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Achieving Business Competitiveness in a Digital Environment

Opportunities in E-commerce and Online Marketing

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∅ Springer

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Preface

Practices in retail are changing worldwide. In each country, the changes occur at different intensities and speeds depending on the technological development of both the retailers and the shoppers and their openness to innovations. New distribution channels, payment methods, and communication technologies have shaped customers' shopping experiences for many decades. However, this development significantly accelerated recently. The COVID-19 pandemic has affected many sectors and industries. Even the most conservative sellers have been forced to change their traditional business models and selling methods. Those that have negatively perceived and rejected new technologies, card payments, and online sales, in general, have had to reorient quickly.

Moreover, due to the social distancing restrictions implemented due to the COVID-19 pandemic, many new customers became familiar with online shopping. They were more or less forced to order any goods from online retailers. After they overcame their original fear, customers became accustomed to shopping from the comfort of their homes, and some of them no longer wanted to forgo this comfort even after a return to the regular course of life. The global pandemic undeniably accelerated advancement in the e-commerce sector and the digitization of retail services. This development of events thus emphasized the importance of gaining the necessary knowledge, tools, and competencies to achieve business competitiveness in the digital environment.

Currently, the differences between brick-and-mortar and online shopping are less distinctive, and there is a high possibility that these terms will disappear in the future and that one will no longer distinguish between strictly online and offline shops. The direction of retail is dictated by one major trend: customer convenience. For some, this convenience may mean no longer needing to go anywhere (physical convenience), while for others, it will mean that they do not have to think about shopping (mental convenience). This goes hand in hand with the requirement for speed and simplicity. Online and offline customer experience is already overlapping, and we are not moving toward the total dominance of e-commerce but to the digitization of all retail. We are currently witnessing the emergence of a new D2C (direct to

customer) business concept. There is an apparent effort by brands to eliminate all intermediaries and directly reach the customer. However, the customer is overwhelmed and tends to remove everything that is not relevant to him or her from his or her attention. As the share of online retail grows, competition increases, which stresses the importance of providing relevant information to the customer before purchase and improving the customer experience. Whether doing so requires investing in new technologies or implementing new tools and strategies, bringing the customer greater convenience and having an excellent online brand presence are the critical factors for success.

Sellers thus should seek ways to influence the buyer even before he or she visits their store or considers buying their products. Online marketing and e-commerce automation systems provide an efficient solution without the need for extensive technological innovation. Marketing automation systems can educate potential customers or present the required product information to build trust and significantly shorten the purchasing process. The driving force of marketing automation is sending content messages that are precisely tailored to a specific customer. The content is delivered to him or her at the ideal moment when he or she needs it and searches for it during his or her shopping journey.

One of the essential functions of all marketing automation tools is to deliver preselected content to potential customers, always based on their specific actions. For example, when users visit a website offering new cars, the system automatically responds by sending them an e-mail with a detailed offer about the entire product line. Similarly, if the customer leaves the shopping cart before completing the purchase, the system can send him or her an e-mail or a message with a special offer for this particular product. Thus, marketers create various automation rules in the system environment, based on which they can cover the entire purchasing process or product life cycle. This process is called lead nurturing. System tools for marketing automation enable accurate monitoring and evaluation of responses to previous campaigns based on contacts in the marketing database. Through lead nurturing, campaign contacts are educated, and their relationship with the brand is established. Thanks to lead scoring, contacts in the database are gradually sorted. When the required qualification (sales qualified lead) is reached, the prepared contacts are passed to traders to complete the trade. The inputs for the evaluation of lead scoring and the content of the message itself need to be created by marketers. This is not possible without a thorough analysis of target groups, understanding the purchasing processes of all persons who participate in a business case, and influence over purchasing decisions. The availability of customer tracking systems has enabled marketers to collect large quantities of consumer-related data that provide valuable information about preferences, needs, shopping patterns, interests, and customer demographics.

While large companies and corporations have implemented big data and business intelligence concepts for many years, small and medium-sized companies seem to be hesitant to pursue this trend. However, we believe that all enterprises, regardless of size, can grasp the potential of marketing and e-commerce automation and become competitive in the digital environment. This publication offers insights into the

workings of marketing and e-commerce automation systems, outlines opportunities in retail digitization, and, more critically, guides those who decide to increase the competitiveness of their business by following the online journeys of their customers.

This publication aspires to fill the knowledge gap in the current literature regarding the possibilities of increasing firms' digital competitiveness using available online technologies to reach potential customers with personalized offers and engage with them in long-term relationships. In addition, another objective of this book is to design an intuitive framework for the self-evaluation of the current level of digital competitiveness that can help companies assess their capabilities and resources in e-commerce and online marketing. Knowing the weaknesses and strengths of their digital business processes will contribute to formulating a more effective digitization strategy and a greater level of business competitiveness in e-commerce.

The introductory chapter "The Broad and Narrow Definition of E-Commerce" focuses on reviewing existing definitions of digital entrepreneurship in the scientific literature and international documents. By identifying reoccurring characteristics, we propose a set of factors that can increase a company's competitiveness in the online environment if the proper measures are put in place. Building on the identified factors, in chapter "Evaluative Framework for Digital Competitiveness", we combine secondary information, opinions of experts in online marketing, and the experience of SMEs to identify which factors affect the capacity of businesses to embrace the digital environment. Based on these findings, we propose an evaluative framework allowing businesses to assess their current level of e-commerce readiness.

The website represents a central element of the entire e-commerce and online marketing strategy. Therefore, chapter "Website-Centric Shoping Experience" analyzes the aspects that impact the customer's perception of the virtual ambiance of the website. Chapter "Website-Centric Shoping Experience" provides a conceptual framework for linking virtual commercial hospitality and purchasing behavior. The authors introduce five concepts: affective reactions, cognitive absorption, exploratory behaviors, approach-avoidance behaviors, and intention to buy. The research described in this chapter uses data from 498 respondents.

Consumers make their purchasing decisions based on information that is also related to emotions. Customers prefer transparent information that allows them to trust companies and then show interest in their services or products. Chapter "Socially Responsible Online Marketing" attempts to link the brand reputation and customer shopping intentions with the ability of companies to communicate about their socially responsible actions. Strengthening the image is one of the fundamental goals of marketing, and the CSR concept is thus one of the possible aspects of strengthening the image and thus having the edge over the competition.

Digital advertising evolves in an increasingly dynamic context and therefore finds itself in perpetual change. Advertising success increasingly relies on targeting and personalization capabilities that require strong skills in collecting and processing user information and data. However, these practices carry risks for Internet users since personal and potentially sensitive data on their lives can be exchanged without actual knowledge or consent on their part. Thus, in chapter "Algorithms: The New

Leaders of the Advertising Market", the authors analyze the effects of programmatic advertising on the perceptions of advertised content and user attitudes toward the protection of personal data. This chapter provides new evidence on the usage of adblocking and users' motivations to avoid online advertising.

Chapter "The Credibility of Online Recommendations" also explores the impacts of information transparency—however, this time from the perspective of the user-generated content. Online recommendations and their impact on customers' decision-making process during online shopping are still growing. Customer reviews represent a particular type of content created by random users without professional expertise who base their opinions on their subjective experience. The authors introduce a credibility model of online recommendations using the results from previous studies and information credibility frameworks.

Influencer marketing is a marketing communication tool increasingly used by all brands. Most companies are now turning to social networks to promote their products and get closer to their potential consumers via partnerships with celebrities and personas that their customers follow. Therefore, the last two chapters of this publication are devoted to the study of this phenomenon. Chapter "The Relationship Between Product Placement and Shopping Intentions on Instagram" analyzes how the placements of products on Instagram influence consumers' purchase intention and to what extent this new type of marketing communication could lead to the development of negative attitudes such as brand and influencer weariness. While chapter "Product Endorssment by Opinion Leaders: The Case of YouTube Community" explores the dynamic between influencer endorsement on YouTube and the brand attitudes and shopping intentions. The chapter combines the information from 20 test sessions, including a real brand–YouTuber collaboration video and the analysis of comments posted under this video.

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Acknowledgments

Contents

The Broad and Narrow Definition of E-Commerce

Tereza Semerádová and Petr Weinlich

Abstract Electronic commerce is neither a new phenomenon nor a phenomenon that is easy to define and even less easy to assess. First of all, we are faced with the diversity of definitions and, hence, of measures. The broadest definitions encompass activities related to the network infrastructure, both hardware, and software, which underpin the functioning of the Internet: routers, servers, network administration software, and software platforms. Another broad definition of electronic commerce includes all electronic transactions, including credit card transactions and the infrastructure necessary for electronic commerce operation. Finally, a more restrictive definition is limited to the purchases and sales of goods and services made over the Internet, whether paid for or not, delivered or not delivered online. These different definitions make it difficult to monitor the development of business activities on the Internet and identify the factors necessary for achieving higher competitiveness in this sector. This introductory chapter focuses on reviewing existing definitions of digital entrepreneurship in the scientific literature and international documents. By identifying reoccurring characteristics, we propose a set of factors that can increase a company's competitiveness in the online environment if proper measures are put in place.

Internet technologies have changed the way people think, work, spend their free time, look for information, and purchase goods and services. The Internet became a new marketplace with its own rules overcoming the constraints of time and location. E-commerce is a relatively broad term used to describe all business transactions carried out using the Internet, while the main emphasis is on e-shops and activities related to improving customers' online shopping experience. With advancing digitization, companies can follow their customers throughout the shopping process, offer guidance and advice, and shape their brand opinion. As online tools such as advertising and tracking systems evolve, they become more intuitive and accessible

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even for individuals without expert marketing knowledge. Running an e-shop and using online advertising to promote the products and the brand is no longer reserved for large companies. All companies can increase their visibility and establish an online presence for their business. However, it appears that some of them struggle more than others in achieving digital competitiveness. Despite the increasing user-friendliness of online marketing platforms, many enterprises hesitate to implement these tools due to uncertainty over their actual benefits. The lack of knowledge regarding opportunities in online retail digitization may be one of the main reasons for the slower development of e-commerce in some countries. Since marketing and e-commerce automation do not require advanced hardware equipment, knowledge and skills represent the critical prerequisites for succeeding in the Internet shopping environment.

The term *digital entrepreneurship* has gained greater visibility since the late 2000s. The popularity of digital entrepreneurship has increased dramatically with increased attention from media, academia, government, and businesses. A new generation of entrepreneurs has taken place trying to seize the various opportunities of the web while responding to the demands of consumers eager for innovation. However, despite this increase in popularity, the concept of digital entrepreneurship remains vague, moderately understood, and not fully recognized due to theoretical inadequacies. This unclarity is surprising given that many often see digital entrepreneurship as an essential process through which economic change occurs: growth, job creation, and innovation. The term digital entrepreneurship is relatively new. The concept began to make its first appearance in the literature during the 2000s. McKelvey (2001) was probably the first to use it under the term *Internet entrepreneurship* to refer to attempts to capture business innovation processes on the Internet. Innovation involves knowledge-intensive products in the modern economy. Carrier et al. (2004) spoke more specifically of the phenomenon of small and medium-sized enterprises created to do business exclusively on the Internet under the term *cyber entrepreneurship*. Other terms such as *e-entrepreneurship* (Malay 2004) and, more recently, *digital entrepreneurship* (Hull et al. 2007) have been used with similar meanings. However, it seems that the latter term is better suited today to refer to the phenomenon we are dealing with.

Although digital competitiveness has been at the academic and applicational forefront for many years, there are some inconsistencies regarding the definition of the term. Researchers associate digital competitiveness with a company's willingness to innovate both the existing business process and new business ideas (Stankovic et al. 2021; Akhromeeva et al. 2020; Kuester et al. 2018). Although researchers agree that information technologies and the Internet transform how companies and industries work, there is little academic information about the decision factors that influence the propensity of companies for digital innovation (Gawer 2021; Nambisan 2020; Quinton et al. 2017). According to Tilson et al. (2010), the level of digitization is reflected in the amount of collected, produced, stored, and processed content, information, and energy. However, due to its complexity and unprecedented speed, digital transformation changes the previously used models to explain innovation tendencies (Levchaev and Khezazna 2019). Kraus

et al. (2021) argue that the main prerequisite for successful digitization is the strategy and not technology itself. Saarikko et al. (2020) refer to this phenomenon as the digital consciousness of the company, which describes the company's ability to benefit from digital technologies for business purposes.

The development of electronic transactions profoundly transformed the structure of economic activities. Traditional commerce was characterized by a succession of stages to link the producer to the consumer. Electronic commerce reversed this usual logic, and now, it is the consumer who goes directly to the distributor or the producer (Jantan et al. 2003; Javalgi and Ramsey 2001). The number of intermediaries thus decreased. From the companies' point of view, digitization represents a transformation facilitated by using ICT tools while taking into account connected consumption patterns to shift logistics, products, services, or industries into a digital environment. As part of lifestyle habits, digitization can be observed through the multi-screen use of digital technology (TV, computers, tablets, smartphones, digital watches) daily and for various tasks. Indeed, digital media disrupt companies' marketing strategies and contribute to new economic models (Lee 2001; Mahadevan 2000). They provide innovative ways of delivering value to customers. Thanks to digital technologies, processes, and activities internal to the organization, they can also improve, thus impacting their performance. Digital media is also changing the behavior of consumers who want to access brands anytime, anywhere, and from any medium.

The Internet provides them with convenient and instant access to information and communication. It thus helps to strengthen their power towards brands, thanks to access to extensive information on products, prices, availability, and satisfaction of other consumers. In addition, Internet tools promote the generation of content (text, photos, videos) by the user and its sharing with other Internet users (Dutton and Blank 2013; Ghose and Han 2011). Such an upheaval is indisputable. The Internet is an additional communication channel similar to television or the press and a powerful medium capable of causing rapid changes impacting consumers' purchasing process and the marketing strategies of companies. This digital era raises several challenges for companies, which are also opportunities to be seized. They must establish a digital culture, equip themselves with technical and managerial skills, and ensure the convergence between traditional and digital communication tools. Enterprises need to take into account the multiplicity of actions because the formats are constantly changing so that communication on traditional channels follow an almost always identical approach in terms of targets, broadcasts, locations, and formats, as well as the nature of the growing evolution of technologies that influence digital uses and marketing practices, in addition, the need immediacy desired by customers and personalization of responses and offers (Rustagi 2012). Digital transformation should be seen as an opportunity to improve the customer experience, of course, on the condition of mastering data. Collecting, mixing, and controlling customer declarative and behavioral data is one of the main challenges. This transformation undoubtedly involves setting up truly omnichannel strategies for enterprises, offering seamless customer journeys (Aslanyan et al. 2020; Sharma et al. 2018).

Due to the changes in customer preferences induced by the appearance of new technologies and applications, companies are forced to rethink entire business

models or run multiple business models at once (Li et al. 2017). Companies need to adjust their products and services (Vial 2019). However, many challenges arise from rapid technological development and slower organizational change (Matt et al. 2015). Saarikko et al. (2020) define digital transformation as a socio-cultural process requiring new technologies, structures, and skillsets. The demand for ICT specialists has been increasing rapidly due to the growing e-commerce sector, and many enterprises struggle to fill vacancies for ICT specialists (Eurostat 2021a, b). Current recruitment trends demonstrate the need to educate employees in ICT and help them master e-commerce and online marketing skill sets. Hanelt et al. (2020), in their literature review, distinguish three main areas of change regarding digitization. These are data storage, data processing, and data exchange. He places business digitization in perspective with its impact on individual processes. Analogously, following his reasoning, these three areas may be applied to every process of customer acquisition. In e-commerce, multiple automated or semi-automated systems and platforms can carry data storage, processing, and exchange. After a correct setup, these platforms can perform most of the expert actions instead of the knowledge workers otherwise required. While firms compensate for the lack of a competent workforce by increasing the automation of online shopping and advertising systems, the demand for individuals to integrate and operate these systems will continue to grow (Bagshaw 2015; Heimbach et al. 2015).

Herhausen et al. (2020) define digital business competitiveness as a set of resources and capabilities. While resources refer to production inputs, capabilities describe firms' ability to perform e-commerce- and digital marketing-related tasks. In the digital economy, resources may be tangible, such as computers, warehouses, distribution channels, or cashiers. However, most of the resources are intangible and related to data. Customer-related data collection and subsequent analysis are the main mechanisms behind all e-commerce and digital marketing activities (Leeflang et al. 2014). The academic literature distinguishes four types of marketing capabilities: (1) capabilities related to selling channels, (2) capabilities related to social media, (3) capabilities for managing digital relationships, and (4) capabilities for using digital technologies (Herhausen et al. 2020).

The rapid development of information and communication technologies (ICTs) has led to significant economic and social changes in the last two decades. ICTs have fundamentally influenced communication in the business sphere and directly impacted production, trade, warehousing, customer service, and cooperation among business entities. As a result of the use of ICT in the second half of the 1990s, economic theory and practice were enriched with many new terms, including electronic business (e-business), electronic commerce (e-commerce), and electronic shops. E-commerce is becoming increasingly crucial to the prosperity and competitiveness of businesses and entire economies, as reflected in the strategic goals of many countries and political and economic unions such as the European Union. E-commerce may be evaluated according to various criteria that are not universally defined and thus may differ across countries (Genchev 2015). These differences lead to difficulties in evaluating the effectiveness of e-commerce in international comparisons and limit the identification of barriers and drivers of e-commerce. Thus, the

adoption of appropriate measures to support e-commerce and exploit its full potential. Moreover, due to the continuous introduction of new technologies, the behavioral patterns of online users continue to change, leading to the adoption of new communication and selling channels by marketers and businesses. These social, economic, and technological changes manifest as new e-commerce business models with distinct customer and business involvement levels (Tzeng and Shiu 2020; Huynh et al. 2020).

This chapter represents an introduction to the problem of digital commerce and the online presence of an enterprise that is discussed in more detail in the following chapters. The studies above suggest that digital entrepreneurship is a complex set of processes, tools, and competencies. Due to their similarity, terms such as electronic commerce, digitization, e-business, or online marketing are often confused. Therefore, we find it necessary to establish what we understand under the term digital entrepreneurship in this book. This chapter focuses on defining what we believe to be the heart of current business activities on the Internet. We review the definitions of online activities provided by both the official international authorities and the scientific literature. We propose a list of characteristics defining digital entrepreneurship as understood by this book by analyzing the common traits.

1 E-Commerce Versus E-Business

The rapid growth of e-commerce has necessitated the adoption of a uniform and internationally accepted definition for statistically monitoring and measuring this new phenomenon. The scientific community demonstrated interest in e-commerce in the first half of the 1990s. Clarke and Jenkins (1993), among the first to respond to the growing use of computer networks in doing business, defined e-commerce as "*buying and selling goods or services over an interactive telecommunications-based computer network.*" According to them, e-commerce may be thus perceived as the application of information technology to processes related to making contracts to purchase goods and services between distant buyers and sellers. While valid at the time of its formulation, this definition limits online shopping only to the process of arranging a business transaction and neglects other aspects such as online payment, online customer service, or advertising. Dearlove (1994) provided a more general definition, describing e-commerce as the proactive management of transactional information flow using databases. Although Dearlove's definition did not directly mention the Internet as the primary medium, he predicted the rapid growth of electronic data interchanges. Harrington (1995) included the payment process in the definition of e-commerce as "*the exchange of information, goods and services and payments using electronic means.*" He also defined two main markets of e-commerce: B2B and various electronic means (EDI, EFT4, e-mail, fax). In contrast, Strader and Shaw (1999) defined e-commerce very loosely: "*The relationship between organizations and consumers is increasingly ensured through electronic information technology (IT). This is generally called e-commerce.*"

The definition of e-commerce broadened in the second half of the 1990s. Kalakota and Whinston (1999) qualified e-commerce in terms of communication as a process involving the delivery of information, goods, services, and payments; in terms of business processes, they used online commerce to refer to the use of technologies to automate business processes; they considered the impact on services as a tool to reduce costs for both businesses and consumers and increase the speed of service delivery; and finally, they referred to e-commerce as to an opportunity to buy and sell products, information and other online services via the Internet. The above-described definitions from the 1990s show the inconsistencies and varying processes encompassed by e-commerce. The lack of a generally acceptable definition of e-commerce was highlighted by Ngai and Wat (2002), who analyzed scientific articles on e-commerce from 1993–1999. The OECD summarized the problems with defining e-commerce in the late 1990s:

> The definitions of electronic commerce in different sources vary considerably. Some include in e-commerce all financial and business transactions in electronic form, including electronic data interchange (EDI), electronic funds transfer (EFT), and all credit or debit card activities. Other definitions restrict e-commerce to retail sales to consumers, where transactions and payments occur on open networks such as the Internet. The first type of definition concerns a form of e-commerce that has existed for decades and results in trillion-dollar activities every day, and the second type involves activities that have existed for about three years and are difficult to measure (OECD 1999, p. 28).

The rapid growth of electronic transactions in the second half of the 1990s and the need for statistical measurement required a precise and, for international comparisons, internationally accepted definition of the term e-commerce and its distinction from e-business. It has also become necessary to analyze the driving forces, barriers, and impacts of the development of electronic transactions. The OECD Ministerial Conference in Ottawa focused on this issue in October 1998. Based on the conclusions of this conference, the OECD working group in the following period defined the terms e-commerce and e-business and dealt with various aspects of measuring e-commerce. In 2001, the OECD (2011) published one of the first internationally accepted definitions of e-commerce—the so-called broader and narrower definitions. The broader definition defined e-commerce as the sale or purchase of goods or services between businesses, households, individuals, governments, and other public or private organizations, carried out through various computer networks. The narrower definition of e-commerce included only transactions performed through applications provided over the Internet.

Problems that arose in distinguishing transactions carried out over the Internet, and those occurring over other networks were the impetus for the OECD in subsequent years to unify the two definitions. In 2009, the OECD published a revised definition that unified the broader and narrower concept of e-commerce and is still used in OECD documents:

> E-commerce transactions are the sale or purchase of goods or services effected through computer networks by methods specially designed to receive or place orders. Goods and services are ordered using these methods, but payment and delivery of products do not occur online. E-commerce transactions can occur between businesses, households, individuals,

governments, and other public and private organizations. According to this definition, E-commerce includes orders placed through a website, extranet or electronic data interchange and excludes orders made by telephone, fax or handwritten e-mail (OECD 2011, p. 72).

Unlike the definitions published in the 1990s, this definition excluded e-commerce transactions performed with traditional electronic means (telephone, fax, e-mail) and emphasized the use of unique means introduced directly for e-commerce. Eurostat defines e-commerce similarly:

E-commerce can be generally defined as the sale or purchase of goods or services between businesses, households, individuals, or private organizations through electronic transactions made over the Internet or other computer (online communication) networks. E-commerce involves ordering goods and services via computer networks; payment and final delivery of goods or services can be made online or offline (Eurostat 2021a, b).

Some scientific sources still use both narrow and broad definitions of e-commerce. However, these are not definitions according to the type of networks used, as distinguished by the original OECD definitions from 2001, but the definition of e-commerce according to the activities involved in online retail. Turban et al. (2015a, b) stated that in the narrower sense, e-commerce is the process of buying, selling, or exchanging products, services, and information between business partners through telecommunications networks. In a broader sense, according to the authors, e-commerce includes, in addition to the purchase and sale of goods and services, customer service, cooperation with business partners, and the management of electronic transactions within the organization. Examples of the narrow definition of e-commerce are currently also the OECD as mentioned earlier (2011) and Eurostat (2021a, b) definitions, as well as the Poong et al. (2006) of e-commerce as "*trading in goods and services via electronic media and the Internet.*"

A broader concept of e-commerce is used by Stallmann and Wegner (2014) as "*the sum of all digital commercial transactions between economic operators that take place via the Internet, especially the sale of goods and services.*" The problems with defining e-commerce concern the different scopes of definitions used and understanding the relationship between e-commerce and e-business. Some authors do not distinguish between e-commerce and e-business. For example, Xu et al. used the terms e-commerce and e-business as synonyms. According to their concept, "*e-business/e-commerce has a wide meaning and includes all types of electronic transactions (i.e., B2B, C2C, mobile commerce, e-government, e-learning, e-publishing, online community, and social networks) and communication within the organization, between organizations and with consumers*" (Xu and Quaddus 2010). Turban et al. (2015a, b) used the term e-commerce as equivalent to the broadest definition of the term e-business. E-business is usually defined as activities, transactions, and processes performed electronically using ICTs (Taylor and Murphy 2004; Wu et al. 2003; Earl 2000). IBM coined the term e-business in October 1997 when launching its e-business advertising campaign. At the same time, IBM defined e-business as "*the transformation of key business processes in the use of Internet*

technologies" (IBM 2021). This definition indicates the broader content of the term e-business compared to the term e-commerce.

The OECD introduced one of the first internationally accepted definitions of e-business, which defined e-business as "*automated processes in and between businesses that run over computer networks*" (OECD 2003, p. 4). This definition was also adopted by the European Commission, which stated that "*e-business includes all electronic transactions as well as non-transactional business processes*" (European Commission 2010, p. 174). Similarly, Eurostat pointed out the different content of the two terms, noting that "*e-business is more than e-commerce*" (Eurostat 2021a, b). Turban et al. observed that e-business refers to a broader definition of e-commerce and includes not only the purchase and sale of goods and services but also all types of online business, such as customer service, cooperation with business partners, electronic transactions in the organization, and e-learning: "*From this point of view, e-commerce is understood in its narrower sense as a subset of e-business*" (Turban et al. 2015a, b, p. 7).

2 Key Factors for E-Commerce

E-commerce is affected by various factors. The stages of the e-commerce life cycle can be represented by the so-called S-curve, published in 1999 by the OECD (1999) (see Fig. 1). The readiness stage includes the preparation of mainly technical, commercial, and social infrastructure deemed necessary for implementing
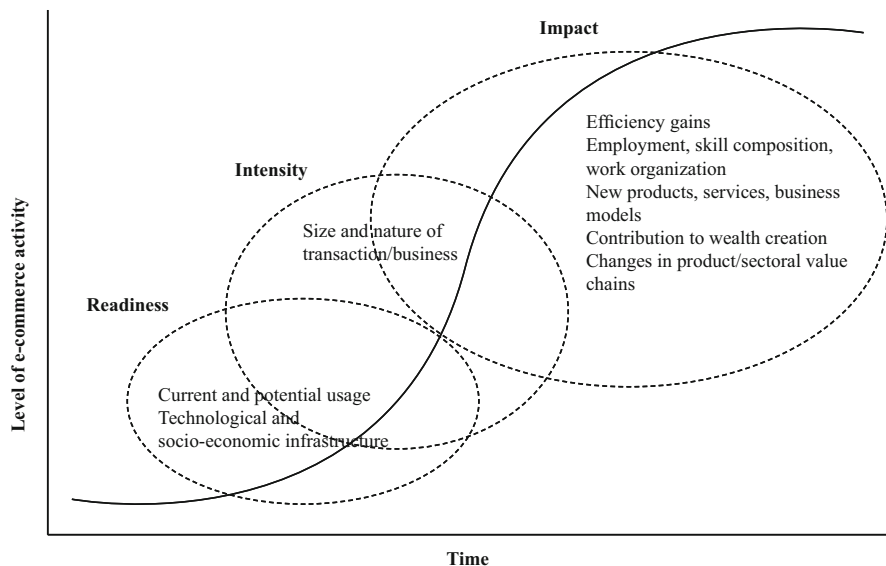

Fig. 1 S-curve of an e-commerce life cycle (Source: Author's illustration based on OECD 1999)

e-commerce. The intensity stage includes e-commerce applications, i.e., its use in practice. The impact stage is when the use of e-commerce exceeds the substitution effect and brings new added value (OECD 1999). These stages partially overlap, and each contains factors that affect the economy's readiness for e-commerce, its use, and its impacts.

Scientific research has focused on e-commerce effectiveness factors since the early 1990s. The works published in the first half of the 1990s focused mainly on B2B e-commerce and the conditions and barriers to its development. The focus of scientific interest in this period was mainly on the security of electronic transactions. Dosdale (1994) emphasized the need for greater security when trading on open networks. According to Dearlove (1994), the involvement of European companies in electronic transactions is hampered by insufficient communication infrastructure, poor management planning, and underdeveloped tools and techniques. It is interesting that Dearlove, in his work, assumed the development of various technologies but without a single mention of the Internet. In contrast, Travica (2002) identified the Internet and the World Wide Web as the driving force behind e-commerce and considered concerns about the security of electronic transactions to be "probably the biggest" obstacle to e-commerce.

Since the second half of the 1990s, research related to e-commerce has focused on B2B e-commerce and e-commerce factors. Quaddus and Achjari (2005) identified security barriers, legislative problems, costs associated with critical technology acquisition, and lack of knowledge and skills as obstacles to developing e-commerce. Singh et al. (2001) compared e-commerce in the USA and Western European countries. Their list of factors includes the level of technology penetration, the economic environment, the business environment, the cost of Internet access, online security, privacy, and legislation. Key factors also include the availability of venture capital for start-ups and cultural factors (language differentiation, lifestyle). Those authors considered the electronic payment system to be the crucial prerequisite for effective e-commerce, along with the ability of the business sector and the government to accept the risk associated with the introduction of new business models.

Javalgi and Ramsey (2001) noted the dependence of e-commerce on four critical infrastructures: (1) information technology and telecommunications infrastructure, (2) socio-cultural infrastructure (organization of society, its institutions and social groups, language, level of education, relation to innovation, technology, and entrepreneurship, knowledge, and skills), (3) commercial infrastructure (logistics services, banking services, ICT and market research services), and (4) political-legal infrastructure (government policy and legislation, including data protection, intellectual property, trademarks, and Internet domain names). Similarly, Tassabehji et al. (2007) divided e-commerce factors into four categories:

1. technological factors (development of telecommunications infrastructure),
2. political-legal factors (support for ICT development from the adoption of legislation for ICT development and implementation, support for education in the ICT field),

3. social factors (Internet users and the level of their knowledge and skills in ICT) and,
4. economic factors (economic level of the country, economic growth, level revenues, costs of acquiring new technologies, Internet connection costs, commercial infrastructure development, and the state of the business environment, among others).

Ho et al. (2007) identified ten factors that could act as drivers or barriers to e-commerce. These factors are divided into four groups:

1. economy (economic level, financial resources),
2. environment (geographical characteristics, demographic characteristics, urbanization, cosmopolitanism),
3. people (education, human capital), and
4. technology (information structure, Internet connection costs).

Their study analyzed the effects of five selected factors that they consider key to the growth of e-commerce: Internet penetration of the population, investment in telecommunications, level of education, availability of venture capital, and credit card penetration. According to those authors, these factors have the character of endogenous factors in the domestic economy and, at the same time, act as exogenous factors for other economies. The results of their quantitative analysis confirmed the significant influence of three factors on e-commerce growth: Internet penetration, investment in telecommunications, and the level of education.

Moreover, research by the international consulting company CIVIC Consulting (2011) identified consumer trust and interest in online shopping, delivery systems, payment systems (especially security and ease of use), high-speed Internet penetration, and vendor involvement factors in e-commerce. Kshetri (2007) divided e-commerce barriers into three categories: (1) economic barriers, (2) socio-political barriers, and (3) cognitive barriers that affect the behavior of consumers and businesses and are related to their knowledge, skills, ability to communicate in English, and awareness of the benefits of e-commerce.

In addition to these barriers, Savrul et al. (2014) defined technical and legal barriers. Eppright and Hawkins (2009) identified three groups of factors that arise in the early stages of e-commerce and influence its further development and impact on traditional retail: (1) factors related to retailers, (2) factors related to products, and (3) factors related to consumers. Mohapatra (2012) defined three driving forces of e-commerce: (1) economic forces, which include the benefits of e-commerce for companies and consumers; (2) market forces, which include marketing and customer service; and (3) technological forces, which Mohapatra considered to be a critical factor in eCommerce growth. Rawat et al. (2013) identified external factors of e-commerce beyond corporate management's reach and cannot be controlled by it: culture, consumers' personal characteristics, language, religion, and government support. Gomez-Herrera et al. (2014) examined barriers to cross-border e-commerce. They pointed out that cross-border e-commerce imposes new requirements on businesses that can generate new costs (e.g., the need to communicate in a foreign

language, navigate foreign legislation, adopt cross-border online payments, and ensure the delivery of goods abroad).

Microeconomic and macroeconomic impacts represent a significant driving force that affects the level of implementation of e-commerce. These impacts manifest both as benefits for businesses, consumers, and society and as risks and barriers associated with the implementation of e-commerce.

2.1 Factors Motivating the Adoption of E-Commerce

Chaffey and Ellis-Chadwick (2019) stated that the main driving force of e-commerce is the opportunity to increase revenue and reduce costs. According to the OECD (2003), the two critical effects of e-commerce are market expansion and cost reduction from companies' perspectives. E-commerce provides consumers with information about goods and services, helps them find retailers, facilitates price comparisons, offers convenient delivery of purchased products, and allows easy shopping via computer or mobile devices regardless of where they are.

The use of e-commerce allows retailers to achieve time, administrative and labor savings by reducing labor costs (this is especially important in countries with high labor costs) and the use of sales space. The Internet significantly accelerates communication and enables rapid responses to consumer demands and shortened delivery times. In addition to the above advantages, Gefen (2002) identified direct links between the seller and the customer and strengthen customer loyalty. Ghandour (2015) reported the benefits of e-commerce for SMEs: reduced transaction costs, lower marketing and communication costs, and the possibility of global expansion. The benefits of e-commerce were similarly defined by Nath et al. (1998). Offering products on the Internet enables companies to publish much up-to-date information about the offered products while enabling two-way communication and data acquisition for marketing research (Liao and Tsai 2021; Teo 2005). A great benefit of e-commerce is the ability to analyze data on consumer shopping behavior. E-commerce enables the seller to reach many potential customers, and the Internet significantly accelerates communication and enables quick responses to consumer requirements and shortened delivery times (Savrul et al. 2014).

Consumers benefit from lower transaction costs and convenient and easy access to large markets with many products and higher-level competition, which tends to lower prices (Gomez-Herrera et al. 2014). The benefits for consumers also include mass customization (mass production "to order") combined with the personalization of the products offered (OECD 1999). Ghandour (2015) considered the main advantage of e-commerce for consumers to be a convenient form of shopping, sales systems available 24 hours a day, and geographically unlimited availability. The consumer can also gather information from many e-shops significantly faster than when visiting stores in person. At the same time, the consumer has an almost unlimited choice of products at his or her disposal; he or she can obtain detailed

information about products, compare the prices offered by different sellers, and consult the opinions and ratings of other consumers.

Moreover, it potentially opens up much larger markets for retailers and consumers (Gomez-Herrera et al. 2014). Compared to domestic e-commerce, cross-border e-commerce offers consumers access to a broader range of goods and services, allowing them to compare products, retailers, and prices on an incomparably more extensive scale and obtain products that the domestic market does not offer. Cross-border e-commerce also provides consumers with access to a wide range of peripheral goods, the distribution of which on a national basis, especially in smaller economies, would not be economically viable (European Commission 2009). Purchasing in a foreign e-shop is an opportunity to obtain the required products if the seller is ready to deliver the products abroad. Thanks to a wide range of the same type of goods, cross-border shopping increases the probability of financial savings because the consumer can choose the most cost-effective product (considering the price of product delivery and any additional fees).

Another significant group of factors that influence e-commerce adoption includes macroeconomic impacts. One of the first analyses devoted to this issue was published by the OECD (1999), which focused on analyzing the economic and social impacts of e-commerce. E-commerce affects not only retail but also many other services and industries; influences the emergence of new products and services; affects industry productivity; causes changes in employment structure; increases the demand for highly skilled labor; exerts new demands on government policy, legislation, and education; expands and globalizes markets; generates sales increases; leads to growth in household consumption; and ultimately translates into gross domestic product (GDP) growth, but not equally in all countries. Cardona et al. (2015) analyzed the macroeconomic impacts of cross-border e-commerce in the European Union on retail, selected industries, household consumption, and economic growth. The analysis concluded that the overall net impact of cross-border e-commerce on GDP is positive in most EU member states, except for three small economies (Bulgaria, Portugal, and Slovakia).

2.2 Barriers to the Adoption of E-Commerce

All factors influencing the economy's readiness for e-commerce can act as barriers to the use of e-commerce if the size or quality of these factors is not sufficient for this use. Technological factors and factors associated with the readiness of customers and sellers must be considered. The fundamental technological barriers include insufficient equipment with ICTs, shallow Internet penetration, and unsatisfactory quality of Internet connections. In addition to technological barriers, the use of e-commerce is limited by mistrust in electronic transactions and related concerns about security and data protection (Srinivasan 2004). This leads to the creation of psychological barriers, which manifest in consumer distrust of the quality of electronic transactions, distrust of an unknown business partner, concerns about the security of

payment transactions and personal data protection, concerns about insufficient law enforcement, and concerns about possible complications when claiming damaged or non-functional goods. If a consumer has a bad experience when shopping online, he or she may be discouraged entirely from making further purchases (Robinson 2017). Psychological barriers are usually related to the quality of legislation and the business environment (Malbon 2013), and an insufficient level of legislation is a legal barrier (OECD 1999).

In addition to the above, other factors may hinder the use of cross-border e-commerce. In this context, Liao et al. (2008) mentioned the linguistic and cultural differences between European countries, which led to the delayed start of e-commerce in Europe compared to the USA. Gomez-Herrera et al. (2014) and Cardona et al. (2015) pointed out that cross-border e-commerce imposes new requirements and thus new costs on retailers and consumers. Successful involvement in cross-border e-commerce presupposes seller communication in a foreign language (e.g., websites), an orientation in foreign legislation, and the ability and willingness to accept cross-border online payments and ensure the delivery of goods to consumers abroad. Concerns about potential problems with cross-border sales mean that some sellers do not accept orders from abroad. Consumers' interest in cross-border shopping may be limited by language barriers (especially in connection with finding a suitable offer in foreign e-shops and understanding business conditions), the requirement to make online payments abroad, possible problems associated with the delivery of goods from abroad (unfavorable delivery conditions, higher price transport, possible customs procedures, complications in case of damage to the shipment), the frequent inability to use Internet search engines to compare the prices of domestic and foreign offers, and concerns about complaints about foreign shipments, among others (European Commission 2009). All these factors can act as barriers to e-commerce and thus prevent the use of its full potential.

2.3 Customer Factors that Influence the Level of E-Commerce Implementation

Customers who shop online have critical characteristics that marketing managers must consider in their marketing decisions. Key features include online customers identifying more with social media, wanting everything immediately, seeking to control their purchases, being volatile, and wanting to be heard. Word of mouth (WOM) is a growing phenomenon thanks to social networks, as many customers give recommendations regarding products they have purchased. Others decide to make a purchase based on the references of these customers, who already have some experience with such a product purchase (Jeon et al. 2019; Meuter et al. 2013). According to Lee and Youn (2009), the expansion of WOM on social networks is caused by eliminating geographical and demographic barriers, which has allowed opportunities to connect and communicate with each other and create innovation

through cooperation between companies and customers. This trend significantly affects customer behavior, as reflected in their preferences, perceptions of trust, or the creation of loyalty.

In general, customer behavior in an online environment differs from customer behavior in brick-and-mortar stores. The following paragraphs summarize selected factors and purchasing motives associated with the online purchase of products. However, the issue of online shopping is extensive and diverse, and therefore, it cannot be said that customers purchase all products under the influence of the same factors and motives. Other factors influence customers when buying, for example, electronics, and other factors are at play when buying food.

Hedonic and utilitarian motives generally influence the shopping process. Both types of purchasing motives are characterized by specific features that affect customer behavior throughout the customer's decision-making process. The hedonic motive is characterized by shopping for fun, excitement from shopping, enthusiasm, escape from reality, and spontaneity, while customers under a utilitarian motive shop with a goal in mind, seeking a sense of success, and experience disappointment when unable to complete a shopping task (Evelina et al. 2020; Chiu et al. 2012). Customers influenced by a hedonic motive like to shop in their free time and find the shopping process itself to be very entertaining. In contrast, customers influenced by the utilitarian motive often make purchases in a planned manner regarding the frequency of purchase and precisely defined products to purchase. These shopping motives have affected customers in the traditional business environment (in brick-and-mortar stores) and when shopping online. Customers influenced by the hedonic motive tend to enjoy the uniqueness of the web environment, which allows interactive browsing of products, video support, or the possibility of chatting with customer support. Shoppers with a utilitarian motive again appreciate the simplicity and speed of the purchasing process, the possibility of planning deliveries and planning and reusing a shopping list, or the breadth of information provided about goods. Although these purchasing motives are essential, their existence is not necessary for purchasing intention, as customers are also influenced by their motives and the factors affecting them when buying products online (Evelina et al. 2020).

Customer behavior when shopping for products online can be influenced by situational factors and life events. *Situational factors* can often be an impulse to buy or not buy a product, as research has shown that customers stop buying products online after situational factors or life events have ended. Situational factors act as triggers in online shopping for products, but they can also influence the future tendency to use online shopping and simultaneously be an impulse to end this activity. Specific situational factors include lack of time, lack of mobility, geographical distance, need for particular products, and attractiveness of alternatives (Sumarliah et al. 2021; Dominici et al. 2021). However, a situational factor in any situation or life event causes a customer to change his or her established shopping habits. The importance of situational factors in connection with the online environment stems from the unique aspects that this environment provides. When a customer faces time constraints, shopping online can save time because it is available 24 hours a day and allows for accurate delivery scheduling and reuse of stored

shopping lists on the merchant's website. Another important aspect of online shopping is convenience, which provides the basis for situational factors such as lack of mobility and geographical distance. Comfort can be a relevant shopping motive in the case of a customer's illness or the presence of young children in the household (Febrilia and Warokka 2021). The global pandemic of COVID-19 is a recent example of a situational factor that significantly affected the shopping patterns of the entire population. We will describe its effects on e-commerce further in this chapter.

The *social factor* explains the social impact of society and individuals on customers' decisions during the purchase process. Today, customers are affected not only by social influence from the immediate vicinity but are also by the online environment, especially social media. Family, friends, acquaintances, and influencers can have a social influence on customers. The category of influencers includes celebrities, bloggers, satisfied and dissatisfied customers in various online discussions, or other individuals who can influence potential customers. The Internet allows references to individual products and services to be passed on immediately to a considerable number of people, which can affect long-term relationships with customers. Suppose the customer is considering buying products online. In that case, social influence can be the decisive factor for converting a potential customer into an actual customer (Jeon et al. 2019) since social influence significantly affects the belief, attitude, and intention to buy products online (Meuter et al. 2013).

Another factor influencing the purchase of products online is the *perceived risk* that negatively affects the customer's attitude towards online shopping. Many aspects of online shopping may be risky for customers, and perceived risk can be divided into social, financial, and security risks in terms of privacy, the risk of not obtaining timely and correct deliveries, risk related to product quality, and after-sales risk (Hanelt et al. 2020; Robinson 2017). According to Jeon et al. (2019), financial risk, product risk, and time risk gradually decrease depending on the number of successful and trouble-free previous Internet purchases. However, retailers should continuously strive for quality customer relationship management to eliminate the impact of problematic purchases and reduce perceived risk.

Trust is a set of specific beliefs in the credibility of a supplier, service provider, or website and trust in the security of online transactions (Kshetri 2007). When shopping online, the feeling of trust can be influenced by previous good and bad experiences with specific sellers (Turban et al. 2015a, b). Retailers who build trust with their customers can reduce the perceived risk and positively influence customer relationships with the company. Some authors also mention demographic factors (Makhitha and Ngobeni 2021), website quality, and design (Kim and Peterson 2017) as important factors influencing customer behavior. At the same time, previous research results showed that statistically significant differences among the individual factors and their impact on online users' browsing and shopping patterns had been proven.

3   Indicators Used to Measure E-Commerce

The size and effectiveness of the e-commerce sector can be measured on three levels: e-commerce readiness, e-commerce intensity, and e-commerce impact. Readiness for e-commerce mainly includes infrastructure and technological prerequisites. Many of these factors can be quantified using other indicators, which allows us to create a statistical overview of the economy's readiness for e-commerce. The intensity of e-commerce includes the size and growth of the e-commerce sector, the nature of transactions, sales activities, consumer behavior, and other variables. Statistical monitoring of these aspects makes it possible to identify the fields and industries that implement or do not implement e-commerce. The impact of e-commerce describes the economic and social impacts of e-commerce at the microeconomic and macroeconomic levels. Knowledge about the impact of e-commerce is the result of scientific and professional analyses (Cardona et al. 2015; Gomez-Herrera et al. 2014; OECD 1999). The left column of Table 1 lists three areas of e-commerce monitoring (readiness, intensity, impact). Each area contains selected factors that can be quantified using various indicators or scoring schemes.

Table 1   Indicators used to measure the levels of E-commerce

E-commerce readiness	State coverage by telecommunications infrastructure. Telecommunications sector services. Prices of telecommunications sector services. Investments in the telecommunications sector. Internet penetration (individuals, households, companies). Internet connection (connection method, connection quality). Internet use (frequency use, activities on the Internet). Digital skills of individuals. IT professionals. Population education. Workforce education. Perceived barriers to B2C e-commerce. Logistics services (quality, speed, reliability, price). Postal services (speed, reliability). Financial services (penetration by payment cards, account ownership with a financial institution, available online payment methods). Perceived level of legislation in the field of ICT.
E-commerce intensity	Companies selling online. Individual shoppers online. B2C e-commerce turnover. Structure goods and services sold online. Used payment methods. Methods of product delivery. Domestic and cross-border online purchase, sales. The average value of online orders. Frequency of purchases.
E-commerce impact	Sellers' costs. Profit of sellers. Speed of different types of transactions. Innovative activity of companies. Reseller productivity. Globalization of economic activity. Requirements for qualification of employees. Education in ICT. Changes in the offering of goods and services. Product prices and services. Time and financial savings for consumers. Changes in consumer behavior. Use of electronic payment systems. Use of new business models. Structural changes in trade. Trade growth. Investment. Structural changes in the economy. Several jobs. Working structure places. Employment development. Aggregate development demand. Economic growth

Source: Author's illustration

Individual indicators measure only selected aspects of e-commerce. However, selecting individual indicators is vital for the overall evaluation of e-commerce and their aggregation into a comprehensive indicator, which expresses a global view of e-commerce according to various evaluation criteria. Aggregated (composite) e-commerce indicators are relatively new in the field of e-commerce. Each of the currently available e-commerce indices is focused on tracking e-commerce from a different perspective. Since 2012, the consulting company ATKearney has published The Global Retail E-commerce Index (ATKearney 2021), which expresses the attractiveness of economies for e-commerce investments on a 100-point scale. The attractiveness of countries is assessed according to four indicators: (1) the size of the online market (weight 40%), (2) consumer uptake and behavior (20%), (3) the level of financial and logistics infrastructure (20%), and (4) the forecast for online retail sales growth (20%). The index reveals the economy's attractiveness for e-commerce but does not sufficiently indicate the strengths and weaknesses of the economy for e-commerce development. In 2014, The Economist Intelligence Unit published The G20 e-Trade Readiness Index (World SME Forum 2021), which expresses the conditions for participation in cross-border e-commerce in the G20 countries. The index includes 44 indicators divided into five thematic categories: investment climate, Internet environment, international business environment, regulatory and legal framework, and environment for electronic payments.

Since 2015, the UNCTAD E-commerce Index (UNCTAD 2021) has been published. This index compares economies according to four criteria: the share of Internet users, the number of secure servers per capita, the degree of credit card penetration, and the quality of delivery services. The index enables a comparison of economies in terms of their readiness to engage in e-commerce and identifies their strengths and weaknesses in this area. Each of these e-commerce indices indicates a selected aspect of e-commerce: the economy's attractiveness for investment in e-commerce, the conditions in the economy for participation in cross-border e-commerce, and the economy's readiness for e-commerce development. None of these indices indicates the extent of the use of e-commerce. In addition to the above indices, there is the Readiness Index Forrester, which is calculated by Forrester (2021). This index expresses a comprehensive assessment of e-commerce in terms of global expansion needs and includes 25 quantitative indicators related to consumers, suppliers, infrastructure, and online retail opportunities in 55 countries. Index information is provided to Forrester clients only.

Other aggregated indices are also related to e-commerce. For example, the APEC E-payment Index measures the ability of countries participating in Asia-Pacific economic cooperation to make electronic payments using 39 sub-indicators (Apec 2015). The Digital Economy and Society Index (DESI) (European Commission 2021) is published by the European Commission to assess the progress of EU member states in the digital field. The index consists of 31 indicators divided into five components: connectivity, human capital, Internet use, integration of digital technologies, and digital public services. Some e-commerce indicators are included in the Internet use and digital integration components, but no distinction from e-commerce is made. The E-Friction Index (Boston Consulting Group 2015a)

measures online business and consumer activity barriers in 65 countries through 55-segment indicators. The E-Intensity Index (Boston Consulting Group 2015b) measures the maturity of the Internet economy in 85 countries. It includes assessing selected information infrastructure, government, business, and consumer activity in Internet use and e-commerce and online advertising spending. The networked Readiness Index (World Economic Forum 2016) aggregates 53 indicators divided into four sub-indices (ICT Environment, ICT Readiness, ICT Utilization, and Impacts of ICT) and thus monitors various aspects of it.

Statistical monitoring of e-commerce transactions is negatively affected by several factors, including a large number of companies involved in e-commerce that are not obliged to provide information about their management; the fact that many companies carry out both electronic and traditional sales in parallel and do not distinguish between forms of sales in their reports; intense competition in the e-commerce industry, which leads companies to data confidentiality or misrepresentation issues; the rapid development of ICT and related new trends in e-commerce, which are associated with a delayed response in terms of statistical monitoring methodology; and methodological problems in measuring e-commerce. A significant obstacle to the objective measurement and monitoring of e-commerce transactions in the economy is competition, which discourages businesses from providing objective data (OECD 1998). Recent research has pointed out this fact; for example, Gomez-Herrera et al. (2014) observed that e-commerce data are generated mainly by private companies, but their business interests prevent them from publishing the data. Cardona et al. (2015) stated that there are no official statistics on online goods trade in the European Union, unlike offline trade, which applies to domestic and cross-border online trade. Duch-Brown and Martens (2013) also identified the same problem. International statistical monitoring of e-commerce is negatively affected by persistent methodological problems, such as the varying procedures for data collection, measurement of cross-border e-commerce, or measurement of e-commerce in multinational companies. Some of these issues can be addressed by international standards for monitoring and measuring e-commerce. An example of such a standard is the Global Online Measurement Standard for E-commerce (GOMSEC), followed by the International E-commerce Association of Europe, including national associations and other organizations that seek to work together. Among other things, GOMSEC defines categories of products and services that are differentiated when monitoring e-commerce (e.g., media and entertainment, fashion, toys, electronics) and simultaneously determines which items are excluded from e-commerce reporting (e.g., sales of motor vehicles, real estate, securities).

4   Conclusion

Based on the analysis of scientific sources, documents of selected international organizations, and the European Union, it can be stated that the definition of the term "*electronic commerce*" (commerce, e-commerce) has been evolving for at least

two decades. The results of scientific research in e-commerce began to be published in scientific journals in the first half of the 1990s. This period also probably includes the first definitions of e-commerce. Since 2001, the OECD has started to use the definition of e-commerce (revised in 2009), which clearly defines what belongs to e-commerce. This determination is necessary for the measurement and statistical monitoring of B2C e-commerce within one economy and international comparison. However, scientific and professional sources published in OECD member countries often present different concepts. E-commerce is defined from different perspectives and in different breadth; in the narrowest definition, it includes only online sales and purchase of goods and services, and as such is part of e-business, in the broadest sense, it is synonymous with e-business and includes all business activities that use the Internet. Scientific resources define different categories of e-commerce. The most frequently mentioned classification of e-commerce is according to subjects (e-commerce B2B, B2C, C2C, C2B, and others), further according to the openness of the used medium (e-commerce on open networks and e-commerce on closed networks), according to the use of ICT (net e-commerce and partial e-commerce or quasi-electronic shops and full-fledged shops), and by geographical point of view (local, national, cross-border, and global e-commerce).

Scientific sources identify and examine the B2C factors of e-commerce, which relate to different stages of the e-commerce life cycle and are differently structured. Based on the analysis of scientific sources, we came to the following conclusions: The economy's readiness for B2C e-commerce is always conditioned by the existence of adequate information and telecommunications infrastructure, which includes functional networks enabling quality Internet connection with higher transmission speed, lower aggregation. This factor is affected due to other factors, including investment in infrastructure and the state's relationship to ICT development. An essential factor for the readiness of the economy for B2C e-commerce is the penetration of the Internet. This factor results from other factors, including the cost of households and businesses to acquire new technologies, their relationship to new technologies, and more, influenced by telecommunications liberalization, competition from ISPs, revenue levels, government policy, and more factors. According to several studies, adequate information and telecommunications infrastructure and Internet penetration are necessary conditions for implementing B2C e-commerce (Bagshaw 2015; Rawat et al. 2013; Poong et al. 2006).

Knowledge and skills in the field of ICT are necessary for the economy's readiness for B2C e-commerce and the use of B2C e-commerce. They are essential not only for the use of B2C e-commerce by consumers (at least the ability to search for goods on the Internet, order it, and possibly pay online is necessary), but they are also necessary for the implementation and development of technical solutions concerning B2C e-commerce (technical systems for retailers, for logistics services, for the implementation of electronic banking, including online payments, implementation, and development of security systems) and also for the use of the potential of marketing communication on the Internet (Teo 2005). ICT knowledge, skills, and interest in ICT use are growing with increasing levels of education. A higher level of education increases the ability of the population to use ICT and also produces new

ideas, incentives for innovation and the introduction of new technologies and supports the growth of cross-border e-commerce, as it increases the ability of stakeholders to communicate in a foreign language and navigate foreign legislation (Javalgi and Ramsey 2001; Kshetri 2007; Nath et al. 1998; Tassabehji 2004).

Readiness for B2C e-commerce and its use in each economy is conditioned by the necessary commercial infrastructure, especially the payment and logistics system (Javalgi and Ramsey 2001; Tassabehji 2004). Kshetri (2007) considers a well-functioning and affordable delivery system one of the factors in the rapid growth of e-commerce in the United States, and Singh et al. (2001) emphasize the importance of a functioning payment system for online payments. The economy's readiness for B2C e-commerce and the use of B2C e-commerce is also strongly influenced by the trust of sellers and consumers in this business model (Kim and Peterson 2017; Atif 2002; Gefen 2000). Trust is supported by the level of security of electronic business and payment transactions, data protection, legal protection of stakeholders, including the dispute resolution system, and other factors. The effect of these factors depends mainly on the legislation in the field of ICT and e-commerce.

We consider the mentioned factors (information and communication infrastructure, internet penetration, level of education, payment system, logistics system, and legislation for ICT and e-commerce) as fundamental factors influencing the readiness of any economy for B2C e-commerce. Regarding B2C e-commerce factors, the European Union is characterized by some specifics, the most important are related to the integration process. The Digital Agenda for Europe (European Commission 2010), in the context of creating the EU's digital single market, required Member States to build telecommunications infrastructure for broadband Internet, implement EU ICT and e-commerce legislation into national legislation and remove barriers to cross-border e-commerce. A specific factor is also the cooperation of EU member states in research and technological development combined with financial support from EU funds.

The starting point for identifying e-commerce indicators is the so-called S-curve showing the three stages of the e-commerce life cycle. Based on them, defined by the OECD (OECD 1999, 2011), three main areas of e-commerce that are desirable to monitor statistically: (1) e-commerce readiness, (2) e-commerce intensity, (3) e-commerce impact. In the initial stage of e-commerce, information on activation factors and barriers to e-commerce is monitored. In the mature e-commerce stage, the use of e-commerce is monitored, and in the mature e-commerce stage, the impacts of e-commerce are measured and analyzed. B2C e-commerce indicators can be divided according to which areas of the B2C e-commerce life cycle they relate to. In addition, indicators can also be broken down according to the aspects they focus on: transactions, consumers, sellers, and indicators measuring the economy's readiness for B2C e-commerce. For the overall evaluation of B2C e-commerce, it is essential to use individual indicators and their aggregation into a summary indicator (so-called e-commerce index), which provides a global view of B2C e-commerce according to various evaluation criteria. Currently, several B2C e-commerce indices focus on tracking B2C e-commerce from a different perspective; none of the indices used to focus only on the use of B2C e-commerce.

Currently, the main problem in terms of e-commerce measurement is with the availability and objectivity of data on the use of B2C e-commerce (especially data on B2C e-commerce transactions), on the contrary, minimal problems are with the availability of data on the readiness of a particular economy for B2C e-commerce. Therefore, the main scope of this book is to provide a comprehensive overview of subsets of activities that influence the internal capacity of an enterprise to become competitive in the online environment. These internal processes are complicated to monitor from the outside of the enterprise, and thus there is no universal methodology that would help monitor the performance of the B2C market and propose mechanisms of targeted support.

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Evaluative Framework for Digital Competitiveness

Tereza Semerádová, Petr Weinlich, and Pavla Švermová

Abstract To stand out and face the growing demand from customers to obtain products and services online, several SMEs are implementing digital transformation strategies. It became evident that many factors other than technology are required to ensure the digital transformation's completion and success. However, the global pandemic of Covid-19 showed that many SMEs struggle significantly to implement Internet and online platforms into their strategies to achieve a decent level of e-commerce competitiveness. In this chapter, we combine secondary information, opinions of experts in online marketing, and the experience of SMEs to identify which factors affect the capacity of businesses to embrace the digital environment. Based on these findings, we propose an evaluative framework allowing business to assess their current level of e-commerce readiness.

Besson et al. (2017) describe "*digital transformation*" as a combination of three phenomena: automation, dematerialization, and the reorganization of patterns of intermediation. This transformation affects all business processes, from the business model to relations with stakeholders. Digitization is also characterized by the immediacy of exchanges between human beings and the creation of new opportunities to create value. Since 1990, digitization has consisted of archiving and storing documents in a digital format, then reusing these documents within Electronic Document Management or Integrated Management Programs. In 2000, these expert systems (ERP, CRM) evolved towards Intranets then towards extranets. Web 2.0 has contributed to the opening of the company's Information System to customers and various partners. Digitization is characterized by the transformation of the organization and its digital maturity, a combination that allows it to transform its business model. The digital revolution is, therefore, a transition towards new digital tools and methodologies. Digital data processing technologies are transforming uses and fundamentally changing human behavior. Digital technologies, for their part, use

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new environments to speed up and simplify data processing. The integration and interoperability of customer data lead to the emergence of the customer-centric: customer desires are at the heart of the business model, and data drives the new business system.

According to Petrenko et al. (2017), the digital economy has four specificities: the non-localization of activities, the central role of platforms, the importance of network effects, and extensive data exploitation. These characteristics distinguish it from the traditional economy, particularly by modifying the chains of creation of value that they induce. The phenomenon of digitization could therefore be defined from the mass of raw data valued by algorithms or artificial intelligence that can be secured by technologies such as blockchain. The software interface is accessible through an IT infrastructure commonly referred to as a web platform, and these platforms have the advantage of deploying a network effect in a community webspace. This new business model is typical of digital re-intermediation because it captures, displaces, and concentrates the value of the ecosystem thus created.

Digital transformation is, therefore, not just the digitization of the company (Bolton et al. 2016; Schmidt et al. 2016). Digitization consists of developing the company's activity (process, customer relations, business model, organizational structure, information flow) in a digital and interconnected world: it is a transformation identical to the previous industrial revolution, which reconfigured the artisanal economy in 1.0 of the time towards an industrial economy in a logic of mass consumption. In his article Mazzarol (2015) clarified the notion of Web 2.0, too focused in his eyes on the notion of e-commerce. He also renames the latter to e-Business in order to highlight the notion of digital transformation. E-business is inextricably linked with the WebWeb and the distribution of information in digital formats. Digital transformation refers to converting all information—text, images, audio, and video—into digital formats that can be exchanged, stored, and indexed in databases. There need to be changed to the business processes associated with them. For example, information previously exchanged as text on paper, such as an order form, can now be exchanged as a digital file and simultaneously distributed to multiple "subscribers" without being copied first.

One of the key research topics about digital transformation is its ability to increase productivity at the enterprise level and contribute to companies, regions, and nations (Martínez-Caro et al. 2020; Norris 2020; Tranos et al. 2020). Digitization is often seen as a means of reducing regional and national disparities in economic growth and wealth. Many countries and multinationals have already supported the implementation of digital strategies to develop businesses on their territory (e.g., the European Commission's Digital Strategy). Unfortunately, however, there are differences in the efficiency of transformation processes, with larger firms appearing to benefit much more from digitization (Destefano et al. 2018), while small businesses often lack the capacity or human capital to take advantage of the digital economy (Bouwman et al. 2019). At the regional level, digital technologies and infrastructure seem to amplify existing economic competitiveness rather than help create it (Craig et al. 2017) and therefore tend to widen regional gaps rather than help bridge the gap between economics and lagging regions.

The future of digital and small businesses has also changed significantly due to the global COVID-19 pandemic and its aftermath. The pandemic dramatically disrupted existing supply chains and challenged some traditional business models during national, regional outages and lockdowns in many parts of the world. Demand for online transactions for retail purchases and various types of personal services has risen sharply, prompting existing offline businesses to rethink their business models. The ability to control online technologies was a central factor influencing companies' speed to respond to changes in the business environment in times of crisis. In all sectors, COVID-19 restrictions have intensified current trends, leading to technological developments in information and communication technologies that have been rapidly exploited by some global high-tech companies and online retailers. These restrictions have also created opportunities for some small businesses by discovering new products, new sources of supply, and new ways of trading. However, many SMEs have experienced significant disruptions in the short term, leading to a dramatic reduction in hours worked and income (Reuschke and Felstead 2020). Although research into the digital transformation of SMEs was not yet so advanced at the time of preparing this model, it was clear from the first months of COVID-19 measures that many companies were unable to respond to the necessary digital business transfer.

This chapter aims to review the current findings regarding digital competitiveness factors and provide a reference framework that would help assess the readiness for digital transformation at the level of individual companies. Considering the previous findings from the scientific studies, we organized structured interviews with 214 experts in e-commerce and online marketing. Based on these findings, we propose and validate an evaluative framework using 612 Czech small and medium-sized enterprises (SMEs) data. We believe that the combination of expert knowledge and individual experiences of SMEs during the pandemic of Covid-19 provides a good source of relevant information for identifying critical factors for e-commerce and online marketing implementation.

1   Changes in the Economic Realities

As described in the first chapter of this book (*The Broad and Narrow Definition of E-Commerce*), five elements make it possible to characterize and thus clarify digitization:

- The non-localization of data. Digitization decentralizes retail activities and makes them accessible without geographical limits. Digital transformation is helping to reconfigure the environment.
- Raw data captured, enhanced, made reliable and secure by these technologies, and used by a community of users.
- A platform, software, and algorithms that are implemented technologies and software services deployed in a digital environment are generally a platform.

- A network effect coordinated within a technological and human infrastructure characterized by a community of users who collaborate to create value on the platform. The business model of the platforms, combined for this network effect, highlights the disintermediation model typical of a digital business model. This digital business model generally captures the total value of the ecosystem.
- A digital re-intermediation business model: this dynamic approach to business models reconfigures organizational processes and digitizes low added value tasks. Business players are focusing on customer satisfaction and customer or user experience (UX).

1.1 Moving the Geographical Limits

E-commerce represents a radical departure from previous commercial practices as well as from their inclusion in physical space. Initially, electronic commerce was characterized by a "*virtual marketplace*," without precise location and its physical infrastructure (Knights et al. 2007). Dematerialized goods such as games, films, music purchased online and represented by digital files are immediately available and downloadable by the IT infrastructure. While for material goods, the stakeholders (buyers, sellers, intermediaries) are physically located. The exchange of goods in its artisanal version, represented by a trader sending his packages himself, has evolved to be entrusted to actors who master the transport logistics chain and its processing. The process of transporting material flows has thus been significantly accelerated to become more efficient. Digitization is transforming the environment, as players no longer have to solve the problem of access to commercial infrastructure; the various stakeholders (buyers, customers, transporters) are detached from all geolocation constraints instead of traditional shops. Commerce has become virtual, as have transactions (Guan 2006).

The medieval market, the shopping center, the traditional shopping arcade, which all contributed to structuring the spaces of the cities erected by previous commercial civilizations, tend to disappear or are reconfigured to meet different needs and uses. According to Antrop (2004), the increasing urbanization of the 1960s during the previous industrial revolution caused the retail trade to migrate, initially located in the heart of cities, on the outskirts. Different neighborhoods appear with the notion of a third place, thus contributing to the re-socialization of former commercial spaces. The collaborative economy calls into question the very notion of the consumption model of coffee shops. Indeed, these third places are inventing a new business model and billing per hour or per day for the occupation of a collaborative or individual workspace. In return for the billing, meals, snacks, and drinks are offered at will. What is sold is no longer just what is consumed but also a pleasant and convivial moment of space-time. Teleworkers, nomadic salespeople, students use these environments as offices, meeting rooms, or collaboration spaces. They promote cooperation, creation through impromptu meetings; they go beyond the limits of traditional businesses. This is the emergence of the concept of extended

businesses. According to Michalak et al. (2009), commerce ceases to be a significant marker of urban space. The error would then be to think of digitization in terms of commercial activities distinct from traditional commerce when it should be treated as the industrialization of the processes of commercial functions. This is a vision of markets that rely and will increasingly rely on the hybridization of virtual and physical media. This physical store and digital platform notion are characterized today by the term physical or phygitalization (Clauzel et al. 2019). This approach combining the physical and virtual interface unifies different distribution channels in an omnichannel strategy (Tolstikova et al. 2020; Fornerino et al. 2018).

It is the effects of this phygitalization on trade that should be considered. The non-localization of commercial activities induced by the digitization of traditional commerce combines virtual functions and physical locations in various ways. These functions go beyond the simple opposition between online sales and in-store sales, but correspond to a convergence of commerce, which changes the size of retail areas, multiplies them so that they operate in a network. Major commercial brands thus develop convenience stores, and they are based on the sharing of databases between establishments to improve knowledge and individualization of client care. The hybrid approach promotes the development of network economies both in terms of IT infrastructure and in terms of physical locations of different stores that no longer offer a product presentation but a customer experience, such as Apple Centers, Orange stores, Nintendo. In these places, the customer experience is at the heart of the sales process; questions and objections are intended to be defused in order to lead a customer to have an individualized, unique experience in the context of a purchase of a product or service (Mohd-Ramly and Omar 2017; Cook 2014).

1.2 Collecting and Exploiting Data

For the digital economy, data is the new raw material. Data valuation contributes to a reconfiguration of the value equation in a traditional business model. The development and use of the Internet have fostered the emergence of massive amounts of raw data from human–machine interactions and connected objects (IoT). Referring to Big Data, big data must be valued in order to create value. According to Ganascia (2015), big data is only at the beginning of a growth that would seem exponential and that it would be necessary to promote. Usually, the raw data does not add value, and to do this, it must be processed and connected with other data.

According to Chhabra et al. (2021), the industrial revolution 4.0 is that of data. The use and enhancement of public, private, structured, and unstructured data improve processes and serve business strategies. Big data usually refers to 4 V or 5 V. The first V refers to a large volume of data, often referred to as infobesity because of the mass of data it represents. It is also impossible to exploit humanely without using raw data processing and valuation technologies. The notion of variety (second V) allows the aggregation of heterogeneous data in various formats, whether structured or not. The third V refers to the notion of velocity, that is to say, the speed

of analysis almost comparable to data processing in real-time, which makes it possible to analyze and dynamically correlate all of the data recovered. Companies that process information without industrializing their valuation (fourth V) using digital technologies will be overwhelmed by the mass of data (Pilloni 2018; Hudson et al. 2001). These companies will be unable to be sufficiently responsive to meet the various demands imposed by the many players in the new digital environment. The last V, veracity, underlines the lack of qualification and validation of information. According to Tien (2013), these computer treatments transform data into information and can even be used for predictive purposes. This approach challenges historical, scientific analyses and shows that big data promote predictive analysis of the data collected to define a business model.

The nature of the data to be processed does not pose any problem. Whether of a financial, commercial, industrial, or economic nature, what is essential is to have the capacity to process a mass of data according to the 5 V criteria. According to Kenney and Zysman (2019), the data revolution is accompanied by developing an economy based on platforms (Uber, Airbnb), which competes with business models by easily matching supply and demand. Traditional business and disrupts existing ecosystems. For Farrell et al. (2019), intermediaries (sellers) who use these platforms must necessarily protect their business model and therefore anticipate securing their business model very early on. Lee et al. (2019) state that from the outset, when they establish their business model, third-party sellers must design and position their products in such a way as to minimize risk. To maintain a competitive advantage on the platform, these middle sellers must have a unique manufacturing process or master other processes. Otherwise, the total value of their business model will be sucked into the monopoly platform. Indrawati (2020) specifies that innovation can generally be a source of value creation but that this value can be recovered by network actors who have invested little or no in development efforts because of the dependence of other partners on them.

Faced with this value migration phenomenon, entrepreneurs will have to ensure the strategic position they want their organization to occupy. According to Hoang et al. (2020), the platform owners use it as a laboratory, and they let users innovate and compete, then select the best products and thus capture their value. Today, the companies such as Google, Apple, Facebook, Amazon, Microsoft, certain large groups like Orange, and other companies described as "unicorns" have developed their digital ecosystem of interconnected platforms, integrated services, and content provided by third parties. According to Toivola (2018), these platforms are part of technological and territorial ecosystems and play the catalyst for innovation through coordination and incentive functions.

1.3   A Community Software Platform

More than ever, the expression of Marc Andreessen, founder of Netscape in 1990, is now a reality: "*software devours the world*." Digital environments are the heart of

these technological developments (open-source software, cloud, API, big data, blockchain). Therefore, digitization can be defined as digital processes that reconfigure business models by positioning players at the center of a new ecosystem. Low value-added tasks initially performed by men are industrialized using digital controllers (smartphone applications, integrated software, collaborative platforms, interoperability of information systems), rendering costly previous operating modes obsolete. Digitization corresponds to a new industrial revolution focused on the industrialization of services in a logic of performance and the traditional business model optimization. This has already happened in previous revolutions (agrarian and industrial). Like the previous industrial revolution, digitization shifts low value-added jobs to new societal opportunities where human skills dominate technical skills. Technological skills are devolved on web platforms interfaced with artificial intelligence systems.

From 1950 to 1976, the SABER system, developed by IBM for America Airlines, was one of the first developments in a data exchange platform. It then evolved to become a technological digital platform called "Inter AAct gradually." According to Grover (1993), Inter-Organizational Systems (IOS) had the new characteristics of creating links between several organizations. Thanks to these IOS, companies such as Saber or American Hospital Supply, among the best-known examples, have created a competitive advantage in their industry. Before 2005, Web 1.0 was a pre-industrial version of frozen HTML language pages, which site developers created. The technological architecture of websites is qualified as static because it can only be modified by developers who have mastered programming languages. The content of the site does not change over time. Around 2000, the first technical development of programming languages like PHP took place. This language interfaced with databases makes web pages dynamic. At the time, content management systems (Content Management System) allowed non-developer users to create dynamic web pages without any technical mastery. The Web is then oriented on the content and no longer on the technical and architectural solution of the site. Hosting and site creation solutions are then made available by platforms offering dynamic site creation services for Internet users; the evolution of programming languages and their standardization allowed computer novices the creation of pages with interactive content (Kleinrock 2010). Ajax, Python, XML, Java, Symfony technologies have contributed to the interconnection and interoperability of sites. Curran (2012) confirms that the term Web 2.0 is used to designate an evolution or, according to some, a revolution of the Web.

These phenomena were first identified and theorized in 2005 by Tim O'Reilly in an article titled "*What is Web 2.0?*", a term that has been the subject of intense literary and scientific production (Levy 2009; Murugesan 2007). Tim O'Reilly insists on the concepts of data sharing, network effects (Belk 2014; John 2012), interface ergonomics (Flavian et al. 2009; Zaphiris et al. 2005), and business models (Turi and Antonicelli 2020; Verhoef and Bijmolt 2019). However, it is necessary to clarify the definition of the term "Web 2.0". O'Reilly (2009) highlights the entrepreneurial aspect thanks to the emergence of new business models and the technical aspect via new software or new services (Schallmo and Williams 2018). Wirtz and

Lihotzky first theorized these models in 2000 under the term 4 C-Net-Business-Model (Wirtz et al. 2013).

The 4 C model can be explained as follows: the emergence of services via platforms or software packages promoting economies of scale in an Any Time Anywhere Any Device (ATAWAD) strategy offers agility in user interfaces that Wirtz et al. (2010) call "trade." Complete control over unique data sources that are difficult to recreate and whose richness grows as people use them; this characterizes the "content." These individuals form groups and then communities within which a collective intelligence emerges that makes it possible to co-produce new services. The users of these platforms then become co-developers of services of products aligned with customer demand. It is the dawn of the era of "collaboration" in the development of services and products. This new market is penetrated to its periphery through implementing "ready-to-eat" services; this market is also attached to a "community" of users, designers, customers. These community websites are characterized by the possibility for users to upload content and modify it. The traditional business model is then reversed because the users contribute to the value of the service they use (Borgianni et al. 2015; Ngo and O'Cass 2013).

The 4C model is one of the business models that Chesbrough and Appleyard (2007) call community-driven. Besson and Rowe (2012) confirm that it will transform the way we deliver (commerce), the information we use (content), the people we interact with (community), and the ways to interact with them (collaboration). The effects of Web networks and the development of Internet technologies have helped transform everyday and routine use into commercial use. In doing so, they have fostered the emergence of new digital business models. It is important to stress that no specific technology characterizes Web 2.0 and its newer versions (Web 3.0 and Web 4.0). It is more of the interconnection of existing protocols that have demonstrated their maturity and technical robustness. Web 2.0 has fostered the emergence of the business model of online platforms and services. Web 2.0 is a platform, a Web service, based on micro-content which has taken advantage of the principles of meta-content or built on the architecture of a meta-web. The software environment covers Web 2.0 and emphasizes the implementation of the technical platform for Web 2.0 services.

According to Jones et al. (2003), most companies encounter insurmountable difficulties in the face of complexity, the unpredictability of the world, and globalization. They are subject to permanent conflicts of interest between profitability and sustainable development, secrecy and transparency, values and value, individual and collective dynamics, fertilization of knowledge—which opens up—and competition—which encloses. According to the authors, the significant challenges for humanity will not be hunger or poverty, and even less sustainable development, peace, health, or education. These significant issues will be resolved by the will of humanity to develop new organizations capable of solving them together. According to Hesse et al. (2011), Web 2.0 is a shared vision of its user community. The goal of all Web 2.0 services is to maximize the collective intelligence of participants mutually. Collective intelligence can be defined as the knowledge distributed in a

group. It reflects the knowledge of all participants and is constantly adapting to changes in the environment or the opinion of the communities, so it is dynamic.

2   The Concept of Digital Competitiveness in the Scientific Literature

Digital entrepreneurship consists of positioning the entrepreneur at the heart of the digital transformation ecosystem and implementing his entrepreneurial skills: personality, character, experience, and ability to federate resources (human and financial) to achieve his goals. Digital projects involve a multitude of players as well as the development of new infrastructures such as crowdfunding systems (Mollick 2014), 3D digital printing, digital maker spaces (Ordanini and Pol 2001; Cisneros-Cabrera et al. 2017), and social media platforms (Reuber and Fischer 2011). This context has led to a more collective entrepreneurial vision (Downing 2005), affecting the traditional form of entrepreneurship. In a digital business model, information flows are the raw material of the new economy, and value is extracted from digital artifacts delivered by the platform economy. The following subsections explain that to drive a digital transformation, it is first essential to assess the degree of digital maturity of the company concerned.

2.1   Digital Capacity of Companies

Before implementing a digital transformation strategy, it is necessary to measure its ability to go digital. The capacity is interpreted based on a diagnostic of the organization's digital maturity allowing the company to be placed on a scale that will characterize its potential for transformation. Either the company will have the capacity to follow this transformation, or it will not be able to. If it is impossible to transform the organization, the solution generally adopted is to create a new company made up of other intrapreneur-type collaborators. Since 1970, different generations of technologies have been implemented, integrating more remarkable technological progress ever. Organizations have many technological means, but traditional and causal use does not favor the development of new uses. If the means are necessary, let us not forget that the capacity for transformation of the organization is just as important.

Considering the raw material of digital transformation, information flows must circulate and be qualified to create value within a dynamic business model. Matt et al. (2015) indicate that the effects of computers do not come from the mere presence of computers. They are the result of a multiplicity of decisions and learning in the workplace. Understanding what companies do and invent with their machines is just as essential to measure their cost or power. It is fundamental to analyze how,

by using their machines and mobilizing many other resources, employees contribute to the technical progress of the company. These reflections suggest the need for a high level of digital culture, organizational uses, and behaviors, creating value through digital patterns and uses. In a 2019 article, Ziyadin et al. point out that information systems influence organizational transformation as long as the organization has the capacity, in other words, maturity. The digitalization ability could be called the Development Trend of digital maturity; the terminal degree is preferred here. In 2018, Schwer et al. highlighted the notion of the digital maturity of an organization. This notion qualifies an organization's specific transformation capacity by considering its human resources, digital infrastructures, and use of these different resources. The following developments propose to diagnose a company's digital maturity, measure it using a value scale, and categorize it into a digital maturity classification. The reconfiguration of companies and their business model would therefore not be due solely to a favorable technological environment but to interactions between societal behaviors and technology, aimed at inventing new entrepreneurial spaces from which new digitalized business models will emerge.

Nolan (1973) is one of the first to propose a model for conceptualizing the sophistication of information systems. His research focuses on the evolution of IT in organizations, and it seeks to explain the analytical relationship between the evolution of Information and Organizational Systems and a dynamic concept emphasizing causal-type analysis. According to Nolan, the sophistication of information systems is leading the organization to digital maturity. This is made up of a series of successive steps, and the experience of the previous step is necessary to move on to the next phase. At that time, he updated a relatively new and essential concept in WIS, that of the sophistication of organizations about their information systems. Nolan (1973), Gibson and Nolan (1974), and Nolan and Wetherbe (1980) are also the first to present a theoretical description of the phases affecting the planning, organization, and control of activities in association with the management of IT resources in the organization. Following the publication of the research work of Nolan and Wetherbe (1980), a certain number of researchers began to take an interest in the complexity of organizational information systems (OIS), and more particularly in the various criteria of maturity or sophistication of OIS (Cheney and Dickson 1982; Lehman and Belady 1985).

Initially, the term *maturity* corresponds to a state of progress, to the highest position on a given scale. Paré and Raymond (2012) perceive maturity as the final stage of the IT growth of organizations, a stage characterized by the full development of the organization's IT resources. Nolan and Wetherbe's (1980) model still constitutes one of the primary essential references for researchers studying the dynamics of information systems. It is made up of six phases of the evolution of IT in organizations:

- The initiation phase is a stage of the discovery of information technology. Computer applications aim to reduce costs without any prior planning or control.
- The contagion phase corresponds to the adoption of information technologies. The use of technologies is spread to users with a particular interest, even curiosity.

- The control phase results in planning and establishing proper controls (rules and procedures).
- The integration phase is characterized by the emergence of a need to assimilate different technologies.
- The data management phase corresponds to the IT organization, structuring data around interoperable systems favoring the integration of applications. The information system's customers (users and external partners, clients) occupy a central place with conscious and effective responsibility.
- The final phase corresponds to digital maturity where IT growth is constant and users and the IT department share responsibilities. Maturity is also reflected in the management of the organization through data (data-driven). Data then becomes a strategic resource.

It is necessary to qualify the score found on a digital maturity scale. The scale evolves from beginners, still at the stage of misunderstanding their ability to use ICT, to that of digital maturity characterized by expert users who integrate ICT in an experienced way into their business model.

Following the work of Nolan (1973), Pham (2010) proposes a maturity scale to characterize the state of development and mastery of information and communication technologies integrated into the different business models of companies. The model of Pham (2010) is used to measure the maturity of companies, and it is composed of four main factors detailed below:

- The ICT infrastructure comprises the various IT devices and services that store, process, communicate, organize, and disseminate information for its staff and stakeholders. This characterizes the notion of a wide-area network. The information system enables sharing and connectivity while ensuring the security of the business system, opening it sufficiently to allow business development while still ensuring the business's protection.
- Organizational agility represented by human resources is the most critical factor in using ICT in business. Digital must be part of the entrepreneurial culture, and the leader must indicate the way to follow in his daily uses. ICT skills will be continuously developed, and process improvement will be at the heart of personnel management. The search for performance (organizational, digital, entrepreneurial) must be the purpose of the company. Applications represent digital artifacts used in the IT environment. Depending on the organization's digital maturity, these applications are standard or developed software, websites, digital platforms, or applications usable on smartphones. At full digital maturity, the organization's processes must be industrialized and interoperable with all computer peripherals. These applications, commonly called web services, are developed to communicate automatically with the ICT infrastructure. We are thus witnessing recombination of the traditional business model, and it is being digitalized by speeding up processing.
- The digital strategy of the entrepreneur characterizes the policy carried out in ICT by the organization. It comprises written, unwritten rules, regular habits, procedures, ways of doing business. This document contains the recognition of a

strategic intention and the determination of the leader's goals. Strategic intent is decisive in the context of digitalization. It is used to indicate to stakeholders that the model is evolving and moving from an old hierarchical model in silos to a more flexible, more mobile, more agile, more connected model in the sense of any time any device.

The entrepreneur must support the involvement of managers and staff in the development and use of ICT in order to increase the performance of the new business model. Employees are vigilant enough to identify weak signals that turn threats into opportunities and generate new business models (Kohnke 2016). The development of the Internet and ICT use has fostered the emergence of globalized business models within globalized commerce. The globalization of the economy has freed up human resources and opened up more dynamic work opportunities. Employees are more receptive to business opportunities, so they act like intrapreneurs. In order to offer a digital transformation tool with a more effective qualitative approach, it is necessary to identify the level of digital maturity of the organization beyond ICT. The information obtained qualitatively makes it possible to validate the technological capacity of the organization to evolve towards a reorganization and ultimately to access a digital transformation. Quantitative measures, on the other hand, pay more attention to the external environment than to qualitative factors internal to the company. Certain elements, such as agility, creativity, the human factor, are not always included in the methods and measures proposed (Fogoroş et al. 2020).

Based on the previous studies, it is possible to identify four significant families of companies, defined by their behavior in the face of digital (Balakrishnan and Das 2020; Ziyadin et al. 2019; Kutnjak et al. 2019):

- The initiated companies (the beginners) are organizations starting in the digital world. Entrepreneurs and managers are skeptical about the business value of extensive use of digital. These companies have tried some digital experiments. They have an immature digital culture. The transformation will be long, the brakes numerous, and often it is more reasonable and quick to build a new business model alongside the old one. This is the option chosen by SNCF when proposing the online ticket sale, and a start-up-type entity was created with additional staff.
- The so-called opportunist organizations (Fashionistas) have experienced different uses in digital. They have made a definite advance in digital technology with innovative experiments such as mobile and social applications, but their organizational functioning is still in silos. This lack of agility and flexibility hampers the coordination of innovative digital projects. Digital culture is pre-existing, but it does not spread outside silos. The entrepreneur and top managers are not promoters of digital transformation, and therefore the impetus is not given. It lacks a common and shared vision coordinated within a guiding strategic axis.
- Conservatives are organizations with an existing target vision, but it is underdeveloped. It is possible to identify advanced digital uses and detect controlled uses of essential functions of the digital environment. However, the organizational brake is still present. The governance of digital projects is characterized by

operating in silos. Computer scientists call these modes of software development "cascading," V-cycle, spiral cycle. These managerial approaches to information systems are not sufficiently agile and dynamic in digital transformations where responsiveness takes precedence.

- The latest and most educated of the digitized companies is characterized by "Digirati." It is a lexical amalgamation between the term digital and literati, and the term literati translates the notion of education. These structures have a good target vision of digitization. The entrepreneurial digital strategy is therefore clear and shared by all the players in the digital project. Digital and causal governance are centralized in order to coordinate the various digital projects efficiently.

3 Components of a Digital Business Model Concept

Vadana et al. (2019) specify that all business processes are impacted by digitization. Among these processes, the customer experience is a fundamental element in the evolution of the business model. The platform generally deployed as a digital artifact makes it possible to study user behavior, and the latter divert the business model initially designed by the platform's creators into use that genuinely corresponds to their demand. In this context, Fossen and Sorgner (2021) suggest that as part of a digital transformation, it is necessary to rethink the organization's business model to adapt to the new digital uses of customers and employees. Companies are therefore invited to rethink their processes and the way they interact with their stakeholders.

3.1 Customer as to the Central Element

Digital creates tensions, and the customer must be supported in his act of purchase, that is to say, before, during, and after. Digitization accelerates decision-making as well as information overload (Edmunds and Morris 2000). Employees must therefore benefit from tools and means to federate and centralize their communication channels (omnichannel) to promote maximum agility. Through these concepts, the customer "experience block" is subdivided into three sub-blocks. The first is understanding the customer thanks to authorized proximity through social media and extensive data feedback. These data allow precise knowledge of the customer, his environment, his location, the segment to which he belongs, and his dissatisfaction with the services or products of the company. Thanks to the various digital-social tools, companies have built a community spirit that promotes the detection of opportunities in the ecosystem fueled by multiple interactions (Barwitz and Maas 2018). Then comes the potential block of growth. It develops through digital tools like tablets that authorize official acts and then store the document in the company's cloud. The customer has easy and free access to this digital document in his private and secure space. CRM-type tools facilitate the centralization of customer

information and serve as a privileged internal and external communication channel while ensuring the traceability of requests (Carnein et al. 2017). Finally, the third block announced by Davenport (2014) concerns interoperability with social networks. They thus initiate a connection of internal company data and external customer data. Customer communication channels make it easier to offer offers in the right customer segments and accelerate sales closing. The customer journey automates and does the work that an operator once did.

The purpose of this approach is to capture the customer and support him throughout his purchasing process in order to create a link with the salesperson and thus prevent him from opting for a competing product. The integration of banking services is an excellent example of this, with the latter listing various actions such as offering a loan, ensuring the property is being purchased, and securing the property by installing an alarm. The establishment maintains a privileged link with its client through the proposal of a smartphone, which will ultimately be a means of payment and a delocalized information system of its behavior for the bank. Banks have integrated ancillary services allowing them to capture customers and offering them an entry point into a catalog of services that simplify and reassure the act of purchase through personalized support (Wang et al. 2017).

3.2 Digitization of Processes

Digitization is the result of a long process of transformation of IT and digital uses. It starts with an artisanal approach characterized by the website builders of Web 1.0. The manipulation of editing software is reserved for web specialists (Dreamweaver, Frontpage, for example). At that time, showcase sites, online stores (Os Commerce, Prestashop, for example) were unique and required strong skills to maintain and develop them. Web 2.0 allows the emergence of a semi-industrial approach favored by content managers and online software packages (Wiki, Blog). These tools have allowed anyone to create or use online sales platforms or showcase sites. However, in many cases, the creation of content using a manager like (Joomla, WordPress) does not correspond to the creation of a single work but more to the standardization of products (Dragomirov 2020; Turban et al. 2015).

The industrial approach, on the other hand, contributes to the development of a platform economy. The maturity of the platform economy allows the development of marketplaces that offer a multitude of possibilities for developing a Digital Business Model. These industrial sites (Amazon, eBay, Oxatis) make developing an online business offer without knowing anything about programming. The company https://www.tunetoo.com/ has created a business model that relieves the entrepreneur of the functional aspects of selling online. Tunetoo has created a web platform that allows designers to break away from manufacturing, marketing, and logistics processes. The designer focuses on his leading talent, creating clothing online. These creators align the design of their product with customer demand; they create a community of influence that will serve as their recommendation. The influencer community will

inspire confidence in the new product. Each product can be designed for a unique customer according to their tastes. The platform manages the product catalog development, manufacturing, sales, and shipping—the platform supplements all the industrial, technical, and technological aspects. The clothing designer is commissioned on the products sold. He focuses on his job; he must generate sales to improve his commission. The increase in sales allows him to access premium offers offered by the platform (personalized invoice, highlighting of his products on the site) (Wang et al. 2018; Kim et al. 2018).

The digitalization of the business model characterizes the next phase. Besson et al. (2017) invite companies to rethink their processes and interact with their stakeholders. Almeida et al. (2020) characterize this phenomenon under the term of acceleration. The digital acceleration leads to the immediacy of trade and challenges the traditional industrial production system. Acceleration characterizes an emerging mode of production identified by a multiplicity of actors interconnected in real-time. The various actors seek to capture control of the intangible links forged by the digital platform. The acceleration in the number of links between the different actors and their transactional and communication skills lead to the birth of a monopoly characterizing a new business model.

Mastery of volume data allows organizations to improve their operational processes by robotizing production tasks. The range of products and services is personalized. Networking allows companies to redefine business processes by decompartmentalizing the various silos of the company. The transversality of the processes promotes the autonomy of employees.

The digitization of processes concerns the industrialization of the various production processes traditionally carried out by operators but do not generate added value. Access to the platform is often paid and sold as a privilege favoring autonomy and permanent access to its information. Banks have once again been significant players in this type of tertiary industrialization. It is in the face of threats from online banks that traditional banks have had to adapt. Digitization cannot occur in addition to traditional processes. Otherwise, the transformation scheme would be counterproductive. It is necessary to efficiently recombine traditional processes to industrialize tasks with low added value to relieve the operators and redirect them to support or customer relationship tasks.

3.3 Value of Digitized Goods and Services

A digitized good or service is considered intangible and non-rival; that is to say that its owner does not imply ownership or exclusive use. The marginal cost of reproducing this good or service is minimal if not zero. This is the case with digital files (audio, video, maps, books) compared to purely material and non-digital goods. These characteristics have been demonstrated in particular by Rayna (2008) or Lambrecht et al. (2014). In a 2016 working paper, Valenduc and Vendramin (p. 8) specified that:

It is explained by the increasing returns that characterize digital technologies, thanks to positive network externalities; in fact, the value of a digital good or service is even higher if it benefits from a wide area network, without this increasing costs. The principle of increasing returns means that the production and distribution costs are almost independent of the volume produced, must be paid from the initial investment, and the marginal cost of production is therefore almost zero. In other words, the digital economy is very capital intensive, but digital goods can be reproduced in very large numbers at very low or even zero unit costs.

The value chain is reconfigured through digital disintermediation. This, therefore, occurs in interstices in the value chain in which there are low added value markets or even traditional markets whose margins are shrinking until they disappear. The leaders of these companies must then rewrite the traditional business model and identify a new value equation. Therefore, the new value is created by implementing a new digital business model that replaces the traditional model, which has become unprofitable. These new digital business models are rolling out through platform economies. They replace the old markets, bringing together supply and potential demand directly. Value capture takes place through the use of digitized data present in all digital spaces. Data valuation is the raw material of the digital economy. From these platforms emerges a transfer of value creation from upstream to downstream. This idea is also developed by Peukert and Reimers (2018), who suggest that if two end-of-chain agents have the possibility of coming into mutual contact at a low cost, then they will tend to do without intermediaries. Digital attenuates the costs linked to producing and transmitting information; the reduction in transaction costs should trigger a process of disintermediation in the markets. From the definitions proposed in the literature, characteristics can then be retained to define the notion of the platform. The digital business model gives value a central role, showing how the organization, on the one hand, creates value (value architecture) (Henderson and Clark 1990) and, on the other hand, appropriates it (Zott et al. 2011). While the first concept describes the appropriation of value, the second explains the creation of value, that is, how value is generated.

The digital business model is therefore oriented towards all stakeholders: customers, shareholders, key partners, the digital transformation of companies is thus developing at different degrees and speeds depending on their degree of digital maturity. Some companies will have unfinished levels of transformation; others will access the complete digitalization of their business model.

4   Expert Opinions

To specify the measurable dimensions of Internet-based digital transformation, we interviewed 214 experts on online marketing and eCommerce. The interviews were conducted via Skype calls and Messenger, and Google Meet platforms. The commissioner, who interviewed with an expert from practice, followed the structure given by the prepared Google form, where he immediately recorded the answers for

each respondent. At the beginning of the interview, the respondents were acquainted with their answers for research and commercial purposes and asked to agree to the GDPR, even though the answers were recorded anonymously. Interviews with respondents lasted a maximum of 30 min, with the average time being instead 20 min. 62% of respondents rejected the controlled interview and asked to send a link to the Google Form, which they subsequently filled out.

The structured interview with experts included the following questions determined based on previous literature research:

- What technologies do you consider necessary for e-commerce and online marketing?
- How should companies transform their business model?
- What business or sales processes will the transformation to the electronic business model affect?
- How much investment should companies count on if they want to start trading or promote themselves online?
- What will business processes be affected by the transition to online business?
- What knowledge do you think is essential for the company to fully use e-business and online marketing?
- What opportunities does the transformation to more digital business models present for SMEs?
- What usually prevents small and medium-sized companies from switching to these models? What obstacles do you encounter most often?

Based on structured interviews with experts in e-business and online marketing, six main areas determining the company's competitiveness in the field of e-business were identified. According to the interviewed experts, e-commerce is not conditioned by the technological infrastructure at the level of the companies; it is primarily a matter of knowledge and the company's setting to implement innovations. Therefore, the identified areas included: general IT knowledge, knowledge related to website design and administration, general marketing knowledge, knowledge needed to manage online advertising, graphic skills, and access to innovation.

4.1 Design of the Evaluative Framework

The model was designed and validated according to the research scheme described in 1982 by Bagozzi and Phillips. This research scheme is one of the most applied methodologies in developing new models in the scientific literature. This methodology recommends focusing on six main validity issues. First of all, it is about logical connections and defining individual elements of the model (theoretical meaningfulness). Subsequent observations and data obtained from them should confirm the theoretical assumptions (content validity), and the most similar measurements for each area of the model (internal consistency) should be achieved. However, the model elements should be distinguishable and should not be identical

variables (discriminant validity). According to the authors, the model should be convergent and nomologically valid. Nomological validity indicates the validity of the model even within a larger theoretical unit.

All six types of validity were taken into account in the formulation of model constructs and related company questionnaire questions. Based on the answers of experts in e-commerce and online marketing, 88 questions were proposed representing a total of 13 main areas of e-business, which were: creation and administration of e-shop, creation and administration of websites, technological background, online advertising, graphic skills, data analytics, marketing strategies, market knowledge, legal aspects, human resources, attitude to innovation, social network management, copywriting. Items were rated on a 7-point Likert scale. The survey was conducted electronically and was distributed to small and medium-sized enterprises in the Czech Republic. Respondents' e-mail addresses were obtained from the MagnusWeb database from Bisnode, which also guarantees the companies' consent to participate in research surveys. In addition, the questionnaire required additional consent from respondents, which allowed their anonymized data to be stored for academic purposes under the GDPR. A total of 15,000 companies were contacted via the Mailchimp e-mail service. However, the testing of the questionnaire took place in two stages, when after the first stage, the questionnaire was modified based on testing. Three hundred and two responses were obtained from the first stage of the company survey, while 310 questionnaires were returned during the second stage. In total, we managed to obtain 612 completed questionnaires.

The analysis and purification of the data consisted of the following three steps. First, Cronbach's alpha was calculated for each measurement of 13 target constructs. Items that caused a decrease in the reliability of the construct were gradually removed until the overall Cronbach's alpha construct increased. Before any item was removed, an analysis was made to see if the item was a separate construct. As a second means of identifying internal consistency issues, items with low correlations with similar properties (i.e., less than 0.40) were removed from the tool. During this phase, a total of 13 items were removed, while one was simply modified to clarify its meaning. The last step was to remove items that appeared to have problems with discriminatory validity. Items were removed if they correlated more with items measuring different constructs than items in their intended construct (Campbell and Fiske 1959; Goodhue 1998). According to these criteria, eight items were removed. After removal, each construct was inspected to ensure that at least five items remained in each dimension. For those dimensions that were underrepresented, additional items closely related to the remaining items were added. So 27 items were added—the result was a tool with 83 items.

4.2 Confirmation of the Evaluative Framework

Discriminatory validity for the second version of the questionnaire was first assessed using exploratory factor analysis. Exploratory analysis revealed problems with

discriminant validity for five of the 13 constructs. Confirmatory analysis and chi-square test were then used for these problematic constructs. Two measurement models were verified for each of the four pairs of constructs, which appeared to be closely related. The first model assumed that the two constructs were different and made it possible to determine the correlation between the constructs. The second model forced the correlation between the constructs to equal one, which combined the two into a single construct.

Furthermore, changes in CFI (confirmatory index fit) were examined. The recommended cut-off value of 0.02 or higher (Vandenberg and Lance 2000) was used as a minimum to assess whether the two constructs are separate or interdependent. The results revealed the need to combine the creation and management of an e-shop with the creation and management of a website, as no empirical evidence that the respondents considered the two constructs to be different. The result of the discriminant validity analysis was, therefore, a reduction from 13 to 12 constructs.

Since the construct should have at least three items (Cronbach and Meehl 1955) and lengthy questionnaires usually have a lower rate of return, efforts were made to reduce the final questionnaire as much as possible while maintaining the number of questions needed to calculate model factors. The final version of the questionnaire, therefore, includes 73 items measuring 12 construction constructs: e-shop and website management, technological background, online advertising, graphic skills, data analytics, marketing strategies, market knowledge, legislative aspects, human resources, attitude to innovation, social network management, copywriting.

The validated competitiveness model was subsequently used to create a web-based evaluation interface. This interface, therefore, contains questions that have been validated as necessary for the calculation of the constructs of the company's competitiveness model in the field of e-commerce. A seven-point rating scale was maintained for the online questionnaire for future validation and improvement of the developed model, with 14.29 points assigned to each level. The total score for individual constructs is calculated as the arithmetic mean of the sub-questions falling into the given area. The total mark is therefore calculated as the arithmetic mean of the 12 constructs. For each construct, three evaluation profiles are prepared, reflecting the achieved score. The evaluative framework is available at http://e-podnikani.cz/konkurenceschopnost and in Table 1.

5 Conclusion

Organizations must be able to overhaul their business model to integrate ICT and mass data processing to digitize their entire process. The developed technological platform promotes the emergence of a community of users (partners, customers, suppliers) and thus contributes to the network effect. This virality promotes it until it reaches a critical mass of users. Taking into account the customer experience allows adjustment of the digital business model by successive iterations. Digital

transformation is part of a long process of evolving business models. By analyzing its deployment and the phenomena it generates, we notice that digitization is comparable to previous industrial revolutions. It corresponds to the succession of minor everyday changes that significantly transform traditional business models. Therefore, digitizing activities is a long process of automating low value-added tasks initially performed by humans.

Digital transformation is also a slow evolution in the digital economy, reaching maturity and challenging the traditional business approach. It is comparable to previous industrial revolutions, insofar as the latter first modified uses, then society, and finally modes of consumption. The digital transformation can be compared to a silent revolution because minor changes are taking place in the daily life of the actors. Without entrepreneurial leadership, the transformation risks being incomplete and will remain in the reorganization stage, so there will be no transition from the traditional to a digital business model. The entrepreneurial impulse helps to give a shared goal in a strategy aligned and understood by all stakeholders. The entrepreneurial approach is akin to practical reasoning that promotes creativity and agility. The performance is the characteristic of the reasoning of the entrepreneurs; it must, however, be framed by the causal logic to optimize the processes of technological transformation and the proposal of an efficient and viable business model.

In order to remain competitive and improve their performance, SMEs must develop new strategies and new business processes that rely on the use of information and communication technologies (ICT). Currently, the challenges facing SMEs are numerous with, on the one hand, the transformation that is taking place at high speed in manufacturing companies, in particular thanks to massive public investments, and on the other hand, the intensification of e-commerce, which not only changes retail business models but which becomes a lever for the management and coordination of supply chains. In this context, companies that want to remain competitive and intensify their use of digital technology must have leaders who are equipped to understand digital opportunities and teams who have the skills to get the most out of ICT. Indeed, the investment in the acquisition and the use of new ICTs is only part of the equation; the balance is based on the ability of a company's employees to make use of ICT, but also to intensify this use in their work environment. The role of users in developing the digital capacity of the organization is central today. In addition to the challenges for the organization, the development of digital skills also presents a challenge for workers as they have to adapt to technological and organizational changes.

The intensification of digital use in SMEs relies on the ability of individuals, managers, and employees to target and seize opportunities, select the right tools, deploy new processes and thus remain on the lookout for possible improvements. This ability to adapt iteratively and continuously in the organization relies on more than one person. Indeed, it is rare that the same person possesses all the knowledge, know-how, and interpersonal skills required in an SME—in the technological, collaborative, and cognitive spheres—to adopt and use ICT to take place optimally. To fully exploit the potential of ICT, an SME should instead focus on bringing together a team (managers, employees, suppliers, advisers) with adequate collective

Table 1 Evaluative framework for digital competitiveness

Website and e-shop administration								
1. We can arrange the creation of websites (self-help or through an agency).								
No	1	2	3	4	5	6	7	Yes
2. We can arrange the creation of an e-shop (self-help or through an agency).								
No	1	2	3	4	5	6	7	Yes
3. We can update the content of websites.								
No	1	2	3	4	5	6	7	Yes
4. We can update the content of the e-shop (add and remove products).								
No	1	2	3	4	5	6	7	Yes
5. We can automatically generate invoices from the e-shop and send them to customers immediately after payment.								
No	1	2	3	4	5	6	7	Yes
6. We understand which systems the e-shop is connected to and how it works.								
No	1	2	3	4	5	6	7	Yes
7. We have complete control over the e-shop, independent of an external programmer or agency.								
No	1	2	3	4	5	6	7	Yes
8. We have complete control over the website and are independent of the external programmer or agency								
No	1	2	3	4	5	6	7	Yes
9. We have a modern and user-friendly website.								
No	1	2	3	4	5	6	7	Yes
10. We performed search engine optimization (SEO) on the website.								
No	1	2	3	4	5	6	7	Yes
11. We regularly add new content and news to the website.								
No	1	2	3	4	5	6	7	Yes
12. In case of problems with the website or e-shop, we can make a quick correction (either with our help or through an external supplier)								
Technological and technical background								
13. We have a stable internet connection in the company.								
No	1	2	3	4	5	6	7	Yes
14. We have more than one fully functional computer with an updated operating system in the company.								
No	1	2	3	4	5	6	7	Yes
15. In the company, we have an employee who masters the IT skills necessary to administrate websites and e-shops.								
No	1	2	3	4	5	6	7	Yes
16. We have at least one employee who understands how the e-shop and the website work technically.								
Online advertising								
17. We can place search ads through Google Adwords (or external collaboration with someone who can).								
No	1	2	3	4	5	6	7	Yes
18. We can place ads on the Google Adwords content network (or we may have external collaboration with someone who can).								
No	1	2	3	4	5	6	7	Yes

Table 1 (continued)

19. We can place ads through Sklik (or external cooperation with someone who can).								
No	1	2	3	4	5	6	7	Yes

20. We can create sponsored posts on Facebook (or external cooperation with someone who can).								
No	1	2	3	4	5	6	7	Yes

21. We can create sponsored posts on Instagram (or external cooperation with someone who can).								
No	1	2	3	4	5	6	7	Yes

22. We can upload the product catalog to Facebook and Instagram (or we have external cooperation with someone who can)								
No	1	2	3	4	5	6	7	Yes

23. We can create separate ads for products and services via Facebook and Instagram (or we have external cooperation with someone who can)								

Graphic skills

24. Our employee or an external provider with whom we regularly work can prepare image materials (illustrations, logos, infographics) for social networks, websites, and advertising systems.								
No	1	2	3	4	5	6	7	Yes

25. Our employee or an external provider with whom we regularly work can prepare video material for social networks, websites, and advertising systems.								
No	1	2	3	4	5	6	7	Yes

26. Our employee or an external provider with whom we regularly work can take representative photos for websites and social networks								
No	1	2	3	4	5	6	7	Yes

27. Our employee or external provider, with whom we regularly work, can create engaging material for story formats								

Data analytics

28. We have created an account for web analytics (Google analytics or other) linked to our website, e-shop, and other advertising systems that we use.								
No	1	2	3	4	5	6	7	Yes

29. We regularly use data from web analytics to evaluate the success of our promotional activities.								
No	1	2	3	4	5	6	7	Yes

30. We refer to our online advertising campaigns by UTM parameters.								
No	1	2	3	4	5	6	7	Yes

31. We regularly use data from advertising systems and social networks to evaluate the success of our promotional activities.								
No	1	2	3	4	5	6	7	Yes

32. We use data obtained from web analytics and advertising systems to segment customers and target personalized ads.								
No	1	2	3	4	5	6	7	Yes

Marketing strategy

33. We have a precisely defined persona of the target customer.								
No	1	2	3	4	5	6	7	Yes

34. We know why the customer buys our product/service and what kind of need we satisfy.								
No	1	2	3	4	5	6	7	Yes

35. We know what communication tools to use to engage our target customers.								
No	1	2	3	4	5	6	7	Yes

Table 1 (continued)

36. We have written marketing goals that we want to achieve.								
No	1	2	3	4	5	6	7	Yes

37. We have created a marketing plan for each month.								
No	1	2	3	4	5	6	7	Yes

38. We have a set marketing budget for each month.								
No	1	2	3	4	5	6	7	Yes

Market knowledge

39. We know who our competitors are.								
No	1	2	3	4	5	6	7	Yes

40. We know the strengths of our competitors.								
No	1	2	3	4	5	6	7	Yes

41. We know why customers buy from competitors.								
No	1	2	3	4	5	6	7	Yes

42. We know our strengths.								
No	1	2	3	4	5	6	7	Yes

43. We know how our customers perceive us.								
No	1	2	3	4	5	6	7	Yes

44. We follow the strategy of our competitors.								
No	1	2	3	4	5	6	7	Yes

Legislative aspects

45. We are aware of all obligations related to compliance with the GDRP in electronic commerce.								
No	1	2	3	4	5	6	7	Yes

46. We know what rules we must follow concerning the storage of user data.								
No	1	2	3	4	5	6	7	Yes

47. We know the rules of mass distribution of e-mails with advertising messages.								
No	1	2	3	4	5	6	7	Yes

48. We have described rules on the website on how users should handle content and behave on the website.								
No	1	2	3	4	5	6	7	Yes

49. We have described the business conditions described on the website.								
No	1	2	3	4	5	6	7	Yes

50. We are familiar with the documents governing e-commerce in the European Union.								
No	1	2	3	4	5	6	7	Yes

Human resources

51. We have dedicated employees who take care of the operation of the website and e-shop.								
No	1	2	3	4	5	6	7	Yes

52. In a company, we have a person who creates content for social networks.								
No	1	2	3	4	5	6	7	Yes

53. We have an employee who responds to comments, e-mails, and messages on social networks.								
No	1	2	3	4	5	6	7	Yes

54. We consider our human resources and knowledge to be sufficient.								
No	1	2	3	4	5	6	7	Yes

55. We are diligently looking for someone specializing in e-commerce and online marketing								
No	1	2	3	4	5	6	7	Yes

(continued)

Table 1 (continued)

56. We have sufficient resources to create one online marketing position (managing social networks, responding to comments, creating promotional materials, setting up online campaigns).								
No	1	2	3	4	5	6	7	Yes

Attitude towards innovation

57. In a company, we are willing to change the way we implement specific processes.								
No	1	2	3	4	5	6	7	Yes

58. Extending our activities to the online environment is one of our main priorities.								
No	1	2	3	4	5	6	7	Yes

59. We are willing to invest in training our existing employees to use e-business and online marketing tools.								
No	1	2	3	4	5	6	7	Yes

60. We are willing to work with an external supplier (self-employed or agency) to ensure those activities that we cannot cover from internal sources.								
No	1	2	3	4	5	6	7	Yes

Social network management

61. We can use tools for the Facebook page and Instagram profile administrators.								
No	1	2	3	4	5	6	7	Yes

62. We can work with creator studio from Facebook.								
No	1	2	3	4	5	6	7	Yes

63. We can link our product catalogs with sections for sale on social networks.								
No	1	2	3	4	5	6	7	Yes

64. We know what content is appropriate for our social media profiles.								
No	1	2	3	4	5	6	7	Yes

65. We can plan the publication of contributions in advance.								
No	1	2	3	4	5	6	7	Yes

66. We can set up live broadcasts.								
No	1	2	3	4	5	6	7	Yes

67. We communicate regularly and consistently on all our profiles.								
No	1	2	3	4	5	6	7	Yes

68. We regularly respond to comments and messages on social networks.								
No	1	2	3	4	5	6	7	Yes

Copywriting

69. The texts on our website are current, readable, and professionally processed.								
No	1	2	3	4	5	6	7	Yes

70. We care about what texts represent our company.								
No	1	2	3	4	5	6	7	Yes

71. We pay attention to the quality of texts for articles that it publishes on social networks								
No	1	2	3	4	5	6	7	Yes

72. We work with a copywriting expert.								
No	1	2	3	4	5	6	7	Yes

73. We strive to ensure that our responses to comments are professionally written.								
No	1	2	3	4	5	6	7	Yes

Source: Author's illustration

digital skills. The complementarity of individual digital skills will be brought together according to the targeted objectives to allow SMEs to maximize the return on investment in ICT.

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Website-Centric Shopping Experience

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Abstract The current marketing strategies revolve around a new form of marketing that is more human, less commercial, giving more importance to the customer by considering him above all as a partner and, more generally, interested in society. While the number of enterprises adopting these changes is increasing, we observe that e-commerce remains mainly based on a model far removed from the characteristics of this new marketing. In this chapter, we are therefore interested in evaluating the relevance of a merchant website to evolve its model towards the values of marketing 3.0. Based on the theories presented, we propose a conceptual framework for linking virtual commercial hospitality and purchasing behavior. We introduce five concepts: affective reactions, cognitive absorption, exploratory behaviors, approach-avoidance behaviors, and intention to buy. The research described in this chapter uses data from 498 respondents.

Marketing 3.0+ represents a new era when companies abandon the consumer as a center of interest to focus on humans and where profitability and corporate social responsibility must be balanced (Warrink 2018). This new form of marketing offers more transparency, authenticity, and responsibility in customer-business relationships. It translates into a discourse that evolves towards a dialogue between equals (Lee 2007). The recent definitions of marketing also include this vision by broadening the scope of marketing which is no longer limited to sales and the consumer but to society. Marketing is a set of activities, institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society. Going further, some definitions entirely omit the purely commercial dimension and describe marketing as a vision of exchanges. These must be fair and involve the creation of value for each of the stakeholders (individuals, organizations, institutions).

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While there are more and more examples of this Marketing 3.0+ concept in marketing, we have not identified any in e-commerce and, more generally, in digital marketing. If one assumes that technology enables progress for the future and that Marketing 3.0+ represents progress to come, then the deployment of digital marketing strategies should be anchored in the values of Marketing 3.0+. Nevertheless, the sector is developing according to a model often based on classic sales strategies, some of which can generate specific stress: continuous promotions, techniques to sell more, "quickly, more than 33 minutes to benefit from this offer," "12 people viewed this offer in the last hour" or "3 people are booking this hotel at the same time." The primary business model of e-commerce seems to lie primarily in short-term sales goals, and it seems to work.

The literature has often highlighted the shortcomings of electronic commerce in terms of human warmth (Cyr et al. 2007). Indeed, the computer screen is inherently cold and impersonal. Therefore, we believe that the transposition of Marketing 3.0+ into e-commerce can at least further increase the performance of this distribution channel or, at best, correspond to the future evolution of this form of distribution. This shift in the possibilities of digital marketing from traditional marketing is above all technological. While in the context of a physical store, it is easy to create an atmosphere, the task is much more complex on the Internet when, for example, we wish to record the presence from a social point of view (relational marketing) or provide an experience for the consumer (experiential marketing). The in-store experience is vibrant due to many stimuli. On the other hand, the Internet user, for his part, is alone in front of his screen. Comments, photos, or avatars do not entirely replace the presence of sellers or other customers (Bilro et al. 2018).

Some authors agree that the salesperson is an integral part of the atmosphere at the point of sale (Sujan et al. 1986; Bitner 1992). Therefore, the absence of a seller on the Internet is a disadvantage, leading to avoidance behaviors (Rajamma et al. 2007). However, Web 2.0 has allowed many social interactions, thus reducing the lack of human presence on merchant sites. Today, there are many tools for obtaining social interactions in a mediatized environment, and the literature, whether in marketing or information systems, has mainly been interested in them, showing the benefits of such tools. This evolution of technology shows that marketing has adapted to the needs of consumers in this area.

However, the gap between the mere presence of elements that may resemble a form of online sociability and the values of Marketing 3.0+ is significant. While the social elements are the first step towards some form of humanization of e-commerce, we are still a long way from the goals of this new form of marketing. At this point, a multitude of questions arise. Is it possible to anchor a type 3.0+ strategy in e-commerce? How far will it be possible to go in humanizing this distribution channel? Will consumers appreciate a merchant website whose values are anchored in those of Marketing 3.0+?

Digital marketing being a relatively large field, we decided to limit this research to electronic commerce. Several arguments allow us to justify this choice. On the one hand, out of all the distribution methods linked to the Internet, it seems that electronic commerce is the one with the wealthiest literature on the one hand, but

also the one for which the technology is the most advanced to be able to transpose the values of Marketing 3.0+ into it.

1 The Human–Machine Interaction

Dabholkar et al. (2003) note that the main difference between the offline and online distribution of information lies in the mediating role of the "machine" during interpersonal interactions. In 1950, Turing proposed to consider questions relating to the capacity of computers to "think" and take the place of a human being. The author set up a test based on a simple principle: the computer's ability to imitate human conversation during a verbal confrontation. As synthesized by Moon (2000), these concepts start from the principle that the interaction between man and machine is similar to that which men can maintain between themselves. The literature agrees that these interactions generate behavioral responses identical to those found in interpersonal relationships since emotions (Morkes et al. 1999), rules of politeness (Nass et al. 1999), or even flattery (Fogg and Nass 1997) have been observed in human–machine relations. These elements show that electronic commerce, based on numerous technological elements, can entirely appropriate the codes and concepts of interpersonal relations. These are fundamental when addressing the issue of hospitality.

Beyond the simple human–machine interaction, the social exchange also responds to the individual's quest for reference in a complex environment (Gruber 2006). Cox et al. (2005) pointed out that many consumers want personal attention from sales teams. Therefore, electronic commerce is naturally interested in this type of interaction to build links between the company and its consumers. However, there is a paradox in these social effects in electronic commerce. While some consumers flee physical stores to avoid crowd effects by taking refuge on e-commerce sites (Penz and Hogg 2011), many still seek a form of social presence once on these sites. This social presence, which can be perceived negatively in stores (saturation, noise, jostling), becomes positive in electronic commerce (Hassanein and Head 2007). The notion of social presence also appears when the concept of virtual hospitality is discussed. Many literature sources are interested in creating this feeling of social presence in electronic commerce, highlighting different particular typologies. Huang (2003) suggests distinguishing social elements into an "active" dimension and another "reactive" dimension. Ardelet and Brial (2011) prefer to distinguish anthropomorphic elements from non-anthropomorphic elements. Hassanein and Head (2007) distinguish real interaction from imaginary interaction. The natural interaction implies an actual exchange between the site and the Internet user, such as emails confirming an order, the virtual communities, the comments of Internet users. Imaginary interaction involves imagining a social presence through photos, voices, texts, or even a specific register of language.

Many authors (Hassanein and Head 2007) have shown that social presence can reduce trust on e-commerce sites. To this end, Yang et al. (2019) studied the role

played by trust and his work concludes a mediating role on attachment, purchase intentions, or even the brand's recommendation intentions. Other authors have also been interested in the mediating role of trust in reducing uncertainty. Previous research also suggests that trust can mediate purchase intention and directly link to the social presence. The study of behavioral responses has also been widely represented in the literature. Previous research mentions a list of behavioral responses: increase in the length of visit, positive attitudes to purchasing, positive evaluation of the site, or even satisfaction. The experience gained on a website, through social factors, generates a state of alertness, involvement, a state of flow, as well as pleasure (Hsu et al. 2017).

For Derrida (2005), hospitality is one of the eight services revolving around the offer of any product. Piccoli et al. (2004) define the latter through three dimensions: the convenience of information (easy access to information about the product), site navigation (quickly and easily find the information sought using the menu, the search engine), and finally, consumer confidence (efficient use of the site thanks to the tutorials, the help and assistance menu). For Iliachenko (2006), hospitality responds to the need for practical use of the website and efficient access to information and website functionality. Morrison et al. (2004) define it as an additional service that each site should offer to improve visitor navigation. This service meets a need and should offer features that make it easy and practical to search for information or product. Moreover, the browsing experience is defined by Rutz and Bucklin (2011) as the virtual contact with a brand/company experienced by the consumer through his active and interactive experience on the site of the latter as well as all the positive and negative consequences that the consumer withdraws from the use of this Internet site. As a result, this experience is enriched, thus providing a greater level of pleasure and emotion. Over the years, research has intensified around the user experience via these technological elements (Hassenzahl and Tractinsky 2006), thus making it possible to go beyond the simple utilitarian interaction between humans and the machine. Therefore, hospitality can be understood as a means of enriching the Internet user's browsing experience. A synthesis of these different visions of virtual hospitality reveals that the concept has, for the moment, been mainly studied as a vector of improved navigation. The experiential approach seems to be the only one to go beyond simple navigation, in literature mainly focused on reducing the user's cognitive load. The relational aspect is here limited to the relationship between man and machine, thus omitting the company's place in the relationship in the context of electronic commerce.

A review of the literature specific to hospitality in a commercial situation allows us to identify some avenues to propose a definition: a peripheral service surrounding an essential service, an element of the atmosphere of the point of sale, an element of the atmosphere of a place of service, quality of the place of service (Carù and Cova 2003). Another part of the definitions emphasizes the elements specific to commercial hospitality: the host/guest relationship, generosity, dramatization, little surprises, security, the attitude of the staff (i.e., smile, greetings, comfort), safety, entertainment, understanding of the customer, in supporting employees, in generosity. These

elements join the behavioral dimension of hospitality proposed by Brotherton (1999), which integrates human motivations and relationships.

Hepple et al. (1990) agree that the interaction between two individuals, one welcoming and the other accepting, is essential for having a relationship based on a hospitable exchange. King (1995) sets out to define the relationship through mothering. According to her, the relationship is successful when the host knows and implements what will make her guest happy. This notion of reciprocity is at the very basis of the concept of hospitality. When they define hospitality, Wood and Brotherton (2008) qualify it as a human exchange. This exchange must be balanced, allowing each of the parties to obtain roughly similar benefits. In the context of electronic commerce, this notion of reciprocity will mainly take shape through the exchange of information. Gursoy (2019) suggests that offering and receiving information is a mechanism of hospitality. This could therefore correspond to the information that the company collects about its consumers and, in return, to the information that the company could provide to its consumers. However, reciprocity should be limited to information and should also concern each party's benefits. This notion must be approached from a long-term perspective. Quality is not necessarily obtained with each transaction but must be balanced throughout the relationship. This ties in with the idea of equalization, compensation, and leveling proposed by Grassi et al. (2011).

Creating merchant websites based on the dimensions of hospitality seems to be an asset that allows the enterprises to differentiate themselves from the competition. Indeed, e-commerce players differ above all in the offer currently offered. However, the concept of hospitality differs from social presence in that it offers real interaction with the business and between consumers.

2 How Users Become Customers

A good deal is not just about buying the cheapest product or the best quality product, however, instead of getting the best value for money beyond specific criteria. Conversely, a bad deal will require spending too much money for the quality of the product sought, or on the contrary, the quality is not there despite the money invested. They visit product characteristics; recognizable brands considered serious, recommendation of a comparative forum, opinions of previous buyers, and more unconsciously, anticipating the quality of the product which might not correspond to the consumer's expectations (Grewal et al. 2009). For this one, the price is an objective and prominent datum, but everything else is entirely subjective, in addition not to have precise criteria to measure both the quality of a product and all the services associated with the transaction (delivery, after-sales service).

After a phase of becoming aware of a need, the next step is that of researching information. The consumer then learns about the different products that can meet his needs, the brands that offer the desired products or services, the various advantages and disadvantages. This information search can be done in different forms, for

example, the consultation of product sheets on different merchant sites or flash a QR code (Quick Response code) in-store using your mobile phone. However, this type of information has its limits because it is often a technical description of the products, not necessarily very relevant or diluted in marketing verbiage. Many expert sites and forums alleviate this search for preliminary information, which is often too technical for the average user. They synthesize information in the form of detailed product sheets, comparative files, and buying guides. Opinion leaders, recognized for their expertise in a particular field, also influence consumers by presenting them with the information they do not necessarily have by doing brief research, such as the failure rate of a product that will not be displayed for obvious marketing reasons on the seller site. Finding this type of information is both long and complex. In this case, these third-party entities' expertise will make it possible to compare products and drastically reduce the remaining choices for the end consumer. Finally, current merchant sites offer various forms of consumer reviews. However, here, it is up to the consumer himself to do a long job of analysis. Comments, preferences of other consumers—the customer has to deal with a considerable amount of information to process, sometimes with opinions in total contradiction, making this task highly complex in the end.

Once the decision has been made for a product, specific cognitive mechanisms, and decision strategies we are going to detail, there remain significant obstacles to the passage to the act of purchase. The primary asset to any act of purchase is undoubtedly the confidence that one can have in the merchant site. Conversely, an extreme uncertainty or even mistrust of the merchant cannot lead to a purchase, except perhaps sporadic cases where there is no competition for a product or service and the amount invested remains relatively low. Confidence and uncertainty are often seen as a continuum of which they are only the ends (Racherla et al. 2012). The risk does not have to be confirmed; what matters above all is how consumers perceive it. There is no sure way for a consumer, even very knowledgeable about the brand and the intrinsic quality, to accurately measure the risk to which he is exposed in purchasing a product or service. Consumers do not specifically employ analytical strategies to measure risk, but heuristic strategies, quick but not optimal decisions, reduce mental strain and make rational decisions (Metzger and Flanagin 2013). This type of strategy has the advantage of being efficient, if not the most effective. Conversely, a purely analytical strategy would be potentially interminable here, as the parameters to be considered are numerous and the availability of information is very low on the consumer side. Thus, recommendation systems are an excellent way for consumers to simplify the decision-making process significantly and facilitate the act of purchase (Yang 2018) but remain dependent on the number of recommendations and the credibility accorded to them (Metzger and Flanagin 2013).

Other factors such as familiarity, ergonomics, or the perceived professionalism of the merchant impact the trust that can be placed in a brand. To reduce consumer uncertainty, e-commerce players most often have recourse to technological and psychological mechanisms. From a user point of view, it is very complicated without being a specialist in computer security, cryptanalysis, or network systems, to have a

clear idea of the technological risk involved. This does not prevent merchants from explaining on their website that their site uses, for example, SLL certificates or the HTTPS protocol, even if the user does not know what that is. It is also possible for them to display the seals of trusted third parties, in general, the banks responsible for payment systems, indicating their seriousness in handling transactions. All this allows them to build an online reputation to reduce the uncertainty associated with the purchase as much as possible.

Online word of mouth is one of the main instruments for choosing a product or service when it is not the most important, and taking into account the evolution of e-commerce in terms of turnover and uses, e-commerce players need to understand the mechanisms. For the most part, current recommendation systems consist of an overall score judged on a scale of 1 to 5, most often associated with comments. Many also propose to classify these comments by assigning them a second mark measuring the usefulness of the comment. Among the largest e-commerce platforms, some have implemented a multi-criteria rating to no longer give a single overall rating to a product or service, which significantly reduces the reality of the rating, but on different characteristics of the product and associated services. However, the decision-making mechanisms for this type of tool are relatively unknown and little studied. In particular, the field of multi-criteria decision-making has extensive literature in the field of mathematics and software decision support agents (Velasquez and Hester 2021), but little from the point of view of cognitive psychology, with for example the research of Wang and Ruhe (2007) which tries to model the cognitive processes underlying decision-making.

From the consumer's point of view, this type of tool has a strong interest because it allows, in an instant via the different ratings, to assess the strengths and weaknesses without having to read sometimes astronomical amounts of comments. For merchants, the significant advantage is being able to use the statistics from these ratings for data mining, cross-selling, or improving their product recommendation system, as well as user preferences. This largely avoids the qualitative and quantitative analyses of comments that can be both tedious and complex in terms of cognitive and decision-making processes. Ratings and associated comments (and word-of-mouth tools more broadly) can also be seen as resources. Consumers rate products (production), then consume them (processing) before making a purchase (finished product). The role of e-commerce sites is to put in place the tools necessary to exploit this resource. When bringing a new product to market, two buyers can be identified that are particularly important for initiating feedback production. Innovators who want to develop new products, and "early adopters" who want to test new products and accept some design errors. These two classes represent on average 2.5% and 15% of consumers, respectively, or about 18% of all consumers. Other consumers will take advantage of the feedback from this segment to decide whether to purchase this product and then, in turn, increase word of mouth online. Although this segment of early adopters lacks authority because they remain anonymous consumers, they are recognized as having particular expertise, increasing their credibility (Metzger and Flanagin 2013). Thus, early adopters often have a

significant impact on the benefits generated by a new product and on-demand in the long term.

Consumers are also more influenced by other consumers than marketing and consider them more trustworthy. In a sense, the honesty of other consumers has more impact than the expertise of a few specialists. The volume itself is also used as a heuristic because it alone influences the consumer's choice for a given product. It is a herd phenomenon that can be found both in a product's "best-selling" effect and in the enthusiasm for entering into an auction competition (Lemanski and Lee 2012). A large number of reviews is a tangible demonstration that a product is widely used and that the rating is quite reliable, and this gives a powerful buy signal when the product is rated well. Conversely, a poorly rated product that begins to have a significant volume of reviews quickly provokes the flight of potential buyers, with the possible exception of early adopters (also called "early adopter" in marketing: consumer ready to buy products. or more expensive services, and at the start of marketing still having some minor design or manufacturing defects) which only represent 10–15% of consumers, and therefore will not in themselves guarantee the economic survival of a product.

Hoffman and Novak (1996) underline the diversity of behaviors that an Internet user can adopt online. These behaviors fall into two categories: goal-directed behavior and experiential behavior. This distinction between these two types of behavior is based on the importance given, by the Internet user, to the hedonistic dimension in the evaluation of his satisfaction. This distinction was initiated by Holbrook and Hirschman (1982), who criticized, as part of their experience research model, an overly utilitarian conception of consumer behavior, centered on the process of problem-solving. They, therefore, offer a dual vision of consumer behavior. Exploratory behavior focused on searching for pleasure qualified as experiential behavior and behavior directed towards a utilitarian goal such as problem-solving.

The so-called unstructured experiential behavior corresponds more to loitering on a site, to browsing activity, comparable to the behavior analyzed by Griffiths and Chen (2007), which can eventually result in a purchase not decided at the outset. Information search activities and browsing choices are non-linear, for example, browsing the website of a luxury brand (Gucci, Dior, Vuitton) for aesthetic pleasure or immersing yourself in its universe, dreaming, discovering new collections, events, the history of the brand. It is a way of doing window shopping whether you are a simple spectator or become an actor if the site allows you to personalize the coveted product. Experiential behavior enhances the emotional and aesthetic attributes of the brand and its products when observing them.

The Internet user deliberately processes information intuitively, without prior calculation. Conversely, a behavior directed towards a purely utilitarian goal (research of technical, economic, specific information on a product) will direct the consumer towards a Web site with very informative content. Then, the consumer will adopt an analytical treatment based on the detailed examination of the utilitarian attributes of the product and will evaluate the product or service on these specific decision-making criteria. The experience already acquired with a particular product of a brand may or may not be valued by the experience of visiting the brand's site;

although these two types of experiences are different, the experience of a branded product may have contributed to the brand's image before visiting its site. Mathwick et al. (2002) validated that the properties inherent in the task condition the consumer's perception of the attributes of a brand and its products. For example, price and quantity in stock are self-evident and can be accessed on the site. On the other hand, experiential attributes such as color, size, shape, smell, and tactile impression require more direct observation of the product and its actual handling. Therefore, the effectiveness of a website is measured by its ability to create favorable conditions for examining these experiential attributes.

3   The Notion of Hospitality in Electronic Commerce

Since electronic commerce is based on the use of technology, the cognitive characteristics of the consumer, therefore, seem fundamental. While information systems are more geared towards a cognitive approach, marketing is mainly concerned with the affective aspects. In addition, the same variable can refer to two different concepts when studied from a marketing or information system point of view. For Lightner (2003), the information system literature mainly studies electronic commerce as an ergonomic device, whereas marketing has a broader interest in it, integrating marketing strategies and consumer behavior.

Despite these differences, the literature also insists on the link between these two aspects. Whether in neuroscience or psychology, many authors agree that there is a link between the emotional state and the cognitions since emotions are essential to human thought. In the context of products, Ratchford (1987) specifies two types of responses: think and feel. The response think implies the existence of a utilitarian motivation and therefore the processing of information, thus falling within the cognitive. Feel rather implies an affective treatment insofar as this facet refers to elements related to pleasure, among others. More broadly, Norman (2004) states that everything has a cognitive and affective component: cognitive to attribute a meaning, affective to attribute a value. Emotions are thus linked to cognitive processes. Consumer motivations can be affective and no longer just goal-driven.

Online shopping is a perpetual search for information (from arrival to placing the order). We can then assume that a hospital site would reduce this type of reaction thanks in particular to the spatial dimensions (easy to use the website, with just the necessary information), relational (presence of salespeople and other customers who can help in real-time if necessary) and reciprocity (feeling of well-being conveyed by a company where the commercial aspects are reduced).

Appeared in the 1980s in the USA (Holbrook and Hirschman 1982), experiential marketing aims to (re) integrate aspects related to pleasure into consumption by re-enchanting it. It is also a way to facilitate the consumer's immersion in experiences. When it comes to consumption in a digital environment, one of the characteristics of electronic commerce is that the market is not limited to a small geographic space. The competition, without limits, is then increased and therefore pushes

professionals in the sector to increase the online experience of consumers. The experience then appears here as a means of differentiating from the competition in a sector where the elements of differentiation are found above all in the proposed offer and where a certain degree of standardization is observable one site to another.

To achieve the experience when the Internet user is interacting with the site's components, immersion is necessary. Many disciplines have focused on the immersive state of the individual. Immersion is close to the concept of flow in psychology and telepresence in information science. Weibel and Wissmath (2011) define psychological flow as the state of intense activity in which the consumer finds himself when he fully accesses the experience. In addition to this definition, we propose that of Carù and Cova (2006), who specifies that it is an exceptional moment during which what we feel, what we want, and what we think are in total harmony. Telepresence is defined as a psychological state in which part or all of an individual's perception, said to be subjective, leads to forgetting the role of technology in an experience (Lombard and Snyder-Duch 2001). The antecedent of flow (Hoffman and Novak 1996), telepresence, refers to being more in the virtual environment than in the natural environment.

Interpreted as an affective, cognitive, and sensory process, immersion allows access to the experience of consumption. According to Carù and Cova (2006), this experience must integrate specific characteristics to allow immersion. The context must be themed (the staging gives meaning to consumption), it must be enclosed (break with the familiar environment, allowing escape), and secure (no external disturbance should distract the individual during the experience, they should feel safe). It also seems essential that this concept is not a stable and continuous phenomenon over time. Carù and Cova (2003) point out that in reality, these are repeating mini-cycles, which may or may not lead to flow (total immersion). The consumer's senses are mobilized to be immersed of paramount importance. The environment of the experience will emit many sources of stimulation, which will be picked up by the sensory receptors of individuals. As a result, and more generally, the consumer's characteristics (skills, experience, search for meaning, identity, and social inclusion) will also be mobilized (Harth et al. 2018).

Psychological immersion results in a reduction in the cognitive load when an individual performs a task, caused by a total mobilization of the attentional resources of the individual focused on a task (Agarwal and Karahanna 2000). The psychologically immersed individual is therefore involved in the experience and absorbed in what he is doing. Based on the above-described findings, we may conclude that the authors articulate cognitive absorption around five dimensions: temporal dissociation (the inability to perceive the time spent during the interaction), immersion (or concentration, that is to say, a total focus on l activity), control (the individual's ability to control his activity during the interaction), fun (pleasure and joy perceived during the experience), and finally curiosity (excitement of the individual's curiosity during the interaction, during his experience).

For Agarwal and Karahanna (2000), this concept is central to explaining the behaviors of individuals when we are in the framework of human–machine interactions. Therefore, the study of the concept of cognitive absorption, which integrates a

dimension relating to immersion, seems to be interesting from an experiential perspective applied in a technological environment. Relatively close to the concept of immersion while being more general (immersion is a dimension of cognitive absorption), the latter allows an experiential approach to immersion and integrates cognitive aspects. According to Ramaseshan and Stein (2014), experience creates links between brands and customers. The notion of the link is important in hospitality which, transposed into electronic commerce, is experienced between the host brand and the guest. For Charfi (2012), the experience must be co-created between the company and the customer. The company is considered a director of experiences, thus referring to the existing theatricalization in a hospitality situation. From an experiential perspective, we propose to retain the concept of cognitive absorption and hypothesize that virtual hospitality is an antecedent of this concept.

4 Website Quality

Many studies have focused on the conceptualization of quality. Researchers first focused on the difference between objective quality based on the product and production and perceived quality based on the user. In service marketing, the creation of models of perceived quality as Servqual (Parasuraman et al. 1985; Parasuraman and Varadarajan 1988) has given rise to much controversy. The majority of debates around this model dominant has focused on the measurement of perceived quality and on the external validity of this model, which has been the subject of numerous attempts at replication in other fields including in the retail (Dabholkar 1994). Perceived quality has been defined as assessing the excellence or superiority of a service. This definition, taken up by many researchers, is consistent with Bitner et al. (1997), who define perceived quality as the overall impression of relative inferiority or superiority of an organization its services.

The literature on technological self-services of the 80s and 90s paved the way for reflections on changing consumer behavior in the face of technology. Partly based on Servqual, developing a user information satisfaction scale by Ives et al. (1983) marks the beginning of work on the satisfaction and quality perceived by users of technologically mediated services. Research on employee adoption of computerized tools reviewed from the perspective of ease of use and perceived utility by Davis (1989) shows these two constructs' impact on the attitudes, intentions, and behavior of users of computer systems. Finally, Dabholkar (1994) worked on using technological self-services, paving the way for studying individual behavior when faced with technological interaction. Dabholkar (1994) based on the analysis of various empirical works proposed a list of attributes likely to influence the quality of interactions automated. The speed of execution and the efficiency of the equipment, its reliability, user-friendliness, the provision of reliable and precise information, the flexibility of use, and the pleasant nature of the environment (safety, convenience, and aesthetics) are highlighted in his research.

Cited in numerous studies, ease of use seems to be a critical factor for internet users. This term can be defined as the ability of the interface to be efficient and easy to use. Ease of navigation depends on several elements: the degree of abstraction of the labels, respect for the customers' navigation logic, the availability of tools of navigation assistance, the technical capacities of the site, but also the time required for the user to access a product/service or given information on the site. The quality of navigation refers to the simplicity of the website's content, the absence of confusion in the sections, and the offer of navigation assistance. The accessibility dimension can be defined as the ease and permanence with which customers can access the service they are looking for. This accessibility covers the notion of permanence of the service on the Web and depends in part on the technical performance of the Web site. As Zaphiris et al. (2006) note that, it is essential not to confuse accessibility and availability of information.

The aesthetic experience is linked to the visual and sound appearance of the site. The Web allows graphics, animations, sounds, which make the service experience more pleasant. Academic research has paid particular attention to the in-store sales atmosphere. Kotler describes the use of atmospheric elements in the shopping environment to produce an emotional effect to increase the likelihood of a sale. Music, colors are all elements of atmospheres that can be used for this purpose on websites. This notion of site aesthetics has been cited many times in studies. Szymanski and Hise (2000) demonstrated that a pleasant online experience influences perceived quality. This hedonic dimension influences perceptions of quality through the quality of ergonomics and design. According to Flesca et al. (2005), five aspects of navigation are relevant to explain the hedonic dimension of a site:

- *Pleasure*: the ability of a website to provide pleasure and entertainment to an Internet user.
- *Escape*: the ability of a website to provide a break to an Internet user, either an escape from his daily life or an escape from the real world,
- *Awakening and sensory stimulation*: the ability of a site to awaken the senses of an Internet user.
- *Relaxation*: the feeling of relaxation is defined as the ability of a site to provide relaxation, relaxation to an Internet user.
- *Control*: the feeling of control corresponds to the feeling of power, mastery, domination, among other things, of technology by the Internet user.
- *The quality of the offer*.

Studies cite the quality of the company's product or service offering as an essential element. Customers come to a website to learn about, consume or order products and services, and they seem to want the broadest possible offer. The basic service can be supplemented by peripheral services (the presence of news or links to complementary services or products by the website's partners consulted). Several specific characteristics of the offer are mentioned: the price of the offer (in the sense of the offer of a competitive price), its scope in terms of variety or rarity (offer of a unique or rare product).

Internet users acclaim the quality of the information. It could be defined as the degree to which the website makes it possible to inform itself about the characteristics and the price of the products/services, in a precise and exhaustive way, by offering the possibility of making comparisons. Some studies insist on the clarity and precision of information about the offer, notions that are all the more important as no salesperson is likely to help them in their process. According to these authors, this dimension appears to have three facets: semantic (understanding is easy), syntactic (the classification of information is logical), and graphic (the graphical interface allows pleasant browsing). Information relating to the offer influences the satisfaction the Internet user obtains from their purchase or consultation experience (Muylle et al. 1999; Szymanski and Hise 2000). The literature tends to break down the dimension into two facets: the richness and updating of information and its clarity and precision. The richness and updating of the offer can be defined as the capacity of a site to provide products/services and varied, enriching, exhaustive, and up-to-date information. Customers visit a site to learn about, consume or order products or services. They wish to have the broadest possible offer and updated regularly. In addition, information relating to the offer must be clear and precise so that Internet users can easily understand it.

Reliability is linked to the ability of the online seller to keep his promises, to fulfill the terms of the trade, which corresponds to the degree of respect for the service promised in terms of quality, quantity, price, and time. Merchant websites must respect the elements they have signed up to, correct errors quickly, and ensure that operations are correct. Online payment security is one of the significant obstacles to the development of electronic commerce (Szymanski and Hise 2000). Merchant websites must therefore try to offer appropriate devices on their sites to reduce the perceived risks of this mode of purchase and thus help establish a climate of trust to improve the perceived quality of the purchasing experience. Sites that implement systems for the confidentiality of personal data and payment security help reassure Internet users and influence the perceived quality of the online shopping experience (Bauer et al. 2006). The term security sometimes covers the notion of transaction security in the financial sense, but also security on personal data to protect personal information (respect for privacy). Hoffman and Novak (1996) note that users who refuse to provide personal information would be willing to do so if the site explained how that data is used.

Interactivity on the Internet results in the possibility of sending an email to the webmaster to formulate an opinion, a criticism, to dialogue on the discussion forums, or to create its site. Always for the sake of interactivity, online businesses can make online help tools available to customers (virtual assistant, messaging, advice, and customer service online or by phone, FAQ section, order tracking) to inform and guide them throughout the buying or consuming process. The role of these tools is, in particular, to compensate for the lack of contact personnel. The Internet also offers an opportunity for social interaction. Website users can interact with others who have common interests (Jawecki et al. 2011). As the online consumer is alone in front of his screen, he compensates for this lack of social interaction by exchanging opinions on products, the brand, or even belonging to one or more virtual

communities. Commercial websites can encourage the formation of user groups and thus create a community atmosphere of belonging and identification with the site by facilitating communication and interpersonal activities (Deterding 2008). Ghose and Dou (1998) have shown that an increase in interactivity through the improvement of interactive functions has a positive and significant effect on quality and attractiveness.

The Internet as a communication medium also offers the possibility of personalizing the site according to the information sent by the user. Communication can be tailored to each client by building a relevant database. According to Pepper and Rogers (1998), this allows real face-to-face marketing to be built. The online seller can welcome and direct customers to a place they know are convenient for them or even build a virtual home. It can also offer products or services based on purchases already made by the visitor and according to his characteristics. These dimensions of personalization and interactivity are therefore critical. They can be defined as the ease with which the site makes it possible to interact with online sellers or other consumers.

Using the Internet to make a purchase implies mutual trust between the seller and the buyer to overcome psychological barriers due to distance and the difficulty of formally identifying the company with which the transaction takes place. Therefore, merchant websites must reassure consumers to reduce the uncertainty associated with this mode of distribution and promote the development and growth of Internet purchases (Morrison and Firmstone 2000). Credibility is slightly different from reliability because it relates not to the service but the company's brand image or the product. Seckler et al. (2015) comment on the elements of websites that make it possible to generate a priori trust (domain name, domain extension, design). It also seems that the reputation of the site plays a risk-reducing role; This is undoubtedly for this reason that Internet users more easily place their trust in websites developed by already known companies (click and mortar) rather than those of new entrants (pure players). As Antéblian et al. (2013) note, maximum customer credibility is seen when the website is associated with a network of well-known stores with which the customer has a personal experience of a long-term relationship. Likewise, the presence of a label on a commercial site, a sign of quality issued by a trusted third party, is an element that can help reassure Internet users and offer a better guarantee of security for users. We can define this characteristic of credibility as the degree of confidence granted by the customer during the realization of a transaction on a site due to the site's reputation, its products, and services (Flanagin et al. 2014).

Considering any errors or problems encountered during a transaction seems to play an essential role in a good perception of the quality of service—recent studies in service recovery marketing support this claim. Service recovery is defined as any service related to a mishap or problem (real or perceived) of the consumer during the service experience with the company (Maxham 2001). Translating this term into French is not easy. Indeed, the concept of after-sales service covers only management following the act of purchase and tends to be interpreted as the very restrictive contractual concept of guarantee. Researchers have pointed out that effective management of customer problems restores satisfaction (Cao et al. 2018). Maxham

(2001), conducting a study in interpersonal service (hairdresser) and technical service (website), concludes in both cases to a significant influence of successful management of customer problems on the level of satisfaction, the intention to re-purchase as well as word of mouth. He suggests, however, that a high level of problem management on the Internet has an even more positive impact on consumer ratings than it does with a traditional service like the hairdresser. The interactive features of the Internet facilitate these inquiries of customers. Therefore, this topic of customer support can be considered one of the elements of the perceived quality of websites. If a review of the academic literature in consumer perception on the Internet has enabled us to identify the most cited dimensions in this field of research, it is also essential to compare these themes with a review of the tools developed by professionals.

5 Effects of Virtual Hospitality

Academics in information systems, marketing, and web practitioners have taken an interest in Internet user behavior. As a result, the number of variables to be studied is potentially significant. To stick only to the atmosphere of e-commerce sites, a multitude of consequences have been studied: time spent, perception of time, memorization, experienced pleasure, navigation, shopping pleasure, emotions, trust (Cheung and Lee 2005), or even purchase intention (Pelet and Papadopoulou 2013). Far from being exhaustive, this list shows the diversity of states (whether cognitive, affective, or conative) that have been studied.

A hospital website must generate approach behaviors and reduce avoidance behaviors. The notion of approach avoidance was widely studied in psychology before being transposed into management science. Eder et al. (2013) define approach motivation as the activation of behaviors by, or the orientation of behaviors towards, positive stimuli (objects, events, possibilities), while avoidance motivation can be defined as the activation of behaviors by, or the orientation of behaviors away from, negative stimuli (objects, events, possibilities).

Whether at a traditional point of sale (Skandrani et al. 2011) or in an online environment (Eroglu et al. 2003; Koo and Ju 2010), many studies have shown the existence of a link between positive emotions and approach behavior. The vast majority of this research aligns with psychologists Mehrabian and Russel (1974), who proposed a framework for analyzing the environment. This model postulates that one or more environmental stimuli will generate emotional responses, which will generate a response, whether approaching or avoiding. Conceptualized in this way, emotions play a mediating role between environment and behavior. Indeed, according to Deng and Pool (2010), approach-avoidance behaviors do reflect not only the perception of the quality of the site but also many critical behaviors in the success of a commercial site such as satisfaction, number of visits, the desire to explore the site, the time spent, or the probability of purchase.
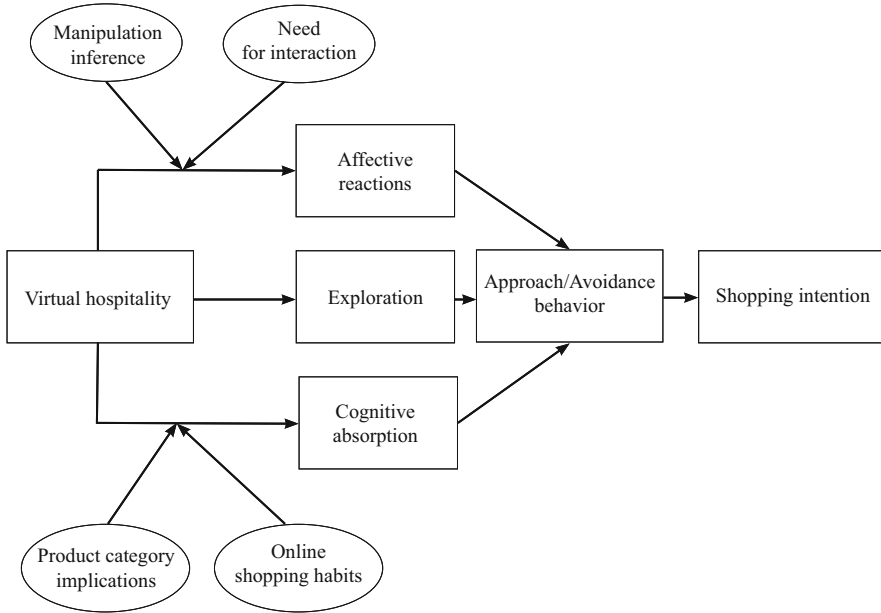
Fig. 1 Conceptual research model of virtual hospitality (Source: Author's illustration)

After exploring previous studies and some of the existing literature corpus, we propose the following research model that will be further developed in this chapter based on primary data (Fig. 1).

6 Factors Influencing Web-Centric Experience

The development of the questionnaire included three types of questions: the central ones relating to the study (various items constituting the measurement scales used for the conceptual framework) and identification questions and control questions. The measurement scales were defined based on the above-described dimensions of website quality and the characteristics of hospitality. The questionnaire was then distributed via sponsored posts on Facebook and Instagram targeting the Czech population older than 18 years. Three criteria of representativeness were retained, including location (Czech Republic), gender, and age (in four categories: 18–25 years; 26–40 years, 41–65 years, and over 65 years). We wanted to extrapolate our results to the reference population. We aim for a minimum number of individuals to be interviewed per cell of 50 ($n = 50$). Therefore, the theoretical sample size needed to be at least $n = 50 \times 8 = 400$.

6.1 Sample Characteristics

A total of 1846 people responded to the questionnaire. The size for each cell ranged from 179 (cell 7) to 281 (cell 5). All of this data has been cleaned to be analyzed, and a strict procedure has been put in place for this cleaning phase. This procedure can be summed up in three points:

- Elimination of people outside the quotas (under 18 and not living in the Czech Republic).
- Removal of people for whom the time to complete the questionnaire (from arrival on the survey home page to validation of the latter, therefore including the site visit phase) was less than 7 min.
- Removal of people whose score on the control questions related to the correct completion of the questionnaire was judged to be insufficient. This score is calculated as follows:

    - An eliminatory question if the answer is false: it concerns the background color of the site.
    - Eight questions concerning the services offered on the site. There are at least two questions per manipulated dimension. The individuals having made one or two errors were kept in the database. If the respondent had more than three errors, he was eliminated.

The majority of respondents were female, aged 18 to 25. On the contrary, the number of men was relatively low, and the over 65 years were almost missing from the sample. An additional collection was specific to targets for which we lacked respondents was organized to fill this gap. We finally removed the individuals who were overrepresented in order to achieve the representativeness of the sample. Despite our efforts and in the interest of efficiency, we have stopped the collection even if some cells observe deficiencies in men and individuals aged 65 and over. To counter this problem, we used the Chi-square test to verify whether our samples, despite the "mathematical" difference ($n + x$; nx) of individuals in each of the cells, could represent the reference population from a statistical point of view. Table 1 summarizes the characteristics of each of the samples, which are compared with the characteristics of the population, and gives the results of the Chi-square tests carried out.

As observed in Table 1, all the chi-square tests have an asymptotic significance value more significant than the commonly used threshold of 5%. The most tangent threshold is that of the age category for cell 4. By rejecting the null hypothesis (H0), the risk of being wrong is greater than the threshold for each situation. Therefore, we do not reject the null hypothesis to the detriment of the alternative hypothesis. There is no significant difference between the composite sample and the Czech population. In other words, we can say that our eight samples are representative of the reference population. Table 2 compares the number of individuals we kept after the data preparation phase.

Table 1 Characteristics of the sample

	Sample 1			Sample 2			Sample 3			Sample 4			Population
	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	%
Gender													
Men	31	32.8	46%	26	29.9	43%	37	32.8	55%	30	32.8	45%	49%
Women	36	34.2	54%	35	31.1	57%	30	34.2	45%	37	34.2	55%	51%
Age													
18–25	11	8.8	16%	9	8	15%	15	8.8	22%	15	8.8	22%	13%
26–40	23	17.6	34%	16	16	26%	17	17.6	25%	20	17.6	30%	26%
41–65	27	31.8	40%	28	29	46%	27	31.8	40%	25	31.8	37%	47%
65+	6	8.8	9%	8	8	13%	8	8.8	12%	7	8.8	10%	13%
Test	Size n=	Khi2	Sig	Size n=	Khi2	Sig	Size n=	Khi2	Sig	Size n=	Khi2	Sig	
Gender	67	0.2	0.655	61	0.993	0.319	67	1.039	0.308	67	0.476	0.489	
Age		3.827	0.281		0.154	0.985		5.191	0.158		6.525	0.089	

	Sample 5			Sample 6			Sample 7			Sample 8			Population
	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	Eff. obs.	Eff. theo.	% eff. obs.	%
Gender													
Men	23	26.5	43%	23	27.4	41%	32	30.9	51%	26	30.9	41%	49%
Women	31	27.5	57%	33	28.6	59%	31	32.1	49%	37	32.1	59%	51%
Age													
18–25	8	7.1	16%	8	7.4	14%	14	8.3	22%	13	8.3	21%	13%
26–40	13	14.2	34%	14	14.7	25%	15	16.5	24%	16	16.5	25%	26%
41–65	27	25.6	40%	27	26.6	48%	26	29.9	41%	28	29.9	44%	47%

65+	6	7.1	9%	7	7.4	13%	8	8.3	13%	6	8.3	10%	13%
Test	Size n=	Khi2	Sig	Size n=	Khi2	Sig	Size n=	Khi2	Sig	Size n=	Khi2	Sig	
Gender	54	0.887	0.346	56	1.409	0.235	63	0.081	0.776	63	1.506	0.22	
Age		0.455	0.929		0.114	0.99		4.629	0.201		3.466	0.325	

Source: Author's illustration

Table 2 Ratio of the Rejected and of the Actually Used Questionnaires

Category	1	2	3	4	5	6	7	8	Total
Quest. rejected	218	233	239	210	281	276	179	210	1846
Quest. used	68	61	67	67	54	56	63	63	498
Ratio QR/A	31.2%	26.2%	28.0%	31.9%	19.2%	20.3%	35.2%	30.0%	27.0%

Source: Author's illustration

6.2 Structural Model with First-Order Concepts

Table 3 summarizes the main indicators allowing us to check the reliability, convergent, and discriminant validity of the various concepts integrated into the model.

Reliability ensures that similar results are obtained if the measurements were to be repeated. In this specific case, we used two indicators: Cronbach's Alpha and Dillon and Goldstein's Rho. In Table 3, we summarize all of these indicators for the variables used in this model. According to Fornell and Larcker (1981), a good quality measurement model is obtained when these different indicators are greater than 0.7. Following the pre-tests carried out, we observe here that all the values are above this standard. We can then conclude that our measurements are reliable.

Convergent validity indicates the ability of the scale to measure exactly what it is supposed to measure and nothing else. It is acquired if the items supposed to measure the same variable are correlated with each other. Two criteria are proposed by Fornell and Larcker (1981) for the evaluation of this validity: the factorial contributions and the variance of the variable. All factor contributions must be greater than 0.5 for the first criterion. Regarding the second, the variable's variance must be explained for the most part by its measurement indicators rather than by error. Verifying this point can be seen through the Average Variance Extracted (AVE), the value of which must be greater than 0.5. As we can see, all the concepts used in the framework of our model meet the criteria of convergent validity.

Discriminant validity assumes that all of these items better explain a given construct's variance than any other construct integrated into the model. In other words, a given manifest variable must be correlated with the latent variable that corresponds to it and all the other latent variables that correspond to this manifest variable. Also, each latent variable must better explain the manifest variables corresponding to it than the other latent variables of the model (Tenenhaus et al. 2005). According to the recommendations of Chin (2009), ensuring good discriminant validity involves studying cross-loadings. The mean of variance shared between the different latent constructs must therefore be less than the shared variance of another construct and its indicators. The latter is measured by the square root of the Extracted Mean-Variance (EMV). This root has a dual-use: to eliminate negative values and to distinguish the differences better. The latter study shows good discriminant validity since each of the constructs shares more information with its indicators than with the other variables. The only indicators whose AVE is lower than other latent variables correspond to second-order variables with their first-order

Table 3 Indicators of reliability and convergent and discriminant validity of the concepts integrated into the model

Latent variables	Reliability	Convergent validity	Discriminant validity	
First order – Second order	Cronbach's Alpha	Dillon and Goldstein's Rho	EMV	Higher EMV?
Perceived hospitality	–	–	0.524	No
– Dimension of reciprocity	0.907	0.931	0.729	Yes
– Dimension of playfulness	0.896	0.928	0.763	Yes
– Dimension of navigation	0.859	0.914	0.780	Yes
Positive affective reactions	–	–	0.629	No
– Completeness	0.951	0.964	0.871	Yes
– Relaxation	0.914	0.959	0.921	Yes
– Simulation	0.884	0.928	0.812	Yes
– Pleasure	0.944	0.964	0.899	Yes
– Tranquility	0.875	0.941	0.888	Yes
– Surprise	0.885	0.929	0.813	Yes
Negative affective reactions	–	–	0.864	No
– Annoyance	0.944	0.964	0.898	No
– Oppression	0.966	0.975	0.909	No
Cognitive absorption	–	–	0.552	No
– Time dissociation	0.922	0.941	0.763	No
– Immersion	0.927	0.945	0.773	Yes
– Entertainment	0.931	0.951	0.828	Yes
– Control	0.908	0.942	0.844	Yes
– Curiosity	0.897	0.936	0.830	Yes
Approach behavior	0.938	0.953	0.802	Yes
Avoidance behavior	0.878	0.917	0.729	Yes
Shopping intention	0.971	0.979	0.920	Yes

Source: Author's illustration

variables. For example, the EMV of oppression is 0.909, and adverse valence affective reactions are 0.96.

Also, note that two first-order concepts do not respect this rule: cognitive absorption and affective reactions with positive valence. These are first-order variables that have been created specifically for this first section, namely, to obtain a comprehensive overview of the effects of hospitality. In the literature, each affective reaction is a one-dimensional concept of order 1, therefore independent. We have grouped them here under the term affective reactions because the valence is the same. Note, however, that each positive valence affective reaction (order 2) has an average variance extracted that is much greater than the squared correlations of each of the dimensions of cognitive absorption (order 2). In conclusion, this model incorporates

reliable and valid measurements. Therefore, the quality of the model allows us now to focus on the analysis of the structural model.

6.3 Global Quality of the Model

The approach we are using here (PLS) does not allow us to obtain a set of indices to ensure our model's goodness of fit, unlike the LISREL method. However, this approach provides us with the Goodness of Fit (GoF) (Tenenhaus et al. 2005). The latter allows the evaluation of the quality of the model, but also that of the structural model. There is not a critical threshold from which it is possible to judge whether the quality of the model is good or not. However, the closer the latter is to 1, the more we consider that our model is efficient. In our case, the latter having a value of 0.680, we can consider it satisfactory. Table 4 summarizes the main elements relating to the quality of the model.

It also seems interesting to note the slight difference between the value of GoF (0.680) and the value of GoF obtained after resampling, having for the value of 0.681. In our case, we opted for bootstrap on 100 samples, and obtaining a low span reveals that our model is stable. The second row of the table gives us the values of the relative GoF, allowing us to know the real maximum value that the GoF can take. The latter being 0.863, we can conclude that the measurement and structural models are of good quality by comparison with the absolute GoF. The relative GoFs, based on the external and internal models, are very high (>0.9), indicating a good fit of the model to our data.

6.4 Structural Model

Browsing a hospital website will generate affective reactions with positive valence and reduce affective reactions with negative valence. These two hypotheses are not rejected. This is also the case for cognitive absorption, which is positively influenced by perceived hospitality. The links between affective reactions and approach-avoidance behaviors are also significant, as for the positive and significant link between cognitive absorption and approach behaviors. All of these hypotheses are not rejected. Finally, we are interested in the links between approach-avoidance

Table 4 Quality adjustment of the model

Quality adjustment (GoF)	GoF	GoF (Bootstrap)
Absolute	0.680	0.681
Relative	0.863	0.855
External model	0.999	0.998
Internal model	0.864	0.857

Source: Author's illustration

Table 5 Results for the virtual hospitality effects on the concepts of the first order

Relations	Results		
	T	Pr > |t|	Conclusion
Perceived hospitality > Positive affective reactions	21.428	0.000	Significant
Perceived hospitality > Negative affective reactions	−9.991	0.001	Significant
Perceived hospitality > Cognitive absorption	20.888	0.000	Significant
Positive affective reactions > Approach behavior	11.217	0.000	Significant
Negative affective reactions > Avoidance behavior	11.924	0.000	Significant
Cognitive absorption > Approach behavior	7.421	0.000	Significant
Approach behavior > Shopping intention	18.853	0.000	Significant
Avoidance behavior > Shopping intention	−1.096	0.273	Insignificant

Source: Author's illustration

behaviors and intention to buy. If the level of approach behavior positively and significantly influences purchase intention, we observe that avoidance behaviors do not significantly influence purchase intention. In other words, it is quite possible to experience affective reactions with a negative valence, that these generate avoidance behaviors, but this does not mean that consumers will not have the intention of buying on the website.

We then observed the effects of perceived hospitality on the set of mediating variables proposed: affective reactions (whether they are positive or negative) and cognitive absorption. All of these mediators also significantly impact approach-avoidance behaviors. Approach behaviors will positively and significantly affect the intention to purchase, and for their part, avoidance behaviors will not significantly influence purchase intention. The results are summarized in Table 5.

7 Moving Towards a Humanization of Digital Interfaces

According to Dubet (1994), experience is a way of experiencing, of being invaded by a sufficiently emotional solid-state while discovering a personal subjectivity. Experience is also a cognitive activity, a way of constructing reality and, above all of verifying it and of experiencing it. Dubet, therefore, retains two components, cognitive and affective, of the experience and considers the social dimension not as a third component but as a general framework in which the experience takes place. Indeed, the consumer tries to attribute meaning to what he is experiencing, thus constructing a reality of his own. He projects his personality, his imagination, and his social environment into this construction. This self-construction makes the experience very personal. Although personal, the experience has for the author a social character insofar as it exists, in the eyes of the individual, only insofar as others recognize it, possibly shared and confirmed by others. The consumption experience, a particular case of experience, obeys this logic. It is individual and collective, subjective (Carù and Cova 2003), and objective (Chaney et al. 2018).

The experiential approach finds its foundations in the criticisms made of the partial nature of a mainly cognitive approach to consumer behavior, an approach too focused on decision-making processes that abandon purchase and consumption, sources of experience, including emotional experience. Therefore, the experiential approach proposes to go beyond the essentially utilitarian nature of purchase and consumption to integrate affective, recreational, and symbolic variables. In doing so, she is interested in the objective and subjective, rational and affective characteristics of the purchasing process and the act of consumption. It allows a more in-depth examination of the psychophysical multisensory relationships of consumer behavior (Holbrook and Hirschman 1982). It corresponds to a dynamic approach to consumer behavior insofar as it considers their learning and the evolution of their behavior. It delivers a more global interpretation of the act of consumption by including the framework of this consumption experience lived by the consumer. These theoretical considerations renew the definition of consumption. Consumption is no longer perceived as a single process of destruction, completion, and consumption but as co-creation, production of experiences (Antéblian et al. 2013; López et al. 2016), values, identity, self-image (Carù and Cova 2003). In this context, the consumer is no longer outside the process, and he becomes the very object of the transformation process in which he is jointly and acting subject and an object of transformation (Vargo 2008).

Suppose the Internet medium deprives the Internet user of three senses (smell, touch, taste) among the five. In that case, this deprivation may not affect people, in the same way, depending on their age, their browsing habits of the site for information and purchase, the functional and recreational role that they attribute to the consultation of the site and according to their implication about the class of product. The emotional experience does not always engage all five senses simultaneously. This relevance of the experiential approach in the study of the surfing behavior of Internet users has been underlined by several works (Hoffman and Novak 1996; Hoffman et al. 2003; Schlosser 2003). The analysis of this surfing behavior of Internet users goes beyond the only utilitarian aspects to include intrinsically joyful experiences, according to Chen et al. (2011). It is, therefore, reasonable to understand the behavior of Internet users from an experiential point of view. This will make it possible to highlight the subjective aspects linked to this behavior and provide the tools necessary for an analysis of the emotional reactions of Internet users to the stimuli of the website. This position is justified by the sensory depth of the Internet media, which, even if its sensory breadth is not enriched, has a greater sensory intensity than that of traditional media (Li et al. 2002).

The intensity of sensory stimuli on the Internet may be due to the simultaneity of exchanges between the website and the Internet user. The latter adapts his navigation behavior according to the nature of the stimuli perceived, which can affect the intensity of his affective and cognitive reactions, thus leading him, through more or fewer complex processes of appropriation or direct diving (Carù and Cova 2006), to live pleasant and joyful experiences or to reach immersion situations qualified as Flow (Harth et al. 2018). Flow is here a metaphor that can be translated into immersion. This immersion (total or partial, lasting or momentary, wanted or

suffered) or sensation of immersion of a subject in a virtual (Internet, reverie, video game) or the physical universe (bookstore, concert) consists of entering a universe, of soaking up an ambient atmosphere. For an Internet user, this immersion consists of withdrawing from their physical environment and concerns to devote themselves and be absorbed by the visit and the purchase on a site. This immersion can be cognitive and emotional; on a site too, words and photos can have an affective resonance that can go as far as fright: a visit to a humanitarian cause site that elicits action and donation. Immersion can consist in letting oneself be overwhelmed by a flood of emotions.

The motivations for using the Internet change as the user interacts with the Internet. Even if the initial usage motivations are predominantly utilitarian, developing the relationship between the Internet user and a branded site can evolve towards more subjective motivations of an emotional and symbolic nature. Thus, the online behavior of the Internet user is enriched by multiple motivations: utilitarian, hedonic, and social (Zeba et al. 2020). Any site visit is made in a certain context inherent to the Internet user, his environment, and the type of site consulted. The context of the experience is therefore presented as the set of environmental factors conditioning consumer behavior to a certain extent. It is defined as the set of organizational principles that give meaning to a situation (Gera et al. 2021). Studies examining the context of the consumer's shopping experience highlight the role of the theatricalization of the point of sale in the consumer's involvement and the interpretation of the experience (Khalifa and Liu 2007).

Our results suggest that visiting a hospital e-commerce site generates an enriched experience than visiting a website that is not a hospital. The main objective of the design and characteristics of an e-commerce website would be to encourage the purchase and ensure the smooth running of the purchasing process. The design and characteristics of a hospital e-commerce website would aim to provide the Internet user (buyer or not) with a pleasant experience that he will remember and that would encourage him to come back. This would improve the reputation and image of the brand as well as sales. The design of a hospital website can give a unifying role for all of the brand's actions, enrich its territory of expression, define the contours of its image, and generate more or less experiential visitor experiences.

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Socially Responsible Online Marketing

Pavla Švermová

Abstract Consumers make their purchasing decisions based on information that is also related to emotions. Customers prefer transparent information that allows them to trust companies and then show interest in their services or products. Corporate social responsibility is one of the critical factors influencing the image. Because the concept of CSR significantly affects the perception of the company among customers and society. Strengthening the image is one of the fundamental goals of marketing. The CSR concept is thus one of the possible aspects of strengthening the image and thus having the edge over the competition. This chapter examines the relationships between CSR communication, brand reputation, and customer shopping intentions.

Over the past two decades, companies are increasingly taking ecological concerns into account, which are now part of their strategic approach. Considered the leading causes and agents of environmental degradation, companies must be held accountable for their financial results and social and environmental responsibility (CSR). Many companies consider CSR an opportunity to be seized and whose implementation requires questioning their strategy (Tang et al. 2012), their organization (Bondy et al. 2012). According to Fowler and Hope (2006), the more possibilities are considered to integrate a sustainable development strategy into the economic model, the more the managers can succeed in their transition. The CSR approach ensures the competitive advantage, the sustainability of their products as well as long-term profitability. Consumers are willing to pay more for goods with more ethical attributes (Besley and Ghatak 2007). Today, CSR improves the company's competitive position (Yu et al. 2017) and makes it possible to develop a competitive advantage (Saeidi et al. 2015) by opening up new markets or by offering new product versions.

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Several authors have proposed a theoretical link between commitment to a societal cause and the construction of brand equity (Hoeffler and Keller 2002; Naidoo and Abratt 2017; Hur et al. 2013). However, the most active companies in their CSR policy are the most closely monitored (Weber 2008). The results of Mohr et al. (2001) show that the companies that do the most in CSR and communicate it are the most criticized and monitored. Other research shows that a company that has communicated on its social responsibility may be going through a crisis more difficult than another. We cite the studies by Swaen and Vanhamme (2004), which show that consumers' perception of a company that has communicated on its social commitments and which is accused rightly or wrongly of non-citizen behavior can decline more rapidly than if she had not referred to it.

The brand plays a key role in creating value since it determines the offer's strategy and positioning. It is the product of a company's history and conveys its values and identity. It is, therefore, the first tool for communicating competitive positioning within the market and explaining the elements of differentiation. Protecting a company's brand equity is, therefore, an essential priority for the marketing decision-maker. Because it expresses its identity and, more broadly, the strategic mission of the company, the brand will condition the perception of the company, whether the actor is internal (employees, unions) or external (customers, suppliers, non-governmental organizations) (Miller et al. 2018; Bertels and Peloza 2008). Beyond the competitive and heritage dimension, the brand, therefore, plays an essential role as a benchmark for many stakeholders. In order to relay a company's societal commitments internally and externally, operational decision-makers have multiplied communication attempts, whether on an institutional level or more directly in advertising. However, these attempts have often turned out to be counterproductive and may have affected the company's overall confidence, particularly among consumers. The latter is very skeptical about the company's intentions in terms of Sustainable Development when they link them too directly to a promotional approach, for example, with "product-sharing" type operations.

Conversely, institutional engagement seems to be more legitimate and to have a better effect on the loyalty and purchasing intentions of these same consumers (Homburg et al. 2013). However, far from these debates on the supposed instrumentalization of Sustainable Development commitments, marketing managers are often implicitly convinced of the merits of their approaches and generally mainly motivated to set up CSR projects within their brand strategies. Aware of their duties and the constraints imposed on them, decision-makers are waiting to know how to effectively deploy a CSR policy within the strategies of brands and companies. However, the concepts resulting from the Sustainable Development paradigm have many limits on their applicability in marketing.

Many studies have focused on the content of corporate CSR communication. In particular, comparative studies at the international level have been carried out. For example, Maignan and Ralston (2002), from a sample of 50 communication media via the institutional websites of companies in the United States, France, the United Kingdom, and the Netherlands, have proposed a typology of CSR principles and processes conveyed by websites using content analyses. Likewise, Hartman et al.

(2007) conducted a cross-cultural analysis regarding the communication nature of CSR in 16 European and American organizations. They underline the predominance of two types of communication in terms of CSR: communication that uses economic arguments and terms mainly present in American organizations and communication based on a moral and ethical language instead used concomitantly with the arguments by the European companies in the sample. This type of comparative study on the methods and principles of CSR reporting is widely represented in the Anglo-Saxon literature (Golob and Bartlett 2007). In this chapter, we focus on the ethical arguments of CSR emphasized in the marketing communication of brands and their impact on the customer perception of the brand and their shopping attitudes.

1   CSR as a Normative Concept

There are many definitions of what CSR is in the literature. For example, Murillo and Lozano (2006) define it as an instrument of social regulation that aims to stabilize interactions between the company and the company and facilitate the long-term integration of the company's goals and the company. According to Vilanova et al. (2008), CSR also has a social mission covering two main aspects. Firstly, considering the demands of what is commonly called the stakeholders and secondly, the integration of practices related to this notion into management logic. The majority of definitions present the concept of CSR for companies as the act of intentionally integrating social and ecological issues into their business activities and relations with stakeholders (Weatherill 2001). Therefore, socially responsible behavior responds to legal imperatives and goes further by investing more, particularly in the environment and human capital (Buhmann 2006). Another significant reference is ISO 26000, which defines CSR as the responsibility of an organization concerning the repercussions of its choices and actions on the environment and society. Thus, the organization promises to adopt an ethical and transparent conduct, to be part of sustainable development, to consider stakeholders and applicable laws and international standards of behavior (Schmiedeknecht and Wieland 2015).

Sustainable development is an integral part of the concept of CSR. It questions our current development model, which is considered unsustainable, for future generations (Schönherr et al. 2017). It is defined as a model of development that meets the needs of present generations without compromising the ability of future generations to meet theirs (Blowfield 2004). It originates from the Club of Rome, an organization founded in 1962 which brings together various scientists, economists, civil servants, and industrialists concerned with the problems linked to the economic and demographic growth of the world. It was in 1992 that, for the first time, at the Earth Summit conference, the United Nations referred to environment and development as two joint concepts. Finally, in 2015, the United Nations put a sustainable development agenda for 2030. This program is adopted by the 193 member states and contains the 17 sustainable development goals structured around five pillars (Planet, People, Partnership, Prosperity, Peace) (Baumgartner 2013). ISO 26000 is a

Table 1 Main principles and questions related to CSR According to ISO26000

Seven principles	Seven central questions
Accountability	Governance of the organization
Transparency	Human rights
Ethical behavior	Relations and working conditions
Respect for stakeholder interests	The environment
Respect for the principle of legality	Loyalty of practices
Respect for international standards of behavior	Consumer issues
Respect for human rights	Communities and local development

Source: Author's illustration

standard that identifies seven principles and central questions (Table 1), listed below, representing the foundations for CSR implementation.

The fundamental principles that emerge from most definitions represent the tendency to go beyond legal obligations, not be satisfied only with the search for profit (Swaen and Chumpitaz 2008), and consider the various stakeholders. Stakeholders are defined by the Stanford Research Institute as a person or group of people who enable the operation of the business, including shareholders, employees, suppliers, owners of capital, and society (Laplume et al. 2008). Freeman (1994) believes that a stakeholder in the organization is, by definition, any group of individuals or any individual who can affect or be affected by the achievement of organizational objectives. Finally, the different definitions that can be gathered allow us to deduce three fundamental pillars, namely a social, environmental, and economic axis, of sustainable development (Kolk 2016). The company, therefore, voluntarily takes into account the repercussions of its strategic choices at these three levels.

1.1 The Appearance of the Concept

It was between 1920 and 1930 that the notion of corporate social responsibility (CSR) appeared in the literature, but it was not until 1953 that the concept benefited from a genuine academic interest (Freeman and Hasnaoui 2010). It was on this date that the term corporate social responsibility was used in the United States by H. Bowen, Keynesian economist, in his book *Responsibility of the Business Man*. H. Bowen portrayed CSR as financial engineering, which tends to achieve a reasonable balance between societal interest and the private interests of companies (Bowen 2013). He aligns CSR with personal ethics, economics, and business management (Matten and Moon 2004).

In 1956, Sutton et al. highlighted that profit-making is not the only responsibility of a manager. The authors observed that some of them also consider their employees, suppliers, consumers, and other stakeholders in their operations. Subsequently, the concept developed further with globalization and the desire for better supervision of multinational companies. This reactivated the debate on CSR between the 1970s and
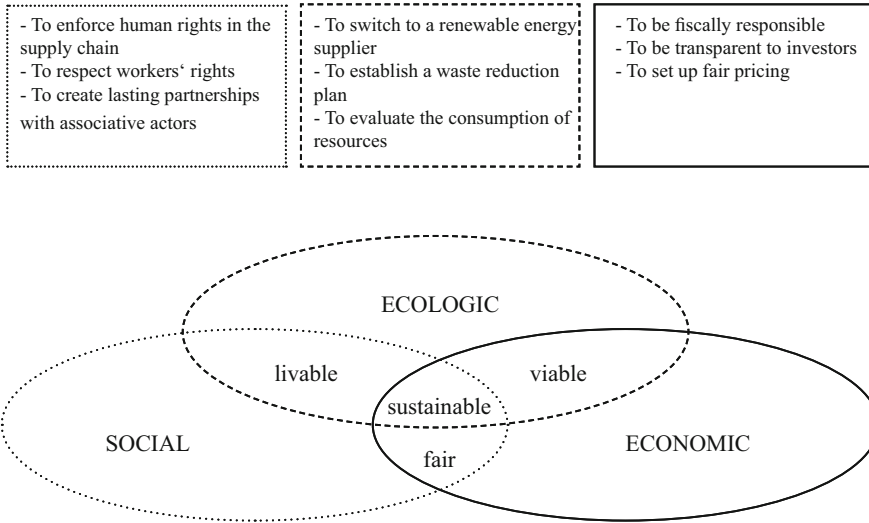
| - To enforce human rights in the supply chain
- To respect workers' rights
- To create lasting partnerships with associative actors | - To switch to a renewable energy supplier
- To establish a waste reduction plan
- To evaluate the consumption of resources | - To be fiscally responsible
- To be transparent to investors
- To set up fair pricing |

ECOLOGIC

livable   viable

sustainable

SOCIAL   fair   ECONOMIC

Fig. 1 The three pillars of CSR (Source: Author's illustration)

1990s, on the one hand, due to the international and industrial developments of companies, on the other hand, due to various environmental disasters such as Seveso (1976) and Chernobyl (1987). These elements shed light on the hidden costs arising from the misuse of the public good and the upsurge in productivism (Carroll 1999). This points to the weaknesses of classical economic theory, where the economic agent himself assumes these costs since he perceives the benefits. Therefore, the objective of CSR is to combine the company's economic utilitarianism, which acts in favor of the collective good, with ethical utilitarianism, which optimizes the moral heritage. It was in 2001 that the European Commission laid the fundamental foundation for CSR. The concept has continued to gain momentum, all the more so in recent years, to finally establish itself as a benchmark model for companies and especially transnational corporations (Matten and Moon 2004).

Consumer reactions differ, among other things, depending on the nature of the firm's investment. The latter can be human, material, or financial (Mohr et al. 2001). This is why it is interesting to know different CSR commitments and actions that companies can undertake. The international community has determined sustainable development intentions that integrate themes previously separated from the business. These themes are environmental responsibility, consumer protection, human rights, respect for labor agreements, and the fight against corporate governance and corruption. We can see that CSR can concern many areas and take many forms. Here, in Fig. 1, some concrete examples are categorized according to the three pillars of CSR previously mentioned.

1.2   Influence of CSR on Elements of the Marketing Mix

In the marketing mix, we find the company's elements to create value and thus influence demand. This is therefore conducive to analysis and recommendations about marketing in CSR. The four Ps are common elements in the marketing mix. However, it seems interesting to mention that a broader notion of it has been developed by Pomering (2017). This new framework considers the dimension of sustainability and includes 10 P (product, price, promotion, place, participants, physical evidence, processes, principles, promise, partnership), which clarify and facilitate the pursuit of sustainable objectives within the company.

The product will be significantly impacted by a company's desire to focus its strategy on CSR. According to its CSR orientation, the company will have to make its products more sustainable and ethical. It can seek to improve the resources necessary for production by favoring recycled materials or favoring a shorter production chain. It can also improve the quality of its product by limiting the use of harmful elements or by improving the quality of primary resources (Dzever and Gupta 2012). These are the elements that led to the creation of labels to avoid any fraud in the communication of brands. CSR, under its social and environmental components, leads to a competition mechanism in search of novelties having a role in terms of CSR (Lamarche and Rubinstein 2011).

CSR at the product level is implemented at two levels. On the one hand, from a macroeconomic point of view, that is to say, in the context of production of the product (toxicity of pesticides, CO_2 emissions, level of soil pollution, average workers' wages, working conditions). On the other hand, at the microeconomic level, the product itself (zero waste, in recycled or recyclable material) meets the customer's sustainability requirements and ethical criteria (Sigala 2013). We also note that specific categories of products induce a more significant effect on the consumer via CSR communication. Siegel and Vitaliano (2007) found that companies offering experience products have a higher CSR influence rate than physical products. According to the authors, this is because the quality of the experiential products cannot be assessed visually or by touch. A CSR communication then gives indications as to the quality of this product. For example, the rate of CO_2 emitted by a car cannot be quantified by the consumer. Therefore, stating this value in advertising acts as "proof" and reassures the customer about the societal values of sustainable development (Spychalska-Wojtkiewicz 2020). The values of sustainable development constitute an asset put forward in the symbolic valuation of offers; they participate in capturing new markets (Lamarche and Rubinstein 2011). Therefore, the emergence of CSR has led to a principle of competition, which has resulted in an improvement in product quality.

Various research shows that consumers' most crucial purchasing criteria are price and quality (Fliess et al. 2007). However, few studies concern the links between pricing policies and the implementation of CSR approaches. The study by Mohr and Webb (2005) nevertheless informs us that it is often assumed that these CSR practices represent a cost for the company that is ultimately borne by the consumer,

which would lead to a drop in sales following an increase in prices. Beliefs tend to perceive more durable products as more expensive. Despite this, consumers who are facing the existing economic and ecological crises, on the one hand, want low prices and, on the other hand, more responsible consumption patterns (Diallo et al. 2020). The association of the two criteria, therefore, seems possible to them.

In contrast, Mohr and Webb (2005) demonstrated in their study that the influence of corporate CSR initiatives had a significant positive effect on consumer behavior while the price had a significant negative effect. They also argue that the positive effect of CSR actions is more influential than the negative effect of prices, especially for efforts to protect the environment. We thus observe that some consumers express a desire to set a higher price for a product that meets social or environmental criteria, and the latter is therefore not priced sensitive. In addition, consumers can show one's social affiliation or even one's adherence to ideas or a movement (Abbas et al. 2018). A consumer can choose CSR products for these reasons, also explaining his desire to pay more. Besides a genuine desire to pay more, some people say they are "just" ready to pay more for a socially responsible product. There are, in fact, various studies that demonstrate this point (Fliess et al. 2007). Golob et al. (2013) have shown that a socially responsible business promotes the willingness of global consumers to pay more for a product or service. However, the authors observe a difference because for South America and Asia, 60% of consumers would be affected, while for Europe and the USA, only 40% and 42% would be inclined to pay more.

Concerning the different modes of product distribution, a distinction will be made here between mass distribution stores, specialized stores, and e-shops. First, the gap between consumers' stated preferences and actual behaviors can partly be explained by the accessibility and limited availability of CSR-type products. Customers have their consumption habits, and if CSR-oriented products are not on sale in traditional stores, the consumer may not be inclined to go to specialized stores to acquire these products (Abbas et al. 2018).

Many consumers have no fundamental knowledge of CSR. They feel too little informed, especially about the conditions and the impact of production (Fliess et al. 2007). The role of communication is therefore crucial not only for the notoriety of the actions implemented but also for informing and educating the consumer on the purpose and importance of these initiatives. One of the main obstacles to considering these commitments is a lack of customer knowledge (Abbas et al. 2018). In addition, since most CSR actions are not visible to the consumer, effective communication will be essential to inform and gain customer confidence. Customers must be informed both at the production context of the product and on the characteristics of the product itself (Liu et al. 2019). For customers who are more informed on this subject, it will be necessary for the company to display absolute transparency in its communication. Consumers want to know the company's real intentions (Bhattacharya and Sen 2004). It is, therefore, not easy to communicate about CSR, knowing that consumers are skeptical about CSR marketing (Mohr et al. 2001). In addition, what consumers say about CSR does not coincide with their actual behavior. One of the explanations put forward by Fliess et al. (2007) would be the

lack of valuable and relevant information. It also emerges from their study that the standards and information being sometimes too numerous, it becomes confusing for the consumers who would prefer more coherence and collaboration between the companies.

Companies must have a good analysis prior to their CSR communication. By communicating about their commitments, they risk being even more criticized later (whether it is fake news or legitimate accusations). The image that consumers will have of the brand may be less good than before it made known its CSR actions. Companies must therefore be able to anticipate these possible criticisms. In addition, communicating about the brand's CSR actions represents a risk of seeing higher consumer expectations in this area. However, if the company has good communication skills, it will be beneficial. Swaen and Vanhamme (2004) showed that consumers perceive the brand more positively and more trustworthy thanks to communications. Effective communication is therefore essential. For this, the company must adapt its marketing to the consumer who reacts differently depending on his profile. Depending on the culture from which it comes, the consumer will be more willing to trust the information received on a CSR project from a person they know rather than a written report (Fliess et al. 2007). Hence the importance of positive word of mouth as well.

CSR communication is based on a principle of trust because the majority of the measures taken will not be visible to the consumer. Hence the need for good information. However, in addition to the company's marketing strategy, certain elements can allow the consumer to verify the commitments made by the company, such as labels. We will find organic labels for the environmental aspects, for example, and the social aspects, fair trade. The OECD trade policy document 47, which deals with CSR communication strategies, also cites consumer guides and CSR reports written by companies on which consumers can base their decisions.

2   Impacts of CSR on Consumer's Perceptions of the Brand

As Jones explains, stakeholders, including consumers, do not respond to CSR itself objectively; they respond to CSR perceptions. Social perceptions are formed by a combination of bottom-up processing of sensory inputs as "raw" data enters the brain and top-down processing in which meaning is imposed on those inputs. Through this process, people construct psychologically meaningful representations of what they perceive as existing in the social world (Jones et al. 2019). Perception is regularly used in marketing and often measured using different scales. Marketers are interested in perceptions because they guide consumer choices. Therefore, managers must be careful that these perceptions coincide with the company's image through their CSR initiatives (Swaen and Chumpitaz 2008). There is a growing interest in CSR from managers and researchers, particularly about consumers' perception and reaction to it (Arli and Lasmono 2010). Companies must increase their investments to develop their CSR capacities and implement campaigns to go beyond the simple

pursuit of profit. This is how firms will positively influence the perception of CSR. Lee et al. (2013) described consumers' perception of CSR commitments as the extent to which these consumers perceive an organization to support activities about social welfare.

The customer's perception of CSR includes a wide range of concepts, depending on the actions implemented by the company, which must be able to conceive in the broad sense (Maignan and Ferrell 2001) a multidimensional three-factor model for consumer perception of CSR. These factors are public image, character, and worth and are all three significant. However, it is the public image that is the most potent element of the model. There are also other ways of conceptualizing the perception of CSR. The work of Öberseder et al. (2013) and Turker (2008) developed measurement scales considering the different stakeholders. Finally, other authors, including Alvarado-Herrera et al. (2015) and Fatma et al. (2016), studied perceptions of CSR under the three pillars (social, environmental, and economic). In all the cases, the concept is modeled in a multidimensional way.

Studies on the reaction and perception of consumers towards CSR have been summarized by Beckmann (2007), who suggests that there are positive relationships between the CSR activity of an organization and consumers' reactions to it. This company and its product. Much research in developed countries shows a positive consumer perception of CSR (Arli and Lasmono 2010). Even if differences in perception have been observed between different countries and cultures, this remains positive (Maignan and Ferrell 2003).

2.1 The Variables of CSR Perception

As we discussed above, the notion of consumer perception is relatively complex and subtle. Many variables are related to the perception of CSR and influence each other. These variables are summarized in Fig. 2 and further described in the points below.
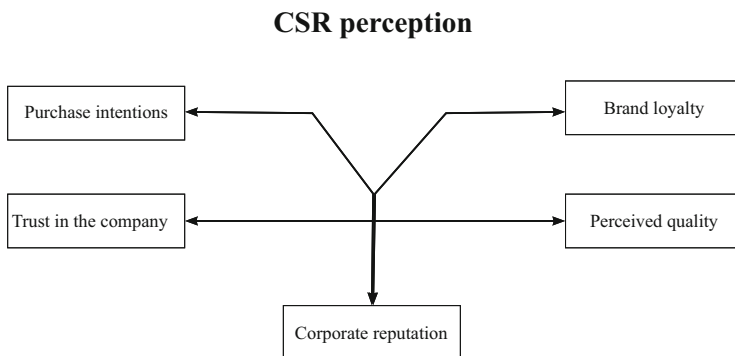

Fig. 2 Variables of CSR perception (Source: Author's illustration)

Studies on a customer's brand loyalty have shown enhanced when the company performs CSR actions, leading to positive attitudes towards the brand. The customer's perception of CSR impacts attachment and loyalty to the company and consequently the company's performance. In addition to playing a short-term role, responsible action also generates long-term impacts. These can be observed as soon as the consumer identifies with the company's values, which develops the relationship of loyalty to the brand (Chaudary et al. 2016). Trust in the company is a variable widely used in various studies on CSR. A firm's CSR initiatives are considered a successful strategy for building a bond of trust with its consumers (Torres et al. 2012). This is consistent with Mahmood and Bashir's (2020) research, which asserts that CSR commitments impact perceived quality and consumer confidence. Kim et al. (2015) found that trust mediates the relationship between consumer perception of CSR and corporate reputation. Moreover, the perception of CSR by consumers influences confidence in the company. In turn, trust in the company will influence purchasing intentions upwards.

Mahmood and Bashir (2020) show, on the other hand, that a certain distrust of brands persists. They indicate that corporate communications can lead to consumer skepticism that will harm brand confidence. Therefore, the consumer's perception of CSR influences trusts positively or negatively depending on the consumer's brand interpretation. Therefore, we again observe a significant interaction between the different variables of perception, with a more critical relationship with the company's reputation.

Roberts and Dowling (2002) and Heikkurinen (2010) have shown that consumers' perception of CSR influences their reputation, mainly because they show the desire to be associated with brands that have a good reputation. We also observe that when CSR has a positive effect and positively impacts its reputation, it will also positively influence the perceived quality of products. This is, among other things, a factor that influences consumer satisfaction. Finally, when the latter persists over time, we notice an increase in perceived reliability and confidence in the company (Swaen and Chumpitaz 2008).

Leonidou et al. (2012) point out that the negative impacts must also be taken into account. If a firm's CSR approach is hypocritical, it will not affect the consumer favorably, the one who does not want the company to exploit social issues for their benefit. If CSR has a negative impact, it can represent a barrier to developing trust and loyalty. It appears that a brand's communication influences purchase intentions. According to David et al. (2005), CSR communication influences customers' purchasing decisions. Yoon et al. (2006) also claim that this type of communication gives a positive brand image to the company and consequently generates an increased intention to buy. Once again, we observe an interaction between the different variables. The perception of CSR plays an important role in the perceived quality of products. For example, Milgrom and Roberts (1986) claim that CSR's advertising campaign increases product quality. They also claim that it improves the perceived quality of the business.

2.2 The Behavior of Companies Regarding CSR

CSR has become a crucial issue for many companies, which allocate significant resources under pressure from stakeholders and their customers (Binninger and Robert 2011). In the current context where consumers easily communicate by sharing their opinions via different online platforms, word of mouth is proliferating. The consequence is that a negative image can quickly appear and lead to the non-purchase of a brand's products. A company that implements CSR actions that are not perceived as sincere or refusing to adopt a CSR behavior could very quickly be penalized. The consumer may feel that the company is trying to manipulate them with false advertising. However, CSR behaviors positively affect the firm. A society that acts more for social welfare gains a more favorable reputation.

Stakeholders have new demands, which is why CSR is a crucial issue for organizations. Therefore, the company must assume its legal responsibilities, its responsibilities towards the environment, its employees and shareholders, and society as a whole. Pressure from these stakeholders and new regulations and laws are arguments that strongly encourage companies to integrate CSR commitments and sustainable behavior into their operations (Baumgartner 2013). This continually raises new questions about the development of new value creation models, new collaboration methods between actors, and new mechanisms for internalizing externalities. This pressure on firms from their environment and the choice of their positioning means that companies will adopt various CSR strategies. Lavorata (2014) thus exposes four levels of CSR involvement. The findings related to strategies regarding CSR are summarized in Table 2.

As a company aims to make a profit, the impact of firms' CSR approaches has been the subject of numerous studies, particularly about their influence on its financial results. These actions would make it possible to acquire added value in terms of image and reputation, which would improve financial performance. Therefore, compliance with commitments, demonstrated through strategic choices, is essential for the company to benefit from a good reputation and maintain its legitimacy (Tang et al. 2012).

Table 2 Different levels of CSR involvement

Level	Strategy	Description
0	Passive	Minimum compliance with rules and conventions
1	Symbolic/ defensive	The first phase is for firms to start to implement aspects in their CSR policy. It can, however, be eco-bleaching
2	Proactive	Companies set up voluntary commitments that link CSR to their product or service offering
3	Substantial	Companies include CSR in their overall strategy

Source: Author's illustration

2.3   The Behavior of Customers Regarding CSR

We observe that sustainable development increases interest in consumers who adapt their consumption patterns. Despite this and the development in the field of CSR, consumers remain skeptical of companies that act in CSR (Leonidou et al. 2012). A 2016 study carried out by Lombart et al. in the field of mass distribution showed that consumers remained skeptical in different price-image contexts about the reality of retailers' CSR initiatives and operations. Despite this ambient doubt, a company that invests in CSR development and actions could acquire a competitive advantage from the point of view of value creation. Consumers are no longer just looking for a positive consumer experience, and some of them will also pay attention to the CSR actions of the brands from which they procure the products or services (Abbas et al. 2018).

This chapter focuses on the consumer's perception of the CSR approaches of brands but also on his behavior. Gond et al. (2011) explain that behaviors (for example, of consumption) are not always in line with attitudes, which are mainly in favor of sustainable development. Despite this mismatch between expressions and behaviors and consumer skepticism, different studies have shown that different CSR operations impact consumer perception and behavior. The effect of a CSR initiative also stems from how the consumer perceives it. Is the action consistent with the company itself? What is the underlying motivation? The answers to these questions will be decisive for the influence. Several motivations and barriers for responsible consumption have been mentioned in the literature. There are three types of motivation for consuming a CSR product (Hansla et al. 2008). The most reported is the selfish motivation where the consumer is ready to play a more significant sum if he derives personal benefits from it, or when he considers that the repercussions will be harmful to him (Snelgar 2006). We also distinguish the altruistic motivation, which concerns the search for the good of others, and social justice. Finally, biospheric motivation revolves around a fundamental objective of environmental improvement (Hansla et al. 2008).

Significant barriers counterbalance these motivations for consuming a responsible product. Among these, Doran (2008) cites each individual's demographic, religious, or cultural characteristics. It has also been shown that the lack of information on the different environmental labels as well as the price, perceived quality, and availability of products (Hira and Ferrie 2006) plays a negative role in the consumer's decision-making process. Regardless, consumers seem increasingly inclined to buy responsible products, but significant barriers severely constrain their efforts. The functional aspect and the intrinsic quality of the purchase should not be reduced during this type of purchase.

3   The Case of the Cosmetics Industry

The sector determines the type of product, the profile of the consumer, and the importance of the commercial relationship. As part of this chapter, it was chosen to focus on the cosmetics industry, in particular, because it is very likely to find many aspects and characteristics of CSR there (McWilliams and Siegel 2001). In addition, this is an area where many brands are active in their CSR communications. Finally, this area has generated particular interest due to growing questions about safety and environmental and social impacts (Bom et al. 2019).

3.1   CSR Specifics of the Cosmetics Industry

The cosmetics industry, in public, emphasizes its CSR programs on social and ecological aspects, including preservation of the environment. This goes in particular through the exact composition of the products, which, when they are said to be "natural," are associated with CSR practices in the minds of consumers, who then also perceive them as being qualitative and suitable for their health (Fliess et al. 2007). Consumers are increasingly aware that cosmetic products can contain chemicals that can prove to be a danger for their skin and, therefore, their health as well as for the environment (Csorba and Boglea 2011). Laboratory research is one of the most critical factors in the development of the cosmetics industry, whether it is for creating the product or for its final analysis. For their part, Secchi et al. (2016) indicate that sustainable environmental development has been the driving force behind development and research in many fields, including cosmetics. For product creation, research and development in chemistry have always tried to develop processes using raw materials that are as less toxic as possible. The aim of this is to develop ingredients that do not represent a health risk.

From now on, the processes, as well as the innovative products, have priority. There is thus an evolution towards chemistry which is based more on renewable plants and no longer on petrochemicals. New processes must consume less energy, use non-toxic materials and produce less waste. The ingredients of sustainable chemistry must respect the environment, biodiversity, human health and safety, fair trade practices, and the various social and societal impacts. Cosmetic products must also be tested before selling on the market to comply with the standards in force. In addition, the establishment of certified labels has also pushed industries to improve their laboratories. Before being put on sale, the product must first be assessed in the laboratory.

While product composition is essential, the entire supply chain is likely to have social and environmental impacts. Therefore, it is essential to consider the entire life cycle of the product (design, manufacture, packaging, distribution, use, disposal, use after consumption) (Bom et al. 2019). Csorba and Boglea (2011) underline the importance of waste from cosmetic products. These are amounts of shampoos,

toothpaste, and deodorants released into the environment every day after use. This is where the interest lies in more sustainable product alternatives that break down more quickly.

Consumers want to see more socially responsible cosmetic brands because CSR is important to them in this industry (Kannaiah and Jayakumar 2018). In addition to the awareness of the nature of dangerous synthetic cosmetic ingredients, concerns for preserving resources and the environment are growing (Csorba and Boglea 2011). Thus, consumers are increasingly fond of organic products without harmful components not tested on animals. They are also looking for more ecological and sustainable products for nature and aquatic life.

However, we note that at the time of purchase, social responsibility criteria are much less present. This finding indicates the social desirability of consumers. CSR is therefore not a determining factor in the purchasing decision, unlike the quality, price, or ingredients of cosmetic products. In contrast, consumers say they are willing to pay more for cosmetics that have been produced under sustainable and responsible conditions (Shabib and Ganguli 2017). Finally, if consumers buy a product with CSR characteristics, a study carried out in Germany with 245 respondents showed they felt they were making a positive contribution and protecting the environment when they consumed sustainable cosmetics (Brückel and Schneider 2019).

Women seem more concerned with the CSR commitments of cosmetics brands than men (Moisescu 2015). However, it turns out that, compared to men, women are very representative of the use of cosmetics (Pudaruth et al. 2015). However, according to the study by Sahelices-Pinto et al. (2020), at the time of purchase, there is no significant difference between men and women. Their study also showed that the youngest (18–35) pay the slightest attention to CSR features but focus more on prices and other elements. This contrasts with the results obtained by Moisescu (2015), who asserts that the impact of CSR is more substantial among young people. On the other hand, the older segment (aged 51–75) is the least informed group about responsible behavior in the cosmetics sector (Sahelices-Pinto et al. 2020).

3.2   CSR Related Communication Tools

Initially, "green" was more of a marketing strategy that, over time, evolved into the norm. In 1991, during negotiations for the creation of the European community, activists managed to change the Community directives for cosmetic products. This launched a movement in favor of responsible products. However, the concept was not new then because, in the 70s, there was a big wave in the sector advocating natural products based on plants and fruits, which resumed in the 80s and is still observed today (Csorba and Boglea 2011). In the cosmetics sector, small and medium-sized companies have initiated CSR initiatives, which has enabled them to quickly gain market. These firms wanted to stand out and then finally set the standard, and it was the multinationals had to follow suit. CSR is now an integral part

of various brands and their corporate image (Fliess et al. 2007). Csorba and Boglea (2011) also assert that a significant part of the market comes from small and medium-sized enterprises but that many industry giants now also attempt to incorporate more natural formulas in their products and become more environment friendly. In order to maintain their place in this fiercely competitive market, companies need to develop innovative and sustainable products that meet the high expectations of consumers (Bom et al. 2019). Thus, consumers push the industry to become more responsible, on the one hand, then the media and campaigns of certain brands encourage others to assert their positioning (Csorba and Boglea 2011).

Responsible products were initially sought after by consumers with peculiarities such as more fragile skin, irritations, or even allergies. This has reached many more consumers who demand the other benefits of this type of product mentioned above in recent years. First, concerning distribution, large retailers are becoming important sellers of responsible products because they enjoy a specific control over the practices of their suppliers given their substantial sales volumes. In addition, because they source more directly from producers, this power of influence is accentuated (Fliess et al. 2007). Csorba and Boglea (2011) also claim that retailers adjust to higher consumer expectations with natural cosmetics, sometimes from their brand. The authors also inform us that there are more and more distribution channels for this type of product, which is also a factor in the market's growth.

The cosmetics industry improves performance in CSR and creates a positive image thanks to its responsible commitments. As ethical consumerism grows, the global cosmetics industry aligns itself with consumers' expectations, whose social consciousness also increases (Chu and Lin 2013). Products are developed with cruelty-free manufacturing in mind; these products are created with natural ingredients or support charitable causes. CSR commitments correspond to the social concerns of customers, through responsible production or through the fact that the products have socially responsible properties (McWilliams and Siegel 2001). As concrete examples corresponding to these expectations, we could cite the financing of social causes, the sponsorship of events, the production taking into account ecology or the public support of environmental issues, health issues, or children (Fosfuri et al. 2014). Optimized use of water and energy, less packaging, and fair trade can also be added to the list.

In their study, Fliess et al. (2007) noticed that the subjects present in the CSR reports of the leading market players find many similarities. The authors cite in particular animal experimentation, ecology, and protection of the planet, ethical trade, supply chain, ingredients, packaging, human rights, partnerships with NGOs, treatment, and involvement of employees, the internal organization of CSR, and audit. Many cosmetics firms seek to find a place in this competitive market, and advertising advocating CSR in this sector is increasingly widespread (Chu and Lin 2013). This rapid development makes communication on CSR in the cosmetics industry advanced, sophisticated, and easily observable, although it mainly deals with product characteristics and not production processes. Some of the first companies to publish CSR reports have come from the cosmetics industry,

which still has an advantage in CSR communications over other sectors (Fliess et al. 2007).

Social networks are of paramount importance in the development of product communication Zhao et al. (2012) showed that CSR informs consumers through various channels and that the internet has a crucial role in these communications. It is then a question of the so-called non-traditional advertising instead of traditional advertising, which groups together the traditional media, notably allowing brands to limit marketing budgets. A company must not only communicate its actions and the specifics of its products, but it must also convey in its communications an incentive to use these sustainable cosmetics. It must convince consumers that they are already contributing to social and environmental well-being (Wilson et al. 2018a, b).

Cosmetic products also require communication on many aspects that consumers should be aware of. Companies must inform about their products' allergy testing and dermatological testing and state whether they are tested on animals. The rabbit symbol specifies in particular that the product is "cruelty-free," other symbols are also used in the field, in particular, to indicate recycling information. Cosmetic brands can also use eco-label, which indicates the low environmental impact of the product. Finally, companies are also required to mention all the ingredients present in the product. Despite a communication on CSR that seems well developed in the cosmetics sector, consumers are poorly or even moderately informed on this subject (Shabib and Ganguli 2017).

4   Impacts of CSR Communication of the Brand Reputation

Numerous studies have been carried out in CSR; among them, some have been carried out in the field of cosmetics. As this chapter focuses on this industry, it seems interesting to us to overview the previously carried out studies in this context. Previous studies on CSR in the cosmetics industry have been carried out in different countries. Different results emerge, which can be explained by cultural differences, consumer perceptions, and the diversity of samples (Shabib and Ganguli 2017). Among the most recent is the study by Bom et al. (2019), who assessed sustainability in its relationship with the cosmetics industry, its assessment, and its impact on the product life cycle. The authors concluded that this is a complex concept that can only be assessed by integrating its environmental, social, economic dimensions and the quality of the final product.

Sustainability should not be seen as an isolated aspect but as a multifaceted issue. Vázquez-Burguete et al. (2017) sought to assess the impact of the responsibility criteria when the consumer of a cosmetic product evolves in the different stages of the decision-making process. These criteria were evaluated on several representative samples to compare their impact on men and women according to their age group. In this study, we note that women tend to place more importance on the criteria of responsibility than men. On the other hand, age would also play a role in the impact

of these criteria in the purchase decision. It is observed that young consumers do not give it much importance, while the 51–75 age group lacks knowledge on the subject.

Shabib and Ganguli (2017) studied, based on an online questionnaire with 384 respondents, how the attitudes and behaviors of purchasing cosmetics products in Bahraini women are impacted by CSR awareness. The results showed a general lack of awareness among Bahraini female consumers. There are very few sources of information and do not show much interest in CSR in the cosmetics field. Also, in 2018, research by Wilson et al. attempts to assess the factors that may play a role in the ecological purchasing behavior of the Indonesian population. To do this, they gave a questionnaire to 260 people who had already bought and used green cosmetics. It emerges from the study that attitude towards behavior needs to be further encouraged among consumers. Their beliefs unconsciously push and reinforce them to adopt a specific behavior.

The study by Chu and Lin (2013) compared the perceptions of female consumers regarding CSR in cosmetics in the United States and China, taking into account cultural differences. Chinese consumers are said to place more importance on CSR and have higher expectations than American women. The study also highlights a difference in purchasing intentions. Finally, the study mentions the predominantly positive effects of communication on the CSR of brands. Montagnini et al. (2015) sought to understand perceptions about the characteristics of products, prices, distribution, and communication activities and the role of natural, organic, and ethical cosmetics in the process of identity formation in young adults. It shows a greater sensitivity to the issue of sustainability among young consumers. However, the authors also observed a lack of awareness of the definition of a sustainable cosmetic product. The study subjects often fused natural, biological, and ethical characteristics as a whole. Finally, a study by Zhao et al. (2012) analyzed, again in the cosmetics sector, via an online questionnaire that brought together 74 respondents, the impact of CSR on the attitudes and purchasing behavior of consumers. However, as their sample is not representative of the population, the results cannot be generalized. We may observe the same problem for Roermund's (2013) study, carried out in the Netherlands. This survey, conducted on the influence of CSR on the relationship between the customer and the company, using qualitative and quantitative methods, obtained 134 respondents. Like Zhao's study (2012), the majority of respondents were students.

In summary, there is much similarity in previous studies. All agree with Bom et al. (2019) to affirm that CSR is a complex subject that must be studied based on all its components. It seems that overall consumers are poorly informed about the definition of CSR. Regardless of the age category, previous studies mention either a lack of knowledge of this concept or a non-distinction between the nuances used by industries (for example, organic products and natural products). This leads to discrepancies between the studies since Vázquez-Burguete et al. (2017) estimate that adults (between 25 and 50 years old) are more sensitive to CSR, while Montagnini et al. (2015) think it is young adults.

Based on the previous findings, we propose the following research model that is displayed in Fig. 3. Our theoretical research provided us with information leading us
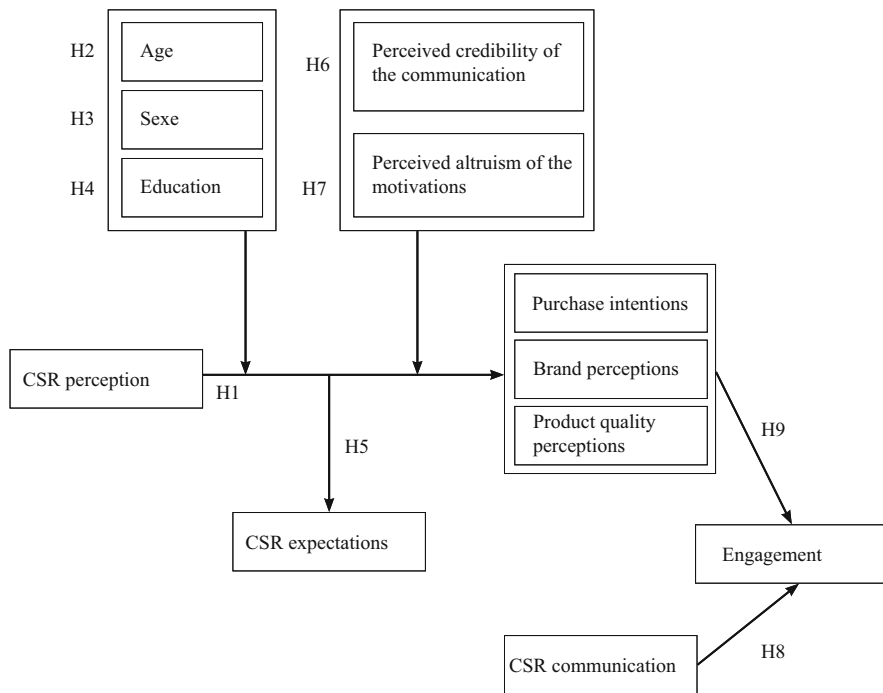
Fig. 3 Research model and hypotheses (Source: Author's illustration)

to write this hypothesis. Some studies have shown that customer impressions of CSR influence their purchasing decisions (David et al. 2005). Regarding product evaluation, it has been shown that this is favored by brand CSR initiatives (Brown and Dacin 1997). On the other hand, a substantial CSR advertising campaign can convey the idea of product quality or corporate quality. Yoon et al. (2006) also argue that CSR initiatives give a positive brand image. For example, corporate image advertising has become an effective means of informing corporate identity based on CSR initiatives (Pomering and Johnson 2009). We have seen conflicting information in the literature, especially regarding the influence of age.

Many sources claim that there has been growing interest in CSR in recent decades. We, therefore, want to know whether CSR expectations improve purchasing intentions, brand perception, and quality perception. We assume that consumers who have higher expectations of CSR have a different perception of CSR in this area. We assume that consumers with high expectations are more informed about this and will be more inclined to understand related communications. He would thus have a better perception of CSR than a less informed person. If our first hypothesis holds that the perception of CSR influences e purchasing intentions, brand perception, and perception of quality, CSR expectations, therefore, play a moderating role in the relationship between the perception of CSR and the three dependent variables.

It was the information in chapter two that led us to this hypothesis. We discussed that communication about CSR can generate skepticism which tends to weaken the persuasion of the message (Pomering 2017). This can negatively impact the image of the company by the consumer if the latter perceives the CSR activities communicated by the brand as insincere (Yoon et al. 2006). Also, in chapter two of this brief, we mentioned that communication on CSR can positively impact consumers. However, some studies show us that this is not always the case. Becker-Olsen et al. (2006) tell us that the underlying motivation is decisive in the impact on the consumer. This is supported by Leonidou et al. (2012), who concluded that an adverse effect could also be passed on to the customer. Therefore, if the consumer perceives the commitment to CSR of a brand as hypocritical and in its interest, this communication will affect the customer adversely.

Consumers share opinions and discuss brands on social media. The interaction rate or engagement rate concerns the actions of Internet users on published content and therefore informs us more about the relationship of subscribers with the brand rather than the relationship of subscribers to each other. Safi et al. (2018) explain that the source, in other words, the social network, has power over the target, that is to say, the consumer, and it is this mechanism that influences decisions client. We, therefore, know that the notion of commitment is essential and has influence, but we want to know to what extent it is correlated with the variables analyzed in our model. Our study focuses on social networks, which have become essential for today's brands; we want to know whether engagement reflects consumer behavior and perceptions. Engagement rate is a concept that is increasingly used in online social media marketing, and the difficulty in eliciting subscriber engagement is common to almost all brand pages. We, therefore, want to know if, according to our sample, the engagement rate can be influenced upwards by content relating to CSR with a concrete example.

Therefore, the hypotheses that will be tested to answer our research question and verify our model are as follows:

H1: Consumers' perception of CSR influences their purchasing intentions, perception of the brand, and perception of quality.

H2: There is a more substantial positive impact on consumers' perception of CSR on their purchasing intentions, brand perception, and quality perception for older consumers compared to younger ones.

H3: There is a more substantial positive impact on the consumer's perception of CSR on their purchasing intentions, their perception of the brand, and their perception of quality for women compared to men.

H4: There is a more substantial positive impact on consumers' perception of CSR on their purchasing intentions, their perception of the brand, and their perception of quality for consumers with a higher level of education.

H5: The higher the CSR expectations of consumers, the more positive the impact is on consumers' perception of CSR on their purchasing intentions, their perception of the brand, and their perception of quality.

H6: The higher the perceived credibility of CSR communications, the more influence the consumer's perception of CSR has on their purchasing intentions, their perception of the brand, and their perception of quality.

H7: The higher the altruism of the perceived motivations of CSR actions, the more the influence of the consumer's perception of CSR on their purchasing intentions, their perception of the brand, and their perception of quality is impacted.

H8: A communication on social networks evoking donations to an association generates more engagement than communication-only advertising.

H9: Purchase intentions, brand perception, and quality perception influence engagement on social media.

H10: Purchase intentions, brand perception, and quality perception are more influenced by environmental type communications than social type communications.

4.1   Methodology

Following the literature review, we were able to pose the hypotheses of our model developed above. We want to determine whether a communication containing information relating to CSR is likely to influence a consumer's purchase intentions, perception of the products, and perception of the brand. In order to answer these questions, we wrote a questionnaire that we shared online. The questionnaire included seven questions subdivided into sub-questions. To prevent too many respondents from not completing our survey and therefore not being able to be taken into account, we have limited the duration of the questionnaire to around 20–25 min. The first question aims to obtain a measure of the perception of CSR. As this type of measurement scale is not the subject of this chapter, we have opted for a simplified version. To obtain a CSR perception variable, many aspects must be taken into account. In order to define our measurement scale, we relied on previous work. During our research, we gathered two types of studies on this subject. In the first type of study, the authors carried out their measurement scale by developing items according to the stakeholders. They generally consider the environment, society, consumers, the local community, employees, suppliers, and shareholders. This type of study was notably carried out by Turker (2008), who studied employee perceptions of CSR. Öberseder et al. (2013) also used this approach to study consumers' perceptions of CSR this time around. The authors of studies of the second type have developed their measurement scale according to the three initial pillars of CSR. They, therefore, include items for the social, environmental, and economic pillars. There is, in particular, the study of Alvarado-Herrera et al. (2015) and that of Fatma et al. (2016), who studied consumer perceptions from this angle.

In all of these studies, the methodology was similar. We, therefore, had to choose one of the two approaches and preferred a measurement scale based on the three pillars. This was to keep the questionnaire short enough and to keep a certain number of items per category. For each pillar, we have defined five items that we have taken

from the various studies, as mentioned earlier. We total 15 items for which we have ensured that all stakeholders are represented. These criteria were measured using a seven-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." For the dependent variables of our model, namely purchase intentions, brand perception, and quality perception, we based ourselves on measurement scales used previously in the literature. Some items have been taken up in a very similar way (often translated from English), and others have been adapted to correspond to our study and to be adapted to the field of cosmetics. Finally, we wrote some items directly related to our subject, added them to the measurement scales. Our three measurement scales, namely purchasing intentions, perception of the brand, and perception of quality, comprised three items evaluated with Likert scales ranging from 1 to 7 from "not agree at all" to "completely agree."

Our target population included people in the Czech Republic and over 18 years of age to have respondents who make their purchases. Respondents who did not meet these criteria were not included in our study. Online sharing was chosen because it is a quick and inexpensive method. This allowed us to get as many respondents as possible in a short period. On the other hand, only people with internet and social media access, namely Facebook and Instagram, on whom we shared the questionnaire are likely to respond. The questionnaire was sent to many people but was also shared on various Facebook pages to collect as much data as possible. With this sharing method, we got a convenience sample. We, therefore, cannot describe our sample as being representative of the population.

When we closed our questionnaire, we had 117 respondents, including 79 usable, who completed the entire questionnaire and corresponded to the target audience. Out of these 70 respondents, 58 were women, and 21 were men. The data was then processed with SPSS Statistics software.

4.2 Interpretation of the Results

Before we could test our hypotheses, we had to create new variables. This was necessary because we had several items from our questionnaire, which were qualitative variables. This restricts us to the level of statistical tests, so we had to get quantitative variables. For the five new variables that we created, we proceeded in the same way. First, we performed principal component factor analyses. This method makes it easier for us to analyze the data by reducing it. It brings together the correlated variables in order to reduce the factors and thus the data. We can thus see if our data can be grouped into one or more dimensions. After factor analysis, we calculated Cronbach's alphas to measure the internal consistency of our data. For our data to be summarized into a single quantitative variable, they must be consistent. For this, Cronbach's alpha must be between 0.6 and 1. The results are summarized in Table 3.

We observe that after factor analysis, Cronbach's alpha is systematical >0.6. This indicates good internal consistency and allows us to create new variables that

Table 3 Results of the Cronbach's alpha

Variables	Number of items	Number of dimensions	% of the variance explained	Cronbach's Alpha
CSR perceptions	15	5	65.387	0.822
CSR expectations	15	3	60.840	0.898
Purchase intention	3	1	73.020	0.806
Brand perception	3	1	65.314	0.692
Quality perception	3	1	76.714	0.846

Source: Author's illustration

correspond to the correct dimensions. For this, we calculate the arithmetic mean of the items of the measurement scales.

For H1.1, our regression is not significant, so we cannot reject the null hypothesis. Our p-value is 0.201 and is therefore above the significance level of 0.05. In addition, the two bounds of the confidence interval are of opposite signs. Finally, our Student's test statistic is less than 1.96 in absolute value since it amounts to 1.288. Therefore, the three criteria are not met for us to be able to say that there is a statistically significant influence. We, therefore, cannot accept our hypothesis.

Regarding H1.2, our results show that our regression is statistically significant with a p-value of $0.025 < 0.05$. In addition, we observe that the confidence interval bounds are of the same sign and our Student's test statistic is more significant than 1.96 in absolute value since it amounts to 2.291. Our hypothesis H1.2. is therefore accepted, and the null hypothesis is rejected. We note that the explanatory variable explains only 6.4% of the dependent variable. The R2 is 0.064, which is relatively low. We still conclude that the perception of CSR influences the perception of the brand. As for the previous one, for H1.3, the regression is statistically significant with a p-value of $0.005 < 0.05$ this time. This last simple linear regression is slightly more explanatory than the previous one because the R2 equals 0.096. The perception of CSR, therefore, explains 9.6% of the perception of quality. The hypothesis is verified, and the null hypothesis is rejected. The results are summarized in Table 4.

There is a more substantial positive impact on consumers' perception of CSR on their purchasing intentions, perception of the brand, and perception of quality for older consumers compared to younger ones. In this second hypothesis, we sought to determine whether the age of consumers is a moderating factor in the relationship between purchase intentions, brand perception, and consumers' perception of quality and their perception of CSR. Note that as for Hypothesis 1, we have three sub-hypotheses that will each be tested with the same method.

H2.1 supposes a more substantial positive impact on the influence of consumers' perception of CSR on their purchasing intentions for older consumers compared to younger ones. For this first moderation, we observe for the Student's test a p-value of

Table 4 Results for the hypothesis H1.1–H1.3

	Instant. B	Coefficients Std. Errors	Stand. Coeff. Beta	t	Sig.	95.0% Confidence interval for B	
						Lower Bound	Upper Bound
H1.1 Consumers' perception of CSR influences their purchasing intentions	3.766	0.803		4.689	0.000	2.167	5.366
PCSR	0.266	0.207	0.145	1.288	0.201	−0.145	0.677
H1.2 Consumers' perception of CSR influences their perception of the brand	3.472	0.675		5.145	0.000	2.128	4.816
PCSR	0.398	0.174	0.253	2.291	0.025	0.052	0.743
H1.3 Consumers' perception of CSR influences their perception of quality	2.188	0.715		3.060	0.003	0.764	3.611
PCSR	0.525	0.184	0.310	2.858	0.005	0.159	0.892

Source: Author's illustration

0.2512, that is to say, greater than 0.05. Our test is therefore not significant, and the age does not have a moderation effect in the relationship between perception of CSR and consumer purchase intensions. We therefore, cannot accept this hypothesis because our results do not allow us to reject the null hypothesis.

H2.2 assumes a more substantial positive impact on consumers' perception of CSR on their perception of the brand for older consumers compared to younger ones. Our second hypothesis is also not statistically significant because we observe a p-value of 0.7509 for the test. Age is therefore not a moderator in the relationship between the perception of CSR and the brand's perception.

H2.3 postulated a more substantial positive impact on the influence of consumers' perception of CSR on their perception of quality for older consumers compared to younger ones. Our last sub-hypothesis also turns out not to be significant. We observe in our results a p-value of 0.8481 for the Student's test, which is well above the significance level. Once again, there is no rejection of the null hypothesis, and our hypothesis H.2.3. is therefore not verified.

For this third hypothesis, we proceed exactly in the same way as for hypothesis 2. We also performed the tests with PROCESS with the same dependent and independent variables and this time tested the sex of the consumers as a moderating variable.

H3.1 There is a more substantial positive impact on the consumer's perception of CSR on their purchasing intentions for women compared to men. We observe in our results a p-value of 0.1723 > 0.05. The test is not statistically significant, and

therefore we cannot say that gender is a moderator in the relationship between the perception of CSR and the purchasing intentions of consumers.

H3.2 There is a more substantial positive impact on the consumer's perception of CSR on his perception of the brand for women compared to men. For this second sub-hypothesis, our results show a p-value of $0.3979 > 0.05$. Once again, our test is not meaningful, and we cannot reject the null hypothesis.

H3.3 There is a stronger positive impact on the consumer's perception of CSR on his perception of quality for women compared to men. The results of the third hypothesis also allow us to observe that the test is not significant. We notice a p-value of $0.4230 > 0.05$. In this case, our hypothesis H.3.3. cannot be accepted either because there is no rejection of H0.

Like hypotheses H2 and H3, this fourth hypothesis aims to determine the profile of consumers most sensitive to CSR. The process used for the test is, therefore, again the same.

H4.1 There is a more substantial positive impact on consumers' perception of CSR on their purchasing intentions for consumers with a higher level of education. We observe that this moderation is not statistically significant. We observe a p-value of the Student's test, which is equal to $0.3239 > 0.05$. There is no rejection of the null hypothesis; therefore, our results indicate that the level of education, i.e., is not a moderator in the relationship between consumers' perceptions of CSR and purchasing intentions.

H4.2 There is a more substantial positive impact on consumers' perception of CSR on their perception of the brand for consumers with a higher level of education. For this second sub-hypothesis, our results indicate the same elements. The p-value is 0.9270, which is well above the significance level of 0.05. This moderation is therefore not statistically significant, and we cannot reject the null hypothesis.

H4.3 There is a stronger positive impact on consumers' perception of CSR on their perception of quality for consumers with a higher level of education. Once again, we observe that the test is not significant. The p-value is $0.1797 > 0.05$. So we also cannot reject the null hypothesis and accept H4.3. Therefore, the level of education has no moderating effect on the relationship between the perception of CSR and the perception of quality of consumers.

This hypothesis will be split into three sub-hypotheses which will be tested like the moderations above with the PROCESS functionality.

H5.1 The higher the CSR expectations of consumers, the more positive the impact on consumers' perception of CSR on their purchasing intentions. We observe that the p-value of the Student's test is 0.5309, which is greater than 0.05. The test is therefore not statistically significant, and we cannot reject the null hypothesis. Therefore, consumers' expectations in terms of CSR are not a moderator in the relationship between the perception of CSR and consumers' purchasing intentions.

H5.2 The higher the CSR expectations of consumers, the more positive the impact on consumers' perception of CSR on their perception of the brand. We observe that CSR expectations do not have a moderating role in the relationship between CSR perception and consumers' brand perception. Our results indicate a

Table 5 Results for the moderations of the perceived credibility

Situation	Dependent variable (Y)	Independent variable (X)	Moderating variable (M)	Significance	P-value
1	Purchase intentions	CSR perception	Credibility 1	Significant	0.0001
2	Purchase intentions	CSR perception	Credibility 2	Insignificant	0.3348
1	Brand perception	CSR perception	Credibility 1	Insignificant	0.5111
2	Brand perception	CSR perception	Credibility 2	Significant	0.0063
1	Quality perception	CSR perception	Credibility 1	Insignificant	0.6623
2	Quality perception	CSR perception	Credibility 2	Insignificant	0.4544

Source: Author's illustration

p-value of $0.0877 < 0.05$. The test is therefore not statistically significant, and we cannot reject the null hypothesis.

H5.3 The higher the CSR expectations of consumers, the more positive the impact on consumers' perception of CSR on their perception of quality. Our last sub-hypothesis presents results similar to those of the previous two. Moderation is not significant because we can read a p-value of $0.1370 > 0.05$. We, therefore, cannot accept H5.3 because there is no rejection of the null hypothesis.

For hypothesis H6, we have grouped the results of the other moderations in Table 5. To test this hypothesis, we presented two communications to the respondents to evaluate, one of which is supposed to be more credible and the other less. We, therefore, made the moderations for each of the three independent variables in the two situations.

We note, based on our results, that four out of six tests are not significant. Only two of our moderations are meaningful, provided we reach a certain threshold. We note that for situation 1, credibility is a moderator in the relationship between the perception of CSR and the consumer's purchasing intentions. However, its effect is only significant when the credit score is below 70%. If credibility increases and exceeds 70%, this effect is no longer significant.

Our results also indicate that in situation 2, credibility has a moderating role in the relationship between the perception of CSR and the perception of consumers' brands. This effect becomes significant only after a credibility score of 75% and becomes more pronounced with an increasing score. On the other hand, if the score is less than 75%, the moderation is no longer significant.

For hypothesis H7, the methodology is the same as for H6. We have also grouped the results of the moderations in Table 6.

Our results indicate that four out of six tests are not significant. We note that the two significant moderations are those carried out with the same independent and dependent variables as the H6. First, we note that for situation 1, perceived motivations are a significant moderator in the relationship between the perception of CSR

Table 6 Results of the moderations for the perceived motivations

Situation	Dependent variable (Y)	Independent variable (X)	Moderating variable (M)	Significance	P-value
1	Purchase intentions	CSR perception	Motivations 1	Significant	0.0001
2	Purchase intentions	CSR perception	Motivations 2	Insignificant	0.422
1	Brand perception	CSR perception	Motivations 1	Insignificant	0.8975
2	Brand perception	CSR perception	Motivations 2	Significant	0.0093
1	Quality perception	CSR perception	Motivations 1	Insignificant	0.3929
2	Quality perception	CSR perception	Motivations 2	Insignificant	0.3318

Source: Author's illustration

Table 7 Frequency table for H8

		Frequency	Percent	Valid percent	Cumulative percent
Q8.1					
Valid	Yes	66	83.5	83.5	83.5
	No	13	16.5	16.5	100.0
	Total	79	100.0	100.0	
Q8.2					
Valid	Yes	50	63.3	63.3	63.3
	No	29	36.7	36.7	100.0
	Total	79	100.0	100.0	

Source: Author's illustration

and the consumer's purchasing intentions if the motivations score is less than 40%. When the motivations exceed this threshold, the effect is no longer significant.

Second, it appears that in situation 2, the motivations have a significant moderating effect in the relationship between the perception of CSR and the perception of the brand of consumers. However, this effect becomes significant only from a motivation score of 70% and intensifies if this score increases. If the score is less than 70%, then the effect is no longer significant.

In order to answer the H8 hypothesis, we once again presented two situations to our respondents. The first is a fictitious communication on a social network that is solely advertising and therefore not relating to CSR; the second is also a fictitious communication on a social network that relates to CSR and evokes donations of products to an association. We then asked if respondents interacted with this type of content at least once a month to set a limit and see if there was a noticeable difference. The objective was, therefore, to compare the number of "yes" for each situation. First, we made a frequency table in Table 7.

Based on this table, we observe an increase in the number of "yes" between situation 1 (no CSR) and situation 2 (CSR). It goes from 13 to 29. That is to say, from 16.5% to 36.7% of "yes." However, even though this table of frequencies

Table 8 Influence of purchasing intentions on commitment

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1	Pintentions	−0.053	0.156	0.113	1	0.736	0.949
	Constant	0.117	0.616	0.036	1	0.849	1.124

Source: Author's illustration

Table 9 Influence of the brand perception on engagement

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1	Pbrand	0.591	0.235	6.310	1	0.012	1.806
	Constant	−1.444	1.120	1.661	1	0.198	0.236

Source: Author's illustration

informs us that there is an increase, we do not know if it is statistically significant. For this, given that they are qualitative variables, we secondly carry out a Mc Nemar test derived from Khi2. The p-value of the test is equal to 0.001, so it is less than 0.05. There is a rejection of the null hypothesis, and we can therefore conclude that there is a statistically significant difference in the engagement elicited by a communication relating to CSR or not.

H9: Purchase intentions, brand perception, and quality perception influence engagement on social media. To test this hypothesis, we asked our respondents to answer "yes" or "no." We will therefore test our hypothesis with a binary logistic regression. This hypothesis can also be broken down into three sub-hypotheses. Firstly, H9.1 Purchase intentions influence engagement on social media. The results for this hypothesis are displayed in Table 8.

The results of our regression indicate a p-value of 0.736, which is greater than 0.05. The test is therefore not significant. We, therefore, cannot reject the null hypothesis and do not accept H9.1. Our results do not support the conclusion that is purchasing intentions influence engagement on social media. The second sub-hypothesis was formulated as follows, and the results are displayed in Table 9. H9.2 Brand perception influences engagement on social media.

We observe that in this regression, a p-value of 0.012 < 0.05. Therefore, our regression is significant, and we can accept the hypothesis that consumers who have a good perception of the brand interact more on social networks. H9.3 Perception of quality influences engagement on social networks. For this third test, the p-value is more significant than 0.05, with a value of 0.678. Our test is therefore not significant. Based on our results, we cannot reject the null hypothesis and therefore cannot say that brand perception influences consumer engagement on social media. The results are described in Table 10.

H10: Purchase intentions, brand perception, and quality perception are more influenced by environmental type communications than social type communications. For this last hypothesis, H10, we asked our respondents directly if they were influenced differently depending on the type of CSR subject. We asked the 75 respondents who answered yes to rank in importance six themes relating to

Table 10 Influence of the perceived quality on engagement

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1	Pquality	0.077	0.186	0.172	1	0.678	1.080
	Constant	0.508	0.808	0.395	1	0.530	1.662

Source: Author's illustration

Table 11 Average score of the CSR influence

Theme	Theme title	Average score
1	Preservation of the environment (zero waste, recycling, reforestation)	4.13
2	Defense of animals (No testing on animals, support for NGOs that defend animals)	3.88
3	Organic and/or natural and/or vegetarian/vegan products	3.49
4	Fairtrade ingredients and employee well-being	2.93
5	Support for various NGOs and intervention in disaster situations	2.43
6	Fight against discrimination such as immigration, the black community, the LGBT community, or others	1.77

Source: Author's illustration

CSR, three environmental themes, and three social themes. The aim of this is to see which subjects have the most impact on consumers.

This time we did not divide the hypothesis into three. Purchase intentions, brand perception, and quality were taken into account as a whole. We asked respondents if they were influenced differently depending on the CSR topic. Looking at the proportions, we find that most of our sample says this is the case. 75 out of 79 respondents, or 94.9% of them answered "yes." From a managerial point of view, it seems interesting to know which subjects consumers seem to be most sensitive to. We asked them to rank six CSR themes in order of what most impacts their purchasing intentions, perception of the brand, and perception of quality. These six themes were written based on the elements analyzed on the websites of cosmetics brands.

For each topic, we then calculated an average score based on the responses obtained. To do this, we assigned for each respondent, according to their ranking, a score of 6 for the topic that was chosen first, a score of 5 for the topic chosen in the second position, … then finally a score of 1 for the last chosen theme. We then calculated the averages for each topic based on these scores. This allowed us to establish an overall ranking of the six themes. Theme 1 is the one that generally obtained the best scores. The results are shown in Table 11.

We observe that themes 1 and 2 are tied and chosen 25 times each as the most important. Eighteen respondents chose the theme in the first position. Themes 3, 4, and 5 are well behind and were chosen respectively 2, 4, and 1. Our results, therefore, show that it is the subjects relating to the environment that are widely chosen as being the most influential on the perceptions of our consumers, and we, therefore, confirm our hypothesis.

4.3   Conclusions

In the field of marketing, much work has focused on the link between the communication of socially responsible actions by companies (Bhattacharya and Sen 2004) and consumer perception (Swaen and Vanhamme 2004). For example, Maignan and Ferrell (2001) test consumers' different perceptions of CSR in different countries (the United States, France, and Germany). Recently, based on previous work, Lindgreen et al. (2012) demonstrate, in a case study, that a company can develop a brand strategy based on CSR. The development of a brand CSR would, in this case, be similar to that of corporate CSR. Current measures concentrate on this perceived CSR. However, during the buying process, consumers tend to value brands more than the companies themselves. In addition, the perceived CSR measures available globally assess the expectations of all stakeholders, thus partly obscuring those of consumers.

Perceived CSR is then conceptualized as a multidimensional construct (Swaen and Chumpitaz 2008). Among the corresponding measures, that of Sen and Bhattacharya (2004), adapted from Maignan et al. (1999), is the most used in the context of the perception of socially responsible initiatives of the company towards its stakeholders. It encompasses four dimensions: philanthropic responsibility, respect for the environment, respect for workers, and respect for consumers. The perceived CSR has made it possible to highlight the critical role played by the perceptions that consumers have of companies' efforts to integrate social and environmental demands. Garriga and Melé (2004) notably demonstrated that CSR perceived by consumers influences the reputation of companies and the confidence they inspire. In this sense, CSR is considered signals sent by the company to reduce the uncertainties that weigh on consumers' purchasing decisions and therefore strengthen confidence (Swaen and Chumpitaz 2008). CSR initiatives generate positive perceptions and evaluations of the quality of the company's products, which also reflects on the trust placed (Maignan et al. 1999).

CSR not only explains boycott behavior but also, in favorable terms, socially responsible purchasing behavior. This appears to be mainly explained by the performance of CSR (Webb et al. 2008). On the other hand, the abundant literature on the brand-consumer relationship shows that in his mind, it is instead the brand that plays a preponderant role and determines his attitude and behaviors (Binninger and Robert 2011). The consumer may establish a relationship with a given brand without knowing the company that manages it, especially if it is a multi-brand company (Lindgreen et al. 2012).

The results from our case study confirmed that regularly including aspects of CSR in marketing communication helps establish more dynamic relationships with the customers, improve the brand's perception, and increase shopping intentions. Socially responsible marketing is becoming an inseparable part of a brand's communication. Customers' expectations are becoming more demanding in terms of information transparency, ethical and ecological production, and the approach to

durable development. Companies and brands thus need to embrace these principles and constantly prove to the customers that they adhere to them at any time.

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Algorithms: The New Leaders of the Advertising Market

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Abstract Digital advertising evolves in an increasingly dynamic context and therefore finds itself in perpetual change. Advertising success increasingly relies on targeting and personalization capabilities that require strong skills in collecting and processing user information and data. However, these practices carry risks for Internet users since personal and potentially sensitive data on their lives can be exchanged without actual knowledge or consent on their part. While the targeting and the precision with which the advertising algorithms deliver content, users' interest in the marketing content decreases. Thus the main question is, what are the causes of this lesser effectiveness of online advertising. In this chapter, we analyze the effects of programmatic advertising on the perceptions of advertised content and user attitudes toward the protection of personal data.

While digital platforms are a major cultural and economic issue (Srinivasan and Venkatraman 2017), they have revealed a new essential resource in the global digital landscape: algorithms and data. At very high speed, a growing number of fields—culture, sport, and information, medicine, transport, territories, and even finance—are now equipped with increasingly efficient algorithms (Ye et al. 2020). They organize and structure information, help make decisions, or automate our daily lives. In order to justify the development of these predictive tools, the promoters of Big Data disqualify the relevance of traditional non-automated intermediaries. In the advertising market, the players in the sector and, in particular, the traditional media are facing profound changes brought about by new intermediation mechanisms whose performance is closely linked to the control of data. It thus appears that these actors, American for the most influential (Google and Facebook in particular), occupy a central function on the market of digital advertising by controlling, in particular, the collection and the management of the personal data making it possible to optimize the customer relationship and the match between advertisers and

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consumers (Miralles-Pechuán et al. 2018). The activity of these new services is thus based on their ability to collect data and use it to make the system more efficient. The more the number of participants grows, the more the volume of information about them increases. Thus, mechanically, the more attractive the service, the more it will increase its efficiency, a phenomenon called data-driven network effects (Braverman 2015).

The rise of the collection of personal data is taking place in a globalized and deregulated economy that favors the extreme concentration of resources around a handful of actors, partly explaining the domination of a duopoly formed by Google and Facebook on the market. Therefore, these integrated advertising platforms seem to disqualify the traditional players in the advertising market (Chernyshova 2021). First of all, unlike "classic" advertising, these advertising devices allow a much higher degree of targeting and personalization while allowing advertisers to configure their advertising campaigns through automated modules and a variety of new settings (temporality, center of interest, budget allocated per day, geographical location). The ad servers of these platforms record each action in real-time, allowing advertisers to optimize their advertising insertions and monitor their campaigns: they can, for example, know the precise profile (age, gender, level of education) and the geographic location of people clicking on the advertisement using dedicated software or applications made available by the platform manager. Also, their ability to collect data over time and use it to make the system more efficient has allowed Google and Facebook's advertising platforms to proliferate until they dominated the global digital advertising market disproportionately (Bohannon 2015).

The advantages of programmatic advertising have already been addressed by many authors before (Shehu et al. 2020). The precision of targeting, possibilities of personalization, the array of formats advertisers may use, real-time order and delivery, user tracking all these characteristics make programmatic advertising a very efficient marketing tool. Algorithms, machine learning, and artificial intelligence can exploit the available personal information to the maximum potential. However, despite these advances in online advertising, it appears that Internet users have started to be inert, especially to some types of ads, such as display banner ads (Köster et al. 2014). Previous research suggests that users may also perceive online advertising as very intrusive and lead to intentional avoidance (Youn and Kim 2019). In the following paragraphs, we focus on providing detailed insights into the functioning of online advertising systems. The technical aspects are then completed with data related to user perceptions and reactiveness collected from 100 millennials.

1   Data-Based Advertising

Analysis of Google and Facebook through the prism of the industrial economy reveals the existence of several levels of platforms reflecting the multiverse nature of their activities. The service architecture and the inherent network effects make it

possible to relate them to the platform model. The advertising part of their activity also deserves the same name. Even if it cannot be dissociated from the other activities of these international groups, their mode of operation is also based on the main structuring features of a platform such as the linking of several sides, the presence of an effect of critical networks as well as the sophistication (reflecting actions to improve and perfect an object or device using advanced techniques) and the industrialization of advertising insertions bear witness to this trend. The platforms thus provide an open infrastructure for these interactions and define the conditions and the management of the relations between the two slopes (Rodrigues 2019). These digital platforms, driven by technology and sophisticated software tools, which link more and more finely and quickly several categories of actors (generally two sides, advertisers and publishers for platforms related to digital advertising), allow in many areas outclass traditional organizational models. The platform is often opposed to the market model and its linear functioning (Hagiu 2007). Thus, although the intermediation market is not a new phenomenon, the digital economy has made it possible to generalize the model to many parts of the economy. The device then makes it possible to link two sides through a matching system which is at the heart of the value creation of a platform. Given its modularity and openness to the outside, a competitive platform largely depends on the value created by third-party players. It is precisely in this that the platform is above all an intermediation agent (in the sense of putting actors in touch): it thus fulfills certain economic functions, which are both informational (research tool and prescription) and transactional (payment security, logistics management) (Xu and Lee 2020).

In this process, data constitutes a fundamental dimension of the model: the more the platform works on its system using algorithms to collect, organize, sort, analyze, and interpret the data, the more precise the filters, the more relevant and valuable the information exchanged will be. Moreover, thus more effective will be the pairing between the different slopes. Therefore, these platforms must have an explicit data acquisition strategy (Dhar 2017; Wilson 2004). The multiverse nature (two-sided or multi-sided market) of these advertising systems thus refers to another constitutive element of the platform model: network effects and the capture of network externalities by the platform manager.

The distributed nature of advertisers using Google and Facebook's advertising platforms appears to be a structuring element of their success: their strategy does not aim, unlike many other industrial strategies, at integrating, within a single entity, the various functions and activities of a given sector, but, on the contrary, seeks to promote modularity and the plurality of associated actors. Also, with these platforms, the nature of the advertising offer changes. It is now unlocked, the unused capacity (spare capacity) is used. While the media have operated on a structured offer (an inventory), these new platforms operate on an outsourced offer. As we have explained, the intrinsic value of the platforms of Google and Facebook lies mainly in the network effects that it creates (Lin et al. 2021). These, by creating self-reinforcing feedback loops, increase their user base often with a minimum of effort or investment for the platform manager (especially for leaders, winner-take-all markets). An advertising platform's effectiveness is partly based on its ability to

attract advertisers and users who are widely dispersed geographically. This characteristic allows platforms to attract both local advertisers and multinational companies. The network effects, for the most competitive platforms, are therefore part of an international dimension. This is why traditional advertising networks essentially structured from national territories can often not compete with the local and international power of platforms like Facebook. and Google. This point also explains the intensification of concentration in the digital advertising sector (Ji et al. 2016).

It seems important to review the evolution of digital advertising to understand better and identify the current situation. Since the 1990s, digital advertising has been based on two main levers, namely Search Engine Advertising (SEA or search), linked to search engines through the purchase of keywords (Google's AdWords program, for example, largely dominates the French market), and display, which designates forms of digital advertising using graphic or video elements. In the case of display, targeting by placement (through the choice, by the advertiser, of sites or web pages likely to attract users sensitive to its offer), contextual (through the choice, by the advertiser, keywords and themes linked to its products or offers) or socio-demographic have long been the only modalities made available to advertisers. The growing complexity of purchasing journeys and the ever-growing need for more relevant targeting have gradually given personal data singular importance. The evolution of the so-called display advertising is a good illustration of the rise in data within digital advertising from the 2000s, with a remarkably sustained intensification during the 2010s and the appearance of programmatic advertising (Shehu et al. 2021).

These new players in the advertising field, linking IT and intermediation, also offer a match between an inventory (of advertising spaces) offered for publishers (content or service providers) and advertisers. The functioning of the advertising marketplaces known as the Ad Exchange Platform is a good illustration of the sophistication and industrialization of the digital advertising market. The objective is to connect two sides, publishers (SSP—Supply-Side Platform) and advertisers (DSP—Demand-Side Platform), and thus reach a very targeted audience (Real-Time Audience) via a pricing system based on auctions. In real-time (Real-Time Bidding) (Sayedi 2017), the operators of these platforms (SSP or DSP) can be independent (there are about fifteen active in France), while other companies, such as Google (Double Click) and Facebook (Atlas), are both SSP and DSPs. The latter thus offer a complete Ad Exchange (Lee and Johnson 2013). Buying on Ad Exchange platforms is a new business that requires a technical infrastructure to monitor the flow of impressions, evaluate impressions, choose a bid, and then serve an ad.

These advertising platforms thus authorize transactions that were previously impossible for both practical and budgetary reasons. The AdSense program launched by Google thus allows a host of content producers (websites, blogs, forums) to offer advertising space on a whole section of the Web for which site or application managers did not have the necessary human and financial resources to manage an internal advertising network. The automated matching offered by AdSense between a multitude of advertisers (small or large) and a myriad of sites (often with a limited audience) has resulted in a significant reduction in the costs of the meeting between

advertising supply and demand. This type of market structurally leads to very concentrated markets because the externalities and network effects mentioned above largely favor the most potent players capable of managing an extensive inventory and user base (Perez-Latre 2007).

Innovation linked to behavioral targeting thus contributes to transforming the operating logic of advertising activity (Breznitz and Palermo 2013). While traditional advertising can reach vast numbers of people, some of whom are in the jargon of "wasted exposures" advertising, ad servers have the potential to direct specific messages to specific people. Therefore, programmatic purchases are part of this trend and are causing profound upheavals that are reconfiguring the advertising and media industry. A few years ago, when an advertiser wanted to buy advertising inserts on various media, agencies and advertisers had to negotiate with salespeople. The administrative burden and lack of advertising efficiency (mainly because of a lack of targeting criteria) have led the profession to move towards programmatic purchasing. The latter thus characterizes purchases made through software that automates the transaction processes: selection of advertising spaces, the definition of prices. Therefore, they are associated with using an algorithm to purchase its space instead of the traditional process involving negotiations, back and forth of media plans, and manual insertion orders (Busch 2015).

By automating the digital inventory buying process, some major media outlets like the New York Times have automated the media buying process and streamline their sales force. In 2015, for example, the American newspaper decided that all purchases of simple banners on its sites and applications would henceforth be possible only in programmatic mode and that it would mobilize its small sales team on large accounts. Publishers generally distinguish prime (or premium) advertising space from others. The marketing of the so-called premium spaces generally remains internalized, while second-tier spaces are sold from technological platforms (Ad Exchange). Note, however, that this distinction tends to fade, as evidenced by the significant rise in programmatic advertising across the market (Hampel et al. 2012).

The "bottleneck" linked to the scarcity of advertising space on the major media has thus been loosened thanks to these platforms, which have considerably reduced the logistics costs linked to the broadcasting, distribution, and matching of advertising spaces. Furthermore, the very nature of the programmatic market requires in-depth knowledge of users, and its effectiveness only grows by collecting and processing an increasing amount of data. With the sophistication of digital advertising networks, we are thus changing the paradigm, moving from an advertising space valued for the content in which it is inserted to a valuation based on the relevance of the profile that will consult this content. A new configuration is taking hold, in which the large-scale exploitation of data directs content publishers towards a role of commodifying the behavioral data of its audience (Liu-Thompkins and Malthouse 2017).

2 Advertising Duopole of Facebook and Google

Significant programmatic advertising and behavioral targeting players have been created outside the media field and fall within technical engineering (Boerman et al. 2017). The efficiency linked to mastery of data has led the traditional media to collaborate with this new kind of intermediaries. Many digital advertising specialists believe that the Ad-Exchanges model will be generalized to all online advertising and even to certain traditional media (radio, television) in their digital version. They also anticipate a continued concentration of traffic around the most important players, including Double Click (Google), AppNexus (independent platform, which is nevertheless 20% owned by Microsoft), and Atlas (Facebook) (Lallement et al. 2014).

Compared with the main competitors, Google and Facebook have colossal financial resources, giving them disproportionate market power compared to "traditional" players essentially structured around national territories. This power allows them to erect very high barriers to entry into the digital advertising market by investing heavily in research and development and infrastructure, ensuring them a technological advance (Roy et al. 2017). The duopoly's maneuvers based on the large-scale redemption of competitors and startups with high growth potential are another illustration of this. Google and Facebook have thus taken advantage of their lead in this area to free themselves from industry intermediaries by withdrawing their offer from competing Ad Exchange platforms. By acquiring the company DoubleClick in 2007, Google had thus well anticipated this market orientation towards programmatic advertising. Also, to buy impressions on the Google display network, an advertiser has no other choice than to go through two Google DSPs: AdWords or DoubleClick Bid Manager (DBM). Each Ad Exchange provides access to different inventories: Google's DoubleClick Ad Exchange provides Google's display inventory (Google Display Network, AdSense, and YouTube). The AdWords program can also be linked to programmatic advertising since it is also based on an automated purchase. In contrast, AdWords is limited to a specific publisher, and a keyword buying campaign cannot fit into a multi-channel programmatic buying. In the case of search, the AdWords program can be considered the proprietary DSP of the Google search engine, allowing advertisers to place their ads at the top of the Google results page. Other platforms, such as DoubleClick Search (also owned by Google), allow ranking on Bing, Baidu, and Yahoo engines, in addition to Google (Jarvis 2009).

Regarding user traceability, Google is a benchmark, in particular, thanks to its many free services, which allow Internet users to manage all their digital activities (research, news, music, videos)—messaging by a single user account). This range of services allows Google to offer increasingly sophisticated and complete advertising solutions: since January 2017, advertisers can, for example, target their advertising on YouTube by taking into account the user's history on the engine, Google search. In addition, users of DoubleClick Bid Manager, Google's DSP, have free access to targeting criteria (and individual segments) available on the Google Display

Network, such as affinity audiences if purchases are made on the Google Display Network (Aonghusa and Leith 2016). The data is, therefore, sometimes accessible, but there is always a charge for its use. This same logic also favors the use of DoubleClick, which includes a solution for each step of the implementation of a campaign: the hosting of creations is done from the DoubleClick Campaign Manager (Google's Ad Server); the purchase of space takes place on DoubleClick Bid Manager, delivery is on DoubleClick AdExchange (the inventory for which Google administers ads), and the impact of advertising campaigns on the advertiser's site is measured by Google Analytics (Google's site-centric measurement tool). Apart from the financial aspect (low commission on purchases by the Google DSP), advertisers also find it of marketing interest, with the possibility of understanding the journey of Internet users on a wide range of terminals and platforms thanks to the unification of data. It thus becomes possible to optimize the campaigns and their impact for the different screens, channels, and formats, from the online from the campaign to its impact on the site. We thus control the media parameters (deduplicated coverage of Internet users between the different sites and platforms, control of repetition) (Kritzinger and Weideman 2015).

An individual is embodied by a cookie (or even a set of cookies). The only exceptions to this principle are environments where it is mandatory to connect (with an e-mail address) to use the service: this is what makes the advertising force of Facebook and Google, which can dispense with the logic of cookies through accounts held by individuals on their platforms. This is a considerable advantage over the competition. This is why Facebook bought the Ad Server Atlas in 2013: Facebook's Atlas technology tracks an individual using a system based on the Facebook ID, not a cookie. In this configuration, Facebook forces its tracking solutions to measure campaign performance: it is therefore not possible to use a third-party Ad Server in the case of Facebook campaigns (Cabañas et al. 2021).

Very detailed knowledge of their users appears to be another fundamental element in understanding and determining the success of the two American giants. Facebook bases its strategy on its Newsfeed device, which prioritizes the appearance of information in the news feed of its users based on algorithms that consider the interactions between users and the platform, such as likes, shares, comments, or links between users. On the content production/distribution side, the algorithms consider several criteria, such as the format, the popularity of the content provider, the popularity of its previous publications. The goal is to provide an architecture that optimizes both user experience and advertising revenue (Gill et al. 2013).

At the same time, this technological maturity has given rise to new approaches to the relationship with the consumer, inspired in particular by the concept of permission marketing, popularized by Seth Godin (2007). The principle is based on a relationship of "trust" between the consumer, who agrees to reveal his tastes and interests, and the platform, which undertakes to offer him the most attractive and appropriate offer concerning his expectations. Facebook knows its users very subtly thanks to the information they more or less voluntarily leave on the platform. Users often fill in their profile exhaustively: training, position held, age, favorite series, and brands, and, at the same time, Facebook generates other data related to the

geographical location of connections or user actions. Each connection produces data: the more time the user spends and interacts with the platform, the more it can offer targeted advertising profiles to its advertisers.

The provision of tools for monitoring advertising campaigns to advertisers appears to be another constituent element of the domination of Facebook and Google in the digital advertising market. Advertisers have a battery of metrics available to assess the effectiveness of a campaign by measuring the actions of Internet users (click rate, engagement rate, conversion rate) and their profile (socio-demographic data). The flexibility is that some advertisers can launch several advertising messages and then focus on the one that achieves the best results (thus abandoning the less effective) (Bonsón and Ratkai 2013).

These globalized advertising networks also attract small advertisers (such as a neighborhood restaurant) and the most significant global advertisers, who can reach dozens or hundreds of millions of users through a single point of contact and a unified interface to track the effectiveness of a global campaign by country. In this configuration, it appears that the value for advertisers does not come only from the volume of users present on the other side, but above all, from the suitability of the audience with their objectives. Google and Facebook tend to offer more and more integrated advertising space purchasing solutions, and it is more and more challenging to distinguish DSP, Ad Exchange, and SSP as their advertising solutions are complete (the launch, in 2018, of the Google Platform Marketing service aimed at centralizing all of Google's advertising tools illustrates this orientation) (Szymanski and Lininski 2018).

3   Value Chain of Programmatic Advertising

Traditionally, the advertising value chain has included four main types of players: advertisers, agencies, media houses, and publishers. Advertisers bought ad space to promote their products or services. Their goal was to reach as many potential consumers as possible to boost their sales. The audience was a determining factor. The boards ensured the marketing of advertising space. The agencies acted as intermediaries between advertisers and the agencies responsible for designing, producing, and distributing advertising campaigns. Publishers broadcast advertisers' advertising. In the 1990s, online advertising was marketed directly: advertisers and publishers negotiated, and impressions were sold at CPM (cost per thousand displays) (Brügger and Milligan 2018). Then the agencies established themselves as intermediaries enriching their marketing discourse beyond the CPM by completing the contextual approach of socio-demographic targeting. Since the end of the 2000s, we have observed a transformation in digital marketing, notably with programmatic purchases, which involve the purchasing process's automation through software and algorithms. Programmatic platforms thus allow companies to automate their buying and selling advertising space by freeing themselves from media agencies traditionally acting as intermediaries between advertisers and advertising agencies. The data

and the objective of greater personalization are at stake. There are three categories of data: first-party data (information collected from the advertiser side), second-party data (data collected by a partner of an advertiser and available for free or no), third-party data (data marketed by data suppliers) (Yuan et al. 2014).

According to Sayedi (2018), programmatic purchasing is a new method of marketing online advertising space: it covers all advertising transactions carried out automatically and individually: it is the buyer who selects the impression and the profile on which he wishes to distribute. Programmatic buying can be done at an auction or fixed CPM, and programmatic buying may be unsecured or guaranteed. At its origin, there was real-time bidding (RTB). The RTB offers the possibility of buying advertising space at auctions to display the advertising of its choice in real-time and in an automated manner. It connects buyers and sellers of advertising via DSP (Demand Side Platform) purchasing and SSP (Supply Side Platform) sales technologies and sees the emergence of consulting companies specializing in purchasing (Trading desks) (Wang et al. 2017). These platforms can be open or constrained and rely on different technologies for buying and selling advertisements such as:

- **Demand-Side Platform (DSP):** optimization technology platform on which buyers can plan, target, execute, analyze a digital advertising campaign. It allows a trading desk (service company specializing in purchasing and optimizing programmatic space through DSP technology) or an advertiser via a centralized interface to buy in real-time and to auctions, display inventories offered by the various SSPs. In France, the leading DSP operators on the display market are DoubleClick Bid Manager (Google), AppNexus, MediaMath, dataXu, Adobe Media Optimizer, and Turn.
- **Supply-Side Platform (SSP):** a technological platform publisher can make their inventories available through an Ad Exchange. It is an arbitration platform between different buyers that optimizes a publisher's advertising inventory marketing and puts potential buyers in competition through an auction system. SSPs are based on "holistic yield" algorithms (yield management applied to the sale of advertising space) which offer the possibility of arbitrage between RTB and direct sales. The main SSPs for programmatic display are: Admeld (Google), AppNexus, Improve Digital, Pubmatic, and Rubicon Project.
- **Data Management Platforms (DMP):** a centralized system for collecting first or third-party data. It is an "advanced" database, and the information collected in this system makes it possible to develop advertising strategies by targeting Internet users, for example. The DMP is a technological platform that allows the processing and managing of anonymous data used for advertising targeting purposes such as social profiles.

New relationships are being established between the different actors, and data is now at the system's center. It seems that data is the lever on which the players position themselves as the pivotal firm in this ecosystem. SSP, Ad-Exchanges, and DSP are now at the heart of the system, and the discourse on digital transformation concerns traditional players and their means of claiming a place in the network

organization (Brügger and Milligan 2018). Programmatic advertising is structured around several tools and actors relying on digital to "streamline purchasing procedures." It is an open platform that offers digital advertising players the opportunity to innovate and offer new services to capture value. This is like the Ad-Exchanges, which market unsold products from both publishers and Ad-Networks or SSPs and DSPs, which have developed services that allow publishers and advertisers to sell better/buy ad impressions. Today, the challenge is to buy targeted impressions, with a given target dimension taking on more and more importance. These four types of actors now represent the central components of the platform. Third-party data providers are currently at the periphery, which could take a completely different place if DMPs prevailed in the competitive environment (Wang et al. 2017).

Programmatic advertising appeared at the initiative of pivotal firms, which, through their digital platforms, offered savings in transaction costs for players on both sides of the system: publishers (space providers) and advertisers (buyers of space). The automation brought by digital to purchase space from qualified profiles was very quickly successful, and programmatic purchasing gained much weight. Initially, in line with the theoretical work mobilized in the first part, the hub firms that developed the platforms captured the value by efficiently coordinating the purchase of space. To develop externalities, the players have chosen openness in order to guarantee the greatest possible interoperability. However, this choice should have been partly compensated by control mechanisms. For example, if the Android platform is qualified as a neutral platform because it is not characterized by tight control of the critical components that generate value or the customer base (Ballon 2009), the platform provides development kits and an essential point of passage for developers and users of applications.

While the theory suggests that the pivotal firms, at the origin of the platform, have the hand to design and guide the evolution of the ecosystem from which they are at the origin, the case of programmatic advertising illustrates a reality different. It seems that by facing the constraint of interoperability to fit into a complex ecosystem, Ad-Exchanges have failed to erect barriers to entry and protect themselves from a takeover by advertisers/publishers or the arrival of new entrants. This relates to a certain extent to a business model design problem. Programmatic advertising appeared at the initiative of pivotal firms, which, through their digital platforms, offered savings in transaction costs for players on both sides of the system: publishers (space providers) and advertisers (buyers of space). The automation brought by digital to purchase space from qualified profiles was very quickly successful, and programmatic purchasing gained much weight. Initially, in line with the theoretical work mobilized in the first part, the hub firms that developed the platforms captured the value by efficiently coordinating the purchase of space (Wang et al. 2017).

To develop externalities, the players have chosen openness in order to guarantee the greatest possible interoperability. However, this choice should have been partly compensated by control mechanisms. For example, if the Android platform (mobile telephony) is qualified as a neutral platform because it is not characterized by tight control of the critical components that generate value or the customer base (Brügger

and Milligan 2018), it masters development kits. It remains an essential point of passage for developers and users of applications.

In the case of programmatic advertising, the two sides are generally the poor relatives of the ecosystem built around a technological platform insofar as it is the platform that markets their assets without owning them and that it constitutes a point compulsory passage because it has access to customers. However, these slopes are, in reality, very aware of their situation, such as paying several times for the same space. They, therefore, seek to protect themselves, like the refusal to share too much of their data with agencies and trading desk for advertisers illustrated above and to work not to allow a single pivotal player to settle. Conversely, they develop agreements with several platforms (multi-homing) and, above all, try to renew relationships directly. While the theory suggests that the pivotal firms, at the origin of the platform, have the hand to design and guide the evolution of the ecosystem from which they are at the origin, the case of programmatic advertising illustrates a different reality. It seems that by facing the constraint of interoperability to fit into a complex ecosystem, Ad-Exchanges have failed to erect barriers to entry and protect themselves from a takeover by advertisers/publishers or the arrival of new entrants. This relates to a certain extent to a business model design problem (Alaimo and Kallinikos 2018).

4 Tracking Techniques

Online advertising relies on various mechanisms for collecting personal data and monitoring the activity of Internet users as they browse. This monitoring involves the use of tracking tools, a practice described by its detractors as "digital tracking" (Chen et al. 2016). The inventory of tracking mechanisms was also carried out by Ishtiaq et al. (2021).

The tracking of IP addresses, also called IP tracking, allows monitoring an Internet user's browsing based on the IP address received by each consultation terminal connected by the Internet (Boda et al. 2012). The IP address can be fixed but is more generally dynamic (e.g., change of address when restarting a home internet box). IP tracking, therefore, allows browsing to be tracked over a limited period. However, this tracking method works regardless of the terminal (personal computer, telephone) and Internet access software (browser, mobile application). The IP address also allows the geolocation of the terminal at the country level (with reliability close to 100%) of the city (with reliability not exceeding 90%) (Taylor et al. 2012). In particular, IP addresses are distributed by ICANN in batches; membership in a batch allows the organization or country corresponding to the address to be known.

The central technology of web tracking is the HTTP cookie. The cookie is a set of data sent by a web server to the web browser, which the latter then stores locally. Only the server that created the HTTP cookie can then re-read its content. In addition, cookies have a limited lifespan. In addition, they can be refused (on a

case-by-case or systematic basis) or deleted at the user's initiative (via the security settings of the browser). Suppose it can be used to manage connection or personalization on a website. In that case, the cookie also allows tracking for advertising purposes, i.e., it contains an identifier allowing the identification of the user (and therefore the reconciliation with personal data kept in the database by the management) or that it contains data relating to its browsing history. The potentially ephemeral nature of cookies has led to the development of techniques to ensure their persistence. We then speak of a respawning cookie, an evercookie, or even a zombie cookie. The principle consists in recreating an HTTP cookie after its deletion by relying on another storage device, either a Flash cookie (in reality, a local shared object or LSO) or a persistent storage mechanism in the browser such as IndexedDB (Chen et al. 2016). As Flash is no longer used by less than 3% of websites, the first device can be considered obsolete.

Cookie tracking has been supplemented by various fingerprinting methods, which can be used with web browsers (Ishtiaq et al. 2021) and smartphones. Concerning web browsers, the technique exploits the extreme variety of browser configurations (user agent and a list of fonts or extensions installed) and, more broadly, workstations (operating system, model of graphics card, graphics card, graphics card, graphics card, graphics card, graphics card, card driver version). Browser fingerprinting thus makes it possible to calculate the footprint of a browser-based on the specificities mentioned above, while canvas fingerprinting exploits the (minimal) differences in graphic rendering. More precisely, canvas fingerprinting consists in transforming into a lossless image, with the canvas API of the web browser, a character string constituting a perfect pangram (in order to maximize the diversity of rendering), then in recovering this image with the Javascript method ToDataURL, and finally to transform the image into a character string using base encoding. According to Acar et al. (2014), around 5% of sites ranked in the Top 100,000 Alexa used canvas fingerprinting, compared to around 2% for sites in the Top 1000 Alexa. Among the known users, we can cite the company AddThis, whose widgets are widely distributed and provide excellent coverage, i.e., 97.2% of the American population. Firefox implements canvas fingerprinting blocking by default since Firefox 58.

In practice, fingerprinting methods have also been used with phones (device fingerprinting). They are based, for example, on the use of data from monitoring the rate of battery discharge (battery fingerprinting) or movement sensors. In addition, mobile devices have been the subject of a new tracking method: tracking by ID (Al-Fannah and Mitchell 2020). Thus, each terminal iOS (IDFA: Identifier For Advertising), Android (GAID: Google Advertising ID), or Windows (WAID: Windows Advertising ID) has a unique and non-permanent identifier, therefore different from a phone number or a serial number, allowing terminal monitoring. The collection of personal data can lead to the identification of an individual during his navigation, either directly (authentication, ID) or indirectly by cross-referencing information. For example, in the extreme, the geolocation of an address coupled with a browser fingerprint can lead to identifying a particular individual if their home is located in an area (Kaur et al. 2017).

5 Protection by Law

The protection of personal data presents different approaches depending on the country and culture. Three main poles tend to emerge: the United States, China, and the European Union. The US model of personal data regulation focuses on the primacy of individual freedom, even associating privacy with concealment behavior and a source of inefficiency. China, for its part, allows massive fundraising for the benefit of both the state and businesses. It is also gradually putting a system of sanctions for "bad" citizens based on a social credit system in which each Chinese citizen is associated with a reputation score (Goldfarb and Tucker 2011). The European model diverged from the American model from the 1970s by establishing personal data protection as a fundamental freedom. This concept led to the application from May 25, 2018, of the General Data Protection Regulation (GDPR). The European model considers the power asymmetry between large organizations and citizens and ensures citizens' informed consent when collecting personal data. The GDPR is based on the principles of informed consent and the proportionality of the data collected about the purposes of the processing as communicated to the user. The notion of personal data in the broad sense includes directly nominative data (such as name and first name) and indirectly nominative data. Therefore, the regulation covers identifiers, location data, IP addresses, or cookies relating to a directly or indirectly identifiable natural person. This voluntarily comprehensive definition significantly reduces the room for maneuver of companies, obliged to ask the user for an explicit authorization before collecting personal data, henceforth unable to act in the shadows without risking harm (Geradin and Katsifis 2019).

6 The Mechanism of Online Advertising

The success of many businesses depends on advertising, and the advent of digital offers a host of new opportunities. After discussing the value chain of programmatic advertising and tracking techniques in the previous sections, we now detail how contemporary display advertising works and the role of its various intermediaries.

The display mechanisms have undergone several changes and have become more complex over time (Fig. 1). Initially, publishers (1) offered for sale the advertising spaces that were available on their sites. Advertisers and their agencies bought these. (2). The ease with which it is possible to target Internet users and follow their traces on the Web (browsing history, IP address, operating system, installed extensions) has given rise to new intermediaries (who can be grouped under the name of Ad platforms), and their interactions become more complex. Adservers (3a) are ad managers that allow advertisers to schedule their campaigns (formats, dates, tracking). On the publishers' side, adservers facilitate the management of a website's advertising inventories (3b). They also allow behavioral targeting or contextual as well as optimizing ad rotation. Ad-Networks (4) are advertising networks that
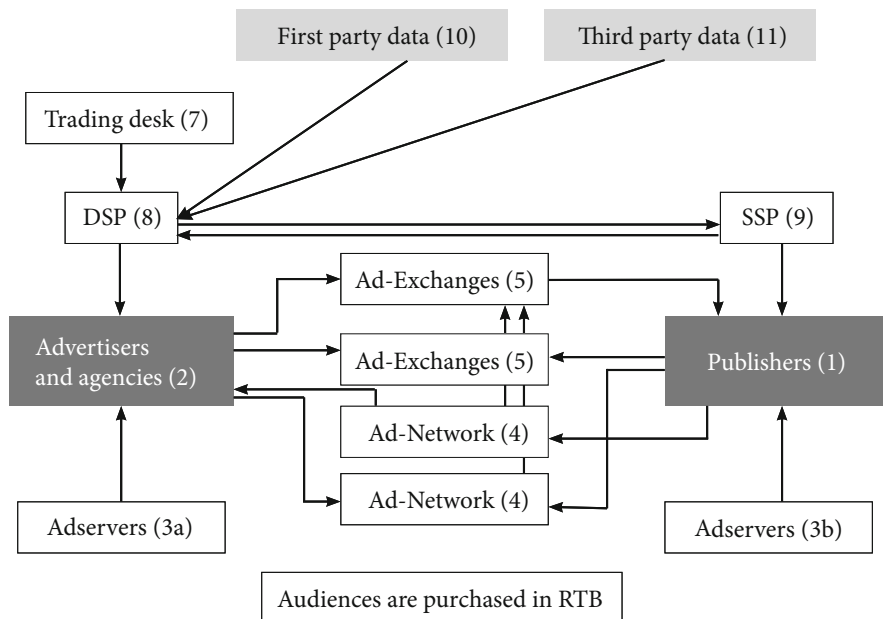
Fig. 1 The mechanism of programmatic advertising (Source: Author's illustration)

appeared intending to help publishers to market their advertising space. Ad-networks are thus akin to the sales representatives of publishers for whom advertisers purchase advertising space. Both advertisers and publishers can contact different ad-networks. These then specialize in thematic networks, on categories of Internet users, specific terminals, or even specific targeting technologies. Ad-Exchanges (5), which appeared following the increase in unsold space, allow the real-time purchase, distribution, and optimization of advertising space. They are open and automated marketplaces (Busch 2015). They are beneficial for both advertisers and publishers. Indeed, one enjoys space at reduced prices while the other liquidates its unsold space. Audiences are purchased in RTB1 (6), which means that display spaces are auctioned in real-time. The process typically takes less than 120 ms (Münstermann and Würtenberger 2015).

Programmatic advertising includes all the advertising campaigns associated with the use of software and algorithms. It, therefore, refers to technologies that automate the traffic and real-time placement of digital advertisements based on contracts negotiated directly between the parties (Li et al. 2018). Ad-Networks being able to sell space on Ad-Exchanges, on the one hand, and advertisers using several Ad-Exchanges to maximize their chances of obtaining the best space at the lowest cost, on the other hand, have led to the creation of new intermediaries to help with buying/selling: Trading desks (7), DSP2 (8), and SSP3 (9). Trading desks are consulting companies specializing in buying in RTB, while DSP and SSP are purchasing tools for advertisers (querying several Ad-Exchanges) and sales for

publishers (optimize the value of an inventory by bringing together several potential buyers). Finally, advertisers increasingly use Data Exchanges, or "brokers" of data to identify Internet users according to various criteria such as behavior, centers of interest, or demographic characteristics. The data acquired constitute the so-called third-party data (11). Advertisers will also use the data they have collected themselves, the so-called first-party data (10) (Chaffey and Ellis-Chadwick 2019; Estrada-Jiménez et al. 2017).

7 Analysis of the Negative Experience of Consumers with Display Advertising

Beyond the low click-through rates of the display, we observe that Internet users are increasingly opposed to the advertising they face while browsing. Security (30%), intrusive and interruptive nature of advertising (29%), increasing page load time (16%), too much advertising (14%), and privacy protection (6%) thus represent the five motivations most mentioned by Americans when it comes to installing ad-blocking devices (Statista 2021).

The section analyzes the negative browsing experience Internet users may have with display advertising in two steps: depending on what is and what is not visible to the user. Thus, particular attention is first paid to understanding the consumer behavioral response to display advertising and assessing its intrusive and interruptive nature. The chapter then focuses on browsing safety and privacy protection issues through the manipulation, management, and communication of personal data in bulk.

The intrusive and interruptive nature of digital advertising has been the focus of various studies since the early 2000s. Chatterjee (2001) established a model of user interaction with display advertising that can be summarized in three stages: pre-attention, attention, and finally, click-decision making. More specifically, a user visiting a web page where advertising appears is subjected to an advertising stimulus corresponding to the opportunity to see the ad. The Internet user will either interrupt the course of his actions to pay attention to the ad or ignore it and continue browsing. In the first case, he becomes aware of the announcement and is more likely to recognize it. The internet user shifts their attention from the editorial content to the ad and then decides whether the ad can spark their interest or not. Advertising information processing ends immediately if it refocuses on editorial content without clicking on the ad.

In the second case, the advertising information is processed unconsciously. This phenomenon is particularly recurrent, so much so that it has been named banner blindness since 1998. Eye-tracking studies are also dedicated to it. Thus, the thermal maps of Nielsen (2007) show that Internet users do not look at advertising banners and that the right column (where display advertising is often affixed) and everything else. Formats that may resemble advertising are routinely avoided (Rohrer and Boyd

2004). Various ad formats directly tackle this phenomenon by requiring the attention of the Internet user to the ad. This is particularly the case with pop-ups.

Edwards et al. (2002) thus focused on the perceived intrusiveness of advertising and the irritation that engenders advertising, leading to its avoidance. They defined intrusiveness as a psychological reaction to advertisements that interfere with a consumer's ongoing cognitive processes. Intrusiveness then refers to the phenomenon by which advertisements lead to adverse emotional reactions such as irritation. These emotional reactions can then lead to avoidance reactions. Cognitive avoidance is akin to an automatic and subconscious process by which the Internet user avoids looking at an advertisement. It is carried out without making a conscious decision or behavioral action on the part of the latter. Cognitive avoidance is opposed to the physical avoidance that results from the conscious decision of the Internet user, who will then resort to various mechanisms to avoid advertisements (Goldstein et al. 2013).

Physical avoidance is a reaction to a feeling of infringement or threat to freedom. Brehm's Reactance Theory states that any individual facing such a feeling will adopt a psychological reaction to restore the lost or threatened state of freedom (Brehm and Brehm 2014). Applied to advertising, reactance can have a boomerang effect, leading the consumer/internet user to react and adopt an attitude contrary to the effect intended by the advertiser. This is notably based on the reactance theory that Edwards et al. (2002) established that forced exposure to advertisements could lead to an intrusive perception of them (Pujol et al. 2015; van Doorn and Hoekstra 2013; Li et al. 2002).

The free fall in click-through rates and (CTR) and the scale of the "banner blindness" phenomenon led Cho and UTA (2004) to investigate the causes of internet user advertising avoidance and to assign it a first theoretical model. Through their study, the authors validated the contribution of three variables to advertising avoidance: the interruptive nature and the excessive nature of digital advertising and previous negative experiences. In terms of interruption, Internet advertisements, sources of noise or nuisance, can hinder the consumer's efforts to browse web content and disrupt the display of the page for the consumer, distracting him from editorial content or still interfering in his search for information. Thus, the greater the interruption is perceived to be, the greater the ad avoidance reaction. The exact causal reaction logic applies to perceived advertising clutter and negative prior experiences. Cho and UTA explain ad clutter as the number of banners, pop-ups, links that appear on a single web page. This excess advertising induces irritation among the Internet user or a perception that the Internet is exclusively an advertising medium (Cho and UTA 2004). Finally, unsatisfactory, unnecessary, or non-incentivized digital advertisements can be compared to negative prior experiences (Hervet et al. 2010).

McCoy et al. (2008) looked in more detail at the antecedents of the intrusiveness of digital advertising. With a definition of intrusiveness similar to that of Li et al. (2002), they validated the contribution of two characteristics to this perception of certain digital ads. Thus, advertisements obscuring editorial content, on the one hand, and the effort required to make them disappear, on the other hand, are two

factors leading to an intrusive feeling. This feeling then leads to irritation and influences the attitudes and behavior of the Internet user. Based on reactance theory, McCoy et al. (2017) were able to verify the impact of repeat advertising on consumers. It turns out that the frequency of exposure to an ad improves a consumer's attitude towards it. As a result, an Internet user will have a more favorable attitude towards a familiar advertisement than an unfamiliar one. However, the repeated exposure of advertisements (even if the Internet user appreciates them) that resemble repeated interruptions induces an increased feeling of intrusiveness. Repeating negatively perceived ads also amplifies the feeling of intrusiveness. Finally, McCoy et al. (2017) have validated the existence of a direct negative relationship between perceived intrusiveness and the attitude of the Internet user on websites.

This latter relationship was also established by Huang et al. (2018) when studying the importance of context/congruence on the effectiveness of display advertising and the resulting attitude of Internet users. Huang's study thus made it possible to underline that the more the content of the display ad is in line with that of the web page, the more the attitude towards the ad and the brand will be favorable. Reactance theory has also been used by Ying et al. (2009) to establish that the perception of ad intrusiveness can be moderated by ad value, placement, and execution. Indeed, beyond the match between the content of the ad and that of the website, ads admitting informative and entertaining content are perceived as less intrusive. Regarding their placement and execution, the hypotheses validated by Ying et al. are similar to those of the authors as mentioned earlier: a low/limited repetition frequency, a hosting website whose quantity of ads is low/moderate, and a display that does not interrupt the editorial content of the web page help decrease the perception of intrusiveness. Similarly, the study conducted by Dziśko et al. (2017) using eye-tracking measures shows that animated ads attract less attention and are less attractive than static ads. The explanation proposed for these results suggests cognitive avoidance—regardless of the animation speed—when Internet users do not want to be interrupted in achieving their goals.

8 Assessment of Browsing Safety and the Protection of the Privacy of Internet Users Subject to Display Advertising

The behavioral response process of Internet users to display advertising as well as the evaluation of its intrusive and interruptive nature having been established in order to analyze the side "Visible" to display advertising, some aspects that are less visible, but which remain equally worrying and essential in the eyes of consumers, need to be addressed. This section thus deals with the latter's fears concerning the safety of their navigation, starting with an understanding of the threats of malvertising (malicious advertising). An analysis of the various display

stakeholders' data and the risks associated with the various techniques is then carried out. The determinants of trust in websites are discussed last.

Malvertising is an English term for malicious advertising. In a report commissioned by the IAB, Ernst and Young (2015) identified this practice as exploiting the digital advertising ecosystem to inject malicious software (malware) into the various browsing media of Internet users. Malvertising can impact any link in the display advertising logistics chain (ad-networks, ad-exchanges, ad servers) and thus deliver malicious ads on legitimate websites. Several types of malware can be distinguished, such as spyware, ransomware, scareware, nuisanceware, virus, adbots. The methods of distributing malvertising are also varied and do not necessarily require the user to click on the infected ad. In this way, we find, for example, the link hijacking, which redirects Internet users to malicious sites that they did not want to visit, the drive-by download, which induces the installation of software without the user's knowledge. Internet users and the watering holes differ from the drive-by download by precisely targeting the audience to be attacked. Finally, the deceptive downloads require a click on the part of the user. Unlike drive-by downloads, they will encourage them to visit a supposedly interesting page rather than exploit the weaknesses of their browser and its extensions (Gervais et al. 2017). The studies conducted by Li et al. (2012) and Zarras et al. (2014) suggest that 1% of internet advertisements are malicious.

Estrada-Jiménez et al. (2017) recalled that advertising success increasingly relies on targeting and personalization capacities that require significant skills in collecting and processing information and data on users. However, these practices admit risks for Internet users since personal and potentially sensitive data on their habits can be exchanged without fundamental knowledge or consent on their part. They can pose risks of invasion of privacy, discrimination, distribution of malware, fraud. Two-thirds of Internet users are now concerned about these practices and believe that they contribute negatively to their online experience. In order to understand in more detail the risks associated with display advertising, it is essential to remember the dynamics and the architecture of the players in this lever of digital advertising. During the real-time auction (RTB) process, large amounts of data collected through cookies are exchanged at the ad platform level. These actors can be classified as either First Party or Third-Party Actors depending on their level of interaction with users. Publishers (and network providers) thus belong to the first category since they directly contact users. Conversely, advertisers, DSPs, SSPs, and ad-exchanges are considered third parties since they are contacted through requests not directly formulated by Internet users.

Finally, note that trust is a determining factor in the perception of display advertising among Internet users. Truong and Simmons (2010) recall that this trust is altered by negative perceptions of the latter concerning the collection of personal data without their knowledge and the perception of weaker and less controlled regulations for digital advertising than for other marketing channels. Bart et al. (2005) established that the characteristics specific to the notion of trust in websites vary according to the category/nature of the site visited. Thus, privacy and the protection of privacy, and the achievement of pre-established goals are the critical

trust characteristics for sites requiring the user's encoding of certain information—therefore, the risk of personal data leaks is essential—as well as some engagement of it, such as on travel sites. Likewise, ease of navigation will induce a feeling of confidence in sites relaying large amounts of information, such as sites dedicated to sports. Thus, the authors emphasize that the feeling of trust online is not the only result of security and privacy but that other factors such as navigation, brand strength, presentation, the advice provided must also be taken into consideration (Tan et al. 2017).

9 Implications of Disturbing Display Advertising and Adblockers

Since consumers' attention admits a cost, display ads deemed disturbing or annoying by users and ad avoidance is not without consequences. This section first details the possible implications of such forms of display advertising for advertisers, publishers, and Internet users qualitatively. The total cost of ad-blocking devices as well as their hidden cost of reducing website traffic is then discussed. The possible consequences of display advertising deemed disturbing or annoying vary among different stakeholders. Beyond the attention that advertisers gain and the active and passive searches generated by users following exposure to display advertising, these ads can be harmful to the image or reputation of the brand. Likewise, while running such display ads can increase publishers' short-term sales commissions, it can also negatively impact user engagement over the long term. Submission to display ads deemed "disturbing" can thus disrupt Internet users' performance of their tasks and reinforce their fears in terms of browsing safety. This can induce them to install software, allowing them to guard against such inconveniences (Belanche 2019).

Second, the financial implications of using adblockers should not be overlooked. Indeed, Randall Rothenberg, President and CEO of the IAB, does not hesitate to characterize these practices as follows:

> [Adblocking is] outright theft, an extortion scheme that exploits can qualitatively the risk of distorting the economy of, and capitalism [and whose] main culprits are unethical societies that seek to divert ad spending into their own pockets. By claiming to represent the interests of consumers and hiding behind "best advertising," several of the largest ad blocker software distributing publishers make payments to get around their barriers. Advertising allows anyone worldwide to type in any URL and has content of unimaginable variety appear on a screen. Advertising also subsidizes the cost of applications, which can take hundreds of thousands of dollars to produce but are often free or inexpensive. Without advertising, either digital content and services will disappear, or their cost of production and distribution will be funded directly by consumers' wallets. The impact on the economy itself is even greater. (Rothemberg 2015)

Rothenberg refers to the practices put in place by certain ad blockers who demand financial compensation from websites wishing to have their ads safe listed and avoid being blocked by the software. This reinforces the financial pressures on display

advertising players and publishers in particular. Indeed, Wielki and Grabara (2018) point out that adblockers often deprive publishers of their primary source of income, namely advertising revenue. Finally, reduced website traffic is a consequence of adblocker use that is often overlooked. According to a study carried out by the U.S National Bureau of Economic Research and relayed by PageFair (2017), it appears that a reduction in their audience worsens the impact of adblockers on the income of small and medium-sized websites. For example, they see a 0.67% drop in traffic for every 1% increase in the number of visitors using ad-blocking software. This is explained employing the "Adblock paradox," which comes in three stages. A website whose audience significantly uses adblockers will experience a temporary increase in traffic (lasting around 1 year) due to a smoother browsing experience. A short period of hearing stabilization will then be observed for 7 months. Without the necessary resources to continue to attract their audience, websites then experience a significant audience drop of up to 8% after 35 months. Unlike large websites, which may sell a small portion of their impressions to advertisers, smaller websites should go through ad-networks to sell their impressions.

10 Perceptions of Programmatic Advertising by the Millennials

Millennials are a very active generation on the Internet. According to the information relayed by PageFair (2017), this generation also seems particularly inclined to install adblockers. This preference of adblockers is a reason which supports our choice to consider them as the target of our investigation. Following the definition proposed by Rainer and Rainer (2011), Millennials were born between 1980 and 2000. The respondents were selected with quota sampling, which is not a probabilistic method but approaches it in many respects and makes it possible to obtain a sample representative of the population (Moser 1952). Given the constraints of time and budget of the research, a sample size of 100 respondents was arbitrarily chosen, including the generation of millennials from the Czech Republic. The respondents were addressed online via Facebook using targeted advertising.

The structure of the questionnaire was divided into five parts:

- Browsing time and opinions on digital advertising
- Knowledge and (potential) installation of adblockers
- Knowledge and (potential) installation of filters to customize your adblocker
- Knowledge and (potential) reaction to anti-AdBlock devices
- The socio-demographic profile of the respondents

The first part aimed to estimate the average daily time respondents spend online on various media (computer and smartphone). This part sought to assess their opinion of digital advertising and, more specifically, of online banner advertising, native advertising, and social networks. In the context of native advertising, five

examples have been introduced. These appeared as images that respondents could click on to view the ad in context. The second part of the questionnaire introduced the concept of software adblocker by explaining the purpose of this type of device. An illustration was included to allow respondents to view a web page without this type of software (presence of advertisements) and with (absence of advertisements). This part of the questionnaire aimed to determine the level of knowledge and (potential) installation of adblockers in the population studied. The third part of the questionnaire introduced the notion of filters allowing to personalize ad-blocker software. Similar to the second part of the questionnaire, the objective was to determine the level of knowledge and (potential) addition of filters. The fourth part of the questionnaire explained the concept of "Adblock walls" and illustrated it with a screenshot taken while browsing with adblocker on the Czech version of the Forbes website. This part aimed to measure the proportion of adblocker users who have already encountered such devices and determine their (potential) reactions. Finally, the last part of the questionnaire focussed on the socio-demographic characteristics of the respondents, namely sex, age, level of education, occupation, and the province from which they come. Note that almost all of the scales used for parts two, three, and four were 5-point Likert scales ranging either from "totally disagree" to "totally agree" or "I am not considering it at all" to "I am fully considering it." In the third part, a sixth point, "I installed this type of filter," is introduced in order to be able to distinguish the millennials who have installed the filter in question.

10.1 Representativeness of the Sample

The administration of the questionnaire provided a total of 230 responses—verification of these identified 46 incomplete responses, which had to be discarded. In addition, five responses turned out to be off-target (outside the age group or geographic area considered) and therefore could not be taken into account. As a result, the respondent base totaled 179 complete responses. Data were extracted from Google forms for statistical analysis performed using SPSS software. The analysis of the sample's representativeness made it possible to verify whether the socio-demographic characteristics of the respondents were representative of those of the target population, namely Czech millennials. To this end, sub-groups have been distinguished: men and women between 16 and 24 years old, on the one hand, and between 25 and 34 years old, on the other. The frequencies observed during the survey were then compared with the theoretical frequencies from Czech Statistical Office (2021).

Since the observed frequencies were disproportional to the theoretical frequencies due to an overrepresentation of millennials aged 16–24, particularly among women in this age group, we had to carry out a posteriori stratification to straighten the sample and increase the sample precision of the observations. Weighting the observations by age and sex required the creation of a new variable. The frequencies of observations before and after weighting of the sample are available in Table 1.

Table 1 Representativeness of the sample of respondents

	Theoretical frequency (%)	Observed frequency (%)	Corrective coefficient
Women 16–24 years	21.7	37.4	21.7/37.4 = 0.58
Men 16–24 years	22.9	27.4	22.9/27.9 = 0.83
Women 25–34 years	27.7	17.3	27.7/17.3 = 1.60
Men 25–34 years	27.7	17.9	27.7/17.9 = 1.54
Total	100	100	–

Source: Author's illustration

Table 2 Results regarding the first set of hypotheses H1a–H1c

Hypothesis		Type of test	Results
H1a	Positive perception of online banner advertising by millennials decreases with age.	RLS	Rejected
H1b	Positive perception of online native advertising by the millennials decreases with age.	RLS	Rejected
H1c	The positive perception of online advertising on social networks by millennials decreases with age.	RLS	Confirmed

Source: Author's illustration

10.2 Verification of the Hypothesis

The first hypotheses sought to understand millennials' views on banner ads, native advertising, and social media advertising. Analyzing hypotheses formulated with a less favorable opinion from the older millennials was performed using simple linear regressions (RLS). The results are displayed in Table 2.

The second set of hypotheses aimed to assess adblockers' level of knowledge among millennials and determine the possible factors that may influence this level of knowledge. The observation of frequencies, as well as an ANOVA test and simple linear regression, was necessary in order to verify the validity of the hypotheses whose results are summarized in Table 3.

The level of knowledge of adblockers having been analyzed, it was then necessary to assess their level of installation among Czech millennials utilizing the third series of hypotheses, the results of which are summarized in Table 4.

After evaluating the levels of (potential) installation of adblockers by Czech millennials, we can take a closer look at the latter's motivations. These were analyzed by the fourth series of hypotheses (Table 5).

Detailed information about the usage of advanced features of adblockers, such as filters, is provided in Table 6.

First of all, through the survey carried out, it appeared that, in general, millennials have a very unfavorable opinion of online banner ads, native advertising, or advertising on social networks. Only 8.8% of the Czech millennials surveyed said they

Table 3 Results regarding the second set of hypotheses H2a–H2d

Hypothesis		Type of test	Results
H2a	At least 50% of millennials are familiar with the concept of adblockers.	Frequency	Confirmed
H2b	The knowledge of adblockers varies based on the level of education of the respondents.	ANOVA	Confirmed
H2c	The knowledge of adblockers decreases with age.	RLS	Confirmed
H2d	The knowledge of adblockers is shared mainly through word-of-mouth and online media.	Frequency	Partially confirmed

Source: Author's illustration

Table 4 Results regarding the third set of hypotheses H3a–H3h

Hypothesis		Type of test	Results
H3a	More than 50% of millennials have already downloaded an adblocker.	Frequency	Confirmed
H3b	The usage of adblockers is more frequent with men than women.	Chi-Square	Confirmed
H3c	The usage of adblockers decreases with increasing age.	Logistic Regression	Confirmed
H3d	The millennials install adblockers more often on desktop computers and laptops than on smartphones and tablets.	Frequency	Confirmed
H3e	The installation of adblockers on smartphones decreases with the increasing age.	Logistic Regression	Rejected
H3f	More than 50% of millennials consider installing an adblocker.	Frequency	Rejected
H3g	The millennials consider installing an adblocker instead on desktops and laptops than their smartphones and tablets.	Frequency	Confirmed
H3h	The intention to install an adblocker on smartphones and tablet decreases with age.	Logistic Regression	Rejected

Source: Author's illustration

favored banner ads compared to 22% for native advertising and 13% for advertising on social networks. While native advertising is meant to be the more discreet format, it is surprising that millennials find online banner ads go more unnoticed than social media advertising. Overall, our results confirm the previous research on this topic. The feeling of advertising intrusiveness can generate negative emotions such as irritation, and this perception can be induced by content obscured by advertisements and the effort required to make them disappear (Krammer 2008). In addition, the interruptive and excessive nature of digital advertising and previous negative experiences can contribute to the advertising avoidance phenomenon of Internet users. Avoidance is cognitive when it occurs automatically and unconsciously by the Internet user. Conversely, it is physical when it results from conscious decision-making by the Internet user, materializing through mechanisms such as adblocking (Johnson 2013).

Table 5 Results regarding the fourth set of hypotheses H4a–H3d

Hypothesis		Type of test	Results
H4a	The main motivations for installing an adblocker are security risks, the need to protect personal data, excess advertisements.	Frequency	Rejected
H4b	The need to protect personal data increases with age.	RLS	Confirmed
H4c	The need to protect personal data varies based on the level of education of the respondents.	ANOVA	Rejected
H4d	The need for interrupted browsing decreases with age.	RLS	Rejected

Source: Author's illustration

Table 6 Results regarding the fifth set of hypotheses H5a–H5c

Hypothesis		Type of test	Results
H5a	The percentage of adblocker users who also added an adblocker filter is tiny ($<10\%$).	Frequency	Rejected
H5b	The willingness to install adblocker filters increases with age.	Logistic Regression	Confirmed
H5c	Men install adblocker filters more often than women.	Chi-Square	Confirmed

Source: Author's illustration

Our survey proves that adblocking is a general practice adopted by Czech millennials. Judging based on our sample of respondents, 80% of the respondents say they know the concept, and 67% of them say they have installed an adblocker. However, the number of individuals willing to install an adblocker is decreasing with increasing age. Moreover, males are more inclined to use such software tools than women. Then, while 67% of millennials have installed an adblocker on a computer, only 9.1% have done so also on smartphones and tablets. Whether potential or actual, the installation is essentially motivated by the interruptive and deemed excessive nature of the advertising. In addition, Czech millennials want to protect themselves from potentially malicious advertising and protect their lives and private data.

11 Conclusion

In 25 years of existence, Internet advertising has emerged and gained considerable importance, becoming the main driver of growth for the advertising market. The functioning of this market is characterized in particular by high complexity, an omnipresent technical component, and the presence of a duopoly with a competitive fringe. Through its development, online advertising is taking on many issues that form as many research topics to be explored, whether it concerns, for example, its effect on consumer privacy protection or its role in the emergence of multinational firms with considerable market power.

Since 2004, digital advertising has known a constant growth, as targeting technologies and inventories allocations progressed. However, this trend had been slowed down in the mid-2000s, especially in the field of display advertising, due to several factors. Most importantly, users' attention to online ads followed a downward trend, early identified as banner blindness. In commercial communication, the concept of resistance to advertising reflects all the behaviors used by individuals in response to the dissonance that advertising causes in them (Li and Huang 2016; Kelly et al. 2010). Abedini Koshksaray et al. (2015), in his editorial, specify that it can be understood by motivations to fight against the invasion of personal space through advertising and certain avoidance behaviors. Cho and UTA (2004) identify three components of avoiding Internet advertising: cognitive (e.g., intentionally ignoring a pop-up), affective (e.g., anger), and conative (e.g., closing an interstitial, leaving the site). On the other hand, research shows that perceived advertising intrusion on the Internet is critical in irritation, annoyance, and avoidance (Belanche 2019). It also has a negative impact on the attitude towards the promoted brand and the intention to purchase it (Goodrich et al. 2015).

For intrusive advertising formats, it is necessary to emphasize repetition and exposure time, especially for Internet users opting for functional or ideological resistance. Indeed, the risk of arousing/increasing the exasperation of an Internet user (sometimes already irritated) is very present. One of the lessons of this study is that it is essential not to overlook the consequences of irritating Internet users. It can lead Internet users to opt for a conative avoidance strategy to learn ways to block intrusive advertisements on the Internet or seek help from experts on forums. Thus, the use of intrusive AdBlock-type anti-advertising software can become widespread among the Internet user population, thus limiting the scope of the advertising effectiveness of digital campaigns.

As the results of our study show, the level of Adblock usage among millennials is considerably high. While the users consider some types of advertising less intrusive, such as native advertising, they continue using tools helping them to avoid intrusive ads. The possibilities of advertising algorithms and technologically enhanced personalization thus go as far as the consumer's tolerance for the number of ads they encounter during their browsing sessions. Therefore, advertising platforms should reconsider the amount of advertising content they are willing to display. Otherwise, programmatic advertising may lose its effectiveness altogether.

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The Credibility of Online Recommendations

Marián Lamr and Michal Dostál

Abstract Online recommendations and their impact on customers' decision-making process during online shopping are still growing. Customer reviews represent a particular type of content created by random users without professional expertise who base their opinions on their subjective experience. Therefore, user reviews are very different from traditional reviews, where an expert evaluates the goods. The paradox is that user reviews have recently become more popular and more sought after on the Internet than traditional, professional reviews. Customers are more often interested in the layman's view and the opinion of other users, in which they can empathize, than in professional reviews, which can be either too technical or sometimes commercially colored. However, what makes a review credible and influential remains a question. In this chapter, we propose a credibility model of online recommendations based on previous research conducted in this area.

The Internet is perceived as a very uncertain environment despite its advantages in the multiplication of information and the speed of exchanges. This uncertainty stems mainly from its fundamental characteristics: anonymity and the absence of presence and direct contact. On the Internet, face-to-face communication between interlocutors is replaced by indirect interaction through the intermediary of the computer. In this long-distance communication, "Who is who?" remains a highly critical question since the Internet user does not know with certainty whether his interlocutor is whom he claims to be or even if he exists. The impossibility of direct contact also helps to hide the actual behavior of digital interlocutors during the interaction. In the absence of this face-to-face interaction, it will be evident that the interlocutor finds it difficult to correctly judge the other party's behavior, intention, and motive, which should not be favorable to his or her decision (Pappas 2016).

On the Internet, under these asymmetric conditions, consumers, without the possibility of directly contacting the merchant, nor the possibility of inspecting the

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physical identity of the seller as well as of the product, very often find it very difficult to distinguish good quality sellers from others (Garbarino and Strahilevitz 2004). To enhance the likelihood of accomplishing their individual business goals, sellers possessing inferior quality might seek to conceal their actual limited characteristics, which can demotivate potential consumers. In addition, quality salespeople find it challenging to signal their actual good value in this asymmetric digital context. Information asymmetry on the Internet thus discourages severe sellers, on the one hand, and on the other, ruins competition and healthy commerce (Mohd Suki and Mohd Suki 2017).

The criticized problem of the digital age is here. In e-commerce, some sellers behave opportunistically for personal gain by concealing accurate information about their weak points and low quality. At the same time, consumers, in most cases, have to make the purchase decision without having the means to accurately and sufficiently inspect these details, without being able to make a sure and specific assessment of this business partner (Miyazaki and Fernandez 2001). By carrying out the exchanges at a distance and with these strangers, electronic consumers very often doubt that the merchant could behave opportunistically by communicating false information on his identity and the product in exchange. This is why, as soon as he perceives this asymmetry of information, the electronic consumer always feels himself in an uncertain situation which must be to the detriment of his profits (San Martín and Camarero 2009).

These last details constitute the third source of uncertainty on the Internet: information security and privacy concerns. In the era of the explosion of information technologies, information security and privacy must undoubtedly be considered one of the most important ethical concerns. By taking part in digital life, the Internet user must, in several cases, declare discreet and sensitive information on his identity as well as on his private life, such as his civil, financial, and monetary details. This information could be subject to sharing, fraudulent use, or exploitation which remains without the consent of the Internet user. Today, no sufficiently robust mechanism or regulation can reassure this protection, which is 100% committed. In addition, the inability and lack of enthusiasm and responsibility among insurers to provide this protection, which is not impossible in any case, is still significant. To this truth, the Internet represents a significant and delicate uncertainty for its users who put their interests therein fragility. In the context of e-commerce, declaring his private and monetary information to the merchant, for the consumer, is entirely not far from putting his fortune in the hands of this stranger (Kamalul Ariffin et al. 2018).

Once consumers have to disclose their personal and monetary information online, two types of information security concerns may arise. The first relates to the incorrect use of this information due to the lack of appropriate controls by the merchant. The second insists on a second use by third parties for opportunistic purposes outside the primary transaction. Information security in the context of electronic commerce could thus be vulnerable.

Information asymmetry, opportunism, and information security concerns characterize the uncertainty of the digital environment. This uncertainty makes the buying process of the electronic consumer criticized (Yang et al. 2007). During this process,

he finds permanent doubts about the vulnerability of subjects of significant interest such as the source and types of commercial information (uncertainty of information), the credibility of the offers proposed (uncertainty of the offer), the validity of the alternatives to be considered (uncertainty of knowledge), or the appropriate criteria that it could use in the service of an adequate evaluation of the offers (uncertainty of choice). Directly, this uncertainty can negatively influence the intention and then the adoption to buy because the more significant the uncertainty, the more the consumer perceives the risks he must face during the purchasing process. By integrating his purchasing process into an uncertain situation, the consumer might consider that the expected trading results could also be uncertain, making him dissatisfied and regrettable. Where does his perception of risk come from? Dowling and Staelin (1994) propose that the concept of risk perception refers to the perception of contextual uncertainty and the adverse consequences resulting from the possible purchase. Contextual uncertainty undoubtedly gives rise to trade risks which undoubtedly constitute obstacles to trade. In the following paragraphs, we seek to identify these risks to understand better the reflections and the behavior expressed by consumers in this uncertain purchasing situation.

This personal evaluation mechanism has been the subject of multidisciplinary research for at least two decades. In the following paragraphs, we will review the literature on the subject, covering three important research contents on the credibility of electronic information. In the first part, we will present a summary of the dimensions of credibility, which represent the evaluation criteria that Internet users use in their judgment. The second part focuses on a review of credibility assessment models. Finally, we will review the recognized findings on the factors determining credibility in the perception of Internet users. These determinants would allow the adjustment of information to said criteria by making it credible. The logic is clear. The more uncertain the context, the more psychologically the exchanges are perceived as risky and complicated. This is a significant obstacle that is helping to slow the development of electronic commerce (Ha 2020). We seek in the following paragraphs to clarify this emerging problem which remains to the detriment of the performance of electronic exchanges. Where does this uncertainty come from? How does this intervene in the course of online exchanges? What is necessary and effective to control it? Many questions arise whose answers seem vital to reassure the good conduct and the multiplication of exchanges on this new economic platform. Anonymity, the absence of physical appearance and direct contact, characterizing exchanges on the Internet, helps bring out the essential elements that are at the origin of such uncertainty in the digital environment: the information asymmetry, opportunism among interlocutors, and concerns about information security and privacy (Noort et al. 2008). Information asymmetry is defined by Akerlof (1978) as the significant problem recognized in buyer-seller relationships where the seller often has more information about the trade than his partner. In the digital context where consumers have no choice but to exchange remotely with sellers but never with face-to-face contacts, they should undoubtedly perceive this asymmetry of information which results in the sellers always having more information, quantitatively as well as qualitatively, on the product in exchange, on its characteristics and

also on the conditions of exchange. This will undoubtedly not facilitate the correct decision of the consumer.

1 Perceived Risks of Shopping Online

The uncertain purchasing environment on the Internet identifies four potential sources of significant risks: the product, the remote transaction, the Internet transaction, and the merchant site. Failure to directly inspect the product before decision-making, payment, and subsequent delivery could lead to consumer disappointment in the product's performance compared to expectations. The non-conformity of the product compared to the previous promises of the seller, the delivery of the lower quality than that committed may be the case. The remote transaction limits the communicative exchanges between the buyer and the seller on the one hand, and on the other hand, generates the time intervals between payment, delivery, receipt, and verification of the product. As a result, the consumer should suffer the loss in terms of time and financial resources in the event of a faulty purchase found upon receipt and inspection of the product after payment. The waste of time waiting for delivery, the loss of resources to return the product in the event of non-satisfaction can be examples of this (Laroche et al. 2004).

The transaction on the Internet, on the other hand, obliges the consumer to the inevitable declaration of private information and especially to the use of a less secure mode of payment compared to the traditional modes. This becomes a source of the disclosure of confidential contact details, theft, hacking, fraud. Finally, through its ergonomics and informational content, the commercial site could generate distrust among consumers. Once these elements are judged insufficient, the site could cause him unfavorable questions at the level of its credibility and its reliability. These four elements contribute to generating different types of risk. Roselius (1971) indicates that the consumer can suffer from many types of loss: loss of time (when the purchased product is defective, the consumer will waste time and effort to repair or replace it); loss related to chance (the defective product purchased would in some instances damage the health and safety of the consumer); loss of ego (buying the faulty product makes the consumer feel stupid); and loss of money (money wasted on repairing or replacing the faulty purchased product).

Bhatnagar et al. (2000) identify two main types of risk that predominate in electronic exchanges: risk related to the product category and financial risk. The first, which relates to the product itself, is associated with the consumer's conviction that the product could provide him with uses as he expects. This risk is increased if the product represents technological complexes or is associated with the satisfaction of ego needs. Financial risk is associated with the Internet as a purchasing mediator. Consumers are, in most cases, apprehensive about disclosing their confidential credit card information on the Internet. The reason is apparent: They risk losing money to attempted credit card fraud. Because of this kind of risk, the Internet is still far from materializing as a retail outlet. Several merchant sites are visited by thousands of

consumers every day. However, a deficient proportion of these visits are converted into actual purchases.

Peter and Tarpey Sr. (1975) identify six different dimensions of risk:

- **Financial risk:** loss of money due to the absence of sufficient guarantees for the product in the event of defection and additional costs for the repair
- **Performance risk:** losses generated when the chosen product does not perform as desired
- **Psychological risk:** losses conceived once the product chosen does not satisfy the consumer's self-image
- **Physical risk:** losses resulting from the fact that the chosen product could physically damage the consumer
- **Social risk:** losses that consumers must suffer when their choice is not appreciated by those around them (family, friends), the value of this product therefore minimizes
- **Risk of time:** time lost to acquire a faulty and unsuitable product, additional time and effort required to repair or replace it

During each purchasing process on the Internet, the consumer, before making the decision, very often seeks to identify the uncertainty of the purchasing situation and, in particular, the associated risks, then establish his strategies for reducing the purchase price risk in order to mitigate this uncertainty and especially the adverse effects of risks. In typical e-purchasing scenarios, the transaction can only progress once these effects remain at a level below its acceptance threshold, or in other words, the overall perceived utility of its eventual purchase, despite the impact, risk, remains at a satisfactory level. The perception of risk is an essential determining variable in buying on the Internet (Tham et al. 2019). Therefore, the installation of risk reduction strategies must play a predominant and decisive role in reducing contextual uncertainty, facilitating trade relations, and encouraging consumers to purchase activities. The following paragraphs will submit to the clarification of these strategies, which serve an understanding of the devices of purchasing behavior and especially of the mechanism of functioning of exchanges on the Internet.

2 Credibility Dimensions of Electronic Information

The Internet user generates his search for information online to improve his knowledge, assist his assessment of an outcome, or help his decision-making. From this perspective, it is obvious to notice that it favors its support on the information it trusts. Here, the credibility of the information can be considered a criterion that decides to use or reject the information, that is to say to position the confidence of the Internet user (Greer 2003). On the Internet, the information seeker has a significant possibility of accessing an innumerable amount of information presented therein in similar formats but whose level of credibility varies enormously. The absence of universal standards in publishing information online makes it widely possible to

modify, plagiarize, and distort information. As a result, a large proportion of the information published on the Internet is incorrect, incomplete, or invalidated. This critical situation becomes even riskier due to the lack of a quality control mechanism that promotes immediate recognition of credible information and others. As soon as the assessment of the credibility of the information becomes problematic, in order to compensate for this absence, the Internet user himself takes on this assessment work (Metzger et al. 2010).

Credibility is not a physical character of the information, of the source, or the person. It is these objects and their characteristics that serve as the basis on which the person judges credibility. The person, with their knowledge, experience, and beliefs, makes their judgment in their way. From this perspective, credibility should be primarily attached to a subjective treatment process and be defined as the person, based on their knowledge and skills, assesses whether the information is reliable and whether they can trust it (Hajli et al. 2014). Thus, on the same information, the perception of its credibility probably varies among individuals. Due to the difference in their characteristics, this perception interprets different levels and dimensions of credibility. Understanding the dimensions of credibility is crucial because it allows us to know to what degree the person perceives credibility. In the literature, credibility is publicly viewed as a complex and multidimensional concept. In their classic studies dating back to the 1950s of the last century, Hovland and Weiss (1951) consider the credibility of a source of information in two fundamental dimensions: competence and reliability. The reliability dimension interprets the perception that the source presents or does not intend to provide a valid statement of a subject.

After researching interpersonal interactions, this proposition is close to the concept of "epistemic vigilance" proposed by Sperber et al. (2010). Epistemic vigilance refers to the mechanisms that help the individual verify whether the information he receives from others is correct. It allows the individual to control the risk generated by false information intentionally or accidentally introduced during the communication. This role is essential because no tool reassures the exclusion of any false information during interpersonal communication. While reliability represents the sender's willingness to provide the correct information, the competence dimension interprets whether the sender can do so. Competence in this sense refers to the qualification of the source (knowledge, expertise, experience) and therefore signals the quality of the information it offers. Since Hovland and Weiss (1951), reliability and expertise have been developed in quality research as fundamental aspects of credibility. In e-commerce, Fogg and Tseng (1999) make information reliability a reality in three specific details: honesty, fairness, and impartiality. According to Fogg and Tseng, credible information must be truthful and cannot be influenced by the private motives of its sender. On the other hand, Metzger (2007), emphasizing the expertise dimension of electronic information, specifies that credible information must: be current, be complete and comprehensive, represent the fact and reality but not subjective opinion, and represent some authority.

One of the first multidimensional scales of electronic credibility, proposed by Wathen and Burkell (2002), identifies five criteria that can be considered when judging the quality of information on the Internet: correctness, timeliness, objectivity, authority, and coverage. Trueness represents the degree to which the information and the source have editorial errors and how the information can be verified among different sources. The fewer errors are presented and the more consistent the information across different sources, the more accurate the information. Timeliness determines the level of updating of information, and the more up-to-date the information, the more valued it is. Objectivity refers to identifying the purpose and motives that the author manifests in providing the information. Evaluating the objectivity of information suggests considering whether the information interprets fact, reality, or the individual opinion of its author. The objectivity assessment also includes checking the author's intention behind his launch of the information; it also suggests seeing if the information is subject to commercial intent, is related to a conflict of interest, or is supported by a sponsor (Stubb et al. 2019).

Authority is another element that cannot be found in the information itself but the identity of its author. The authority suggests checking certain occupations: who is the author of the information, their qualifications, at what level this author is appreciated and accredited. The authority also suggests seeing if the information or its source is recommended by people you trust. Lankes (2008) asserts that authority is a critical detail of credibility on the Internet because of the democratization as well as the decentralization of authority in digital environments where everyone has the opportunity to be the author of information publicly published and where more consumers of information, but not its producers, become senders of information. Rieh (2002) suggests that during the evaluation of electronic information, the authority plays the role of a component of quality control. Rich argues that the reviewer is looking at the authority of the information to determine if he can trust it. Coverage means the integrity or depth of information. Coverage is undoubtedly an essential criterion of credibility because this element represents the essence of the quality of the information. Because the evaluator makes his judgment to assist himself in deciding whether he will trust the information and then use it, the level of coverage of the information, essentially indicating its usefulness, would be considered carefully by the assessor.

Hilligoss and Rieh (2008) summarize previous research by citing a dozen criteria used to measure electronic credibility: honesty, correctness, factuality, fairness, plausibility, completeness, precision, objectivity, impartiality, reliability, depth, informative value. However, Hilligoss and Rieh argue that it is not easy to view these measures as determinants of perceived credibility or dimensions of credibility itself. These authors return in their research to the Wathen and Burkell (2002) five-point scale. In the same study, the authors found, on the one hand, that, in the first phase of judgment, the evaluator shows a broad interest in defining the term credibility by individually determining the dimensions of this concept. On the other, he can characterize his notion of credibility by using one of the five dimensions or combining them. Table 1 proposes the main criteria retained in a large

Table 1 Credibility dimensions of electronic information

Criteria	Previous research	Description
Reliability	Hovland and Weiss (1951)	The authors exhibit a willingness to interpret the truth
Expertise	Metzger (2007)	Information has the potential to help the user in his decision process
Rightness	Fogg and Tseng (1999)	Information and the website the information is on are without errors, and the information is easily verifiable.
Objectivity	Metzger et al. (2010)	The information uses facts instead of subjective opinions
Actuality	Wathen and Burkell (2002)	The information is up to date
Authority	Lankes (2008)	The author of the information is competent and has a good reputation. The author has a good list of reliable references.
Coverage	Hilligoss and Rieh (2008)	Information has integrity and is detailed

Source: Author's illustration

number of studies as fundamental dimensions of the credibility of electronic information.

3 Credibility Assessment Models

As soon as the Internet user determines his criteria for evaluating the credibility of the information, he will continue his judgment by addressing specific evaluation strategies. These strategies, being considered methodologies for evaluating the person, will be recalled when they are in the evaluation situation. Through their proposed evaluation models, the researchers tried to redesign these strategies. In the following paragraphs, we aim to review four models most used in field research: the dual processing model, the theory of prominence—interpretation, the unifying framework of evaluation, and the 3S model.

3.1 Dual Processing Model

Metzger (2007) proposes that the Petty and Cacioppo (1986) Development Probability Model and Chaiken and Maheswaran (1994) Heuristic—Systematic Model can be used to characterize the process of electronic credibility assessment. In his model of dual processing of credibility assessment, Metzger confirms that, in an assessment situation on the Internet, Internet users can use two basic modes of judging information content to determine their attitude: systematic judgment, which refers to relatively analytical and comprehensive processing of relevant
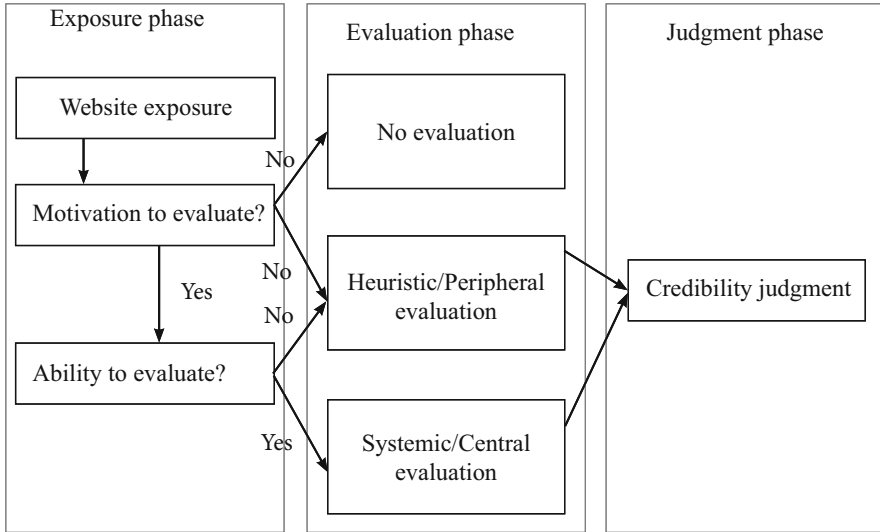
Fig. 1 Dual processing model (Source: Author's illustration based on Metzger 2007)

information which generally requires cognitive ability; the heuristic judgment which is carried out by activating or applying a recognition of heuristic signs that have undoubtedly been learned and memorized beforehand. Compared to systematic judgment, the heuristic procedure requires minimal cognitive effort. The choice of one of these two modes of judgment follows a logic which is driven by two key factors: (1) the initial motivation and objective in terms of researching information on the Internet which result from the need for information or as a result of receiving poor quality, disbelieving or unfair information; (2) the individual skills which relate to the know-how of the Internet user in terms of evaluating the information published online.

The dual processing model (Fig. 1) is not only capable of predicting when the Internet user will or will not attempt to evaluate electronic information significantly but also helpful in understanding how they will interpret their judgment (or in other words, which judgment, systematic or heuristic, it will choose). This model suggests that, given their motivation in seeking information, Internet users may consider certain aspects of information to assess its credibility. Those less motivated to seek out high-quality and credible information may not rate the information at all or simply consider some simple heuristic features such as website design or graphics. On the other hand, those with high motivation are more likely to make serious and systematic judgments. However, in this case, if they show that they do not have the know-how and experience in handling information, no systematic judgment will take place due to a lack of adequate tools. No effort is possible; they always stop at the level of a heuristic judgment. Efforts are only activated if they are competent at it. They thus arrive at a profound judgment on the content of information by passing above its surface characteristics. In summary, novices and people who find

electronic information not very salient tend to use simple heuristics more frequently than experts and people who see information on the Internet as prominent and essential. On the other hand, the latter is more concerned with the quality of the information during their judgment.

Another usefulness of this model is that it can predict the type and level of credibility the evaluator may find at the end of his judgment. The unmotivated person to process the evaluation will see presumed and surface credibility, which is rather emotional and requires the least effort invested in the judgment. The one who is motivated and habitually basing the judgment on the credibility of the source of information is concerned with the deemed credibility. Finally, the expert who is broadly proficient in information processing considers learned-type credibility, which is rational at the highest level.

3.2   Theory of Prominence: Interpretation

While the Metzger and Flanagin (2013) model provide an operative tool for research on the electronic credibility judgment process, Fogg and Tseng (1999) offer a methodological framework that can be added to it for a better understanding of the mechanisms that regulate these judgment procedures (Fig. 2). At the end of various studies over 4 years with 6500 participants, Fogg proposes his theory of Prominence—Interpretation which is based on a fundamental idea: the judgment by the Internet user of electronic credibility depends on (1) the elements it takes into account for exploitation during the judgment (Prominence) and (2) the personal way in which the Internet user interprets these elements (Interpretation). Fogg points out that, during the judging process, it is not clear that all of the material on the subject (information, source) will be considered and that only elements retained could influence the assessment. On this point, five factors decide which elements will be retained: the motivation and the ability of the Internet user in terms of processing the elements; the topic of the object to be evaluated (for example, news, leisure); the objective of the evaluator (for example, information search, fun, transaction); his experiences; its characteristics.
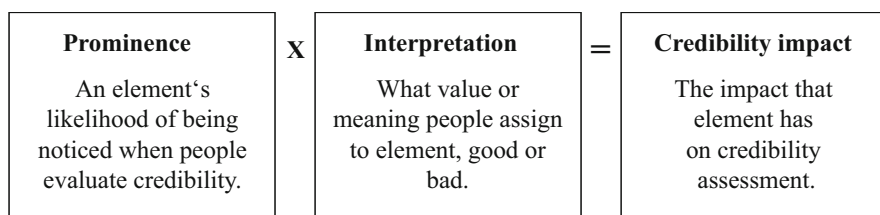
Prominence	X	**Interpretation**	=	**Credibility impact**
An element's likelihood of being noticed when people evaluate credibility.		What value or meaning people assign to element, good or bad.		The impact that element has on credibility assessment.

Fig. 2 Theory of prominence—interpretation (Source: Author's illustration based on Metzger and Flanagin 2013, Fogg and Tseng 1999)

These selected elements must then be submitted to a personal examination (Interpretation) to be considered good or bad. According to the author, this individual interpretation is affected by three-person factors: the spiritual assumptions of the assessor (e.g., culture, experiences), his level of knowledge, their skills, and personal evaluation context. The author concludes by considering these factors related to the subject of the evaluation—the evaluator—which is theoretically but also operationally indispensable for research on the mechanism of credibility (Fogg 2003).

3.3 Unifying Credibility Assessment Framework

In another effort to improve the methodological framework of credibility research, Hilligoss and Rieh (2008) conceptualize the judgment of credibility, after an experimental study, propose their unifying framework, which distinguishes three different levels of credibility: conceptualization, heuristics, and interaction. Conceptualization reflects how the person conceptualizes and defines credibility, and she represents her perspective on credibility. The authors find that this conceptualization generally addresses five aspects of credibility: honesty, plausibility, reliability, objectivity, and verifiability.

The second level of judgment refers to the basic rules that the assessor might use to judge credibility. These pre-established and personalized rules help him identify the search modes that are useful and adequate for him to access information and then carry out the judgment conveniently. Selected information that is subject to these rules will be considered credible. At the end of the experimental results, Hilligoss and Rieh propose four essential means which could assist this heuristic judgment: the medium (which conveys the information), the source (which creates the information; a source may or may not be familiar to it), recommendations (which support the information), and aesthetics of the website (which makes it attractive according to its design). At the third level of judgment, the evaluator recognizes certain specific attributes related to the information and its source by introducing them into his final individual judgment. The authors suggest three groups of attributes that could be the object of this recognition: the content of the information (the message), the source of information (its affiliation, its reputation, the educational qualification of its author, the skill level of the source), and finally the peripheral attributes of the information (its presentation, its writing language, the presence of graphics and statistics).

Interestingly, the authors of the unifying framework point out that conceptualization can differ between individuals, that each can consider his or her recognition (s) of the dimensions of credibility, which leads him to identify the corresponding heuristic category, which in turn allows him to focus on such characteristics of the information or its source. These characteristics, once determined, will be the subject of any possible interaction. Finally, the authors underline the controlling role of the judgment context, which could influence the evaluation at all three levels. The social, relational, and dynamic framework surrounding the search for information characterizes this context element.

3.4 3S Model

Lucassen and Schraagen (2011) consider the perception of the credibility of information as the result of the interaction between the characteristics of the assessor and those of the information in proposing their 3S model (Fig. 3). They identify in this model, at the end of an experimental study on online automotive forums, three fundamental evaluation strategies based on the semantic elements, the surface elements of the information, and the elements of its source.

The first strategy aims to consider the semantic characteristics of information, such as its correctness or neutrality. The evaluator can use this strategy when he attains a certain level of expertise in the domain that the information translates. Once this condition is lifted, he will assess the information based on his knowledge. The authors note that, in this strategy, the evaluators consider factual correctness as the most critical aspect of credibility. However, if the person is not sufficiently expert in the field, their judgment will hardly rely on this semantic strategy. Instead, it will tend in this situation to revert to considering the surface characteristics of the information. These surface characteristics summarize how information is presented. They can refer to the design of the website, its aesthetics, or the length of the text, its depth, the volume of its references, and the volume of the images presented. The author's reason is that to activate this strategy, the evaluator must have various skills,
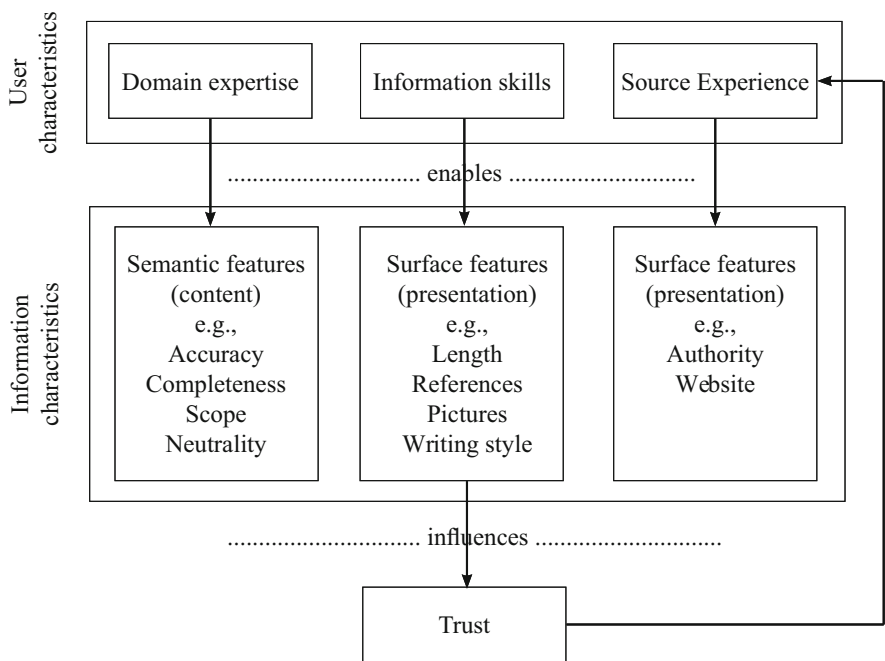

Fig. 3 3S Model for credibility evaluation (Source: Author's illustration based on Lucassen and Schraagen 2011)

including generic skills in terms of information processing. This category of competence refers to knowledge of how a surface characteristic relates to the concept of credibility, such as the fact that the presence of bibliographic references suggests that the writing of the information is the result of consistent research. The third strategy is based on the assessor's consideration of their previous experiences with a particular source to assess the information presented therein. In this strategy, the evaluator uses said experiences as a prime indicator of credibility. Contrary to the first two strategies, this one refers to a passive maneuver where the elements of information are not considered at all and where the pre-observed value of a source irrationally guarantees the quality of everything linked to it.

During the evaluation process, the Internet user is likely to use one of the three strategies and a combination of the alternatives. Connoisseurs of the field immediately mobilize their knowledge by starting from a rational semantic judgment. The use of other strategies is not seen as a priority for these experts, but using these in a second effort is possible. The height of the impact of an attribute from each of these three categories (semantics, surface, and experiences) depends on the personal characteristics of the rater. Second, information processing specialists have a solid tendency to boost their skills in this term and will be fabulously affected by the surface attributes exhibited by information. Finally, the authors find that novices very rarely mention semantic elements in their judgment. To them, a rational judgment does not seem evident because of the field's limit in terms of expertise. In this case, the appeal to processing skills and experiences with the source is mainly conceivable. Application of these two strategies by novices does not require expertise in the field.

4 Determinants of the Credibility of Electronic Information

Identifying the evaluation strategy allows the Internet user to establish the equation to measure the credibility of the information. In order to finalize this measurement, she adds the referential variables to her equation. Following this logic, these variables play the role of determinants of credibility. The following paragraphs address a review of these determinants, which are part of the findings proposed at the end of academic and empirical research on the credibility of electronic information. In the first part, we will review the factors affecting the measurement of the credibility of electronic information in general. In the second part, the determinants of the credibility of electronic recommendations relate directly to the environment of electronic commerce. The communication and electronic commerce literature conceptualize the devices used to assess the credibility of information into three categories: characteristics of the information, those of the source, and the individual.

Scholz-Crane (1998) offers a quasi-experimental study where 21 students were asked to rate the quality of the information presented on two websites and write a short essay explaining how they performed the assessment. The author suggests specific evaluation criteria for participants to choose from. The content analysis

results show that most of the respondents use two essential criteria to assess the quality of the information. Information depth is the degree to which the information is presented in detail, and Accuracy is presented with statistics and citations from its sources; it is legibly written and well organized.

Based on his theory of Prominence-Interpretation, Fogg et al. (2003) validated a large study following the same qualitative descriptive approach to establish a list of criteria used to assess the credibility of the information featured in websites. Each of the 2684 people interviewed was asked to assess the credibility of two sites that focus on the same theme, such as health, news or finance, and e-commerce. At the end of this study, they identify four groups of elements that are the subject of the consumer's consideration at the time of his judgment:

- **Information characteristics:** its organization, its presentation structure, the depth of its content, its updating, its bias, its usefulness, and the quality of its language of expression.
- **Presentation of the site:** its visibility, readability, navigability, and functionality. This element plays the most crucial role in consumer judgment, according to the authors.
- **Reason for source:** commercial intent, advertising presence, identification of the website operator, its method of handling communication with its audience.
- **Brand recognition and site reputation** are established based on the consumer's knowledge of the source, the degree of familiarity with the site, the presence of a "seal of approval," or the site's affiliation with reputable organizations.

Ma and Atkin (2017) and colleagues draw on the credibility judgment literature to construct a model for assessing the credibility of User Generated Content (UGC). In this descriptive study, the authors propose that the judgment of credibility be carried out on three levels: intuitive, heuristic, and strategic, based on certain essential features of information, its source as well as personal characteristics of the assessor, familiarity with the source, source reputation, availability of references, personal knowledge of the assessor, personal experiences. At the most modest judgment level with the least cognitive effort, the person evaluates the information based on their knowledge and experiences (intuitive judgment). When the person shows more cognitive efforts, the evaluation is based on a simple recognition of credibility based on a reminder of two primitive criteria: familiarity at the source and its reputation (heuristic judgment) or is based on more systematic and in-depth treatments (strategic judgment) by resorting to verification of information on other sources.

Lucassen et al. (2012) organized a study on the impact of attributes of information on the judgment of its credibility based on their 3S model. These relationships are examined under the control of two factors: familiarity with the assessor's subject and competence in handling electronic information. The authors propose an empirical study within an experimental approach. According to the results, these two factors moderate the relationships between the characteristics of information and the judgment of its credibility. People with excellent knowledge of the subject assess credibility differently than those who are new to it. The difference is fundamentally

manifested in using semantic attributes of information (e.g., the height of its correctness) in judgment. Novices cannot do this by tending to base their considerations on surface attributes (e.g., text length). On the other hand, experts in the field establish a mixed strategy that relies on a combination of these two attribute categories. Then, the competence displayed by the Internet user in processing information also differentiates how the person uses the elements of information quality during the judgment process. People with better IT skills base their assessment more on information quality cues. When an Internet user evaluates information to which she sees herself unfamiliar, her recognition of the quality of the information significantly influences credibility if this is a person of great competence. On the other hand, for the less competent, no difference in credibility is noticed between the information with low quality and one with better quality.

Based on the theoretical Dual-Process model introduced by Deutsch and Gerard (1955), Cheung et al. (2012) studied the impact of informational and normative elements of e-recommendation on consumers' perception of their credibility. Five antecedents of this credibility were found after a quasi-experimental study based on the online questionnaire method and valued by the structural analysis model based on the partial least squares method. These five evaluation criteria are: The first category consists of the strength of the argument, the credibility of the source, and the confirmation with the prior belief of the receiver of the information. The second category combines the consistency of the recommendation and the rating that other consumers give on the recommendation. The strength of the argument refers to the quality of the information transferred in the message. The more substantial and persuasive the arguments, the more the audiences will tend to develop a positive attitude towards the recommendation by seeing it as credible. Source credibility relates to the credibility and reputation of the recommender. The personal profile of the latter presented publicly on the platform allows the assessment of this credibility/reputation. Consumers tend to prioritize their belief over information from a broad credibility/reputation source and accept that information more readily. Confirmation with a prior belief is associated with consistency between the consumer's pre-established knowledge and experiences on the performance of the recommended product and the informational content of the recommendation. The more this consistency is evident, the more the consumer tends to believe in it. The consistency of the recommendation is interpreted by its convergence with the other recommendations on the same subject. This consistency strengthens credibility perceived recommendation.

The public rating on the recommendation is linked to the public's opinion on its usefulness, and it interprets how previous readers vote for this recommendation. Such a positive assessment strengthens the perceived credibility of the recommendation. Baek et al. (2012) use ELM information development models (Petty and Cacioppo 1986) to identify factors determining the usefulness of an electronic recommendation. 75,226 customer comments collected from the Amazon.com platforms were analyzed using the text mining method. The authors discover at the end of these works four elements of the commentary. Consistency between the personal rating and the audience rating: the personal rating generated by the author of the

recommendation does not differ from the level of the average rating raising the product. The reviewer whose author is in the Amazon.com top 10,000 best reviewers is significantly more valuable and credible than others. Commentary's usefulness increases when its length is amplified; however, this reinforcement is saturated when the commentary reaches the threshold of 1000–1500 words in its presentation. The importance of the number of negative words used in the comment increases its usefulness; the use of negative words makes the arguments more powerful and persuasive; however, the negative valence commentary is not more helpful than the positively oriented commentary. The authors suggest that the effects of the factors mentioned above are moderated by the consumer's objective, for which he is proceeding to consult the recommendations. When considering the experience product (product whose characteristics are challenging to inspect before purchase) and the low-priced one, the consumer judges the usefulness of the comment somewhat peripherally. On the other hand, for the research product (product whose characteristics are easy to observe thanks to the seller's descriptions) and that with a high price, the central judgment will be frequented.

In a quasi-experimental study that took a communication approach, Schindler and Bickart (2012) examined the perceived usefulness of customer comments under the impact of its two characteristics: content and linguistic style. The authors suggest three such factors that influence this utility. The depth of the comment determines the richness of the information that the message conveys. The more informative, descriptive, or evaluative the commentary is, the more valuable it is in favor of the exploitation of readers. However, this relationship knows a threshold. The consumer needs enough information to support the judgment and decision, but an excessive volume of information makes a comment challenging to be absorbed. Content with positive valence and moderate quantity helps to reinforce the usefulness of the comment. Positive reviews help consumers consider the alternative more deeply, but too much positive information would lead them to question the recommender's motives. However, the proportion of evaluative and negative information, moderate or abusive, has no impact.

The more critical product descriptions are in terms of volume, the better the commentary assists consumers in their decision-making. In addition, a moderate proportion of descriptions of the author of the comment reinforces its perceived value. The presentation of this type of personal information helps the consumer better understand the recommender's perspectives and motives by promoting the establishment of his authority and making him more sympathetic to the consumer. However, as soon as this information is abusive, the heterogeneities between the consumer and the author become more evident, and as a result, the latter becomes less pleasant, and then his recommendation is less useful. Harmful stylistic elements are associated with the low-value recommendation. These elements make the recommendation more challenging to understand by damaging its usefulness and weakening the consumer's perception of the competence of the recommender. However, recommendations including unofficial stylistic elements (for example, slang, humor) are seen as more beneficial because these elements make the consumer feel more connected. However, the abuse of these elements can lead the consumer to

perceive that the recommender is intelligent and competent but less honest and severe. This promotes skepticism among consumers by damaging the perceived usefulness of the recommendation.

5 The Proposition of a Conceptual Credibility Model for Online Recommendations

People look for information on the Internet to support their arguments by helping them to react or simply to learn and acquire new knowledge. The content of the information, therefore, enables them to reduce the uncertainty of the environment. However, the availability of innumerable electronic contents provides the user with information that varies widely in quantity and quality, and information can therefore create more discrepancies and uncertainties. When learning, the impact of the information is simple: it can be stored and recalled by the user. However, in most cases, it is used immediately to aid decision-making by impacting the attitude and behavior of the user. Faced with a vast amount of information received every day, each person tries to filter it before retaining helpful information. If she does not believe in content for such a reason, likely, she is not using it. Of course, one of the most important criteria used in this filtering service is the credibility of the information.

Credibility may therefore condition the effectiveness of the persuasive message. It is for this reason that this factor is the subject of a central concept in our research. Credibility will first examine its significant consequences: the change in attitude and behavior and the receiver's reaction. Then, as soon as credibility influences the impacts of the persuasive message, it is essential to see how the receiver decides what to believe. This question has been widely studied in several academic disciplines such as information science, communication science, psychology, sociology. Based on previous research, we seek a contribution to answering this question as part of an experiment in marketing. Identifying the factors determining this credibility perceived by the electronic consumer will constitute the core of our empirical work. Based on the previously described findings, we thus propose the following credibility model for online recommendations (Fig. 4) and the following hypotheses (H1–H6).

- **Hypothesis 1:** The effects of trust and quality signals on the perceived credibility of recommendations are additive and equally important.

  - **Hypothesis 1.1:** The presence of a product description positively affects the perceived credibility of the recommendations.
  - **Hypothesis 1.2:** The presence of a product image positively affects the perceived credibility of the recommendations.
  - **Hypothesis 1.3:** The importance of the offer's average rating positively influences the perceived credibility of recommendations.
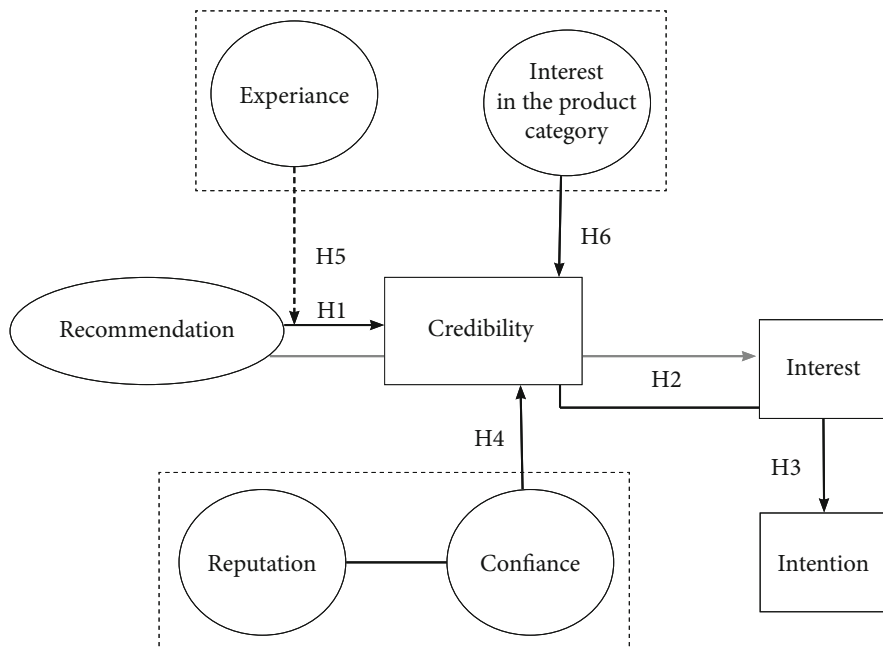
Fig. 4 Conceptual Credibility Model for Online Recommendations (*Source* Author's illustration)

  – **Hypothesis 1.4:** The volume of reviews posted on the offer by customers
     positively influences the perceived credibility of recommendations.

• **Hypothesis 2:** The perceived credibility of the recommendation fully mediates
  the effects of the characteristics of the recommendation on the consumer's
  interest in the offer.
• **Hypothesis 3:** The consumer's interest in the offer completely mediates the
  impact of the credibility of the recommendations on their intention to purchase.
• **Hypothesis 4:** The trust that consumers place in the brand reinforces their
  perception of the credibility of recommendations.

  – **Hypothesis 4.1:** The reputation of the merchant site reinforces the consumer's
     perception of the credibility of the recommendations.
  – **Hypothesis 4.2:** The reputation of the merchant site reinforces the confidence
     in the consumer's brand.
  – **Hypothesis 4.3:** Consumer confidence in the merchant site completely medi-
     ates the effect of the site's reputation on their perception of the credibility of
     recommendations.

• **Hypothesis 5:** Internet shopping experience positively moderates the effects of
  quality signals on perceived credibility.

- **Hypothesis 6:** Consumer interest in the product category negatively influences the perceived credibility of recommendations.

6   Coherence of the Model with Previous Findings

According to persuasion theories, when the information consumer engages in communication and is subjected to a persuasive attempt, the impact of the message is primarily determined by the nature of the reflections that individuals generate in response to the information presented to them. The ELM model proposes that in this situation, in order to react by forming a conforming personal attitude, the consumer essentially tends to manifest the efforts devoted to processing the communicative information. This treatment, which is part of a cognitive process, is likely to experience two different strategies that Petty and Cacioppo (1986) call the central and peripheral routes. Directly, the individual seeks to judge the persuasive message through an elaboration of its informational content. In this perspective, this elaboration is carried out by a reflection on the content of the information perceived and, above all, by an evaluation of the quality of the rational argumentation of the message before suggesting to the subject a particular conclusion. On the other hand, when the individual is not motivated or competent in this information processing, he will slightly tend to do this cognitive elaboration. In this case, according to Petty and Cacioppo (1986), the individual turns instead to the second strategy of judgment—the peripheral path. In this context, for lack of competence or/and motivation, the individual will favor an indirect judgment based on specific more contextual criteria that he perceives from the information.

Research on judging the credibility of electronic information relies heavily on persuasion theories. The literature suggests that the respective base his judgment on the provisions, which are the subject of the characteristics of the information (its content, its argument) and a certain number of elements. Heuristics of the information itself (its presentation, its linguistic style) and its source (the reputation of the source, its reliability, its attractiveness). The study on the credibility of electronic recommendations also suggests factors that determine it: the content of the message, the valence of the recommendation (cognitive elements), or the social elements of the recommendation, its internal and external consistency, its format, and its style, its source. Thus, we assume that the existence of a description of the product can affect the consumer's perception of the offer's credibility (Tam and Ho 2005).

Customer reviews are another form of social opinion expressed about the product and the offering, and they can influence the consumer's judgment. The literature has indicated the relationships between customer reviews' content and quality elements (the quality of the argument, their valence, consistency, depth, length, linguistic style) and the perceived credibility of recommendations. However, the impact of customer reviews in terms of their volume on this perception remains little discussed. The large volume of reviews suggests that the purchase of the product was made in a large quantity. In addition, it demonstrates a high level of interest that

the consumer community places in this product and this offering. Therefore, the volume of opinions in this direction can affect the perception of the credibility of recommendations on the offer. The literature has actively identified a large number of determinants of the credibility of electronic recommendations. However, the magnitude of the impact of each factor is still unclear (Mudambi and Schuff 2010).

6.1 Role of Credibility

In the online shopping process, to mitigate the risk of dissatisfaction, consumers consult product information before establishing their attitude and then their purchasing decision. Their purchasing behavior can thus be influenced by the recommendations and opinions of others, regardless of whether he decides whether or not to buy the product. As soon as the recommendation elements constitute signals of the quality of the offer, the consumer consults the recommendations to assist his assessment of this quality, particularly in the event of a lack of knowledge and direct experience of the product. The more powerful and more persuasive these signals, the better able they are to guide the assessment. Research on signaling suggests that the more credible signal may lead the consumer to a more excellent perception of the quality of the product compared to a less credible signal (Elwalda et al. 2016). The non-credible signal may have little effect on this perception because the consumer is likely to consider it insignificant. In this sense, the judgment of signals is part of helping the consumer differentiate products based on their quality. Moreover, the consumer can only be interested in the product whose perceived quality is desirable because, at the end of a transaction, he pays the price, obviously wishing to receive the valuable good in return. Anything that suggests a relationship between the credibility of the recommendations and the establishment and reinforcement of the consumer interest in this recommended product. The more credible the recommendations are considered, the more critical their likelihood of being used to assess the quality of the offer could result in the formation of interest in the product (Xu et al. 2011).

6.2 Role of Interest in the Offer

The consumer proceeds to judge the credibility of the electronic recommendations on the product to guide his purchasing decision better. The credible recommendation will be more helpful, persuasive in this term. As we explained above, a credible recommendation can lead to a better perception of the quality of the product. Extensive research has confirmed that the perception of product quality positively affects purchase intention (Zhang et al. 2021). This suggests a relationship between the manifestation of this intention and the credibility of the recommendation. The positive evaluative perception of credibility contributes significantly to the formation

of the consumer's attitude. Practically, the researchers found the critical role on the purchase intention of the credibility of the digital note (Ho-Dac et al. 2013), of the congruence between the note and the reviewer's text (Park and Nicolau 2015), of the valence of the comment. The credibility of the recommendation encourages confidence in the offer, which will generate a better positive attitude and possibly a higher intention to buy. Nevertheless, we note that the usefulness of a credible recommendation must be linked more obviously to the perception of the object that it raises. Therefore, its credibility can generate more direct effects on forming an evaluative attitude than decision-making action. It will be complicated for the credible recommendation to immediately produce an intention to buy without identifying an interest that largely quantifies and conditions that intention (Yin et al. 2014).

6.3 Role of the Source

In persuasion theory, the source constitutes an essential heuristic element that plays the role of a solid guarantee of the quality of the object it proposes. As soon as the consumer believes that a well-liked source should be seriously invested in, he is likely to consider that he could not behave dishonestly by providing poor-quality items. In assessing credibility, the source constitutes the authoritative heuristic based on the belief that a reliable source is generally correct (Winter and Krämer 2014). A significant criterion for judging the credibility of information is to consider whether its source was an official authority or not. Research suggests that in the context of choosing between different sources, the individual is more likely to believe in what they perceive to be more reliable than in an unfamiliar source, even if the inspection of the content presented there is little or has not yet been carried out. This role of the source builds on the advantage of the human tendency to assume that a prestigious person cannot be wrong (Dinulescu and Prybutok 2021).

In the context of the Internet, the source refers to the authors of the published content and especially the website that generates or cites the information. As we have summarized in the previous chapter, the literature considers that several character-istics of the source can affect the judgment of the credibility of a recommendation presented there: the attraction of the source, the perception of its value, its style, its reputation, its credibility. Pornpitakpan believes that the message presented by a competent and reliable source may be more successful in influencing the receiver's attitude. Winter and Krämer (2014) consider that the role of the source in judging credibility is connected with its reputation and the expectation of its audience.

Reputation plays a vital role in the proper functioning of the e-commerce system. In this environment of interaction between strangers, the behavior and reaction of consumers are primarily based on their perception of the reputation of the merchants because they know very well that this reputation is established based on the cumulative satisfaction of their customers (Mo et al. 2015). Website reputation is a heuristic element in a credibility assessment situation that allows consumers to

reduce or avoid cognitive efforts to pass judgment. People tend to place a higher value on recognized alternatives than unrecognized ones, which is subject to the principle of heuristic recognition. Even only through its brand, a familiar source is often judged to be more credible than an unfamiliar source, and this judgment remains independent of the judgment of the characteristics of the messages they present. We, therefore, consider in the context of this research the reputation of the website as an essential element of the source, which can affect the judgment of the credibility of the recommendations.

6.4   Role of Personal Characteristics

The theory of persuasion suggests that the personal characteristics of the assessor decide the selection of informational cues to consider during judgment and how these cues will be interpreted. The processing of heuristic or cognitive elements will be manipulated according to the degree of his motivation, while the quality of the interpretation largely depends on his skills in terms of this information processing. Consequently, the personal characteristics of the consumer that characterize these two factors—his motivation and his ability to process information—could be decisive in his judgment of the credibility of the information. In the context of this research, we consider observing the impact of two significant personal variables: the consumer's experience in buying on the Internet on the one hand and, on the other, his interest in the category of product (Zhu and Zhang 2010).

Experience interprets the level at which the consumer knows about and frequents purchases in electronic marketplaces. The rational person who frequents purchases on the Internet must probably believe very well in the proper functioning of the digital reputation mechanism that raises the e-commerce system. Research has confirmed that deals are far from being concluded without this belief. The researchers found that, as soon as the recommendations constitute the essential basis for establishing a digital reputation, the more the Internet user is experienced in e-commerce, the more she perceives the usefulness of the recommendations and the more she uses them in her judgment. to decide. We, therefore, assume that the person experienced in online shopping is more committed to using informational signals to assess the credibility of recommendations before judging the offer (Chan et al. 2017).

Internet shopping experience positively moderates the effects of quality signals on perceived credibility. The consumer's interest in the product category is firmly rooted in his perception of the importance of the product and its purchase, and this is why he expresses himself as more sensitive to the risks of purchase and self-expression when judging a product of his interest. By showing a significant interest in the product category, the consumer tends to use more criteria to evaluate it, accept fewer alternatives, and treat information more carefully and in more detail. The strong interest shown thus makes him more skeptical and more resistant to

persuasive attempts by recommenders. Thus, we propose that the consumer's interest in the category slows down his perception of the credibility of the recommendations.

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The Relationship Between Product Placement and Shopping Intentions on Instagram

Lenka Suková and Ladislava Míková

Abstract Influencer marketing on Instagram is a marketing communication tool used more and more frequently by all brands. Most companies are now turning to social networks to promote their products and get closer to their potential consumers. Marketing influence via product placements seems to have positive repercussions on company sales. Nevertheless, it seems that the continued presence of brands on social networks, via influencers, causes consumer fatigue, even annoyance, who feel invaded by advertising messages. Therefore, the main objective of this chapter is to analyze how product placements on Instagram influence consumers' purchase intention and to what extent this new type of marketing communication could lead to the development of negative attitudes and annoyance.

In a constantly evolving world and in which mentalities are changing, companies must adapt to permanent changes in consumer behavior. A few years ago, traditional marketing, which was the primary means of marketing communication, is now taking a back seat. The use of digital therefore overtakes it. Most companies are now turning to social networks to promote their products and connect with their consumers. The growth in the use of social networks, and more particularly of Instagram, has been explosive in recent years (Djafarova and Rushworth 2017). On average, individuals spend 1.72 h per day on social networks (Bennett et al. 2019). Businesses must therefore redouble their efforts to find new ways of communicating with potential consumers. One of the means implemented on Instagram is the technique of product placements, and its use has grown steadily over the past few years.

Social media product placements allow brands to speak only to their target consumers, making this communication technique one of today's most effective marketing strategies (Liu et al. 2015). A survey conducted on this topic showed that 86% of brand marketers in 2017 used influencer marketing in their advertising

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campaigns and 92% of them found this type of marketing effective (Linqia 2019). Influencer marketing, therefore, appears to be a communication technique that generates positive benefits for companies. It seems that the use of influencer marketing has grown steadily over the past few years worldwide. Indeed, this market reached a value of one billion dollars in 2016 and amounted in 2019 to 6.5 billion dollars, representing a growth of more than 5 billion dollars in the space of only 3 years. The ability for brands to promote their products and services through influencers helps capture better consumers' attention. The results of a worldwide study of 3600 people show that 61% of participants interact with an influencer at least once a day (Statista 2021).

However, in addition to the enthusiasm for this communication strategy, it would seem that the continued presence of brands on social networks, via influencers, can also cause fatigue, or even annoyance, among consumers, who feel invaded by advertising messages (Jacobson et al. 2020). Therefore, marketers must deepen their knowledge of this emerging phenomenon of consumer fatigue and better understand the factors that cause it (Logan et al. 2018).

Given, on the one hand, this craze for influencer marketing and the significant increase in the number of brands that collaborate with influencers to promote their products and, on the other hand, the annoyance of consumers, which seems to appear little by little, we wanted to study the following question. Do product placements on Instagram influence purchase intention, and do they negatively affect the weariness type in consumers?

1 Influencer Marketing on Instagram

Influencer marketing brings together all of the communication techniques used by brands to harness the recommendation potential of influencers in order to promote their products to potential consumers (Argyris et al. 2020). This method of marketing communication has experienced significant growth in recent years. Indeed, companies are devoting increasingly large budgets to digital strategy and reducing those devoted to traditional advertising (Trivedi and Sama 2019). This is because social media has broadened the traditional definition of communication. Social networks make it easier and more regular for everyone to follow the lives of the celebrities they love, unfiltered and with more authenticity and spontaneity than traditional media. Therefore, it is also easier to promote a product every day and naturally through people whose daily lives are virtually shared and with whom we forge emotional ties because the content offered is funny, spontaneous, and honest.

Influencers are defined as people who have the potential to create engagement, conduct a conversation, and sell products and services to a target audience; these individuals may be celebrities or smaller, micro-targeted professional or non-professional peers. According to Belfiore (2018), Instagram is a community service in a smartphone app specializing in photography. Instagrammers use this

social network and exert influence in a community, and Instagram is a communication channel for posting photos and videos.

The growth in the use of this application has been tremendous in recent years (Djafarova and Rushworth 2017). We can observe a significant increase between 2013 and 2018 in monthly active users on Instagram globally. In January 2013, 90 million people used this communication platform, and this figure has only increased to reach one billion users in June 2018 (Statista 2021). This social network is currently mainly used by adolescents, and young adults—41% of Instagram users worldwide are 24 years old or younger. Currently, influencers in general, or Instagrammers more specifically on Instagram, are recognized as being big or small, depending on the number of followers in their community (Trivedi and Sama 2019). Most of the time, subscribers are influenced by the lifestyles or opinions of the influencers they follow daily. They search by following and subscribing to the accounts of their favorite influencers, inspiration for a variety of topics. Instagram users are inspired by influencers for a whole series of things belonging to different fields such as technology, beauty, fashion, politics, or even health (Audrezet et al. 2020).

Therefore, brands do not hesitate to increasingly use Instagramers as a means of communication to reach end consumers (Trivedi and Sama 2019). In order to promote brands and their products, influencers use a practice called "product placement," which involves brand names appearing in their posts on Instagram and recommending brands and their products to influence followers, invite them to buy the products they use, and promote.

The growing presence of product placements on Instagram and their enthusiasm have led to specific laws to allow Instagram users to be informed when content is used for promotional purposes (Taylor 2020). Instagrammers are now, in some countries, required to state whether their posts are sponsored.

Finally, a good influencer marketing strategy can positively impact a company's business results. This technique can indeed make it possible, if carried out correctly, to benefit from certain advantages such as: widening the target audience and therefore increasing the reach of the marketing message, improving the conversion rate of marketing campaigns into trying to reach new audiences, improving the image and notoriety of the brand by taking advantage of the notoriety of the influencer, or even generate an improvement in the visibility and natural referencing of the website. It is interesting to consider influencer marketing because it has been shown that consumers are more receptive to advertising posts delivered by influencers with large communities than traditional advertisements that are shown on television (de Vries et al. 2012).

Influencer marketing is now an integral part of digital marketing strategies for brands. Indeed, a growing majority of brands believe that this new marketing communication technique can lead to more sales and therefore increased profits (Ki et al. 2020). A survey conducted on this topic showed that 86% of brand marketers in 2017 used influencer marketing in their advertising campaigns, and 92% found this marketing compelling. In addition, nearly 89% of these specialists said that the ROI from influencer marketing was better than, or at least comparable

to, what was put in place on other marketing channels in 2018 (Linqia 2019). In addition, the content present in influencer marketing campaigns is 6.9 times more effective than that generated in the studio (Ki and Kim 2019). Because of these positive impacts, 42% of marketers said they wanted to increase influencer marketing and use it as an ongoing strategy rather than to use it only during ad hoc campaigns (Linqia 2019). Ultimately, influencer marketing on social media is a growing industry. In fact, in 2020, the value of this industry is estimated at 2.3 billion euros, compared to only 0.5 billion euros in 2015 (Mediakix 2018).

2 Purchase Intention on Instagram

The intention to purchase online is defined as the desire for a customer to consume a product and a service on a website (Cyr et al. 2018). It has been shown in several studies the existence of a significant relationship between purchase intention and the actual purchase of a product and service. It has been observed that consumers with positive intentions towards a product and service are more likely to consume it online compared to consumers who do not have a positive attitude towards it (Morwitz et al. 2007). In 2019, more than 68% of marketers considered Instagram the most beneficial social network in terms of impact when this communication channel was used to carry out an influencer marketing campaign (Linqia 2019).

Several criteria must be considered to generate positive spinoffs in terms of purchasing intentions, and therefore sales resulting from influencer marketing campaigns carried out on Instagram, such as the choice of influencer, behaviors influencing the act purchase, gender, or generation of consumers.

2.1 Characteristics of the Influencer

The choice of influencer is a determining factor for brand promotion. Indeed, in influencer marketing, the promotion's success relies heavily on the influencer selected to promote the products. Choosing the right Instagrammer is not always easy. In 2018, one in two marketers believed that they did not have the skills and knowledge necessary to target the most suitable influencers to carry out their marketing communication campaign to influence the purchasing behavior of their target customers (eMarketer 2019). We must distinguish two types of influencers: macro-influencers and micro-influencers. These two types of influencers have similarities as well as differences. Their common characteristics are three in number: they are perceived by the members of their community as possessing knowledge in one or more fields, their lifestyle reflects the values they convey on social networks, and finally, they are followed by a community of subscribers (Uzunoğlu and Misci Kip 2014). In addition to these common points, several criteria make it possible to differentiate them. These are set out in Table 1.

Table 1 Characteristics of macro- and micro-influencers

	Macro-influencers	Micro-influencers
Number of followers	More than one million	$1000 < et < 999.999$
Characteristics	• Large range • Low engagement • Significant costs • Passive subscribers	• Low to medium range • Great commitment • Low costs - Active subscribers

Source: Author's illustration

Before a social media marketing communications campaign begins, marketers should choose the influencer they want to collaborate with. The impact will differ depending on the type of influencer chosen to promote their brand (Ahmad 2018). Collaboration with macro-influencers is to be preferred if the objective of the communication is to reach a large number of potential consumers. In addition, some consumers consider Instagramers with a large community to be more honest and therefore more trustworthy than smaller influencers (Djafarova and Rushworth 2017). On the other hand, micro-influencers should be favored when the brand wants to obtain a high level of engagement from consumers. Most of the time, micro-influencers have a more engaged community of subscribers, and they have an average of ten times more comments and likes on their posts posted on Instagram (Dhanesh and Duthler 2019).

Another important characteristic to consider when choosing an influencer is that the influencer's lifestyle and personality match the image of the brand and how the products are presented to the influencer's community. This principle of resemblance between the identity of a brand and the personality of an influencer is known as a congruence. An influencer sharing the same values as those conveyed by the brand he promotes will generate more positive spinoffs in terms of sales (Qureshi and Malik 2017). Finally, how consumers perceive social media advertising is a critical factor in an influencer marketing campaign (Chen et al. 2011). The consumer must have a significant interest in the life and daily life of the celebrity they follow each day and a certain level of attraction and respect towards that person (Ohanian 1990). Therefore, all of the conditions mentioned above are necessary so that the potential consumer can ultimately be influenced by the celebrity's advertisements and convinced by the products they promote.

2.2 Factors Influencing Shopping Intentions

The para-social interaction between the influencer and members of his community, social and physical attractiveness, hemophilia, and the credibility that the influencer generates with his followers are linked to the intention of consumer purchasing (Sokolova and Kefi 2020). All of the above criteria, each in their way, influence the intention to purchase.

Authority

Authority is how a person can exercise a dominant position over other people (Kelman 1958). The one with authority has the power to reward a good deed or, on the contrary, to inflict punishment in case of discontent. In the case of Instagram, the influencer most of the time enjoys a power of authority that he exercises over the members of his community. Speakers are notably recognized, in the sense that they are supposed to hold a piece of knowledge, a competence, a position, an experience, know-how which authorizes their speech that their speech can be, at first glance, qualified as authoritative discourse, even if it is a fragile and contested authority (Monte and Oger 2015). Therefore, the influencer with a specific power has the opportunity to promote products and services through product placements and encourage people who follow them to consume them. Indeed, brands do not hesitate to collaborate with these influential or authoritative people to improve their sales. This is because the followers of these influencers find in them an example to follow and wish to be like them (Sammis et al. 2015).

Credibility

Credibility is a feeling generated when someone inspires trust and reliability in others. Credibility is also related to how the audience perceives a speech to be of quality. Credibility makes it possible to exert a power of influence on the listeners via internalization, which consists of shared values and attitudes between the presenter and his audience (Kelman 1958). According to Sokolova and Kefi (2020), purchase intention is influenced by both para-social interactions and credibility. It would appear that the impact of para-social interaction on purchase intention is slightly more substantial than that of credibility for most influencers. This means that people who are more attached to the influencer they follow are more likely to buy the products they are promoting.

Promotion

Human Brand Theory

The human brand theory reinforces this idea of credibility and emotional connection, which increases the intention to buy. This theory was developed by Thomson and is defined as any known person who is the subject of marketing communication efforts (Thomson 2006). Human brands have been around for a very long time and are embodied, for example, by celebrities, idols, or even athletes. Nevertheless, new human brands have appeared with social networks; they are influencers (Ki et al. 2020) and Instagrammers in the context of Instagram. This theory states the existence of an analogy between the personality traits and those of a brand. The theory of

human brands was developed to create as much emotional bond as possible between the brand and the consumer. Indeed, consumers who have developed emotional ties to a specific brand are more likely to be interested and attracted to other products offered by the same brand. Likewise, the emotional attachment that a consumer has towards a human brand, such as an influencer, for example, facilitates the positive transfer of emotions to the brands that the influencer is promoting (Thomson 2006), which can ultimately lead to positive repercussions on a brand's sales and profits. However, the positive effect that brands desire when collaborating with an influencer may not always be optimal. This is why choosing an influencer who matches the brand's image well (McCormick 2016).

Influences that an influencer can wield over their community are more significant if they are recognized as a human brand by their followers. This recognition is determined by several factors, allowing him to increase his persuasive power and improve the positive impact when promoting a brand (Thomson 2006). In addition, Keller et al. (2003) developed the theory of strategic brand management, according to which celebrities can themselves become brands. According to Keller et al. (2003), brand awareness and image are critical success factors for a human brand. Therefore, a person serving as a human brand can project a clear brand image just as a product can also. The emotional bond that binds the influencer to community members is one of the primary factors allowing the influencer to exert some form of influence with these followers. Indeed, the stronger the emotional bond between the two parties, the more community members will be likely to adhere to the products of the brand advertised by the influencer (Ki et al. 2020).

The influencer must respond as best he can to the needs of his followers in terms of ideality, kinship, and competence, to be perceived by his followers as a human brand that has a strong emotional bond with them. Indeed, kinship is a factor to be developed to forge a strong emotional bond between the influencer and members of his community. It goes through the behavior and personality that the influencer adopts on social media. For example, adopting a familiar, humorous, sympathetic behavior or even sharing the same tastes and preferences as the community members are behaviors that allow the influencer to create an intimate relationship with his subscribers. Finally, a final element to create an emotional bond between the influencer and his community is to fill the latter's need for competence. Most of the time, this need is met when the influencer's followers perceive the proposed content as informative and valuable (Ki et al. 2020).

The Theory of Social Influence

Social influence theory allows us to understand better the invisible mechanisms that allow influencers to build relationships with members of their community (Sokolova and Kefi 2020). According to Gao et al. (2019), social influence covers anything that produces a change in behavior by a dynamic relationship between dominant pressures in a given context and the adaptation of individuals. The theory of social influence distinguishes three different processes that exert social influence on

people: conformity, identification, and internalization (Sokolova and Kefi 2020). First, compliance is a mechanism by which individuals agree to be influenced to gain approval, or conversely, to avoid the disapproval of the influencer (Kelman 1974). Second, identification occurs when community members accept influence to establish or maintain a defined relationship with the influencer, which ultimately becomes part of the follower's image. Influence through identification is based on attractiveness. Indeed, the influencer has qualities such as popularity or creativity. These qualities that the influencer has, the follower does not have. Therefore, he perceives the influencer as desirable and would like to be like him (Kelman 1974).

Third, internalization is a process that occurs when community members accept the influence that an influencer has over them because they have values similar to those of their followers. In this case, it is the content of the influencer itself that subscribers recognize. Influence is exerted because community members perceive the content offered by the influencer as valuable and informative (Kelman 1974). The mechanisms mentioned above of social influence highlight, on the one hand, the hold that the society has over the individual and, on the other hand, the changes in behavior resulting from this hold of the social.

Gender

According to Djafarova and Bowes (2021), women and men adopt different behaviors on social networks. Indeed, most women use Instagram as a social network while men spend much more time on Twitter. Therefore, women are more present on Instagram and are more likely to be influenced by product placements made by Instagrammers. In addition, the way women use Instagram is different from what men use it for. Women use Instagram primarily to keep track of the lives of the micro-celebrities they like and to be inspired by new trends. For their part, in the smaller minority on Instagram, men use this social network mainly to stay informed on general and sporting subjects. Men will also follow accounts of traditional celebrities such as athletes or musicians (Djafarova and Bowes 2021).

Women seem to be more responsive to influencer marketing on Instagram. They are more likely than men to consume products only because their favorite micro-celebrity uses and shows a product (Khan and Dhar 2006). They buy more and more regularly because they are aware of the latest trends. On the contrary, most men seem not to be influenced by the advertisements present on this communication channel (Djafarova and Bowes 2021).

Desire is another concept that plays a vital role in buying on Instagram and is different for men and women. Desires represent the form that human needs take due to culture and personality. In other words, it is like saying that our environment influences and impacts our desires. This concept is developed in influencer marketing because Instagram users envy and desire the celebrities they follow daily. They appreciate their popularity and trendy lifestyle and would therefore like to be like them. Instagram is a social network that arouses the envy of followers. Indeed, this communication channel allows influencers to publish strategically chosen photos

and apply filters to them so that the proposed content is ideal for inserting promotional content and encouraging subscribers to the act of purchase. The intention of Instagram users to purchase a product and service they desire is heightened by the emotion of envy. This emotion leads to a significant increase in the intention to purchase the desired product and service (Loureiro et al. 2019).

A distinction should be made between the reactions of men and women to the content posted on Instagram. Men are more likely to show a strong positive correlation between desire and intention to buy. This can be explained by the fact that most men are more competitive when compared to other people of the same sex (Buunk and Massar 2012). The illusion of a face-to-face relationship with a social media personality is another determining factor for purchase intention and, subsequently, sales on Instagram. This concept helps to understand the power of persuasion better than Instagramers exert on their subscribers and explain the relationship between an influencer and the members who make up his community (Hwang and Zhang 2018). This feeling for a subscriber to have a special relationship with a micro-celebrity that he appreciates makes it possible to positively influence purchase intention and improve the relationship between the brand that the influencer is promoting and the potential consumer (Labrecque 2014) sensitive to the fact of maintaining a privileged face-to-face relationship with a micro-celebrity whom they appreciate as men. This leads to a strong positive correlation between the face-to-face relationship between an influencer and a woman and the intention to purchase the products and services the celebrity is promoting (Jin and Ryu 2020).

In conclusion, the emotion of envy influences the act of buying more among male consumers than among female consumers. This mechanism is further reinforced when the photos posted by the male influencer are selfies or photos taken by other people but appear on their own. On the contrary, the act of purchase will be more important for female consumers when the privileged relationship with the influencer is strong, and the photos used to promote specific products and services are group photos and not selfies or individual photos (Jin and Ryu 2020).

Generation

It is interesting to study the difference in impulse buying behavior between the different generations of the twenty-first century. Four different generations can be considered in this context. The baby boomer class, which represents people born between 1946 and 1965; Generation X, which is made up of people born between 1965 and 1980; Generation Y, made up of people born between 1980 and 2000; and finally, Generation Z, comprising people born from the year 2000 (Gajanova et al. 2020). The four generations mentioned above adopt different buying behaviors. As part of our study on the behaviors on Instagram, the baby boomer generation will not be studied because it has very little presence on this social network. A study has shown that 41% of people in Generation Z fall into the category of impulse buyers; followed by Generation Y, among whom 34% of its members buy on impulse and finally comes in third place, Generation X, for which 32% of its members buy on

impulse. These generations are constantly on the lookout for new things and are also less loyal to brands. Consequently, the latter is obliged to find new marketing communication techniques to meet the best consumers' needs and demands (Dhanapal et al. 2015).

Instagram users are exposed on this social network to multiple stimuli that lead to compulsive buying behaviors. The stimuli present on this digital communication channel are, among others: promotional advertisements, photographs, and videos posted on the Instagram account of specific brands, recommendations from friends, or even influencers (Xiang et al. 2016). The content posted by brands on Instagram represents a new and exciting means of marketing communication. Indeed, this mode of communication seems to influence potential consumers and generate positive repercussions on sales (Kumar et al. 2016). The content posted on Instagram by brands influences the activity of Instagram users, which ultimately creates new needs among members. These new needs can be met through the products and services offered by brands, which will translate into increased sales (Stachowiak-Krzyżan 2021). In addition, it seems that Generation Z, unlike Generation X, is made up of people with better knowledge of the techniques used by brands to sell via social networks. Therefore, members of this generation will be less likely to believe the advertising messages conveyed by brands via Instagrammers.

Regarding influencers and the way they communicate with members of their community to promote brands, it seems that influencers' opinions are rarely shared by their subscribers when making purchasing decisions (Djafarova and Trofimenko 2018). Several studies conducted on this subject have shown that using influencers to promote a brand's products is not always beneficial because Instagram users recognize the posts as paid advertising, which decreases the credibility and authenticity of the influencer and also engenders a negative perception of both the product, the brand and the influencer (Evans et al. 2017; Kim and Kim 2021). In addition, the amounts of financial compensation received by Instagram micro-celebrities to promote brands have increased very sharply in recent years, which may also have accentuated the feeling of mistrust of consumers towards Instagrammers.

3   Risk of Fatigue in the Face of Repetitive Advertising

Social networks now occupy an important and daily place in many people's lives, and these new communication channels offer the opportunity for many brands to be more present than ever before in the lives of their potential consumers. To do this, they use all the means available to promote their products and therefore encourage users of social networks to consume the products and services they offer daily. However, it seems that this continued presence of brands on social networks, via influencers, causes fatigue and even annoyance for consumers, who feel invaded by advertising messages (Jacobson et al. 2020). Therefore, marketers need to dig deeper into their knowledge of this phenomenon of fatigue that emerges among consumers and try to understand better the factors at the origin (Logan et al. 2018). Fatigue on

social networks is a concept that the proliferation of too much information can cause a feeling of overload among users of these platforms and, therefore, among potential consumers. Information overload occurs when an individual is no longer able to integrate information quickly. This phenomenon occurs when the amount of information to which the individual is exposed exceeds the time needed to process it (Jacoby et al. 1974).

In addition, product placement also raises questions among users of social networks. One of them is how the perception of influencers is changing in the minds of social media users. Indeed, before, influencers were perceived as attractive, authentic, and ordinary people most of the time. However, the increasingly important presence of product placements on digital communication channels seems to create user fatigue concerning brands and the influencers who promote them (Tafesse and Wood 2021). This is reflected in a growing questioning of how members of their community perceive influencers. The sympathetic nature of influencers is called into question, as well as the opinion they hold.

3.1 Persuasion Knowledge Model and the Attribution Theory

As we have seen previously, product placement is to exert a particular influence on potential consumers by promoting a brand through a non-marketing communication channel, such as Instagram. In this way, according to Balasubramanian (1994), product placement is viewed as "hybrid." Indeed, like other social networks, Instagram is a communication channel in which the distinction between advertising space and non-advertising space is not drawn precisely. Therefore, this can lead to uncertainty on the part of consumers, who are not always directly aware of the commercial nature of communication. Therefore, product placements can represent the uncertainty that can sometimes be found between advertising content and entertainment content (Evans et al. 2017).

Persuasion Knowledge Model

Friestad and Wright (1994) developed the Persuasion Knowledge Model (PKM), which explains both the repercussions that the persuasion attempt can have on the consumer and the repercussions related to identifying an attempt to persuade the consumer. Therefore, this model aims to understand how potential customers analyze the persuasive strategies of brands and how they see the market. This model, therefore, integrates the consequences of the experiences accumulated by the individual. This model highlights two main actors: targets and agents. The targets are the individuals targeted by the persuasion, so these are the consumers. Agents are the individuals responsible for various persuasion techniques. "Perceived persuasion attempts" represent how consumers perceive the agent-initiated persuasion technique. Persuasion episodes group together, from the point of view of the targets, the
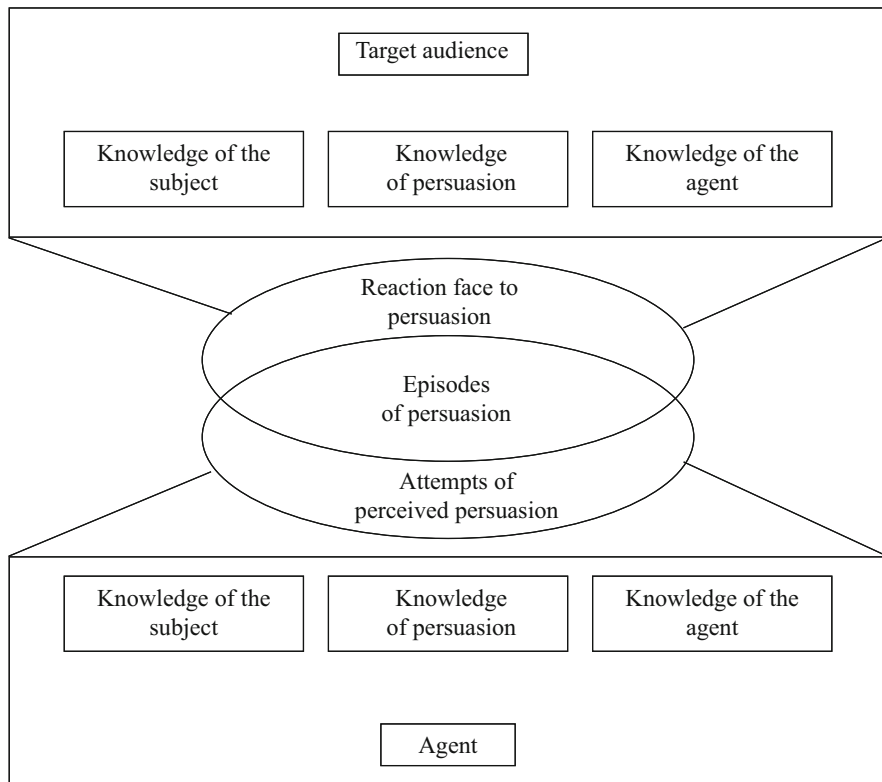
Fig. 1 Persuasion knowledge model (Source: Author's illustration based on Friestad and Wright (1994))

persuasive strategies that originate and are disseminated by the agent. Finally, how the target reacts to these strategies is known as the persuasion reaction (Fig. 1).

The PKM model is interesting to analyze product placements. Indeed, under certain conditions and for specific individuals, product placements can be the source of negative attitudes towards brands. The PKM model offers an interesting analytical framework for understanding these negative responses. According to Cowley and Barron (2008), two types of individuals can be distinguished: LPL (Lower Program Liking), those who do not appreciate the television program associated with the study, and HPL (Higher Program Liking), those who strongly appreciate the same program. The study did bring out some conclusions. Product placement appears to be the source of a more negative reaction for HPL individuals. Indeed, they perceive advertising as intrusive, annoying, or even distracting (Li et al. 2002).

According to Argyris et al. (2020), congruence is defined as: "the merits of an association or extension led by a brand." In other words, congruence helps to highlight the connection and fit between the brand's target message and the celebrity (Lynch and Schuler 1994). The causal model of congruence is a theoretical

framework according to which, when consumers perceive the individual who performs the product placement as congruent, they accept the intrusiveness of a brand for altruistic claims. However, if the consumer perceives the celebrity endorsing the product placement as incongruous, the consumer will negatively attitude towards the celebrity since they will see the business purpose (Rifon et al. 2004).

Consumers can increasingly identify the advertising messages that try to influence them (Cowley and Barron 2008). Individuals become aware that the products or brands present in product placements represent an attempt at advertising persuasion. The question then becomes whether the effectiveness of the placement is undermined when individuals observe the attempt at persuasion. As soon as the consumer perceives the attempt at persuasion, he is the prey of the PKM which leads to the hypothesis of a negative attitude towards the brand.

Attribution Theory

Attribution theory helps understand how consumers can decipher the motives that lead some individuals to promote a product and recommend it to others. According to this theory, the motivations of these individuals can be internal or external. When the causes are internal, it means that they are due to the individual's behavior. On the contrary, when they relate to the environment, we will speak of external causes (Bemmels 1991). The moment the business purpose of product placement is revealed, it can negatively affect consumer attitudes. Indeed, this disclosure can directly or indirectly impact the consumer's perception of product quality. In the first case, we will directly observe the decrease in the consumer's perceived quality of the product. In the second case, there will be an indirect repercussion because the consumer will express doubts about the fundamental objectives of the one who recommends the product (Jin and Muqaddam 2019).

Individuals can view product placement in two distinct ways. The first is to claim that the celebrity carries out product placement to share his passion with community members, so this corresponds to internal motivation. The second is to think that the influencer carries out product placement for profit, corresponding to an external motivation (Salerno et al. 2014). This second option should be analyzed in the context of weariness. Indeed, several studies have highlighted the negative attitude of consumers on the credibility of the individual who recommends certain products with the objective of external motivations (Kelley 1973; Wiener and Mowen 1986). In addition, the financial goal of the person communicating about the products also harms the latter's credibility (Moore et al. 1994; Rifon et al. 2004). Indeed, the disclosure of the commercial objective of the product placement has negative repercussions on the credibility of the source because its sincerity is impacted (Friestad and Wright 1994; Campbell and Kirmani 2000; Campbell et al. 2013). Consumers develop a form of celebrity skepticism that they see as selfish or solely interested in compensation (external motivations) (Campbell et al. 2013).

Consumer resistance to the marketing communications used by brands to communicate on the Internet has improved over the years. Even though Internet users are

increasingly solicited by marketing communications when they are on the Internet, they are increasingly able to identify these techniques and no longer consider them (Petty and Andrews 2008). As a result, marketers must constantly develop new communication techniques to get consumers to pay attention again (Fries 2019). To reach a more significant number of consumers, marketing specialists have developed a new type of communication: covert communications with the guiding principle of concealing the commercial nature of the advertising message (Darke and Ritchie 2007).

Hidden communication is a concept whereby a marketing message is delivered to consumers without them knowing the identity of the sender and the message (Akdoğan and Altuntaş 2015). When marketers communicate through this type of communication, for example, using influencers to promote their brand and product, it helps prevent consumers from setting up a PKM and developing an attitude of skepticism towards the brand (Darke and Ritchie 2007).

4 Consumer Skepticism

According to Obermiller et al. (2005), consumer skepticism towards advertising represents a general tendency not to believe in the veracity of advertising messages. In other words, skepticism towards advertising is a concept according to which despite the recognition of the need for the presence of advertising by the consumer, the latter still emits a defensive response in order to guard against advertising abuses (Chen and Leu 2011). Skepticism can have a negative impact on the effectiveness of an advertising campaign (Kim and Lee 2009). Indeed, in order to have an optimal reach of advertising, it is necessary that consumers have confidence in what is communicated in the advertising messages (Chen and Leu 2011).

There is a growing sense of non-authenticity towards Instagramers who make product placements. Indeed, Instagram users are increasingly questioning the veracity of the comments made by influencers. An influencer who places products for which he is paid creates a feeling of mistrust in the minds of his followers. Subscribers question whether the micro-celebrity actually uses the products they promote or if they do so only for the remuneration they receive (Djafarova and Trofimenko 2018). Consumers may also perceive in this marketing communication technique a certain form of opportunism on the part of brands. Indeed, it is not uncommon for consumers to perceive product placements as being driven just by financial motives (Homer 2009). This mechanism of skepticism can go even further. Indeed, according to a study by Djafarova and Trofimenko (2018), 21% of those who participated said that they unsubscribed from the Instagram account of the micro-celebrity they were following when product placements became too frequent and regular.

It seems that both the type of product placement and the repetition of this type of advertising message impact consumer attitudes. Indeed, too much emphasis on product placements has negative repercussions on consumers' attitude towards the

brand, and this effect would be all the more negative when the message is repeated (Homer 2009). The repetitive nature of product placements appears to be positively correlated with persuasion when repeated in a moderate fashion. However, too high a level of repetition leads to a feeling of fatigue and boredom, which leads to a decrease in persuasion (Campbell and Keller 2003). The two-factor theory developed by Berlyne (1970) states that familiarity with the stimulus is linked (by a non-monotonic inverted U-shaped relationship) to enjoying the stimulus (Anand and Sternthal 1991). This was developed in order to better understand the consequences of repeat advertising. According to this theory, repetition plays a determining role in how consumers respond to the stimulus and this occurs in two distinct phases (Campbell and Keller 2003). Indeed, two factors influence the emotional state of an individual, positive habituation and fatigue (Anand and Sternthal 1991).

Positive habituation results from a reduction in uncertainty and the possibilities of conflict initially induced by the new stimulus. Weariness is caused by boredom, satiety, decreased marginal learning, and a possible rejection effect (Anand and Sternthal 1991). It seems that the first presentations of the advertising message to consumers have a more pronounced impact on habituation, which leads to a more positive assessment from consumers, while the latest exhibitions have more repercussions on the weariness of potential customers, which negatively impacts the way in which individuals perceive the advertising message, with repeated exposure (Berlyne 1970).

Cacioppo and Petty (1979) looked at the two-factor theory and offered a more detailed analysis of the repercussions of repetition. They found that the positive arguments increased at first, but they decreased in time as the message was repeated. They also demonstrated that the counter-arguments first decline but then intensify with the repetition of the advertisement (Cacioppo and Petty 1979). It would seem that the maximum effect of the advertising message is reached when the repetition is moderate (Campbell and Keller 2003). Indeed, the first exposures to the advertising message give rise to consumers the desire to understand the content of the message, and at this stage, the majority of their thoughts will be in adequacy with the contents of this one. However, when the number of exposures becomes too important, counter-arguments compared to an advertising message will emerge. Finally, it has also been shown that the consequences of repetition are influenced by whether or not the elements allowing the processing of the information are available. The onset of weariness is delayed when the consumer has more difficulty understanding and deciphering the message to which he is exposed. At the same time, weariness will appear much faster when the information is easy to process (Anand and Sternthal 1991).

5 Research Methodology

The literature review tells us that there is a feeling of skepticism and non-authenticity about Instagrammers who carry out product placements (Djafarova and Trofimenko 2018).

5.1 Formulation of the Hypotheses

It would seem that an influencer making product placements for which he is paid a feeling of mistrust in the minds of his followers. In addition, consumers are not always aware of the commercial nature of communication (Balasubramanian 1994). Nevertheless, it seems that individuals are more aware that the products or brands highlighted in product placements represent an attempt at advertising persuasion. In addition, we know that the Persuasion Knowledge Model helps explain how potential consumers decode brands' persuasive strategies (Friestad and Wright 1994). So we ask ourselves whether discovering the commercial nature behind product placements can negatively impact how customers perceive the influencer and the brand and if this might impact their intention to purchase.

This is why we make the following assumptions:

H1a: The discovery of the commercial nature of product placement negatively impacts consumers' attitudes towards the influencer.

H1b: The discovery of the commercial nature of product placement negatively impacts consumers' attitudes towards the brand.

H1c: The discovery of the commercial nature of product placement leads to a decrease in purchase intention.

We know that according to Cowley and Barron (2008), two types of individuals are to be distinguished within the framework of the Persuasion Knowledge Model: the LPL (Lower Program Liking), those who do not appreciate the television program associated with the study and the HPL (Higher Program Liking), those who strongly appreciate the same program. Additionally, we know that product placement seems to be the source of a more negative reaction for HPL individuals. Indeed, they perceive advertising as intrusive, annoying, or even distracting (Li et al. 2002). Finally, we know that this study analyzes the reactions of individuals to product placements broadcast during a television program. Therefore, we ask ourselves, in the context of social networks, whether the attitude of consumers who strongly appreciate an Instagrammer is more impacted following a product placement made on their account, compared to a subscriber who weakly appreciates this influencer. We also wonder if this impacts the intention to buy.

We, therefore, make the following assumptions:

H2a: Product placements made by an influencer highly appreciated by a consumer have a more negative impact on this consumer's attitude towards the influencer than the attitude of a consumer indifferent to that influencer.

H2b: Product placements made by an influencer highly appreciated by a consumer have a more negative impact on the consumer's attitude towards the brand than the attitude of a consumer indifferent to this influencer.

H2c: Product placements made by an influencer who is highly regarded by a consumer lead to a decrease in the consumer's buying intention towards the brand, compared to the buying intention of a consumer indifferent to that influencer.

The literature review tells us that there is a feeling of skepticism and inauthenticity with regard to Instagrammers who carry out product placements (Djafarova

and Trofimenko 2018). Both the type of product placement and the repetition of this type of advertising message impact consumers' attitudes. Indeed, too much emphasis on product placements has negative repercussions on consumers' attitudes towards the brand, and this effect would be all the more damaging when the message is repeated (Homer 2009). In addition, according to the study by Djafarova and Trofimenko (2018), 21% of people who participated said that they unsubscribed from the Instagram account of the micro-celebrity they followed when product placements became too frequent and regular. In addition, it seems that too high a level of repetition leads to a feeling of fatigue and boredom, which leads to a decrease in persuasion (Campbell and Keller 2003).

We would therefore like to verify the following statements:

H3a: Too many and regular product placements negatively impact consumers' attitudes towards the influencer.

H3b: Too many and regular product placements negatively impact consumers' attitudes towards the brand.

H3c: Too many and regular product placements lead to reduced purchase intention.

5.2   Data Collection

The objective of this study is, on the one hand, to assess how product placements on Instagram influence the purchasing intention of consumers, and on the other hand, to measure how this communication technique can lead to consumer weariness and distraction from brands and influencers. In order to achieve this goal, we decided to carry out a survey. We indeed need to study several causalities between independent and dependent variables, and for this purpose, the survey seemed to us to be an adequate technique. Indeed, it is the most frequently used to collect this type of data (Mooi et al. 2017).

The type of questionnaire that was chosen to carry out our survey is an online questionnaire. This type of questionnaire has certain advantages. It makes it possible to obtain responses from a large number of potential respondents at a very low cost (Frippiat and Marquis 2010). It also offers certain flexibility because it is possible to orient the progress in the questionnaire according to the answers collected beforehand (Kraut et al. 2004). Finally, obtaining answers anonymously and the speed of data collection are two final advantages of this type of questionnaire. Regarding its disadvantages, it can sometimes lead to a low participation rate. However, specific actions can be implemented to increase the response rate, such as precisely and correctly targeting your audience or even setting up various incentive measures (Malhotra et al. 2017).

In developing our questionnaire, most of us used five-point Likert scales to measure consumers' attitudes towards several topics. These scales are valid since they are already frequently used in the existing literature (Table 2).

Table 2 Concepts and scales present in the questionnaire and the number of items

Measured concepts	Scales	Number of items
Attitude towards the influencer	Bodur and Grohmann (2005)	3
Attitude towards the brand	Bodur and Grohmann (2005)	3
Shopping intention	Yoo and Donthu (2001)	4

Source: Author's illustration

First, we presented the questionnaire by briefly introducing our research. To do this, we focused on the overall theme of the study, namely the analysis of the phenomenon of influencers. Next, we mentioned the conditions that it was necessary to fulfill in order to be able to participate in the investigation in a meaningful way. These conditions are two in number: having an Instagram account and being a subscriber to the account of at least one influencer. Finally, to collect as many responses as possible, we highlighted that the questionnaire was anonymous and confidential.

The questionnaire was designed using the funnel method to facilitate the response path of survey participants (Mooi et al. 2017). To start, we asked general questions about how respondents use Instagram. Also, at the start of the questionnaire are two questions to ensure that respondents comply with the conditions necessary to participate in the study, namely: to have an Instagram account and to be subscribed to the account of at least one influencer. If either of these two conditions was not met, they were taken directly to the end of the questionnaire. Next, we asked questions to obtain results for each of the variables that needed to be evaluated. For that, we imagined the questionnaire as proposing a series of scenarios. For each scenario, we asked questions to measure respondents' attitudes towards the influencer, the brand, and their purchase intent. Finally, we asked two socio-demographic questions to find out the age and gender of each participant.

After developing our questionnaire and before it was published, we wanted to check its effectiveness. For this, five people were asked to test the questionnaire and give feedback on it. This made it possible to verify that the respondents understood the survey well and were able to answer the various questions precisely. Following this feedback, a few last slight modifications were made to the questionnaire to make it as efficient as possible. The questionnaire was subsequently put online via the Google Forms platform. The questionnaire was distributed on three social networks: Facebook, Instagram, and LinkedIn. The survey was also broadcast to three private groups on Facebook. We also sent the questionnaire by private message to a large number of people in order to stimulate the number of participants. We also asked those respondents who wished to share the questionnaire on their social networks to get as many participants as possible.

6   Effectiveness of Product Placement on Instagram

During the dissemination period of our questionnaire, 197 people participated in the survey. Of these, 40 individuals did not meet the entry requirements, which were to have an Instagram account and be a subscriber to the Instagram account of at least one influencer. These were therefore removed from the survey. In total, we, therefore, collected 157 valid responses. In addition, all participants answered all of the questions that appeared on the questionnaire. Indeed, individuals who did not meet the necessary conditions for participation in the survey were removed from the database. There is, therefore, no missing data. Each question present in the question-naire required an answer in order to be able to access the other questions. Finally, the data collected during our survey was transferred to the SPSS software. To do this, we first had to recode the response database to be used on SPSS software. To this end, we had to ensure that all "text" elements were transformed into "number" elements.

The multi-item scales' factor analysis must be performed to verify the validity of the Likert scales that we have used to confirm or refute our hypotheses. Even though all the scales that we used have already been used and validated by the literature, it was necessary to check their validity and reliability because, on the one hand, the context in which they are used has been modified, and on the other, they have been translated so that they can be used in French. Therefore, we performed factor analysis using SPSS software for each item, measuring the attitude towards the influencer, the attitude towards the brand, and the intention to buy. Five steps are used to perform the factor analysis. First, it is necessary to make sure that the different conditions of the analysis are satisfied. For this, it is necessary to obtain a Kaiser-Meyer-Olkin index greater than 0.5 and a significant Bartlett test, i.e., the value obtained in this test must be less than 0.05. Second, determine the extraction method applied for the factor analysis. Third, it is necessary to determine the number of factors. Fourth, we need to rotate the factors and interpret them. Finally, we will need to verify the reliability of the measurement tool (Petscher 2013).

The Kaiser-Meyer-Olkin Index (KMO) must be greater than 0.5. Indeed, if this condition is met, the analysis is appropriate because other variables can explain the correlation between them. In our case, we can observe in Table 5 that the three scales used had a KMO greater than 0.5. It is also essential that the Bartlett test is meaningful, that is, that it has an alpha threshold greater than 0.05. Bartlett's test tests the null hypothesis that variables are uncorrelated in the population (Malhotra et al. 2017). In the case of our scales, we can observe in Table 5 that they all have a p-value less than 0.05. Therefore, for each of the scales, we can reject the null hypothesis that the variables are uncorrelated in the population (Table 3).

Table 3 Values of the KMO index for measuring the quality of the sampling, p-value of the Bartlett test

Variable	KMO	Bartlett
Attitude towards the influencer	0.779	0.000
Attitude towards the brand	0.777	0.000
Shopping intention	0.876	0.000

Source Author's illustration

Table 4 Total variance explained for the three observed variables

Component	Initial Eigenvalues		
	Total	% variance	Cumulative %
Attitude towards the influencer			
1	2.764	92.125	92.125
2	0.127	4.221	96.346
3	0.110	3.654	100.000
Attitude towards the brand			
1	2.755	91.833	91.833
2	0.134	4.482	96.316
3	0.111	3.684	100.000
Shopping intention			
2	0.168	4.201	95.077
3	0.108	2.701	97.778
4	0.089	2.222	100.000

Source: Author's illustration

It is necessary to perform a Principal Component Analysis (PCA). This analysis makes it possible to specify the minimum number of factors that will make it possible to maximize the total explained variance of the data. Factors are kept provided they have an initial eigenvalue more significant than one, as well as a cumulative variance greater than 50% (Petscher 2013). Regarding the attitude towards the influencer, 92.125% of the variance is explained by the first principal component. Regarding the attitude towards the brand, 91.833% of the variance is explained by the first principal component. Finally, for purchase intention, 90.876% of the variance is explained by the first principal component. Results for the three variables are displayed in Table 4.

The purpose of performing a reliability analysis is to make sure that the scales consistently measure what they are intended to measure. In order to measure the reliability of the scales, we use Cronbach's Alpha. When Cronbach's Alpha is more significant than 0.7, it means that the measurement scale is homogeneous and consistent. In Table 5, we observe that Cronbach's Alpha for the attitude towards the influencers has a value of 0.952, attitude towards the brand value of 0.956, and the shopping intention value of 0.952. We can therefore conclude that the reliability of the scales is satisfactory.

6.1 Results for the Hypothesis H1

H1a: The discovery of the commercial nature of product placement negatively impacts consumers' attitudes towards the influencer.

We wanted through this hypothesis to test whether the discovery of the commercial nature of product placement has a negative impact on consumers' attitudes towards the influencer. The p-value obtained is less than the error threshold of 5%

Table 5 Reliability statistics and Inter-Item correlations matrices

Attitude towards the influencer

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items		A Influencer	B Influencer	C Influencer
0.957	0.957	3	A Influencer	1.000	0.876	0.890
			B Influencer	0.876	1.000	0.879
			C Influencer	0.890	0.879	1.000

Attitude towards the brand

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items		A Brand	B Brand	C Brand
0.956	9.56	3	A Brand	1.000	0.873	0.889
			B Brand	0.873	1.000	0.871
			C Brand	0.889	0.871	1.000

Shopping intention

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items		A Shopping	B Shopping	C Shopping	D Shopping
0.966	0.966	4	A Shopping	1.000	0.866	0.853	0.850
			B Shopping	0.866	1.000	0.903	0.890
			C Shopping	0.853	0.903	1.000	0.907
			D Shopping	0.850	0.890	0.907	1.000

Source: Author's illustration

(p-value $= 0.000$), we can reject the null hypothesis. Therefore, we conclude that the data highlighted a significant difference in the average perception of influencers between the reference situation and the situation in which the influencer is paid. The attitude of consumers towards the influencer is better in the baseline situation. Indeed, the average for the baseline is 9.38, and this rises to 8.04 when consumers discover the commercial nature of product placement.

H1b: The discovery of the commercial nature of product placement negatively impacts consumers' attitudes towards the brand.

We then wanted to test whether discovering the commercial nature of product placement negatively impacts consumers' attitudes towards the brand. Similar to the attitude towards the influencer, the p-value for this assumption is less than the 5% error threshold (p-value $= 0.003$), so we can reject the null hypothesis. Therefore, we affirm that the data made it possible to highlight a significant difference in the average of the brand's perception between the baseline situation and the situation in which the influencer receives remuneration. The attitude of consumers towards the influencer is better in the baseline situation. Indeed, the average for the baseline is 8.97, and this rises to 7.96 when consumers learn about the commercial nature of product placement.

H1c: The discovery of the commercial nature of product placement leads to a decrease in purchase intention.

We then asked whether discovering the commercial nature of product placement leads to a decrease in purchase intention. In the same way, as for attitude towards influencer and attitude towards the brand, the p-value for this assumption has a value below the error threshold of 5% (p-value $= 0.011$); we can therefore reject the null hypothesis. The data, therefore, made it possible to highlight, with a risk of error of 5%, the existence of a significant difference in the average purchase intention between the reference situation and the situation in which the influencer receives remuneration. The averages are 11.38 for the baseline situation and 10.13 for the situation in which consumers discover the commercial nature of product placement.

6.2   Results for the Hypothesis H2

H2a: Product placements made by an influencer highly appreciated by a consumer have a more negative impact on that consumer's attitude towards the influencer than the attitude of a consumer indifferent to this influencer.

In order to determine whether the product placements made by an influencer highly appreciated by a consumer have a more negative impact on the attitude of this consumer towards the influencer than the attitude of a consumer indifferent to this influencer, we carried out the same analyses than for the previous assumptions. We, therefore, obtained a p-value greater than the 0.05 alpha threshold (p-value $= 0.810$). We were therefore not able to reject the null hypothesis and therefore could not affirm that the product placements made by an influencer appreciated by a consumer have a more negative impact, in a significant way, on the attitude of this consumer

towards the consumer, influencer, than the attitude of a consumer indifferent to this influencer. The average for a typical influencer was 9.38, while that for a favorite influencer was 9.47.

H2b: Product placements made by an influencer highly appreciated by a consumer have a more negative impact on the consumer's attitude towards the brand than the attitude of a consumer indifferent to this influencer.

In order to test whether the product placements made by an influencer highly appreciated by a consumer have a more negative impact on the consumer's attitude towards the brand than the attitude of a consumer indifferent to this influencer, we carried out the same analyses as for the previous assumptions. We got a p-value more significant than the 5% error threshold (p-value = 0.679), so we could not reject the null hypothesis. Therefore, we could not affirm that the product placements made by an influencer highly appreciated by a consumer have a more negative impact, in a significant way, on the consumer's attitude towards the brand than the attitude of an indifferent consumer, to this influencer. The average value for a highly regarded influencer was 8.82. Therefore, this value is lower than the average obtained for the baseline situation, in which it is a lambda influencer, which is 8.97.

H2c: Product placements made by an influencer who is highly regarded by a consumer lead to a decrease in the consumer's buying intention towards the brand, compared to the buying intention of a consumer indifferent to that influencer.

We then asked ourselves whether the product placements made by an influencer highly appreciated by a consumer lead to a decrease in the consumer's purchase intention towards the brand, compared to the purchase intention of a consumer indifferent to the brand. We again performed a *t*-test in order to find out its p-value. This being above the alpha threshold of 0.05 (p-value = 0.501), we could not reject the null hypothesis. We have therefore not been able to state, with a 95% certainty, that the product placements made by an influencer highly appreciated by a consumer lead to a significant decrease in the consumer's purchase intention towards the brand, compared to the purchase intention of a consumer indifferent to this influencer. The average buying intention for the baseline was 11.38, and that for a highly regarded influencer was 11.04.

6.3 Results for the Hypothesis H3

H3a: Too many and regular product placements negatively impact consumers' attitudes towards the influencer.

We wanted to test whether too many and regular product placements negatively impact consumers' attitudes towards the influencer through this hypothesis. To do this, just like for hypotheses of the same type, we carried out a t-test. We obtained a p-value below the alpha threshold of 5% (p-value = 0.000). This, therefore, allows us to state, with 95% certainty, that there is a significant difference in the average influencer perception between the baseline situation and a recurrence situation in

product placements. The averages are 9.38 for the baseline situation and 6.11 for the situation in which product placements are recurring.

H3b: Too many and regular product placements negatively impact consumers' attitudes towards the brand.

We also wondered if too many and regular product placements could negatively impact consumers' attitudes towards the brand. As for the previous hypothesis, we obtained a *p*-value less than the error threshold of 5% (*p*-value = 0.000). This, therefore, allows us to state that there is a significant difference in the average brand perception between the baseline situation and a recurrence situation in product placements. The averages are 8.97 for the baseline situation and 6.71 for the situation in which product placements are recurring.

H3c: Too many and regular product placements lead to reduced purchase intention.

Finally, we wanted to test the following hypothesis: too many and regular product placements decrease purchase intention. We again performed a *t*-test in order to find out its *p*-value. This being below the alpha threshold of 0.05 (*p*-value = 0.000), we had to reject the null hypothesis. The data, therefore, made it possible to highlight, with a certainty of 95%, the existence of a significant difference in the average of the purchase intention between the reference situation and the situation in which we observe the recurrence of product placements. The averages are, therefore, respectively 11.38 for the baseline situation and 8.64 for the situation in which consumers perceive the recurring and repetitive nature of influencer marketing.

7 Too Frequent Product Placements Lead to Negative Effects

Regarding the attitude towards the influencer, the results show that consumers develop a negative attitude towards the influencer when they discover that the latter is receiving remuneration for promoting a brand through placements of products (H1a). Our analyses, therefore, reinforce the conclusions of Djafarova and Trofimenko (2018), which assert that there is a growing feeling of non-authenticity towards influencers who place products. Subscribers are increasingly asking questions about the honesty of what Instagramers say when promoting a brand. There is a growing feeling of mistrust from subscribers when an influencer makes product placements for which he is paid. Subscribers question whether the micro-celebrity uses the products they promote or do so only for the remuneration they receive. Our analyses have shown that a particular form of influencer fatigue emerges when consumers perceive the commercial nature of product placements.

Then, a negative attitude of consumers towards influencers also seems to emerge when product placements are made on a frequent and recurring basis (H3a). It would seem that this continued presence of brands on social networks via influencers causes fatigue, weariness, and even annoyance among consumers, who feel invaded

by advertising messages (Jacobson et al. 2020). We tested this hypothesis because we only had information on the impact of recurring product placements on consumers' attitudes towards the brand but not towards the influencer. According to Homer (2009), too much emphasis on product placements has negative repercussions on consumers' attitudes towards the brand, and this effect is even more damaging when the message is repeated. Our analyses, therefore, enabled us to provide additional information to the existing literature.

In addition, analyses of the H2a hypothesis make it possible to invalidate the hypothesis according to which product placements made by an influencer highly appreciated by a consumer have a more negative impact on the attitude of this consumer towards the influencer than the attitude of a consumer indifferent to this influencer. This result is contrary to what was observed in the literature about product placements broadcast on television. Indeed, according to Cowley and Barron (2008), two types of individuals can be distinguished: LPL (Lower Program Liking), those who do not appreciate the television program associated with the study, and HPL (Higher Program Liking), those who appreciate this same program strongly. The study found that product placement appears to be the source of a more negative reaction for HPL individuals. Indeed, they perceive advertising as intrusive and annoying (Li et al. 2002). Therefore, the analysis we carried out in our quantitative study highlights the fact that consumers do not react in the same way to product placements disseminated on different communication channels.

Regarding brand attitude, the results of our analyses show that the discovery of the commercial nature of product placements negatively impacts consumers' attitudes towards it (H1b). This result supports Homer's (2009) claims that it is common for consumers to perceive product placements as being driven solely by financial motives. Therefore, subscribers can also perceive a particular form of opportunism in this marketing communication on the part of brands. Our analyses have shown that some form of brand fatigue emerges when consumers perceive the commercial nature of product placements. Moreover, the analyses carried out for the H3b hypothesis support the assertions of Homer (2009), according to which too much emphasis on product placements has negative repercussions on consumers' attitudes towards the brand, which would be all the more negative when the message is repeated. This too much repetition of the advertising message can be at the origin of a feeling of growing weariness among consumers. However, as in the case of attitude towards the influencer, our analyses of the H2b hypothesis do not allow us to confirm the hypothesis according to which product placements made by an influencer whom a consumer highly appreciates have a more negative impact on l attitude of the consumer towards the brand than the attitude of a consumer indifferent to this influencer.

Purchase intention is an integral part of consumers' decision-making process, and it is this step that allows brands to achieve sales. Therefore, it is essential to put in place marketing communication techniques that positively impact the purchase intention of potential customers. After completing our quantitative survey and the results obtained, we were able to validate two hypotheses concerning the intention to

purchase. First, it has been confirmed that discovering the commercial nature of product placement leads to a decrease in consumer buying intention (H1c). Then the H3c hypothesis could also be confirmed. Indeed, the survey results showed that too many and recurring product placements lead to a decrease in purchase intention.

However, the results collected did not allow us to validate the hypothesis according to which product placements made by an influencer highly appreciated by a consumer lead to a decrease in the consumer's purchase intention towards the brand, compared to the purchase intention of a consumer indifferent to this influencer (H2c). The result obtained nevertheless seems to agree with the literature written by Sokolova and Kefi (2020). Indeed, according to these authors, people more attached to the influencer they follow are more likely to buy the products they are promoting. In addition, according to the human brand theory developed by Thomson (2006), the emotional attachment that a consumer has towards a human brand, such as an influencer, for example, facilitates the positive transfer of emotions to brands whose influencer is promoting.

The results of the hypotheses that we have made it possible to identify specific managerial implications. Therefore, we are going to make some recommendations to help brands doing influencer marketing on Instagram improve the way they make product placements. First of all, we recommend that brands do not make too many product placements and too frequently as this is not well perceived by consumers and can lead to brand fatigue and fatigue concerning the influencer. In addition, when the feeling of annoyance or weariness sets in, there is a negative impact on purchase intention. Indeed, a significant decrease in purchase intention occurs in this scenario. Therefore, it is essential to define the frequency of product placements in advance of the contract when a brand collaborates with an influencer.

Next, we also recommend that brands make product placements through Instagramers who have an audience that matches their target consumers. Indeed, we observed during the analysis of the results of our quantitative study that the product placements made by one of the favorite influencers of potential consumers positively impact the purchase intention and the attitude towards the brand and the influencer. In addition, a study by Sokolova and Kefi (2020) demonstrated that sharing similar values has positive repercussions on the degree of persuasion of influencers.

Finally, the last recommendation we would make to brands is to try to hide the paid nature of product placements as much as possible. Indeed, our study has shown that consumers know that the influencer is paid to promote products has a negative impact on attitude towards the brand, towards the influencer, and the intention to promote products purchase. In addition, several studies conducted on this subject have also shown that using influencers to promote a brand's products is not always beneficial because Instagram users recognize the posts as paid advertisements, which decreases the credibility and authenticity of the influencer and also generates a negative perception and weariness of both the product, brand and influencer (Evans et al. 2017; Kim and Kim 2021).

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Product Endorsement by Opinion Leaders: The Case of YouTube Community

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Abstract Content creators are now an integral part of brands' communication strategies to integrate the advertising message organically into pre-existing content such as partnerships, product placements, and sponsored content. It is this power of influence over a target audience that brands seek. However, its effectiveness is conditioned by many factors. These factors may include prerequisites such as the influencer being perceived as a credible source with his audience, the subscriber having a parasocial relationship with the influencer, or the subscriber feeling homophily towards the influencer. This chapter explores the dynamic between influencer endorsement on YouTube and brand attitudes and shopping intentions. The chapter combines the information from 20 test sessions, including a real brand-YouTuber collaboration video and the analysis of comments posted under this video.

Digital marketing has not only relational but also economic importance for companies. To sum up, Vieira et al. (2019) explain that digital marketing aims to achieve marketing objectives through the internet and digital technologies. The world has become a very digital environment. Newspapers and magazines have been transfering to digital for a while, but many of our daily tasks also. With the rise of the digital age, it pays to invest in a digital campaign. While traditional marketing still has a place, it is shrinking in the digital world (Olson et al. 2021). Today for businesses, it is imperative to have a website and use the web to interact with customers. The integration of digital marketing within a company requires adaptation at the operational marketing level, namely the 4P (Product, Price, Promotion, Place).

Thus, when adopting a digital strategy, it is essential to focus on how digital technologies increase and transform the main product. Indeed, digital can modify or add services to the main product. These authors give the example of cars equipped with GPS, reversing cameras, or autonomous driving thanks to sensors. Other

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products have also developed, such as music, videos, and even books that have gone digital. The transformation to this type of product was straightforward given that the nature of these products is already digital; it was enough to give up their physical form to become fully digital. The pricing strategy is also different on the internet; Kannan and Li (2017) stipulate that digital products and services have a very low or even zero marginal cost of production and distribution. This has important implications for pricing and revenue models, especially in product lines consisting of traditional and digital formats. Venkatesh and Chatterjee (2006) examined the optimal online and offline content (magazines and journals) and found that the online format can generate higher profits.

Distribution in a digital strategy differs from the classic strategy, it is also called point of contact, and these are all the places where the company can find its target customer on the internet to offer them their product or service. Regarding the communication strategy, this component is essential during a digital strategy because, as presented in the first section (the levers of digital marketing), it is possible to see that there is a multitude of techniques that companies can use in order to communicate and promote their brand to consumers while creating a relationship of trust with them. As a reminder, it is possible to cite websites, "Display" advertising, natural referencing, paid referencing, sponsored publications, partnerships with influencers. Influencer marketing is part of digital marketing; as explained in the first section, digital marketing benefits from several levers, and influencer marketing is part of the latter's paid media. Influencer marketing is defined as identifying and using influencers on social media to facilitate brand marketing activities (Brown and Hayes 2008). Referring to influencer marketing, Bamakan et al. (2019) explain that this is a kind of marketing in which activities are organized around influencers rather than targeting the market as a whole.

Likewise, Jin et al. (2019) state that influencer marketing aims to connect brands with the most active bloggers and Facebook, Twitter, and Instagram users or the most famous YouTubers. The goal is to create visibility for brands and favorably orient the opinion of their target. Finally, influencer marketing is a type of hidden advertising similar to native advertising in that paid content appears to be earned (Brown and Hayes 2008). Native advertising is generally defined as branded content assimilated or integrated into the design of a platform (Dhanesh and Duthler 2019). Also referred to as sponsored content, native advertising is a term used to describe the paid advertising that makes editorial content's specific form and appearance from the publisher itself (Wojdynski and Evans 2015).

Native advertising has recently gained attention as a way for advertisers to reduce clutter and for online publishers to increase their declining ad revenue (Sweetser et al. 2016). Native advertising holds promise for publishers because they can charge advertisers more for native advertising content than for display ads, which users are likely to avoid or ignore (Wojdynski and Evans 2015). While this has enormous benefits for corporate sponsors, native advertising tactics are a double-edged sword due to the potential to deceive subscribers, who could mistake paid content for genuine, unpaid posts. While consumers generally appreciate the less interruptive

nature of native advertising, they may react negatively if they know its covert persuasion intent (Lee et al. 2016).

Indeed, informing the consumer about a specific case of sponsored content can influence the latter's attention to it (Boerman and van Reijmersdal 2016). Studies on the labeling of advertorials provide some evidence that readers may pay less attention to sponsored content due to disclosure. Cameron and Curtin (1995) found a significant negative effect of disclosure of sponsored content in print advertising: readers were less able to remember the ad's content when it was labeled as such than when she was not labeled. On a related note, looking at the effects of sponsored content on the source of the content, a study found that participants' attitudes towards influencers producing sponsored content can also change depending on the sponsor's level of disclosure—tacit disclosure leading to lower credibility of the influencer (Carr and Hayes 2014).

Like Facebook, Instagram, and Twitter, YouTube is also a platform for content creators that quickly attracted brands who did not hesitate to ask YouTubers to promote their product or service. Collaborations between brands and YouTubers are called partnerships, and YouTube defines this term as a contract that brings together a brand and a creator. It is also sometimes called a sponsorship contract. In the same sense, Dehghani et al. (2016) define partnerships between brand and YouTuber as any type of agreement, paid or rewarded in one way or another, between an organization wishing to promote something (product, service, brand, cause) and a YouTube influencer. He also presented a list of videos that can be made in a partnership on YouTube (specifying that this list is not exhaustive). He then cites the product placement, the sponsored let us play (these are gaming videos where the YouTuber plays while filming himself and giving his opinion on the game or the application sent by the brand) the sponsored Vlogs (a video filmed in a particular place to promote it, it can also be a video of a brand event) and finally sponsored thematic videos.

YouTube now offers different partnership opportunities to YouTubers and a sharing of advertising revenue, changing how content is created and communicated to Internet users. As advertising revenue has increased dramatically, many YouTubers no longer have to hold traditional jobs as their YouTube advertising, and income from brand partnerships is sufficient to make a living (Febriyantoro 2020). It should be noted that there is a great void in the literature and even internationally concerning partnerships between brand and YouTubers, their works, and their interest (Dehghani et al. 2016). The latter insists that the majority of studies on YouTube concern the sociological aspect of this phenomenon.

1 Brand Endorsement Strategies

This section aims to present endorsement between brands and celebrities and then show the factors that made this technique quickly interested brands to practice it by using influencers on social networks.

Celebrity endorsement is an older concept than one might think. Indeed, Keel and Nataraajan (2012) explain that one of the first uses of celebrities in communication could be the association of Pope Leo XIII, in 1898, with a wine company Vin Mariani mixing its alcoholic drinks with cocaine. At the end of the nineteenth century, the British Queen Victoria partnered with the Cadbury Cocoa brand, giving birth to one of the first concrete examples of advertising endorsement. In France, the famous actress Sarah Bernard was featured in an advertisement for a brand of rice powder in 1890. At the start of the twentieth century, this concept was mainly used to promote mass consumption of tobacco, beauty, fashion, and beverages. Celebrity endorsements have been used in all forms of media, including radio and television. In the 1980s, brands began to associate their products with celebrities, such as Nike, by making a line of sneakers for Michael Jordan, which is still produced today under Nike Air Jordan. In the 1990s, celebrities had more say in what and how they wanted to promote the brand and sometimes became part owners of a business (Erdogan 1999).

1.1 *Definitions of Celebrities and Celebrity Endorsement*

Choi and Rifon (2012) state that celebrity endorsement has become one of the most popular forms of advertising. In the same vein, Choi et al. (2005) explain that advertising endorsement is a communication channel where celebrities act as spokespersons for the brand and, by expanding their popularity and personality, they certify the reputation and position of the brand. In the same sense, it is possible to present endorsement as the fact of associating a person, actual or fictitious, with a brand during one or more communication campaigns has experienced a real boom for 20 years. Finally, celebrity endorsement can be defined as a form of advertising in which a company uses a famous person using their popularity to promote a product, service, or brand (Chan et al. 2013).

Some authors have taken an interest in celebrities and have attempted to present a definition of this phenomenon. Thus, McCracken (1989) defines them as any person enjoying public recognition and who uses this recognition in the name of a consumer good by appearing with him in an advertisement. Along the same lines, Zipporah and Mberia (2014) describe celebrities as personalities who are well known to the public, either because of their credibility or their attractiveness or because of both. To take advantage of this, advertisers use celebrities in their advertising to increase the effectiveness and credibility of the ads. Celebrities enjoy high public recognition if they belong to a particular group of people and have distinctive characteristics, such as attractiveness and reliability (Silvera and Austad 2004). Celebrities can transfer their image to a specifically advertised product.

1.2   Interest in Celebrity Endorsement

Brands and marketers sometimes rely too much on celebrity and influencer endorsements to increase sales of their products and services. The use of celebrities in communication helps consumers remember the message of the ad and the brand that the celebrity has endorsed, which helps to create a brand's personality because when a celebrity is associated with a brand, its image helps to shape the image of the latter in the minds of consumers (Agrawal and Kamakura 1995). According to Choi and Rifon (2012), the positive image that celebrities convey to the public can make the advertising message more compelling. Consumers generally have a positive attitude towards celebrity endorsement, which is perceived as attractive, enjoyable, and impactful. However, they are not necessarily convincing and credible.

When identifying with a celebrity, the consumer is more inclined to purchase the product or services offered by the brand in the hope of claiming and benefiting from the associative meaning transferred into his own life (McCracken 1989). Advertising endorsement helps establish and give credibility to the endorsed brand and gives it a certain level of trust with the target audience. Also, according to the same author, this practice helps ensure the necessary attention and a high degree of memorization (Zipporah and Mberia 2014). Along the same lines, Erdogan (1999) states that celebrity endorsement is more effective than non-celebrity endorsement in generating all desired outcomes, including attitudes towards advertising and the endorsed brand, purchase intentions. This same researcher summarized the pros and cons of this concept by suggesting preventative measures to avoid the negative points of endorsement (Table 1).

Table 1   Advantages and cons of celebrity endorsement

Potential benefits	Potential disadvantages	Preventive tactics
Help market the product and increase attention	Overshadowing of the brand	Pre-test and do careful planning
Brand image polishing	Public controversy	Purchase of insurance and insertion of clauses in contracts
Brand introduction	Image change and overexposure	Explain what their role is and put a clause to restrict endorsements to other brands
Brand repositioning	Change of image and loss of public recognition	Consider what stage of the lifecycle is fame and how long that stage is likely to continue
Support of global campaigns	The costs	Select celebrities appropriate for a global audience, not because they are "popular" for all market audiences.

Source: Author's illustration

Table 2 Models for celebrity endorsement

Model	Characteristics	Author(s)
Source credibility model	The effectiveness of the endorser's message depends on his level of expertise and reliability.	Hovland et al. (1953), Goldsmith et al. (2000)
Source attractiveness model	The effectiveness of the message depends on the physical characteristics of the source. Attractiveness influences attitudes and consumer behavior.	McGuire et al. (1985), Kahle and Homer (1985)
Match-up or congruence hypothesis	The strategy's effectiveness is determined by the harmony of the match (congruence) between the endorser (the celebrity) and the endorsed product.	Kamins (1990), Misra and Beatty (1990), Fleck et al. (2012)
Meaning transfer model	The effectiveness of the celebrity endorsement strategy relies on the meaning (significance) that the celebrity conveys throughout the endorsement process.	McCracken (1989), Stone et al. (2003), Fleck et al. (2012)

Source: Author's illustration

1.3 Mechanisms of Celebrity Endorsement

The selection of qualified celebrities is a crucial phase for the success of the communication campaign. Many authors have attempted to create models to facilitate the selection of qualified celebrities (McCracken 1989; Kamins 1990). The four most important models are undoubtedly the meaning transfer model (McCracken 1989), the congruence hypothesis (Kamins 1990), and the two models of the source, namely the model of the credibility of the source (Hovland et al. 1953) and that of the attractiveness of the source (McGuire et al. 1985) (Table 2).

1.4 Endorsement by Celebrities and Influencers in the Digital Environment

Partnerships are by no means a new concept in the world of marketing. The traditional form of brand promotion offers celebrities or well-known personalities the opportunity to work with a brand, and partnerships are usually done through television or print ads. Today and more specifically with web 2.0 and digital marketing, brands are looking for influencers capable of delivering their message.

Indeed, since the emergence of social media and subsequent influencer marketing, a new type of endorser has emerged, called influencers; today's influencers can be seen as a new form of celebrity endorsement (Weinswig 2016) and influencer marketing a modern form of advertising endorsement. Gräve (2017) explains that influencers are likely to be more effective than celebrities when the audience knows

the endorser very well. This is especially the case on social media platforms like Instagram and YouTube, where people deliberately choose to follow their activities, and influencers are seen as part of the community. A study carried out by Google in 2016 shows that 70% of teens registered on YouTube say they trust YouTubers more than celebrities.

Influencer endorsement can be seen as a new form of celebrity endorsement (Weinswig 2016) and influencer marketing as a modern form of celebrity sponsorship. The question is whether these two types of influencers affect consumer responses in the same way or whether there are differences. Mangold and Faulds (2009) found that consumers perceive social media as more reliable than traditional media when delivering brand information. Moreover, Djafarova and Rushworth (2017) have shown that bloggers are perceived as more credible than celebrities. They found that celebrity endorsement on Instagram still seems to work, but micro-celebrities, or "non-traditional celebrities," have even more power because they are seen as more believable, and people can communicate more easily with them than with celebrities. For businesses, social media influencers are attractive potential endorsers and a "perfect match" for the beauty industry.

Schouten et al. (2019) argue that information is more credible when provided by influencers than by a celebrity. In this sense, Nouri (2018) explains that consumers feel more able to identify with a social media star (an average person with a passion for fashion or beauty) than with a celebrity who has high social status. By choosing to work with an influencer, the brand must identify common personality traits between itself and the latter so as not to fall into congruence problems (Dhanesh and Duthler 2019). The most defining characteristic of influencer success is the relationships they build with their followers. These relationships are built on carefully crafted credibility foundations, which are important for influencers to develop their brand. Social networks occupy a unique intermediary place in a continuum of relationships between consumers and influencers they trust. Influencers are somewhere between distant friends and traditional celebrities (Chae 2017).

Jahnke (2018) tried to differentiate between an ambassador and an influencer. For this, the authors based themselves on six points, namely:

- **The relationship with brands**: influencers are sued by brands to promote products. However, the latter does not benefit from an "exclusive" contract and can work with competing brands. However, an ambassador has a strong relationship with the brand and can even share positive experiences voluntarily (without consideration).
- **Interests and content**: the influencer is an expert in a specific field and must create content that meets the brand's expectations while the ambassador is free to publish what he wants.
- **Remuneration**: the influencer is paid by the brand by receiving money or products, while the ambassador does not receive financial compensation.
- **Media**: the influencer distributes the content he creates on his social networks to his community, while the ambassador distributes the company's information where he wants it.

- **Influence**: the influencer impacts his communities' attitudes and purchasing behavior, and the ambassador influences his peers through word of mouth.
- **Audience and visibility**: the influencer has a community that follows him and has a solid commitment to his content, while the ambassador does not have a large audience (everything will depend on his notoriety) but can ensure good brand visibility.

It is essential to clarify that not all influencers are the same. Indeed, while some influencers have nearly a million subscribers or more, others called micro-influencers have smaller groups of "followers" ranging from 10,000 to 150,000 or 500,000. Influencers are perceived as more accessible and assimilable, with a smaller, specialized, but deeply dedicated, engaged, and connected group of followers (Cocker et al. 2021).

1.5 Endorsement by YouTubers

Internet users use YouTube not only for entertainment but also as an alternative source of instruction. As a result, YouTubers blur the lines between ordinary citizens and media professionals and are sought after as endorsers or brand ambassadors, just like celebrities (Tolson 2010). YouTube has the most significant influence because of its unique promotion culture, particularly user-generated content (Smith et al. 2012). YouTuber brand endorsement is a type of electronic WOM (Rybaczewska et al. 2020). Teens may identify with these YouTubers better and find them more trustworthy than traditional celebrities because of their reliability and accessibility (Xiao et al. 2018).

Most marketing research (Mathur et al. 2018) that has looked at brand endorsement by YouTubers has focused on the transparency criterion of this type of partnership. Indeed, the engagement of companies vis-à-vis influential people in social media through paid endorsements and the subsequent blurring of the lines between paid and earned media add complex dimensions to the ethical practice of companies. More specifically, the non-disclosure of paid endorsements by social media influencers and, more specifically, from YouTube calls into question the notions of openness and transparency, involving corporate sponsors in issues of truth, fairness, transparency, and profoundly problematic disclosure (Dhanesh and Duthler 2019). They explain that legal systems and regulatory bodies around the world are struggling to cope with these ever-changing issues, so it is imperative that businesses and public relations officials understand the impact of disclosure, or the lack of it., on the relationships of subscribers with paid influencers, and finally on the behavioral results desired by companies (word of mouth, intention to purchase).

2 Product Placement

Long before product placement in the cinema, this technique was used in literary works or by painters by inserting branded products into their canvas (Lehu 2011). It is possible to quote the famous painter Edouard Manet who painted a bottle of a beer brand in his painting "Un bar aux Folies Bergères." In theaters, product placement first appeared in the United States of America in the 1940s with the appearance of certain brands in movie scenes. The pioneer brands to have used this technique are the famous automobile manufacturer Ford, the famous Coca-Cola brand, several brands of cigarettes such as Marlboro or Lucky Strike, and finally brands of alcoholic beverages (Brée 1996). In France, this method first saw the light of day in cinema in the 1890s with the appearance of a soap brand in a film by the Lumière brothers. Product placement in the cinema concerns both products and services. Indeed, different service companies do not hesitate to use this technique by inserting their logo in certain scenes where the brand is mentioned during a conversation. It is possible to cite Air France, Orange, or Uber. Brée (1996) explains that product placement can even concern causes of general interest such as not wasting water or light and insists that the cinema is a formidable relay in defense of these causes. Since the 1980s, several marketing research studies have been carried out on product placement, its interest, its effectiveness, and its impact on consumer behavior (Lehu 2011). In this sense, different definitions of this concept have been proposed. Table 3 lists some of them.

Table 3 Definitions of product placement

Authors	Definitions
Balasubramanian (1994)	A paid post about a product intended to influence cinema (or television) audiences through a branded product's planned and discreet entry into a movie or TV show.
Baker and Crawford (1995)	The inclusion of a commercial product or service, in any form, in a movie or program, in exchange for some form of payment from the advertiser
Karrh (1998)	Paid inclusion of branded products or brand identifiers, by audio and video means, in programming for mass media.
Russell and Belch (2005)	The intended incorporation of a brand into an entertainment vehicle.
Lehu (2011)	It is essentially the act of "placing" or, better, "integrating" a product or a brand in a movie or a television series. However, one can also find these commercial insertions in other cultural vehicles, such as songs or novels.
Soba and Aydin (2013)	Product placement is the designed insertion of a brand into a movie, show, TV programs, blogs, video games, music videos/DVDs, magazines, books, musicals, mobile phones, the internet. Humanity is exposed to product placement in mainstream media, sometimes even without knowing it.
Kumar (2017)	Product placement is an advertising method and tool that includes products in entertainment programs such as movies, TV shows, and video games, with a specific focus.

Source: Author's illustration

By analyzing the different definitions presented, it is possible to see that there are three important themes:

- The voluntary incorporation or integration of a brand, a product in the mass media, entertainment media (video games), or cultural media (novels, songs).
- The placement is made for commercial purposes.
- Placement can be visual, audio, or both at the same time.

2.1 Typologies of Product Placement

Several typologies of product placement have been proposed as part of research on this concept. Indeed, it is possible to cite the typology of Shapiro (1993), which states that product placement has four aspects, namely:

- the presentation of the product (the product is visible, it is put forward)
- the use of the product (a demonstration of the use of the product)
- the mention of the product (the product is cited)
- the mention and use of the product

Different authors have proposed a classification of product placement according to how it is integrated (Gupta and Lord 1998). This classification includes three possibilities: visual placement (the product is just placed in the image, it can be used), auditory (the product is mentioned, we talk about it), or both at times. In the same spirit, in his book "Advertising in films," Lehu (2011) presents four possible forms of placement:

- **Classic Placement:** it is simply a matter of inserting the product into a movie scene. The advantage of this shape is that it is easy to set up but has the disadvantage of going unnoticed as viewers have become accustomed to this type of insertion.
- **Institutional placement:** this is about highlighting the name of the brand rather than the latter's product. In this type of placement, it is instead the name of the brand and the logo put forward. It is generally used when it comes to a service business. It has the advantage of being easy to set up, but it has the downside that it is even harder to be noticed by the viewer than the traditional placement.
- **Stealth placement** is a very discreet placement; it is an insertion of the product without mentioning or showing the brand or its logo. This type of location is mainly used by high fashion brands such as Armani or Gauthier. The impact of this placement is powerful if the viewer can identify the brand, but it is still challenging given the discretion of this technique.
- **Evocative Placement:** It is also a very subtle type of placement; it involves using clues relating to the brand so that the viewer can identify it without the latter being visible on the screen. The downside to this placement is that it is impossible to deliver results if the viewer is unfamiliar with the brand.

2.2 Product Placement in the Electronic Environment

With the arrival of web 2.0 and its various tools such as social networks, brands quickly became interested in these new media to promote their product by using product placement. Indeed, this technique constitutes one of the types of partnership between brand and influencer presented in the previous section. Product placement on social media can take the traditional form of placement—integrating the product visually, verbally, or both, but this technique can also be done in another way. Today, when discussing product placement, some authors speak of Branded Entertainment, also called Branded entertainment content (Lehu 2011; Choi et al. 2018). Branded Entertainment is presented as the integration of an advertisement into entertainment content, where the goods are incorporated into the storylines of a film, television program, or other means of entertainment. It involves co-creation and collaboration between entertainment, media, and brands (Hudson and Hudson 2006). Branded entertainment content differs from traditional product placement, in which brand products or identifiers are incorporated into existing media content, such as movies or TV shows (Balasubramanian 1994).

In entertainment content, the brand or products are integrated with entertainment content created and distributed by the brands themselves, giving them greater control over the content (Hudson and Hudson 2006). Branded entertainment videos typically exhibit products or brands intending to transfer positive emotions from the video (Choi et al. 2018). In 2003, Coca-Cola Director Steven Heyer explained that commercials and traditional product placement are no longer as exciting and that he now wants ideas that bring entertainment value to our brands and ideas that integrate our brands in entertainment (Hudson and Hudson 2006). While consumer brand exposure in this type of entertainment content may benefit advertisers through increased brand awareness and attitude (Choi et al. 2018), many consumer advocacy groups have argued that certain aspects of branded entertainment can be viewed as unethical and deceptive. Since branded entertainment content is typically designed to be delivered through unpaid or earned media (e.g., social media), disclosure can threaten the practice's success due to the consumer-activated defense mechanism (Choi et al. 2018).

Similarly, Chen and Lee (2014) explain that branded entertainment content refers to brand-generated entertainment content embedded in a branded message or product. The best-known example of Branded Entertainment can be cited Red Bull, which in 2006 made a video on YouTube that reached more than 27 million shares. Inciting branded entertainment, it should be noted that brands are no longer just placed in works; they are integrated into the narrative in such a way as to create an emotional connection with the consumer. Traditional product placement and Branded Entertainment are now invading social networks such as Facebook, Instagram, Snapchat, and even YouTube. Indeed, it is possible to see branded videos with entertaining content, photos of influencers with product placements, stories, getting-ready videos, or vlogs with product incorporation.

2.3   Product Placement on YouTube

The popular YouTube video platform defines product placement on its network as brand integrations are a form of branded content in which a creator discreetly includes a product or service. The idea is to create a relevant video and in tune with the universe of the channel on which the product appears. Several studies on product placement on YouTube have been carried out (Gerhards 2017; Xiao et al. 2018; Schwemmer and Ziewiecki 2018). Initially, content creators on this platform used product placements by incorporating products into their videos in predominantly non-commercial situations. This quickly caught the interest of companies that sought out influencers in the hopes of finding credible people to spread their brand message (Schwemmer and Ziewiecki 2018).

There are different versions of paid product placement on YouTube, depending on the different categories of YouTube channels. For example, there are "Lookbook" or "Haul" videos regarding fashion and beauty channels, which are very common for product placement. Lookbooks are defined as "fashion" videos in which the YouTuber presents entire outfits that serve as inspiration to subscribers. This video format is not too long and is accentuated with music. Some designers change locations in their videos and mention the names of fashion brands in the video itself or the description box below the video (Schwemmer and Ziewiecki 2018). As for the Hauls, it is about showing recent purchases of clothing, accessories, or makeup, sometimes just by showing the items (Jeffries 2011). Gerhards (2017) examined the frequency with which YouTubers used product placement and examined the professional relationships between advertisers and YouTubers. It turns out, over 64% of YouTubers used product placement in one or more videos. The more professional YouTubers are, the more likely they will practice product placement in their videos (Gerhards 2017). Finally, it should be noted that the professional process between YouTubers and marketers still has a long way to go.

Like the disclosure problems concerning Branded Entertainment, on YouTube too, this problem arises even if the platform's rules require YouTubers to inform their subscribers when it comes to a partnership with a brand. Thus, Pfeuffer et al. (2020) explain that when some consumers watch YouTube videos, such as beauty vlogs for entertainment, they do not realize that they are engaging in commercial communication.

3   Factors Determining the Influence of a YouTuber

Our research aims to shed some light on the effects of product endorsement by a YouTuber on the behavior of potential customers and the perceived position of the brand. Although the body of knowledge about the partnership between the influencers and brands is not yet very rich, the academic community's interest is growing very quickly. Therefore, we build our conceptual model on previous studies

regarding celebrity endorsement in the virtual environment, product placement in the physical world, and general marketing studies.

3.1 YouTuber Credibility

During the two qualitative studies, it was found that the credibility of the YouTuber is a significant and not insignificant variable for subscribers, especially in the context of a video of partnership with a brand. Marketing studies on the source's credibility on traditional media and social media are numerous (Ohanian 1990; Sertoglu et al. 2014). Interest in the credibility of the communication source started in social psychology research thanks to Hovland et al. in 1953. They explain that the effectiveness of an advertising message depends on the credibility of the source. They developed a model composed of two dimensions, namely expertise and reliability. Since then, several researchers have been inspired by this model by adding other dimensions such as attractiveness, dynamism, objectivity (Applbaum and Anatol 1972; Ohanian 1990).

Credibility is defined as a positive characteristic of the source that influences the receiver's acceptance of the message (Ohanian 1990). Similarly, Erdogan (1999) states that the credibility of the message sender can influence beliefs, opinions, attitudes, and behavior. Ohanian (1990) developed a credibility measurement scale based on Hovland et al. (1953) and the source attractiveness model of McGuire et al. (1985). This scale is made up of three dimensions: expertise, reliability, and attractiveness. It encompasses 15 items and has been used by several researchers (Till and Busler 2000; Jaoued and Chandon 2007).

In their model relating to the source's credibility, Hovland et al. (1953) integrated expertise as one of the main dimensions, and they define it as the extent to which the sender of the message is perceived as a valuable source of information. Expertise is the degree to which the endorser is perceived to have the knowledge, experience, or skills necessary to promote a product (Van der Waldt et al. 2009). Ohanian (1990) states that expertise is the dimension of credibility that most influences the consumer's purchasing intention. Speaking of expertise, some authors such as McCroskey and Teven (1999) associate it with other attributes such as competence, authority, intelligence, or even qualifications. Regardless of whether the endorser is an expert, the bottom line is that the target receiving the message perceives it as such (Erdogan 1999). The attractiveness of the source positively influences attitude towards the brand, but expertise is a more critical dimension to promote the match and consistency between the endorser and the brand (Till and Busler 2000).

Reliability is the second dimension of the source credibility model and is defined as "the degree of confidence placed in the message's sender to communicate valid information" (Hovland et al. 1953). Reliability refers to the endorser's degree of honesty and perceived integrity (Jaoued and Chandon 2007). Indeed, this dimension is often associated with other attributes such as honesty, sincerity, and objectivity that depend on the target audience's perception of the source (Erdogan 1999).

Ohanian (1990) found that reliability is not significantly related to consumers' purchasing intention and that a reliable endorser is necessarily convincing, whether expert or not. The study by Friedman et al. (1978) showed that reliability is the primary determinant of the source's credibility. In developing the credibility measurement scale, Ohanian (1990) incorporated the attractiveness of the source, which she considers to be an essential dimension. This decision was prompted by the increasing use of celebrities as endorsers of products, services, or social causes (Baker and Churchill 1977; Ohanian 1990). Ohanian (1990) was inspired by McGuire's et al. (1985) source attractiveness model. The latter brings together three essential components:

- Familiarity (knowledge of the source by exposure)
- Similarity (resemblance between the source and the audience)
- Sympathy (affection for the source based on its physical appearance and behavior).

Indeed, a source perceived as sympathetic, similar, and familiar is necessarily attractive and persuasive (McGuire et al. 1985). The attractiveness model includes physical attractiveness and various other attributes such as intellectual skills, personality, lifestyle, or athletic prowess (Erdogan 1999). Several researchers have shown that the attractiveness of the source affects the change in consumers' attitude towards the product or the brand (Kahle and Homer 1985; Friedman et al. 1978; Kamins 1990; Van der Waldt et al. 2009). However, Baker and Churchill (1977) state that although attractiveness positively impacts the evaluation of the product, it does not influence buying intentions. Finally, attractiveness has a positive impact on a product or brand related to physical appearance (Kamins 1990). According to the Ohanian Source Credibility Scale (1990), attractiveness is related only to the physical attractiveness of the source to the public. As part of this research on the credibility of YouTubers in a partnership with a brand, it was decided to use the Ohanian scale (1990), which several authors have used (Till and Busler 2000; Pornpitakpan 2004; Jaoued and Chandon 2007; Sertoglu et al. 2014). The latter comprises three dimensions, namely expertise, reliability, and attractiveness, and each of these dimensions is made up of 5 items for a total of 15 items in all and is defined in Table 4.

3.2 The Attitude Towards the Brand

Consumer attitude research has been widespread in marketing and communications for several years. Interest in this concept is important because it allows us to understand and predict the consumption behavior of individuals (Mitchell and Olson 1981). Attitude is a psychological tendency expressed by evaluating a specific entity according to a certain degree of favor or disadvantage (Eagly and Chaiken 1993). The entity in question can be the brand or the product. Brand attitude is an individual's internal assessment of the brand (Mitchell and Olson 1981). Howard

Table 4 Source credibility scale

Expertise	Reliability	Attractiveness
Très experte/Pas du tout experte	Very reliable/Not at all reliable	Very attractive/Not at all attractive
Très expérimentée/Pas du tout expérimentée	Very honest/Not at all honest	Very chic/Not at all chic
Très savante/Pas du tout savante	Very trustworthy/Not at all trustworthy	Very beautiful/Very ugly
Très qualifiée/Pas du tout qualifiée	Very sincere/Not at all sincere	Very elegant/Very ordinary
Très spécialiste/Pas du tout spécialiste	Very loyal/Not at all loyal	Very sexy/Not at all sexy

Source: Author's illustration based on Ohanian (1990)

Table 5 Brand attitude measurement scale

Attitude towards the brand	I do not like this brand/I like this brand
	I find this mark unpleasant/I find this mark pleasant.
	It is a lousy brand/It is a good brand.

Source: Author's illustration based on Grossbart et al. (1986)

Table 6 Adapted brand attitude measurement scale for video

Attitude towards the video	I do not like this video/I like this video
	I find this video unpleasant/I find this video pleasant
	It is a bad video/It is a good video

Source: Author's illustration based on Grossbart et al. (1986)

(1989) states that attitude towards a brand is the degree of satisfaction that the brand can bring to the consumer's needs. Several scales for measuring attitude towards the brand have been proposed by different authors (Grossbart et al. 1986; Spears and Singh 2004). In the context of this research, the choice fell on the Grossbart et al. (1986) scale, which is composed of three items (Table 5). This scale has been used and validated in several studies (Jaoued and Chandon 2007).

3.3 The Attitude Towards Video

Usually, researchers speak of attitude towards the ad, advertisement, or message in the context of communication or advertising. This attitude is defined by Derbaix and Vanhamme (2003) as an attitudinal reaction to the announcement at the time of exposure and immediately after. Regarding our research, the YouTuber published this video to present a product in partnership with a brand. For this, the choice fell on the attitude towards the brand scale of Grossbart et al. (1986) used in Table 6 and will be adopted in the context of our study.

3.4 Purchase Intention

Since Ajzen and Fishbein's (1975) early work, marketing studies of buying intent have steadily increased. Intention to purchase as personal action towards the brand (Bagozzi and Burnkrant 1979). Spears and Singh (2004) explain that there is a difference between attitudes and purchasing intentions. While attitudes are rough assessments, intentions represent an individual's conscious plan to make an effort to buy a brand. In the same vein, Eagly and Chaiken (1993) present intention to purchase as the motivation of the person to consciously exert efforts to carry out a behavior. Other researchers consider purchase intentions to be part of attitude and, more specifically, the conative component. Purchase intention is linked to consumer behaviors, perceptions, and attitudes (Mirabi et al. 2015). Buying intention can change depending on the influence of price and perceived quality and whether the consumer can be affected by internal or external motivations during the buying process (Gogoi 2013). Finally, Mirabi et al. (2015) state that there are six distinct stages an individual goes through before deciding to buy a product:

- Consciousness
- Knowledge
- Interest
- Preference
- persuasion
- The purchase

Several measurement scales relating to this concept have been proposed previously (Juster 1966; Mackenzie et al. 1986; Sweeney and Swait 2008). As part of this research, it was decided to retain that of Sweeney and Swait (2008), which is an adaptation of the scale of MacKenzie et al. (1986) and which has already been adapted (Temessek-Behi and Laribi 2017). It is composed of 3 items (Table 7).

3.5 Research Hypotheses

Several researchers have worked on the credibility and, in particular, that of a celebrity or an influencer and its influence on consumer attitudes (Erdogan 1999; Jaoued and Chandon 2007; Temessek-Behi and Laribi 2017). Most marketing studies have found that a source with high credibility produces more positive attitude change and induces more behavioral changes than a less credible source (Jaoued and

Table 7 Purchase intention measurement scale

Purchase intentions	This video and its recommendations made me want to buy this brand
	I will test the brand presented in this video
	If I am going to buy a beauty product, it will be this brand

Source: Author's illustration based on Sweeney and Swait (2008)

Chandon 2007). This theory is also confirmed by Kelman (1961), who explains that consumers change their attitude more easily when it comes to a message received by a credible source. Ohanian (1990) has shown that the source's credibility has a positive effect on the attitude of consumers towards the brand. Other researchers have worked on the influence of endorser credibility on attitude towards the ad (Kamins 1990; Goldsmith et al. 2000; Temessek-Behi and Laribi 2017). In the same vein, Ferle and Choi (2005) found that the endorser's credibility has a positive impact on consumers' attitudes towards the ad. As part of this research, it will be a question of testing the following hypotheses:

H1: As part of a partnership between a brand and a YouTuber, the credibility of the YouTuber positively influences attitude towards the brand.

H2: As part of a partnership between brand and YouTuber, the credibility of the YouTuber positively influences attitude towards video.

Intention to buy is a prevalent concept in marketing. Several researchers have worked on the impact of source credibility on the latter (Erdogan 1999; Sertoglu et al. 2014). These works have found a positive influence between these two concepts. In the context of this article, we propose to test the following hypothesis:

H3: In a partnership between a brand and YouTuber, the credibility of the YouTuber positively influences the intention to purchase.

Attitude towards the ad or the video (in our context) is a variable linked to attitude towards the brand. Indeed, several authors have shown that the influence of the advertisement has an impact on attitude towards the brand (Goldsmith et al. 2000; Ferle and Choi 2005). As part of this research, we propose to study this relationship:

H4: In a partnership between a brand and a YouTuber, the attitude towards the video positively influences the attitude towards the brand.

Purchase intention is a concept widely used in marketing research, and various authors (Bhakar et al. 2015) consider it to be behavior following a favorable cognitive or affective attitude. Indeed, studies have shown that a favorable attitude towards the brand generates an intention to purchase the product (Ohanian 1990; Erdogan 1999; Goldsmith et al. 2000; Lee and Koo 2015).

H5: In a partnership between a brand and a YouTuber, the attitude towards the brand positively influences the intention to purchase.

Lafferty and Goldsmith (1999) have indicated that ad attitude mediates source credibility and brand attitude. Goldsmith et al. (2000) have shown an indirect relationship between the credibility of the source and the attitude towards the brand through the attitude towards the ad. Other authors (Yoon et al. 1998; Ferle and Choi 2005) have found that the endorser's credibility has a significant and positive effect on the attitude towards the brand through the attitude towards the advertisement. As part of this research, we propose the following hypothesis:

H6: In a brand-YouTuber partnership, attitude towards video mediates between the source's credibility and attitude towards the brand.

Usually, in marketing research, ad attitude, brand attitude, and purchase intent are constructs that assess the effectiveness of an advertising message (Lee and Koo 2015). Various studies have also shown the indirect path from the attitude towards the advertisement to attitude towards the brand, subsequently influencing purchase

intention (MacKenzie et al. 1986; Goldsmith et al. 2000; Ferle and Choi 2005, Lee and Koo 2015). As part of our research, we propose to test the following hypothesis:

H7: In a brand-YouTuber partnership, the attitude towards the brand mediates between the attitude towards the video and the intention to buy.

4   Testing the Influence of a Collaboration with a YouTuber

The review of the literature and the qualitative studies made it possible to identify several variables that could explain subscribers' attitudes towards the partnership between brands and YouTubers, such as credibility, honesty, trust, personality, attractiveness, admiration. Taking into account these results and the literature, a few variables deemed relevant for building the model were selected:

- The credibility of the YouTuber which includes the expertise, attractiveness, and reliability of the latter
- The attitude towards the brand
- The attitude towards the video
- Intent to purchase

The first part relates to the credibility of the YouTuber and encompasses the three dimensions of the Ohanian scale (1990), namely (1) attractiveness, (2) reliability, and (3) expertise. 7-point differential semantic scales were used to measure these variables. The second part concerns the attitude towards the brand: the scale of Grossbart et al. (1986) was chosen in the form of the 7-point Likert scale. The third part relates to the attitude towards the YouTuber. For this, the one-dimensional scale of Bergkvist et al. (2015) was retained. The latter allows measuring the level of appreciation of the YouTuber by respondents using a 7-point Likert scale. The fourth part concerns the attitude towards the video; the scale of Grossbart et al. (1986) was used. The fifth and final part relates to the intention to purchase. The one-dimensional scale of Sweeney and Swait (2008) was chosen.

Before administering the questionnaire, a face-to-face pre-test with 20 women was performed. This step made it possible to verify that the questions asked were clear and understandable. A second pre-test was carried out online with ten people to verify the correct functioning of the administration mode. The estimated time to answer the questionnaire was estimated at 15 min. Finally, the questionnaire was officially administered online thanks to Google Docs and was distributed to fashion and beauty communities on Facebook.

The sample profile consists mainly of women aged 15–35. Indeed, according to a study conducted by the influencer marketing agency Influence4you (2020), the audience for YouTube "beauty" channels is predominantly made up of women (94%), 90% of whom are between 15 and 35 years old. The size of our sample was fixed by following the rule of Hair et al. (2011), according to which the number of respondents must be five times greater than the number of items. The

questionnaire is composed of 34 items which correspond to a minimum of 170 responses. In the end, a total of 250 responses were collected.

4.1 Exploratory Factor Analysis

The KMO index (= 0.888 > 0.6) and Bartlett's test of sphericity (1739.359, $p = 0$) indicate that the data can be factored in. The PCA has brought out a two-factor structure while the elbow test invites us to retain three axes. Faced with these different results, the three-axis structure was chosen because it is more precise and transparent, allowing us to understand 87.283% of the phenomenon studied. Different items were removed from the axes either for their poor quality of representation or because they were significant on two axes simultaneously (Table 8). In the end, the three axes retained are composed as follows:

- Attractiveness: The items "attractive YouTuber" and "chic YouTuber" were retained for this first factor. The latter benefit from a good quality of representation and an excellent factorial contribution. On the other hand, the items "Sexy Youtubeuse", "Beautiful YouTuber," and "Elegant YouTuber" have been eliminated.
- Expertise: Of the five essential items of this factor, only two were retained "Expert YouTuber" and "Experienced YouTuber." The two items have good

Table 8 Principal component analysis of credibility

Items	Representation qualities	Factorial contributions		
		D1 Attractivity	D2 Expertise	D 3 Trustworthiness
Attractive YouTuber	0.898	0.872		
Chic YouTuber	0.851	0.785		
Expert YouTuber	0.909		0.820	
Experienced YouTuber	0.923		0.865	
Honest YouTuber	0.807			0.817
Confidence in the YouTuber	0.879			0.856
Sincere YouTuber	0.896			0.880
Loyal YouTuber	0.819			0.843
Kaiser-Meyer-Olkin sampling measurement	0.888			
Bartlett Sphericity Test: Chi-square approached	1735.359			
Bartlett Sphericity Test: dll	28			
Bartlett's Sphericity Test: meaning	0			
% of variance explained	87.283			

Source: Author's illustration

quality representations and satisfactory factor contributions. The items "Learned YouTuber," "Qualified YouTuber," and "Specialist YouTuber" have been deleted.

- Reliability: For this last axis, only one item has been deleted, "Reliable YouTuber." The rest of the items were retained "Honest YouTuber," "Loyal YouTuber," "Trust in the YouTuber," and "Sincere YouTuber." These four items have a good quality of representation and respectable factor contributions.

The Cronbach's alpha of the three dimensions is also very satisfactory: attractiveness (0.845), expertise (0.910), and reliability (0.939).

Attitude Towards the Brand

The principal component analysis confirmed the unidimensionality of this construct. Indeed, there is only one factor that explains 86.541% of the total variance. The KMO test (=0.745 > 0.6) and Bartlett's sphericity test (571.451, $p = 0$) show that the data can be factored in. The items benefit from a good quality of representation and acceptable factor contributions (Table 9). Finally, the reliability of the scale is satisfactory, with a Cronbach's alpha of 0.920.

The Attitude Towards Video Scale

The KMO index (= 0.753 > 0.6) and Bartlett's Sphericity test (693.730, $p = 0$) show that the data are ready for factorization. All the items have a good quality of representation (greater than 0.6) and a good factorial contribution. The construct is one-dimensional with a single axis which explains 89.339% of the total variance. The reliability of the scale is confirmed with a Cronbach's alpha of 0.939 (Table 10).

Table 9 Principal component analysis of attitude towards the brand

Items	Representation qualities	Factorial contributions
Brand appreciation	0.839	0.916
Pleasant–Unpleasant	0.901	0.949
Good–Bad	0.858	0.925
Kaiser-Meyer-Olkin sampling measurement	0.745	
Bartlett Sphericity Test: Chi-square approached	571.451	
Bartlett Sphericity Test: dll	3	
Bartlett's Sphericity Test: meaning	0	
% of variance explained	86.541	
Cronbach's alpha	0.920	

Source: Author's illustration

Table 10 Principal component analysis of attitude towards the video

Items	Representation qualities	Factorial contributions
Video appreciation	0.854	0.924
Pleasant–Unpleasant	0.908	0.953
Good–Bad	0.918	0.958
Kaiser-Meyer-Olkin sampling measurement	0.753	
Bartlett Sphericity Test: Chi-square approached	693.730	
Bartlett Sphericity Test: dll	3	
Bartlett's Sphericity Test: meaning	0	
% of variance explained	89.33%	
Cronbach's alpha	0.939	

Source: Author's illustration

Table 11 Principal component analysis of shopping intentions

Items	Representation qualities	Factorial contributions
This video and its recommendations made me want to buy the brand	0.869	0.932
I will test the brand mentioned in this video	0.911	0.954
If I am going to buy a beauty product, it will be this brand	0.840	0.916
Kaiser-Meyer-Olkin sampling measurement	0.743	
Bartlett Sphericity Test: Chi-square approached	606.760	
Bartlett Sphericity Test: dll	3	
Bartlett's Sphericity Test: meaning	0	
% of variance explained	87.324%	
Cronbach's alpha	0.927	

Source: Author's illustration

The Shopping Intentions Scale

Analysis shows that the KMO test is more significant than 0.6, and Bartlett's test of sphericity is significant (606.760, $p = 0$). All the items benefit from a good quality of representation and good factor contributions. Principal component analysis confirms the one-dimensional nature of the scale with a total explained variance of 87.324% (Table 11).

4.2 Confirmatory Factor Analysis Results

This section will be devoted to the results of the exploratory factor analysis of the various constructs: credibility, attitude towards the brand, attitude towards the

Table 12 The Mardia multi-normality criterion

Construct	Mardia coefficient
Credibility	28.949
Attractiveness	0.52
Reliability	1.64
Expertise	12.203
Attitude towards the brand	17.269
Attitude towards video	9.027
Purchase intent	5.646

Source: Author's illustration.

YouTuber, attitude towards video, and purchase intention. Before starting to present the results, the normality of the data will be checked. The "Skewness" asymmetry test, which must be less than 1 in absolute value, and the "Kurtosis" kurtosis coefficient, which must be less than 3 in absolute value, are acceptable for all scales. The "Mardia" multi-normality criterion must be less than three and can be accepted up to a value of 10 (Kline 2013). This criterion is not met by three of our variables "credibility," "reliability," and "brand intent." The Bootstrap method will be used to overcome this problem using the Amos 21 software with 500 replications. Table 12 shows the results of the multi-normality analysis.

The Goodness of Fit of the Credibility Model

During the exploratory analysis, we found that credibility is made up of three factors and eight items. Given the non-respect of the multi-normality condition of this scale (Mardia = 28.949), the Bootstrap method was used. The values before and after this technique are equivalent, which indicates that the sample and the data are insensitive to non-normality. This model presents a good fit, and the indices respect the recommended thresholds. It can be seen that the SMC values exceed the threshold of 0.5 for all items. The GFI, AGFI, TLI, NFI, and CFI are more significant than 0.9. The values of RMR, SRMR, and RMSEA are close to zero. The use of a second-order confirmatory factor analysis is justified by the excellent fit of the first-order model of credibility. The results obtained show an excellent fit of the second-order model of credibility. The various indices meet the threshold required in the literature (Table 13).

4.3   Validation of the Global Conceptual Model and Testing of the Hypotheses

Before examining the goodness of fit of this model and testing the direct link hypotheses, a reminder of the hypotheses as well as a schematic presentation of the structural model is in order (Fig. 1).

Table 13 First-order and second-order credibility model fit indices

| Items	SMC	Loading	SMC	Loading
Attractiveness 1	0.667	0.897	0.779	0.831
Attractiveness 2	0.805	0.817	0.69	0.883
Reliability 2	0.728	0.853	0.719	0.848
Reliability 3	0.867	0.931	0.863	0.847
Reliability 4	0.881	0.938	0.89	0.929
Reliability 5	0.719	0.848	0.718	0.944
Expertise 1	0.881	0.939	0.786	0.944
Expertise 2	0.795	0.892	0.891	0.887
Adjustment indices	Values		Values	
X2	23.065		33.24	
Degree of freedom (DL)	17		19	
P	0.147		0.023	
X2 standard	1.36		1.75	
GFI	0.978		0.969	
AGFI	0.954		0.94	
RMSEA	0.038		0.055	
CMA	0.041		0.088	
SRMR	0.0205		0.0245	
TLI	0.994		0.988	
NFI	0.987		0.981	
CFI	0.996		0.992	

Source: Author's illustration
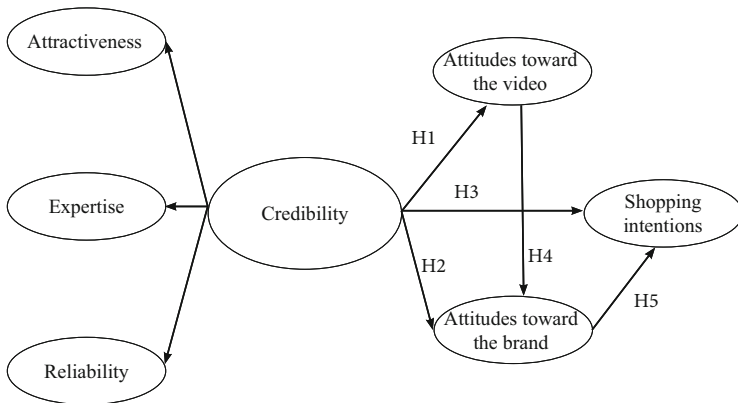
Fig. 1 Conceptual research model (Source: Author's illustration)

Table 14 shows that the model has good goodness of fit. By examining the different absolute indices, it is possible to conclude that the GFI and AGFI meet the required standards as they are greater than or close to 0.9. The same goes for the RMR and SRMR, which have a value close to zero. Finally, the RMSEA is equal to

Table 14 The results of the analysis of the structural model

			Structural links	CR	P
Attitude towards video	→	Credibility	0.848	13.702	***
Attitude towards the brand	→	Credibility	−0.262	−1.761	0.078
Purchase intent	→	Credibility	0.655	5.578	***
Attitude towards the brand	→	Attitude towards video	0.576	3.966	***
Purchase intent	→	Attitude towards the brand	0.372	7.972	***
		Adjustment indices	Value		
		χ^2	231.4		
		Degree of freedom (DL)	127		
		P	0		
		χ^2 Standard	1.82		
		GFI	0.908		
		AGFA	0.876		
		CMA	0.119		
		RMS	0.057		
		SOME	0.0505		
		TLI	0.972		
		CFI	0.976		
		NFI	0.949		

Source: Author's illustration.

$0.057 < 0.08$. For the incremental indices, the NFI (0.949), CFI (0.976), and the TLI (0.972) are all greater than 0.9, therefore, meet the required thresholds. Finally, for the parsimony indices, the standardized chi-square equals 1.82, i.e., less than 2.

4.4   Test Des hypothèses Directes

Hypothesis 1: This hypothesis proposes to test that the credibility of the YouTuber has a positive influence on attitude towards the video in the context of a partnership between a brand and a YouTuber. The relationship between the two variables, credibility and brand attitude, is significant with ($t = 13.702$, $p = 0$), and the structural link between these variables is 0.848. It is then possible to conclude that Hypothesis 1 is validated.

   Hypothesis 2: This hypothesis recommends that the YouTuber's credibility positively influences subscribers' attitude towards the brand within the framework of a partnership between the brand and the YouTuber. The structural link (-0.262) and the relationship between the two variables ($t = -1.761$; $p = 0.078$) are significant at the 8% level but in the opposite direction to what has been assumed. Therefore, hypothesis 2 is not validated.
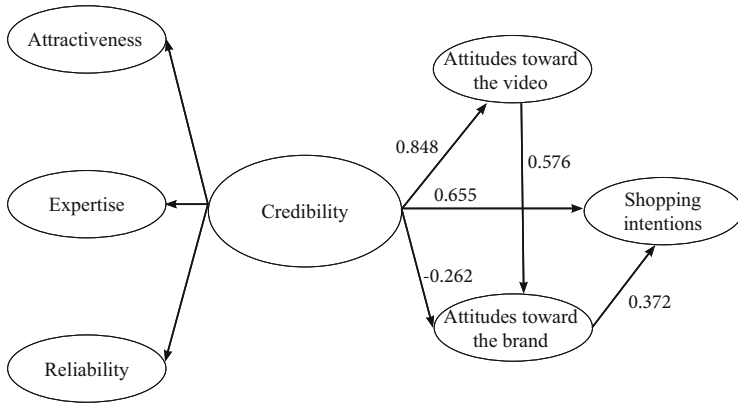
Fig. 2 Results for the conceptual research model (Source: Author's illustration)

Hypothesis 3: This hypothesis relates to the positive influence of the credibility of the YouTuber on the purchase intention of subscribers in the context of a partnership between a brand and a YouTuber. The table shows that the relationship between credibility and the intention to purchase is positive with ($t = 5.578 > 1.96$, $p = 0$), and the structural link between this variable is 0.655. These results show that Hypothesis 3 is validated.

Hypothesis 4: Hypothesis 4 refers to the positive influence of attitude towards video on the attitude towards the brand of subscribers, in the context of a partnership between brand and YouTuber. The structural links and the relationship between attitude towards video and attitude towards a brand are significant with ($t = 3.966 > 1.96$; $p = 0$). Hypothesis 4 is validated.

Hypothesis 5: This hypothesis proposes to test that the attitude towards the brand has a positive influence on the purchasing intention of subscribers in the context of a partnership between the brand and the YouTuber. The relationship between the two variables, attitude towards the brand and intention to purchase, is significant with ($t = 7.972 > 1.96$, $p = 0$), and the structural link between these two variables is 0.372. It is then possible to conclude that hypothesis 5 is validated. The results for the final model are displayed in Fig. 2.

A mediator variable is defined as a generative mechanism through which a primary independent variable can influence a given dependent variable. A variable acts as a mediator because it accounts for the relationship between an independent variable and a dependent variable (Baron and Kenny 1986). According to these authors, to test the mediator effect, it is necessary to demonstrate strong relationships between the independent variable and the mediator variable and between the mediator variable and the dependent variable (Fig. 3). In order to test the hypothesis that the attitude towards the video mediates between the credibility of the YouTuber and the attitude towards the brand, the steps of Baron and Kenny (1986) and Preacher and Hayes (2008) were followed.
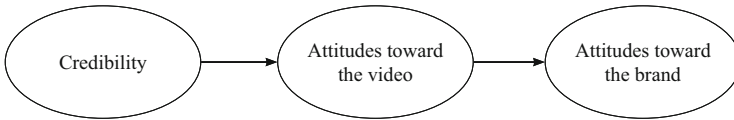
Fig. 3 Mediation effect of the attitude towards the video (Source: Author's illustration)

Table 15 Mediation tests involving attitude towards the video

X: Credibility; Y: Brand Attitude; M: Attitude Video				
Regression	Coefficient	Standard deviation	Test t	p
Credibility → AttVideo (path a)	0.458	0.03	14.593	***
AttVideo → AttMarq (path b)	0.265	0.81	3.261	***
Credibility → AttMarq (path c′)	0.072	0.055	1.318	0.189
Credibility → AttMarq (path c)	0.194	0.041	4.728	***
Confidence interval (indirect effect)	Lower value		Upper value	
Bootstrap procedure	0.06		0.31	
Difference in c and c′	Z value		p	
Sobel test	3.182		***	

Source: Author's illustration

The structural equations indicate that attitude towards video has a complete mediating role because it removes the influence of credibility on attitude towards the brand. The procedure of Preacher and Hayes (2008) shows that attitude towards video mediates the influence of credibility on attitude towards the brand. Indeed, credibility has a statistically significant effect on attitude towards video (a), attitude towards video has a statistically significant effect on attitude towards brand and word of mouth (b), and credibility alone has a statistically significant direct effect on attitude towards the brand (c). However, this mediation is indirect because coefficient c is not statistically significant. The effects (mediated and direct) go in the same direction (positive), and the mediating effect is confirmed by the Sobel test, which is statistically significant. Finally, since the value 0 is not included in any confidence intervals calculated using a bootstrap procedure, the indirect effects are statistically significant.

It can be seen that the effect of attitude towards video has a significant effect on attitude towards the brand ($t = 4.728 > 1.96$, $p = 0$). On the other hand, the coefficient "c" representing the effect of credibility on attitude towards the brand is no longer significant. Therefore, attitude towards video has a total mediating role between credibility and attitude towards the brand. Hypothesis 6 is validated (Table 15).

In order to test the hypothesis, which states that attitude towards the brand mediates between attitude towards video and intention to purchase, the procedure of Preacher and Hayes (2008) was followed (Fig. 4).

From the results of the analysis, it can be seen that the relationship between attitude towards video and purchase intention is significant with $t = 13.369 > 1.96$;
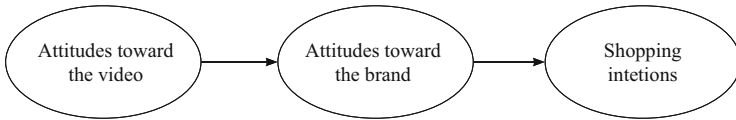
Fig. 4 Mediation effect of the attitude towards the brand (Source: Author's illustration)

Table 16 Mediation tests involving attitude towards the brand

X: Attitude Video; Y: Intent to Purchase; M: Brand Attitude				
Regression	Coefficient	Standard deviation	Test t	p
AttVideo $\rightarrow$ AttMarq (path a)	0.338	0.06	5.658	***
AttMarq $\rightarrow$ IntPurchase (path b)	0.307	0.44	6.931	***
AttVideo $\rightarrow$ IntAchat (path c')	0593	0.44	13.369	***
AttVideo $\rightarrow$ IntAchat (path c)	0.697	0.046	15.308	***
Confidence interval (indirect effect)	Lower value		Upper value	
Bootstrap procedure	0.05		0.16	
Difference in c and c'	Z value		p	
Sobel test	4.383		***	

Source: Author's illustration

$p = 0$ and that the relationship between attitude towards the brand and attitude towards video is significant ($t = 5.658 > 1.96$; $p = 0$). The relationship between attitude towards the brand and intention is significant with ($t = 6.931 > 1.96$; $p = 0$). The relationship between attitude towards video and intention to buy is still significant. Based on the results, it can be concluded that attitude towards the brand mediates between attitude towards video and intention to purchase. To know the nature of this mediation, we go to the next step. This step was necessary to see the direct effect, the indirect effect, and the total effect thanks to PROCESS. For this, the Bootstrap procedure will be used to test the null hypothesis (ab = 0) and to check the significance level of the effects (Ho: ab = 0; H1: ab>0). Recall that: a (the relation between the variable x and the mediator variable M) and b (the relation between the mediator variable M and the variable Y). Examination of the table indicates that the indirect effect between attitude towards video and intention to purchase is significant (0.105 > 0). So the H1 hypothesis is accepted, and it is appropriate to conclude with a mediation. The Sobel test is statistically significant (value = 4.383), the observed mediating effect is confirmed (Table 16).

In the presence of brand attitude, the relationship between attitude towards video and intent to buy is always significant. Since the relation "Attitude towards the video—Intention to purchase" is stronger in the absence of the mediating variable (M), it is possible to conclude that the mediating effect of the attitude towards the brand between the attitude towards video and purchase intention is partial.

5   Results and Discussion

The results show that the relationship between the credibility of the YouTuber and the attitude towards the video is significant ($t = 13.452$, $p = 0$). This is consistent with the results of previous work (Lafferty and Goldsmith 1999; Goldsmith et al. 2000; Ferle and Choi 2005), which has shown that celebrity credibility positively influences attitude towards advertising. In the same vein, Hansen et al. (2014) found that the credibility of users generating video/advertising on YouTube has a positive and significant impact on attitude towards video. Finally, Temessek-Behi and Laribi (2017) confirmed that the credibility of a YouTuber (specialized in fashion and beauty) has a positive effect on attitude towards video.

The results of this assumption are not significant at the 5% level. In a partnership between a YouTuber and a brand, the credibility of the YouTuber does not have a positive influence on attitude towards the brand ($t = -1.848$, $p = 0.065$). This does not corroborate the results of some authors (Ohanian 1990; Jaoued and Chandon 2007; Temessek-Behi and Laribi 2017) who have shown that the credibility of the source positively influences attitude towards the brand.

The third hypothesis states that in the context of a partnership between brand and YouTuber, the credibility of the YouTuber positively influences the purchasing intention of subscribers. The result of this hypothesis is significant ($t = 11.385$; $p = 0$). This confirms the results of previous work by Ohanian (1990); Goldsmith et al. (2000); Sertoglu et al. (2014), which showed that the source's credibility positively influences the intention to purchase. Hung et al. (2011) explain that consumers have more intention to buy a cosmetic product when it comes to an interpersonal influence because it is perceived as more credible and more reliable than the advertisements of cosmetic products, which are often overrated. Finally, Temessek-Behi and Laribi (2017) confirmed that the perceived credibility of YouTubers significantly influences the buying intention of subscribers. The result of this hypothesis also converges with the results of our qualitative study. When analyzing subscriber reviews, purchase intention emerged as a positive attitude towards the brand/product.

The fourth hypothesis states that attitude towards video positively influences attitude towards the brand. The result of this hypothesis is significant ($t = 3.963$, $p = 0$). This is consistent with the work of some researchers (MacKenzie et al. 1986, Ferle and Choi 2005) who have indicated that there is a logical and meaningful path in the mind of the consumer that enjoying the ad will develop a positive sentiment towards the brand/product and may be tempted to test the brand presented. The result of this hypothesis is significant, and there is a positive relationship between attitude towards the brand and purchase intention ($T = 7.908$, $p = 0$). This is consistent with previous research findings, which have indicated that the path between brand attitude and purchase intention is positive (Goldsmith et al. 2000; Ferle and Choi 2005). Our results are consistent with those of some authors (Lafferty and Goldsmith 1999; Goldsmith et al. 2000) who have succeeded in showing that there is a total mediation between the credibility of the endorser and the attitude towards the brand through

attitude towards video. Finally, Yoon et al. (1998) and Ferle and Choi (2005) found that there is a total mediation between credibility and attitude towards the brand thanks to attitude towards video As part of this research, it is possible to explain the existence of this mediation by the fact that a video deemed successful by a subscriber can push the latter, who appreciates the YouTuber and finds her credible, to forge a positive attitude towards the brand.

Finally, we tested the direct and indirect effects of brand attitude as a mediating variable between video attitude and purchase intention. We found that the Attitude towards video—Intention to buy relationship was more robust in the absence of the mediator variable (M). The branding attitude mediates between Video Attitude and intent to buy is partial. This is consistent with the results of Lafferty and Goldsmith (1999) and Lee and Koo (2015), who have proven the mediating role of attitude towards the brand.

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