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The application of social media for marketing strategies in pharma healthcare

Maria Helena Dias Proença

Doctor of Business Administration

Supervisors:

PhD Susana Marques, Associate Professor, Iscte – Instituto Universitário de Lisboa

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“It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of light, it was the season of darkness, it was the spring of hope, it was the winter of despair.”

Charles Dickens, “A Tale of Two Cities”

To my family: my parents, especially my beloved mother who always inspired me with her endless source of encouragement, my sisters and their continuous support and my faithful friend, my dear dog Sushi who keeps revealing to me every day, the meaning of unconditional love.

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RESUMO

O digital está a transformar a forma como os negócios se fazem no mundo, e a saúde não é exceção. A pandemia de COVID-19 teve um impacto significativo na utilização da Internet e acelerou a transição digital a nível mundial, incluindo Portugal. Com o aumento da literacia em saúde e o acesso à tecnologia, os consumidores estão a tornar-se mais informados e proativos em relação aos seus cuidados com a saúde e à automedicação, 67% destes pesquisam problemas de saúde e sintomas e 81% realizam pesquisas *online* antes de fazer uma compra. Esta mudança de comportamento expandiu a comunicação do offline para a Internet. A comunicação *electronic word-of-mouth* (eWOM), baseada nos *media* sociais, envolve mais variáveis para a comunicação de marketing; nos últimos anos, alguns autores discutiram o impacto do eWOM nas decisões de compra do consumidor *online*; entretanto, a literatura ainda é relativamente incipiente no que diz respeito à Indústria Farmacêutica e ao segmento de automedicação do mercado de medicamentos de venda livre (OTC). As empresas farmacêuticas devem estar atentas a esta mudança de paradigma: o paciente é uma parte indispensável e ativa no presente e no futuro da área da saúde, além do médico e do pagador. O marketing farmacêutico está a evoluir para a digitalização, mas ainda há espaço para melhorias, especialmente no âmbito das redes sociais que ainda são um território pouco explorado pelos profissionais de marketing farmacêutico. A maioria das empresas farmacêuticas ainda não se adaptou a estes hábitos de consumo com uma presença digital eficaz. A presente investigação pretende identificar a aplicação de plataformas de redes sociais para efeitos de marketing ou comunicação na área da indústria farmacêutica em Portugal.

Objetivo: Esta pesquisa tem como objetivo, examinar a influência do eWOM nas redes sociais na intenção de compra dos consumidores de um medicamento OTC. Além disso, analisa as diferenças entre homens e mulheres na aceitação do eWOM, bem como o respetivo comportamento de compra.

Metodologia: O modelo teórico aplicado foi o *Information Acceptance Model* (IACM) que consiste em características da informação (mensagem) e comportamento do consumidor em relação à informação onde se integrou uma nova variável, a credibilidade da fonte de informação, tendo por base o *Information Adoption Model* (IAM). Portanto, avalia-se as características da mensagem (estímulo), características do emissor (fonte), características do recetor (audiência) e a resposta ou comportamento esperado. Com base numa abordagem dedutiva, o modelo foi validado através de modelação de equações estruturais (CB-SEM) com base num inquérito online por amostragem transversal a 338 utilizadores de redes sociais, que eram potenciais

consumidores de OTC em Portugal. As perguntas do inquérito foram revistas por um painel de especialistas utilizando a abordagem qualitativa de entrevistas individuais.

Resultados: Os nossos resultados indicam que as características da fonte e do recetor têm um papel importante na intenção de compra de um OTC; portanto, devem ser avaliados em conjunto, considerando a influência das características da mensagem do eWOM nas intenções de compra dos consumidores. Os resultados deste estudo revelam que todas as variáveis estudadas, exceto a qualidade e credibilidade da informação (características da mensagem), são os determinantes da aceitação do eWOM nas redes sociais que mais influenciam as intenções de compra dos consumidores. Em síntese, a fonte ou emissor e o recetor são os determinantes mais influentes na avaliação das informações de um medicamento OTC nas redes sociais. Os resultados também confirmaram que a credibilidade da fonte é um construto multidimensional em que as principais dimensões privilegiadas pelos consumidores de OTC são a reputação, a perícia (expertise) e a confiança, sendo a homofilia a menos importante. O estudo, respondeu a uma importante lacuna de investigação ao verificar que ao avaliar a credibilidade da fonte os consumidores, favorecem laços mais fortes ao preferir avaliar informações de familiares ou amigos do que informações anónimas. Os resultados mostram que não existem diferenças significativas entre os sexos no que diz respeito ao seu comportamento na avaliação das informações sobre um medicamento OTC nas redes sociais. Portanto, o género não tem efeito moderador, o que constitui uma conclusão muito útil sobre a compreensão das diferenças no comportamento entre homens e mulheres relativamente ao eWOM de um medicamento OTC.

Conclusões: Os resultados deste estudo fornecem contribuições teóricas e de gestão. Ao integrar duas teorias, IAM e IACM, construímos um modelo explicativo robusto dos determinantes da intenção de compra de um medicamento OTC em Portugal e identificamos os principais fatores que contribuem para a utilidade e adoção do eWOM OTC nas redes sociais, explicando 72% do comportamento da intenção de compra dos consumidores.

Este estudo fornece aos profissionais de saúde um quadro de referência para compreender a influência do eWOM das redes sociais nas intenções de compra dos consumidores de um OTC. Por este motivo, permite aos gestores farmacêuticos compreender a dinâmica da eWOM das redes sociais e, assim, desenvolver melhores estratégias de marketing.

Palavras-chave: Social Media; Digital Marketing Strategies; Electronic Word of Mouth (eWOM); Consumer Behaviour; Purchase intention; Pharmaceutical Industry

ABSTRACT

Digital is transforming the way the world does business, and healthcare is no exception. The COVID-19 outbreak has had a significant impact on internet use and accelerated the digital transition worldwide as well as in Portugal. Social media is the fastest communication network among worldwide people. During the outbreak, the usage of social media platforms increased two times more compared with normal days. With increasing health literacy and access to technology, consumers are becoming more informed and proactive towards health issues and self-medication, 67% of them are researching health problems and symptoms tracking and 81% conduct online research before making a purchase. This change has expanded communication from offline to the internet. Electronic word-of-mouth communication (eWOM), based on social media, brought more variables to marketing communication and became an interesting field for research considering its communication potential. Indeed, several studies have shown the ability to influence interpersonal communications on products or services in the purchase intention of consumers. As so, in recent years, some authors discussed the impact of eWOM on consumer online purchasing decisions; however, the literature is still relatively nascent regarding the Pharmaceutical Industry and the self-medication segment market of Over-the-Counter medicines (OTC).

Pharmaceutical companies must be aware of this paradigm change: the patient is an indispensable and active stakeholder in the present and future of healthcare, besides the physician and the payer. Pharma marketing may be moving into a more digitalized space, but there is still room for improvement, especially when it comes to social media there is an unexploited territory for pharma marketers as most pharmaceutical companies are not yet to answer these consumers habits with an effective digital presence. The current research aims to study the application of Social Media platforms for marketing or communication purposes in pharma healthcare in Portugal.

Purpose: This research aims to examine the influence of eWOM in social media on consumers' purchase intentions of an OTC medicine. Additionally, we analyze the differences between males and females in the acceptance of eWOM information and purchase behaviour.

Methodology: The theoretical model is based mainly on the Information Acceptance Model (IACM), which consists of characteristics of the information and consumer behaviour concerning the information. The variable source of information credibility is integrated into the model from the Information Adoption Model (IAM); therefore, we evaluated the characteristics of the message (stimulus), characteristics of the issuer (source), characteristics of the receiver

(audience) and the response or expected behaviour. Based on a deductive approach, the model was validated through covariance structural equation modelling (CB-SEM) based on an online cross-sectional survey of 338 social media users who are potential OTC consumers in Portugal. The survey questions were reviewed through a qualitative approach of individual interviews from a panel of experts.

Results: Our findings indicate both characteristics of the source and the receiver have an important role in the purchase intention of an OTC; therefore, should be evaluated together while considering the influence of eWOM information on consumers' purchase intentions. The results of this study reveal that all the variables studied, except for the quality and credibility of information (characteristics of the message), are determinants of eWOM on social media that influence consumers' purchase intentions. In conclusion, the source or issuer and the receiver are the most influential determinants when it comes to the evaluation of the information in Social media concerning an OTC medicine. Our results also confirmed the source credibility is a high-order construct in which the main dimensions privileged by the OTC consumers are reputation, expertise, and trustworthiness and the less important homophily. The study answers an important research gap by verifying that, when assessing the credibility of the source, consumers favoured more strong ties by preferring to evaluate information from family or friends than anonymous information. Results show there are no significant differences between genders in terms of their behaviour when evaluating the information regarding an OTC medicine in social media. Hence gender has no moderation effect. This provides useful insights into the understanding of the differences in the behaviour of males and females regarding online eWOM towards an OTC medicine.

Conclusions: The results of this study provide useful theoretical and managerial contributions. By integrating two theories, IAM and IACM we have built a strong explanatory model of the determinants of purchase intention of an OTC medicine in Portugal and identified the major key factors that contribute to the usefulness and adoption of the OTC information in social media explaining 72% of consumers' intention to purchase behaviour.

This study provides healthcare professionals with a frame of reference to understand the influence of eWOM in social media on consumers' purchase intentions of an OTC. For this reason, it allows pharma managers to understand the dynamics of eWOM on social media, and thus to develop better marketing strategies.

Keywords: Social Media; Digital Marketing Strategies; Electronic Word of Mouth (eWOM); Consumer Behaviour; Purchase intention; Pharmaceutical Industry

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GLOSSARY OF ACRONYMS

ACEPI: Associação do Comércio Eletrónico e da Publicidade Interativa

AESGP: The Association of the European Self-Care Industry

AMA: American Marketing Association

APIFARMA: Associação Portuguesa da Indústria Farmacêutica

AVE: Average of variance extracted

B2B: Business to Business

B2C: Business to Consumer

CR: Composite Reliability

DGS: Direção Geral de Saúde

DTC: Direct to Consumer

eWOM: Electronic Word-Of-Mouth

FMCG: Fast Moving Consumer Goods

HCP: Healthcare Professional

GDP: Gross Domestic Product

IAM: Information adoption model

IACM: information acceptance model

INFARMED: Autoridade Nacional do Medicamento e Produtos de Saúde, I. P

INN: International Nonproprietary Name

KPI: Key Performance Indicator

MAT: Moving Annual Total

MLE: Maximum Likelihood Estimation

MoU: Memorandum of Understanding

NHS: National Health System

OTC: Over the Counter

PBC: Perceived Behavioural Control

POM: Prescription only Medicines

PRM: Pharmaceutical Relationship Marketing

REP: Representative

R&D: Research and Development

ROI: Return on Investment

SDG: Sustainable Development Goals

SEM: Structural Equation Modelling

SM: Social Media

SMMS: Social Media Marketing Strategies

TAM: Technology Acceptance Model

TPB: Theory of Planned Behaviour

TRA: Theory of reasoned action

WHO: World Health Organization

WOM: Word-Of-Mouth

UTAUT: Unified Theory of Acceptance and Use of Technology

YTD: Year to Date

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CHAPTER 1. INTRODUCTION

In the field of health care, the pharmaceutical industry plays a critical role. The pharmaceutical industry added 4.3 billion euros to the Portuguese GDP in 2016, representing 2.3% of the GDP, being highly productive (above the average for all sectors in Portugal) it is a motor of global GDP growth, growing slightly faster than the economy and it is a job creator in Portugal (Apifarma, 2018). However, in 2019, the expenditures on pharmaceuticals as a fraction of total health care expenditures in Portugal amounted to 26.1% which represents 1.24% of the total GDP[1].

The COVID-19 pandemic has a large impact on global healthcare in the current scenario, and this impact can also be seen in related fields. One of the few sectors that are benefiting from Covid-19 is pharmaceutics. However, the pharmaceutical industry has been historically slow to digitize. Instead, it has tended to stick to its antiquated sales approach of relying on its salesforce representatives (REP) in the field to visit healthcare professionals (HCPs) in person to hand out samples and give information. Because of the restrictions on REP's access to HCP's, there was a 75% decrease in promotional activity worldwide, and up to a 500% increase in engagement via remote channels. In the coming years, pharmaceutical customer engagement will be more remote, digital, and informed. To stay competitive in this new reality, pharmaceutical companies will have to adopt new models of customer engagement across the entire organization[2]. This outbreak sped up digital transformation and technologies by several years and transformed businesses forever. To stay competitive in this new business and economic environment requires new strategies and practices. Consumers have moved toward online channels and mastering these channels turn out to be a key success factor and subsequently, the need to adopt digital strategies became evident to companies in the sector. To maintain excellence in engagement, firms will need to be more agile. They will need to understand different channels, types of engagements and customer needs, and shift investments based on the new information they are receiving. The integration of this information with execution is at the core of omnichannel engagement. Social Media Marketing is one of the most noteworthy strategies to adopt in this context. Social media is a key part of the omnichannel customer experience. However, this sector has been very reluctant to adopt this type of strategy for several reasons, including the lack of experienced knowledge in this area. Therefore, the big question is: which electronic word of mouth (eWOM)

1 Medicine and Healthcare Products Statistics – Infarmed website [Internet]. Available at https://www.infarmed.pt/documents/15786/1229727/Estat%C3%ADstica+do+Medicamento+2019/b2e448a8-dc71-c2e8-a93a-f0cbef7ad6eb?version=1.0 Consulted November 16th, 2021

2 Top Customer Engagement Trends in Pharma - IQVIA [Internet]. Available at https://www.iqvia.com/locations/united-states/blogs/2021/05/top-customer-engagement-trends-in-pharma Consulted November 16th, 2021

determinants do consumers of OTC products favour in the adoption of eWOM and the consequent impact on their consumption behaviour? The answer will be a critical finding to implement effective social media marketing strategies.

In the future, the pharmaceutical industry positioning must develop the capabilities to respond to the changes in the value chain, especially the increase in competition, the reduction of margins and implement technological innovation in marketing strategies with approaches more focused on the customer and stakeholders, leveraged by new technologies executing more consumer-centric and omnichannel strategies. As so the major aim of this PhD thesis is to contribute to the field of Digital Pharmaceutical Marketing, both theoretically and empirically, considering the increase of social media use. This research intends to understand the impact of social media reviews on consumer purchase intentions behaviour of non-prescription medicines by implementing a quantitative study based on a cross-sectional survey. Pharmaceuticals that can be purchased without a prescription are known as over-the-counter (OTC) medicines. In contrast to the highly restricted prices of reimbursed and/or prescription-only drugs, they are frequently not reimbursed, and their pricing is free. European countries' community pharmacy industries have undergone substantial restructuring in the recent two decades. The deregulation of OTC drug distribution is a key part of these reforms, this liberalization includes a shift from a traditional pharmacy-centred distribution model to a multichannel distribution model in which OTC pharmaceuticals are sold in places other than pharmacies, such as supermarkets, gas stations, and other nonpharmacy locations (Moura & Barros, 2020).

The Internet brings together several consumers who wish to share experiences, opinions and information about products, brands and different organizations. The digital ecosystem has evolved into a powerful information and communication channel. A form of media that serves to both reinforce and damage brands. As a result, the proliferation of sites such as social networks, discussion forums, and blogs, consumers have easy access to information gathering, data processing, and decision-making. This person-to-person exchange of information has an impact on the decision-making process of consumers and has received considerable attention in marketing. It is in the sense that eWOM, has become, with the arrival internet, a subject of considerable interest in recent years (Dellarocas, 2003; Erkan & Evans, 2016), however, there is still a lack of research regarding the determinants of eWOM information on social media (Dwivedi et al. 2016; Erkan, 2016) and to our knowledge none regarding OTC medicines.

With increasing health literacy and access to technology, consumers are becoming more “health-smart” and proactive towards self-care, 67% of them are researching health

problems and symptoms tracking and 81% conduct online researches before making a purchase (IQVIA, 2019). Since there is a significant increase in consumer interest in obtaining health-related information on the internet, Rader et al. (2014) conclude that marketing in the pharmaceutical industry should integrate social media for engagement with consumers (Roblek et al. 2018).

Our research aims to contribute to the field of Digital Pharmaceutical Marketing strategies and social media, in particular, that may induce important and useful theoretical and managerial contributions. It was decided to focus this work on the consumer perspective and use major stakeholders' expert targets (Pharmacists and Marketing Managers) to validate and refine the survey questions using the qualitative methodology of individual interviews.

Firms that leverage social media to enhance their pharmaceutical relationship marketing (PRM) tactics will be viewed favourably in terms of trust, transparency, openness, and honesty. This way, it becomes imperative for pharmaceutical companies to be able to provide effective social media marketing communications, to be part of the consumer journey and improve consumers' relationships with their brands (Enyinda et al. 2018).

The challenge that pharmaceutical companies face is a lack of understanding of what motivates Portuguese consumers to evaluate pharmaceutical products online. As a result, using an OTC medicine product as a model, this study intends to help marketers in pharmaceutical firms to understand the factors of eWOM that influence consumers' purchasing decisions in the setting of social media.

1.1 Motivations for Research

The motivations for this thesis are both professional and academic.

During my professional life, I have worked in Pharmaceutical Industry with vast professional experience in management and business, in which fifteen (15) years are in the performance of senior/executive management functions in the industry and healthcare sector. As a result of my knowledge of the Pharmaceutical Industry market, ecosystem, and sales and marketing strategies, I am convinced that implementing digital marketing strategies, could be a lever for the necessary and desirable changes that this Industry must face to increase the effectiveness of sales and increase the Return on Investment (ROI). With the advent of the COVID-19 pandemic during the period of elaboration of this thesis, it becomes noticeably clear that digital strategies have become crucial for companies to survive in this "New Normal", and this makes my investigation critical to provide key insights that will benefit the competitiveness of companies and the future of this sector.

I applied for the Doctor of Business Administration (DBA) course at ISCTE-IUL because I wanted to know the state of the art in terms of academic knowledge and develop a scientific approach that could deepen my insights from practical experience.

These motivations are personal in the sense that I want to learn more about digital marketing strategies and the use of social media, but also professional because I intend to use the expertise gained to improve my academic background and start researching in this field of knowledge.

1.2 Context of the study

The pharmaceutical industry produces and markets drugs for use as medications. In Portugal, pharma healthcare is a highly regulated environment which has resulted in the industry being reluctant to participate in social media websites.

According to the report of European Citizens' Digital Health Literacy published in 2014, over 75% of Europeans considered the Internet as a good resource for looking up health information, and 60% reported using the Internet to search health information (EEUU, 2014). Social media provides an efficient platform for general users, patients, and their relatives to access information, ask for help and advice from other users, make contributions to others, receive assistance from the forum and share their experiences in the community. With access to data on social media platforms, people find useful information more effectively and personally, than traditional information retrieval through search engines. Notably, social media networks have become a significant online venue for the exchange of health-related information and advice (Zhao & Zhang, 2017).

Price Waterhouse Cooper consumer survey (PwC, 2012) found that about one-third of consumers are using the social space as a natural habitat for health discussions. PwC (2012), and Agrawal and Kaur (2015) advocate that one-third of patients/consumers are searching for health advice on Facebook, Twitter, and other social media sites. This is an indication that there is a clear opportunity for pharmaceutical companies to make use of these tools for listening and learning about consumer behaviour, market perceptions, and new promotional opportunities. (Agrawal & Kaur, 2015)

Social media networks' impact on pharmaceutical marketing relationships is important for pharmaceutical marketers. Pharmaceutical Relationship Marketing (PRM) can benefit from a social media environment. The pharmaceutical industry can build and maintain relationships with consumers through social media. Firms that leverage social media to enhance their PRM tactics will be viewed favourably in terms of trust, transparency, openness, and honesty. The results provide pharmaceutical marketing managers with insightful and valuable information concerning the role of social media impact on the PRM (Enyinda et al. 2018).

1.3 Research Topic

Cheung & Lee (2012) recognised that it is important for businesses to understand what influences and motivates consumers to post and share information about brands on social media and the impact this has on consumer behaviour and how they can use their findings to their advantage.

Social media plays an important role in consumer buying patterns or intention to purchase decisions (Sulthana & Vasantha, 2019); the precise role it plays, is not clear though. There is not enough research focusing on social media in Portugal, specifically in the Pharmaceutical market segment. This study took place in Portugal and investigated the influence of social media factors such as Electronic Word of Mouth (eWOM) and the credibility of the source of information impact on purchasing intent of over-the-counter (OTC) medicines. For this research, we will follow the Information Acceptance Model (IACM) Erkan & Evans (2016) and will integrate components from the Sussman & Siegal (2003) Theory of Reasoned Action model (TRA) to access the consumer behaviour on social media regarding the influence of eWOM on the intention to purchase an OTC medicine.

More specifically, the proposed theoretical model examines the properties of eWOM information quality, credibility, usefulness, attitude towards information and adoption of information, as well as the dimensions of credibility of the source of information (Shan, 2016), such as trustworthiness, homophily, expertise, tie strength, and reputation, as major predictors of purchase intention. Additionally, we intend to evaluate the moderator role of gender.

The findings contribute to the literature by providing theoretical insights into eWOM via social media networks. Understanding the factors of eWOM information and the credibility of the source of information on social media settings that influence OTC medicines consumers' purchase intentions could assist marketers in incorporating eWOM into their digital marketing strategies.

1.3.1 Relevance of the theme

According to Apifarma (2018), the importance of the Pharmaceutical Industry cluster in Portugal should be analysed from a holistic perspective. We should consider what is the value of medicines added from three perspectives: the Human impact the Societal impact, and the Economic impact. Medicines have changed Portugal's landscape by improving patient's lives, generating income and savings for society and stimulating the economy:

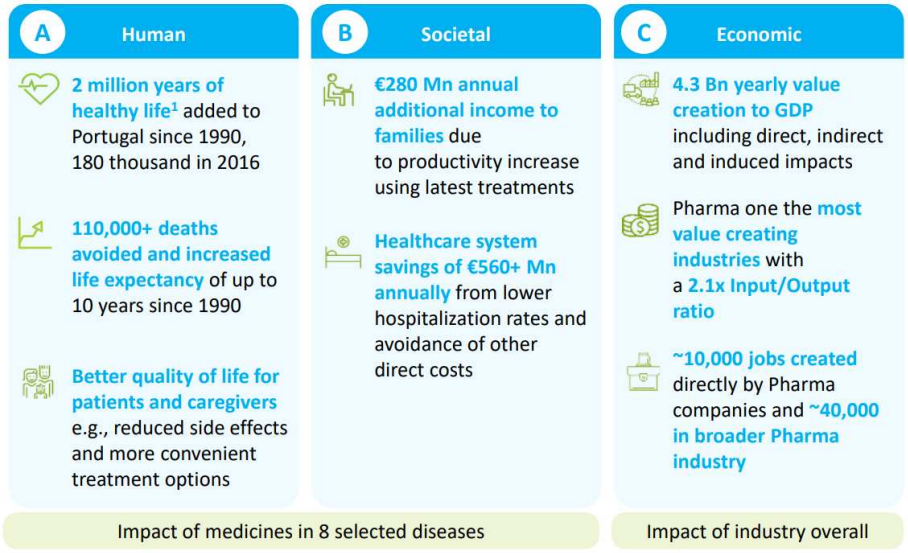


Figure 1: The Value of Medicines in Portugal

Source: Apifarma (2018)

Our actual overbooked health system will benefit a lot from a better population health culture and a wiser specialist referral. Increasing the quality and satisfaction of the health service provided will reduce costs and benefit all the stakeholders in healthcare and, ultimately, all countries and their people (D. Sousa, n.d.).

Health information continues to be one of the most frequently pursued topics on the internet. In social media specifically, health information is widely shared; over 80% of young adults have disclosed health information and have sought health information at least once through a social media channel. Consumers who actively seek out online health information tend to believe the information to be credible, irrespective of whether a medical expert has authored the information (Dillman, 2016; Greene, 2011).

Consumers want to be more engaged in their healthcare and are seeking out information online. Despite intense concerns about confidentiality and security, they have high expectations for electronic health information (Ball, Smith, & Bakalar, 2007). The Internet and the consistent growth over the years of the social media phenomenon, allows several

consumers to spontaneously share experiences, opinions and information about products, brands, and different organizations.

Pharmaceutical companies must be aware of this paradigm change: the patient is an indispensable and active stakeholder in the present and future of healthcare, besides the physician and the payer (Aitken, 2013).

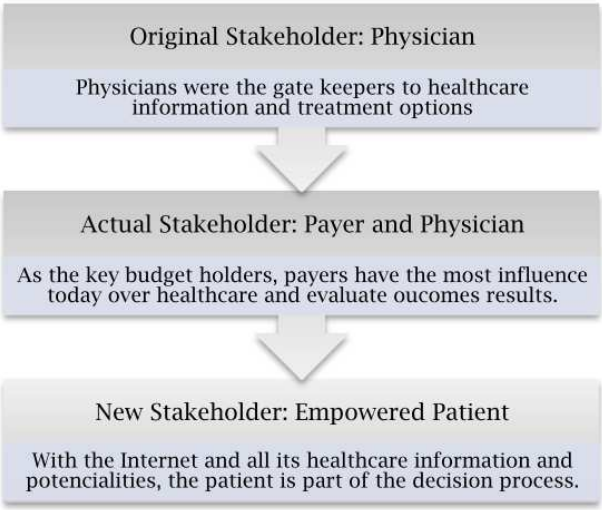


Figure 2: Evolution of Health Stakeholders

Source: IMS Institute for Healthcare Informatics (2013)

Social media websites are a powerful way of communication because they enable adults and adolescents to align around interpersonal relationships and common interests. Social networks also make it easier for users to remain in touch through the sharing of content and updates and quickly mobilize people around issues that matter to them and help to keep them informed.

Social media and health literacy are interconnected, especially in the field of health promotion. Never has it been more important to reach out to healthcare consumers online (Callahan, & O'Leary, 2017). Especially in the current times when the world was challenged by the COVID-19 outbreak which led to a faster digitalization of the economic tissue and the society.

Online networks have become a powerful information and communication channel. A media that has the role of both reinforcing and or damaging the brand. One of the defining phenomena of the present times reshaping the world as we know it is the worldwide accessibility to the internet. One of the trendiest and growing prodigies of the World Wide Web is social media, which comes in many forms, including blogs, forums, business networks, photo-sharing platforms, social gaming, microblogs, chat apps, and finally social networks (Tankovska, 2021). The multiplication of these sites, such as discussion forums, social

networks, blogs, thus unsettles the traditional consumer behaviour search for information, data processing and decision-making process.

A study by Portal da Queixa and Netquest (2018) reveals that about 53% of Portuguese people always consult opinions on the internet before making their purchase and specifically women privilege the use of social networks (Reis, 2018).

Over the last ten years, both the development of a powerful tool such as the Internet, as well as access to it have evolved very quickly. According to Digital 2021[3] (Social, 2021a), there were about 4.66 billion Internet users in January 2021 in the world (more than 316 million compared to the previous year) of these 4.20 billion are active social media users, more than 490 million compared to the previous year.

With the emergence of new opportunities, the needs of society have also changed. People use the Internet for health purposes and require access to e-health facilities more often than before. A new type of patient appeared, the so-called e-patient, who actively gathers information about health and diseases. On the other hand, consumers often find information in unreliable sources, which makes them demand inadequate diagnostics and treatment from their doctor. Thus, the Internet can be either extremely helpful when providing essential information both for patients and doctors, but may also be misleading if it is incorrectly used (Bujnowska-Fedak & Wegierek, 2020).

As a result, some industries are still hesitant towards the Internet's role in commerce and face strong tensions between using traditional or digital marketing tools as they are struggling with the adaptation to, and the utilization of, social media in their Marketing plans. The Pharmaceutical Industry is one of the most resistant sectors to the entry of e-commerce, largely because it is a conservative and highly regulated sector and with a diversified value chain. In the Portuguese market, a traditional process of a physical survey at the point of sale (pharmacies and para-pharmacies) still prevails. In 2010, according to Infarmed, there were 65 pharmacy websites authorized to sell medicines. Ten years later there were 2806 pharmacies with websites available and properly authorized. However, there are still pharmacies that do not have the typical logo that identifies the safe online pharmacies and the respective link, which means that many more exist on the web (Teixeira, 2020).

Then again, the popularity of social media has changed the marketing scenery and the search and sharing of information because consumers do not just receive brand information through traditional mass media, such as TV or print. Along with the explosion of

[3] Digital 2021 Global Overview Report (We Are Social & Hootsuite) [Internet]. Available at https://hootsuite.widen.net/s/zcdrtxwczn/digital2021_globalreport_en / Consulted July 9th, 2021

new media, consumers are intensely seeking online brand-new information about products and brands. Thus, over the past years, marketing witnessed a foremost transformation, because social media has become one of the most vital tools for communication (Baruah, 2012). Such innovation has also influenced consumers because the fast growth in mobile adoption has opened new marketing communications tools, targeting possibilities, and how buyers share information between them and interact with brands. So, the original process of consumer decision making has changed because nowadays consumers can compare prices, find the best deals, and read consumer reviews of the desired product on the internet. Hence, understanding consumer behaviour in the context of social commerce has become critical for companies that aim to better influence consumers and harness the power of their social ties (Zhang & Benyoucef, 2016).

As a result of the increasing popularity of social media networks, healthcare professionals from both Pharmaceutical Industry and Pharmacies are straining to understand and learn how to employ digital techniques to increase their presence on these platforms. Therefore, questions arise about the patients' expectations concerning the development of new technologies and how much they influence their health-related behaviours.

In recent years, the lines between different healthcare types, medical remedies and treatments have begun to blur. This has led to an increasing number of patients opting to self-medicate with over-the-counter (OTC) medications rather than visit a doctor, particularly following the current COVID-19 crisis (Millar, 2020).

Self-medication was commonplace in many countries even before the pandemic. According to the US Consumer Healthcare Products Association (CHPA), 81% of adults use OTC medicines as a treatment for minor illnesses, while the OTC drugs market is growing rapidly, especially in emerging markets. However, COVID-19 has shifted the terms of the discussion.

"Our survey back in June found that during the pandemic, people in the UK became more willing and more likely to self-care for minor ailments, either because they felt safer staying away from healthcare delivery settings or because they were aware of the pressure the NHS was under, or a mixture of both," says Riddalls. "In fact, almost seven out of ten people (69%) in the UK who wouldn't have considered self-care as a first option said they were more likely to do so in the wake of the pandemic. Overall, almost a quarter (24%) said Covid-19 had changed their attitude to self-care."[4]

In the same survey, 44% of respondents said they were more likely than before to look up their symptoms on the internet, while 77% said the NHS should make more information about self-care available online (Millar, 2020).

4 Is self-medication the future of pharma? [Internet]. Available at https://www.pharmaceutical-technology.com/features/self-medication-future-of-pharma/ Consulted July 5th, 2021

In many ways, consumers are taking their everyday health care needs into their own hands, and foods, personal care products, OTC remedies and supplements play a big part in that, especially in a country with a growing population of older consumers (Mandzy, 2017).

At present, the creation of a Europe fit for the digital age is in the European Commission priorities for 2019-2024.

"*The Commission is determined to make this Europe's "Digital Decade". Europe must now strengthen its digital sovereignty and set standards, rather than following those of others – with a clear focus on data, technology, and infrastructure*"[5]

The Association of the European Self-Care Industry (AESGP) recognises the need and urgency to develop Europe capabilities in the digital space. Due to the economic situation and more recently the epidemic crisis, it is even clearer that Europe must be at the forefront of digital development. An unexpected consequence of the COVID-19 pandemic is that governments everywhere must rethink the role of innovation and digital technology for health and well-being. It has brought an accelerated change in the way companies in our sector have approached their digital adoption strategies in response to increased consumer needs. Digital solutions can help people take ownership of their health, make it easier for them to self-diagnose a condition or a symptom, change a health habit or behaviour to reach a goal, enable compliance with a course of treatment thanks to electronic product information, or interact with their community of care providers or fellow individuals with similar health concerns. Today, technology itself can be a wellness or treatment option (Paper, 2021).

OTC brands have their particular online communities, such as official pages of social media networks where consumers can interact with each other and with the brand (Costa, 2014). This fact allows brands to create a close relationship with consumers and provide a positive impact on trust. Consequently, social media has become a significant tool for marketing and branding, so it is important to have a structured strategy addressing the best ways for brands to represent themselves (Roblek et al. 2018) and because social media helps consumers to search and do better decisions on what product they should buy (Lamberton & Stephen, 2016).

Pharmaceutical OTC brands need to comprehend that social media has a massive potential to promote, communicate and persuade consumers and because of that, an online presence is a critical competitive advantage.

5 A Europe fit for the digital age. European Commission website [Internet]. Available at https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_en. Consulted July 5th, 2021

1.3.2 Paradigm Shifts

The paradigm has changed, and consumers are shifting to digital platforms, however, pharma has traditionally been slow to adapt to change. Mckinsey (2016) assessment revealed that pharma companies are limited, not just by their digital and analytic capabilities, but also by specific elements related to their strategy, culture, and organization. A customer orientation strategy has always been fundamental to succeed in healthcare especially in the self–medication segment of the market. Today, the commercial impact of a product can depend as much on the patient or provider experience offers as on its clinical effectiveness. Leading companies develop a deep understanding of all the channels through which they interact with stakeholders during their journeys. To do that, they build up an integrated view of the customer experience instead of a channel-oriented view, for example, by focusing on interactions the sales force can engage in. So digital marketing strategies might complement and enhance the efficiency of the sales representatives (REP), as well as the traditional media. With the COVID-19 outbreak along with technological advancements, the emergence of new trends has imploded in the Pharma Marketing environment:

Direct Customer Interaction: One of the advantages of social media is the ability to communicate and interact directly with end customers, patients and patient associations. Healthcare professionals acknowledge the unique opportunity that these social networks pharmaceutical companies can use to enhance the patient/consumer experience (e.g. by providing interactive educational content), receive first-hand feedback on therapies and their products and ultimately increase their promotional activities through sponsorship or communications campaigns (Nandy & Pal, 2016).

Data-Driven Marketing: with the advent of the internet and the rise of digital media, data-based approaches became a central focus of marketing. Data were seen as a source of effectiveness through targeted marketing that would maximize the potential for higher returns on investment (ROI). The internet also provided marketers opportunities to better understand consumer interests and intentions, not just at one moment in time, but over a consumer's journey. This technology together with the use of artificial intelligence (AI) will help enhance the segmentation and targeting strategies (Lee, Hoti, Hughes, & Emmerton, 2014).

Digital and Social Marketing: the rise of mobile digital devices, especially the smartphone, and the scaling of social media such as Facebook, offered marketers opportunities to reach always-connected consumers. Mobile devices and time-shifted viewing of media content also meant that "prime time" television was no longer the most effective way to reach consumers, so data have been helpful to do that.

Integrated sales and marketing strategy (Digital + Physical): Pharma marketers will have to adopt digital channels to implement a significant number of their marketing initiatives. This is not only required in the context of diminishing in-person meetings, but also in the context of increasing comfort and preference of main stakeholders including patients or consumers to engage through digital channels.

Omnichannel touchpoints in health care: Omnichannel touchpoints provide a mechanism for marketers to deliver consistent messaging and engage consumers via the consumers' most desired platforms. The explosion of omnichannel touchpoints and shifting balance in consumer power across these touchpoints leads to the need that marketers should identify ways to engage consumers via different platforms throughout the consumers' involvement in health decision-making. Health consumers have come to expect seamless experiences in the care delivery process, regardless of the touchpoint they use to gather information about their health, communicate with their healthcare provider, or seek care through. Accordingly, health marketers need to leverage omnichannel touchpoints to deliver consistent messaging and service experiences (Min, 2021; Pieriegud, 2019; Swan, Dahl, & Peltier, 2019).

Consumer-centric approach: empowered consumers' health decision-making is a core trend of today's healthcare ecosystem. It is delivering patient-centred care that engages and empowers consumers to be involved throughout a shared decision-making care process, with results in improved treatment decisions and quality of care, while reducing healthcare costs. Research shows that consumers' involvement in health decision-making is associated with information-seeking across a variety of digital health touchpoints (Dahl, et al. 2018). Emerging digital touchpoints, such as social media, can help facilitate information gathering and sharing between patients, pharmacists and physicians that are critical on improving health outcomes. Healthcare marketers that engage consumers via their preferred communication channels and provide seamless information sharing may increase consumers' efforts to take action, thereby improving consumers' health decision-making and other health outcomes (Min, 2021; Swan et al. 2019) Online resources are becoming more and more prominent as the industry is exposed to digital platforms meaning that digital should now account for at least 50% of the budget, where previously this would have been much lower. But printed materials also have their place firmly within the marketing plan.[6]

[6] Jones L. The life science marketing predictions and trends for the year ahead [Internet]. Available at://www.orientation.agency/insights/life-science-marketing-trends Accessed 17 Jul 2021.

1.4 Research Problem

The goal of this study is to test existing theories concerning the influence of eWOM characteristics on the purchasing behaviour of OTC medications in the context of Social media. In line with this, we hope to add specific knowledge to the current body of general knowledge and identify strategic (marketing) consequences for organizations in this industry on whether it makes sense for the industry to intensify social media usage.

Our research problem consists of understanding the determinants that can lead to consumers intention to purchase OTC medicines in the context of social media networks through testing established theories using a deductive approach on characteristics of eWOM information and source credibility, and its effects on intention to purchase behaviour in the new background (specifically concerning OTC pharmaceuticals). In contrast to prescribed medication, which is typically chosen by the treating doctor or a health professional like a pharmacist, OTC drugs are particularly interesting since consumers have complete control over what they buy and prevent. Consequently, consumers perform self-medication and thus are more susceptible to pharmaceutical marketing efforts to influence their choices. We are seeking to find out whether known eWOM characteristics and their effects on general purchase behaviour also influence purchase decisions when buying pharmaceutical medicines to reach the goal of contributing specific knowledge to the existing body of general knowledge and defining strategic (marketing) implications for organizations within the pharma industry. The actual features of social media platforms, or the type of website, are not of particular interest to this study since most individuals have not yet been able to distinguish between the different types of websites; some sites may be seen as independent when in fact they are related or associated somehow with the marketers. Similarly, others may be independent of marketers, but because of the presence of advertising may be seen as being sponsored (López & Sicilia, 2014). And so, we focus largely on contributing the current knowledge on the perceptions of the dimensions of the source of information.

1.5 Research Objective

For determining the variables of eWOM transmitted by individuals who engage in social media networks that influence the purchase intention of potential OTC pharmaceutical products consumers. The objective of this study is to test existing theories on the influence of eWOM and information source characteristics on purchasing behaviour in the setting of Pharmaceutical market OTC medicines. As a result, we want to add specific knowledge to the current body of general knowledge and identify strategic marketing consequences for companies in this industry on whether it makes sense for the industry to intensify social media usage within their marketing strategies. Thus, the overall objective is to contribute to the

research stream and advance the current state-of-the-art in the literature by addressing the main methodological challenges highlighted in the previous section. It will use Portugal as an empirical study on the perceptions and attitudes of consumers that engage in social media, given the substantial increase of internet usage by consequence social media networks by potential pharma healthcare consumers: our goal is to identify best practices in the application of social media platforms for marketing or communication purposes in pharma healthcare in Portugal.

With the recent dissemination of the use of social media, we begin to witness the emergence of a Marketing communication paradigm-shifting. Companies need to be in social media to be effective and profitable since their consumers are already sharing their content on the internet. Social media strategies have many advantages as they help connect businesses to consumers, develop relationships and foster those relationships promptly and at a low cost. (Kaplan & Haenlein, 2010). Patients, conceived as consumers of healthcare services and products, are increasingly using the internet to find suitable information. On the other hand, healthcare companies and professionals strive to attract their potential consumers (Koumpouros, Toulias, & Koumpouros, 2015).

In conclusion, the scope of this PhD is to investigate the consumer's behaviour and intention to purchase non-prescription medicines, regarding the usage of social media, based on an empirical study with the application of a survey in a sample of individuals that engage on social networking sites in Portugal.

General objective – to determine the influence of online reviews / eWOM on the intention to purchase OTC medicines. It is intended, therefore, to develop and validate a model that allows defining the antecedents of the purchase intention, which, in turn, are interconnected with the online reviews and, also, those that come from reviews, such as variables related to information acquired. With this, it is expected to enable to development of a framework, that can be included by pharmaceutical marketers, in their social media strategies.

Specific objectives with regards to OTC medicines:

- ✓ review literature based upon eWOM behaviour on social media, eWOM behaviour on other platforms, and the influence of eWOM on purchase intention, including the antecedents of purchase intention.
- ✓ to empirically assess the relationships hypothesised in the theoretical models to answer research questions.

- evaluate how the source credibility, the quality and credibility of the eWOM, the needs and attitudes towards information directly influence the usefulness of the information.
- determine the effect of the eWOM information usefulness, regarding the adoption of this same information.
- examine how consumers' intentions to purchase these products are influenced by the adoption of information, the usefulness of the information, and their attitude toward online opinions.

✓ evaluate if gender has a moderating effect between the variables proposed in the conceptual model.

✓ evaluate how digital platforms are used by these consumers.

✓ provide theoretical and managerial contributions for pharmaceutical companies for improving their relationship with consumers and increasing the benefits of social media usage (achieved from the discussion of the results).

✓ generate a broader, holistic understanding of the Portuguese OTC pharmaceutical market and the dynamics of the implementation of a digital strategy in social media.

1.6 Research Design

As previously stated, this research was conducted using deductive reasoning. Individual interviews to collect data were done during the initial stage of the study to provide deeper insights, fine-tune the questionnaire, and eventually provide a better knowledge of the research. In the second phase, a pilot test was conducted utilizing the survey method to see if the results were different from what was expected. In the third phase, the final questionnaire was implemented online on a sample of individuals that engage in social media platforms. Figure 3 shows the research design; each step conducted during the research process is demonstrated in the figure.

Preparing the research design, conducting the first phase of the research, and doing the second phase of the research are depicted in the figure. An extensive literature review was conducted in the first stage, and research gaps were determined. The theoretical model and hypotheses were then constructed, followed by the decision on the research strategy.

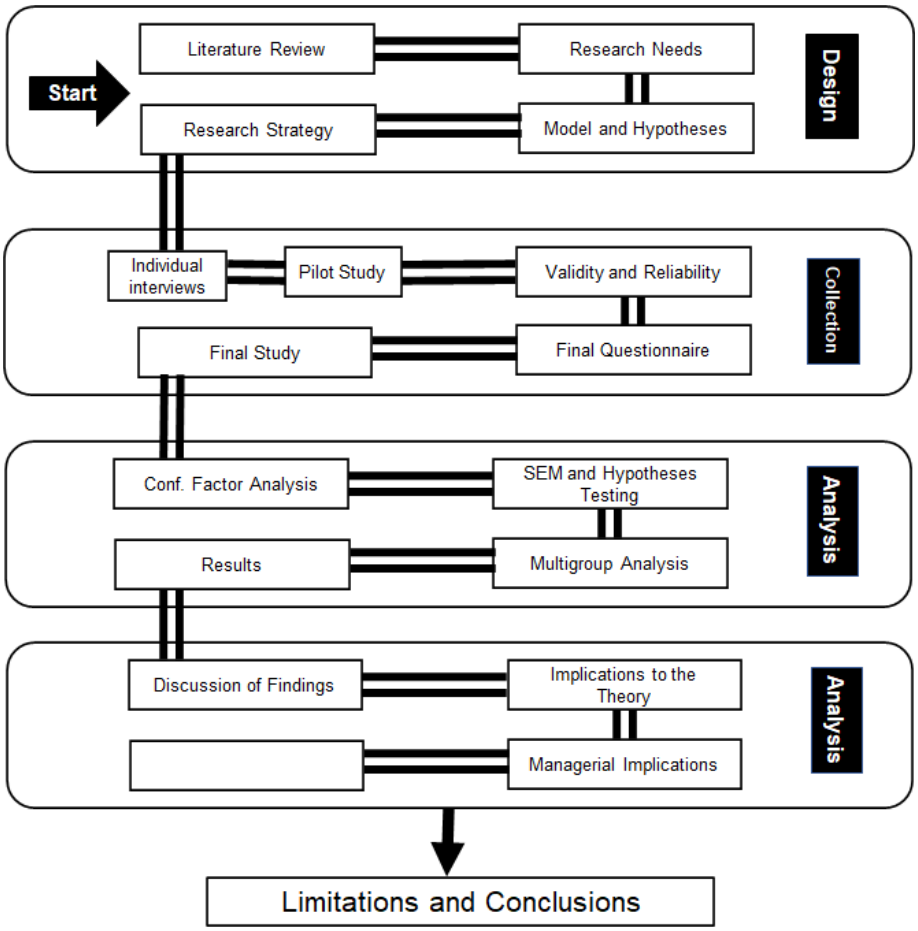


Figure 3: Research Design

1.6.1 Key Assumptions

This research was conducted based on three main assumptions recognised and included in the study: a) survey participants are technologically knowledgeable in the use of electronic devices such as smartphones; b) participants are replying to the questions posed, under the assumption that they understand what is been asked; c) participants are actual or potential consumers of OTC medicines and with appropriate levels of health literacy.

1.6.2 Research Scope and Setting

This research is a cross-section study evaluation of OTC medicine consumers and their behavioural intention to buy a product on social media in a specific time frame.

Purchase intentions pose quite a few problems for researchers. Purchase intention is a mixture of consumers' interests and the likelihood of purchasing the product, it indicates the likelihood that consumers will plan or be willing to purchase a certain product or service in the future (Erkan & Evans, 2016; Icek, 1991). Past research has demonstrated that an increase in

purchase intention reflects an increase in the chance of purchasing. If consumers have a positive purchase intention, then a positive brand engagement will promote that purchase (Martins, et al. 2019). On social media platforms, there is an exchange of information, ratings and responses that enable people to have trust and overcome the insecurities, which result in a willingness to buy firms products. Consumers will usually undertake a process of appreciating the intended product or service to purchase, research, and analyse the product before pledging to buy it. Furthermore, social media websites facilitate the dissemination of eWOM information among a huge amount of people and users can even share their thoughts by only forwarding the posts they agree with (Erkan & Evans, 2016; Ismagilova, et al. 2020a) Online buying intentions have become a key element that can influence the usefulness of online stimuli (Elwalda, Lü, & Ali, 2016; Fang, 2014; Lu, Fan, & Zhou, 2016). Purchase intention is the basis of demonstrating buying behaviour (Martins et al. 2019). This study's research setting is the Pharmaceutical segment of the market OTC in Portugal. More specifically, we study the factors of eWOM in social media that influence consumers' purchase intentions of an OTC medicine.

The research subjects are potential OTC consumers that engage on social media and receive information regarding OTC medicines either from other consumers, healthcare professionals, pharmacies or directly from the manufacturer's pharma marketing initiatives.

The data was obtained through the implementation of a cross-sectional study using the survey methodology.

The higher-level construct in this research is the Source of Credibility Information decomposed into five variables: Expertise; Trustworthiness, Homophily, Tie-strength and Reputation. Additional information regarding the conceptualization of this construct is addressed in section 3.2.1.

Based on the existing literature, thirteen hypotheses were formulated in a framework that explains the determinants of eWOM information on social media which influence consumers' purchase intentions through the tested models, IACM and IAM. Following Venkatesh et al. (2003) next, we additionally evaluated the moderator role of Gender.

A total of eight constructs are operationalized in this research " Source of Credibility Information" is the independent high order construct "Expertise", "Trustworthiness," "Homophily," "Tie-strength," and "Reputation" are the five dimensions of the higher-order construct, "Information Quality", "Information Credibility", "Needs of Information" and "Attitude Towards Information" are independent variables and as dependant variables, we operationalized "Information Usefulness", "Information Adoption" and "Purchase Intention".

Most variables were directly observed but measured indirectly or resulting from calculations based on measurements of observed variables adopting scales empirically verified in other studies and based on the literature review. This issue is further addressed in section 4.7.1.

The psychometric properties of the indicators were analysed. Convergent and discriminant validities were assessed. The model goodness of fit was verified. After these validation procedures, the structural model was tested using covariance-based structural equation modelling (CB-SEM) methodology. In comparison to the other statistical procedures, SEM models enable researcher(s) to evaluate the complex models in terms of their compatibility with all the relationships (covariances) in the data set. While SEM is a general term encompassing a variety of statistical models, covariance-based SEM (CB-SEM) is a more widely used approach in SEM. CB-SEM is more appropriate to affirm theory testing and confirmation and for this reason, it follows a maximum likelihood (ML) estimation procedure that aims at reproducing the covariance matrix (Astrachan, Patel, & Wanzenried, 2014; Hair et al. 2017).

A list of key terms and their definitions is provided in Appendix 1

1.7 Structure of the Thesis

This thesis has seven chapters organized in sections as depicted in Figure 4.

The first chapter introduces the subject of the thesis and outlines the researcher's motivations given that he is a practitioner and brings his field experience to the subject and the research topic and problem, the study's objectives, the research questions, and an overview of the research design and methods. Then it's presented the context of the study with a brief description of the Portuguese Pharmaceutical Market and its OTC segment. In the final section, the expected contributions to theory and practice are addressed. The second chapter consists of a review of the relevant literature on fundamental constructs. A review of the theoretical foundations for this research is done using the consumer behaviour theory, the decision-making process theory. The major gaps in the literature that this research intends to fill are explained. The third chapter introduces the conceptual framework, including the research hypotheses and explains the hypotheses leading to the proposed conceptual framework. The fourth chapter describes the research methodology used to test the hypotheses set in Chapter 3, explains and discuss the steps that were developed concerning research philosophies and approaches, the survey instrument, sampling, pilot test, administration, and data collection. Chapter 5 covers the analysis and results of the study. Chapter 6, is dedicated to the discussion and implications presents the findings and discusses the extent to which the proposed hypotheses are confirmed or not. Finally, Chapter 7 analyses

the contributions to theory and practice, and the managerial implications from the perspective of the Pharmaceutical Industry and suggest future avenues of research and includes conclusions, limitations, and suggestions for further research. The dissertation ends with a complete list of references and appendices.

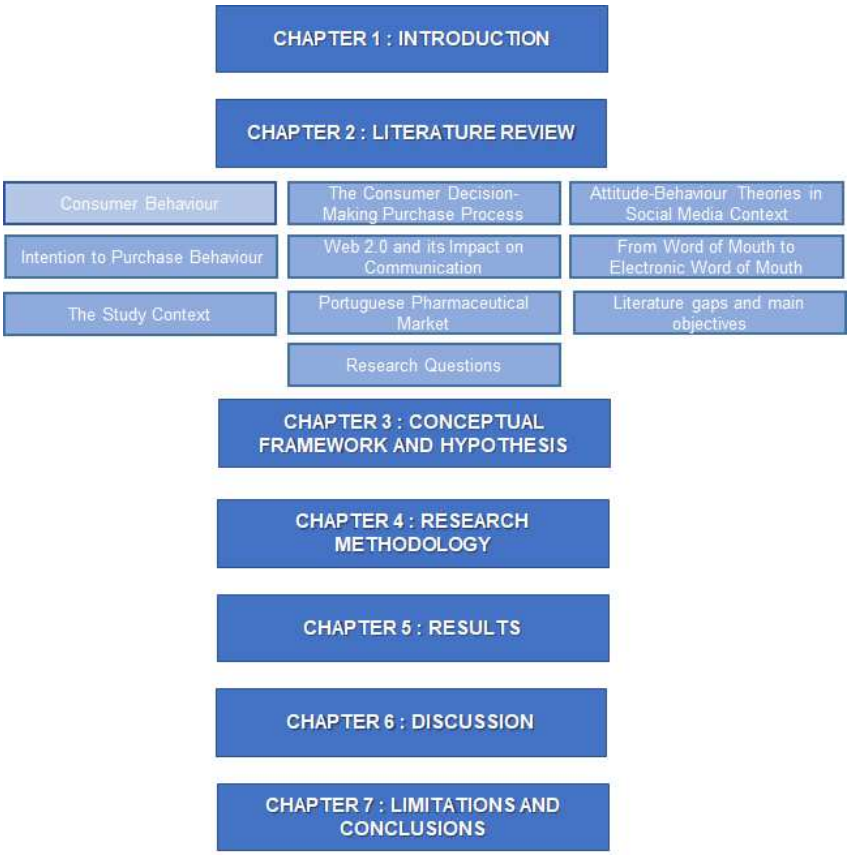


Figure 4: Structure of the Thesis

CHAPTER 2. LITERATURE REVIEW

2.1 Consumer Behaviour

According to the American Marketing Association (AMA): “Consumer behaviour refers to the study of how customers, both individual and organizations, satisfy their needs and wants by choosing, purchasing, using, and disposing of goods, ideas and services.”

Consumer behaviour focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption-related items (Schiffman & Kanuk, 2000). In the past decade, the consumer purchase journey has been modernized. Consumers have upgraded from the traditional marketing funnel and are leaning into new methods of researching and buying products as well as providing feedback. Consumer behaviour is crucial for understanding what drives consumers' purchasing decisions and why. Every individual's view of an issue is different, as is their assessment of various products.

Following Baker & Hart (2008) most traditional consumer behaviour theories and models focus their attention on three key components:

1) The individual: This deals with their psychological processes, their underlying needs, and drives, how they handle information, interpret communications, derive attitudes and beliefs, and make choices.

2) The Social Environment: This includes information provision and communication, the influence of family and other consumers, marketing activity, regulations, and suppliers.

3) The Physical Environment: The only thing we certainly know about consumers is how they behave. We cannot observe attitudes, the network of memory and selective information, the reasons why some friends are more influential than others or the causes of reaction to external stimuli. We observe that people behave differently in different settings and respond to their environments in different ways.

The consumer usually makes daily purchase decisions for buying a product and many of the consumers do not know the factors that drove them to make these decisions on a specific product or services or brand. Consumer behaviour consists of factors that affect consumers buying behaviour. These factors have distinct characteristics that can be divided into four categories: personal, psychological, social, and economic (Qazzafi, 2019). Personal variables and preferences, hobbies, likes and dislikes, are governed by an individual's own choices. Age, gender, and personal concerns are examples of sub-variables that influence personal factors. One of the most important factors to consider in the decision-making process is social influence. Consumer behaviour is influenced by factors such as social class, income, living society, sentimental items (both corporate and individual), occupation, family ties and so on.

Influencers and other opinion leaders also have an important part in one's decision-making. By researching how consumers purchase products, marketers may fill in the gaps and discover which solutions are needed and which products are obsolete in the marketplace. It also supports marketing professionals in developing a strategy to promote their products to have the deepest influence on consumers.

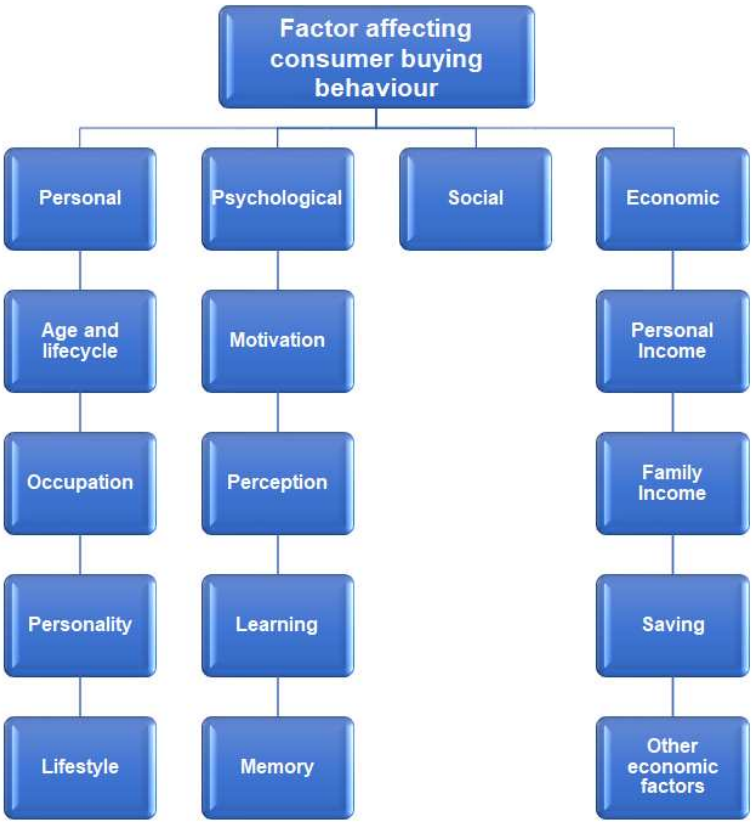


Figure 5: Factor affecting consumer buying behaviour

Source*:* Qazzafi (2019) and Schiffman & Kanuk (2000)

2.2 The Consumer Decision-Making Purchase Process

Consumer decision-making could be defined as the "behaviour patterns of consumers, that precede, determine and follow on the decision process for the acquisition of need satisfying products, ideas or services" (Erasmus, Boshoff & Rousseau, 2001,p. 82).

Consumers make many decisions every day and decisions always require a variety of actions (behaviour) based on an individual's thinking (cognition), feelings (affection), and the immediate society (environment). All these decision components are constantly changing and therefore, purchase decisions are very dynamic and complex.

When it comes to pharmaceutical non-prescription product purchasing, a study claims consumers displayed a moderately high degree of involvement in their non-prescription

medicine purchase decisions. The degree of involvement was not related to age or marital status, but females showed a higher involvement than males in OTC medicine purchase decisions (Gore, Madhavan, McClung, & Riley, 1994).

The information processing theory in consumer behaviour literature suggests that the consumer is an intelligent, rational, problem-solver who actively seeks and uses the information to evaluate the various alternatives or choices. Researchers (Chen, Hou, & Zhao, 2016; Gore et al. 1994; Steinhart, Mazursky, & Kamins, 2013; Wang, Yu, & Wei, 2012) have documented this information-seeking and problem-solving behaviour in the past, but also found evidence that the extent of information search, problem-solving, and evaluation of alternatives in the consumer's decision-making process may vary with the significance or degree of importance of the decision to the consumer. Depending on the degree of involvement in a purchase decision, the extent of information-seeking behaviour, and the degree of awareness about purchase alternatives, consumer decision-making was classified as being high or low involvement-type in nature. In a high-involvement decision, the consumer goes through an extended problem-solving process: recognizing the problem, actively searching for information, evaluating the alternatives, and making the purchase decision. In a low-involvement purchase decision, because the purchase does not have much significance to the consumer, he or she does not extensively search for information, and rarely evaluates alternatives or choices before making the purchase decision (Blackwell, Miniard, & Engel, 2006).

Active information-seeking behaviour such as consulting people sources of information when labelled information is not clear or when conditions are present that confuse safe and effective medicine use is more likely among consumers involved in their non-prescription medicine purchases. Also, the greater the involvement, the greater the likelihood that consumers will seek expert people sources of information instead of common people sources of information. The level of involvement may influence not only the search for information but also how well customers understand the proper use of non-prescription medications. As a result, consumers who are actively involved are more likely to seek out information and recognize the need of using non-prescription drugs safely and effectively. (Gore et al. 1994)

As a unique behaviour of purchasing OTC medicines, the cognition phase is an essential step for consumers, and it can be described as an extended problem-solving process. Consumers are willing to spend a lot of time, to find the best option. Besides their previous own experience with the product, they usually seek advice from other sources, like healthcare experts such as doctors, pharmacists, nurses, and the pharmaceutical industry to

make eWOM's influence on pharmaceutical purchase decisions better decisions as well as to ensure the safety and effectiveness of using OTC drugs. (Cîrstea, Moldovan-Teselios, & Iancu, 2017; Gore et al. 1994; Hustad, Courtney, & Heeler, 1979). While pharmacists have an influence on OTC decision-making at the point of purchase, Rodway (1995) observed that because of their lack of engagement with this category, customers typically consider interpersonal communication from family, friends, and co-workers to be crucial. For consumers whose superficial knowledge is reliant on emotive appeals, interpersonal communication can be instrumental as a substitute if it is deemed trustworthy (Paddison & Olsen, 2008).

Given the above, we concluded that the most appropriate model to be applied in the study in question is the conceptual model by Blackwell, Miniard and Engel (2005) as represented in Figure 6, since it presents itself as the most comprehensive model, as it shows more stages in the purchase decision process, namely, in the phases after the first purchase. The model is organized around a seven-point decision process: need recognition followed by a search of information both internally and externally, the evaluation of alternatives, purchase, post-purchase reflection and finally, divestment. These decisions are influenced by two main factors. Firstly, stimuli are received and processed by the consumer in conjunction with memories of previous experiences, and secondly, external variables in the form of either environmental influences or individual differences. The environmental influences identified, include culture; social class; personal influence; family and situation. While individual influences include consumer resources; motivation and involvement; knowledge; attitudes; personality; values and lifestyle (Blackwell, Miniard, & Engel, 2006).

The need recognition materializes when a consumer recognizes a gap between their existing situation and a desirable alternative. This process is driven by an interaction between processed stimuli inputs and environmental and individual variables. After a need has been acknowledged the consumer embarks on a search for information, both internally through the consumers' memory bank of previous experiences, and externally. Blackwell, Miniard, & Engel, (2006) argue that the model is suitable for use in explaining situations involving both extended problem solving and limited problem solving, by modifying the degree to which various stages of the model are engaged by the consumer. The depth of information search will be highly dependent on the nature of problem-solving, with new or complex consumption problems being subjected to extensive external information searches, while simpler problems may rely wholly on a simplified internal search of previous behaviour. Information is said to pass through five stages of processing before storage and use, namely: exposure, attention, comprehension, acceptance and retention.

Consumption is followed by a post-consumption evaluation which serves as a feedback function for future external searches and belief formation. Divestment is depicted as the final stage in the consumption process acknowledging that the product purchased is likely to be disposed of at some point post-consumption. The alternative consumer choices are assessed by the establishment of beliefs, attitudes, and purchase intentions. This process of evaluation is influenced by both the environmental variables and the individual variables. The intention to purchase is portrayed as the direct antecedent to purchase which is the only outcome tolerated by the model. Though inhibitors are not explicitly depicted as intervening between intention and purchase, environmental and individual factors are considered to influence buying. The scenario is stated as an environmental effect, and while this aspect is not defined, it could include things like time pressure or financial constraints that prevent the consumer from realizing their purchase intentions (Bray, 2000).

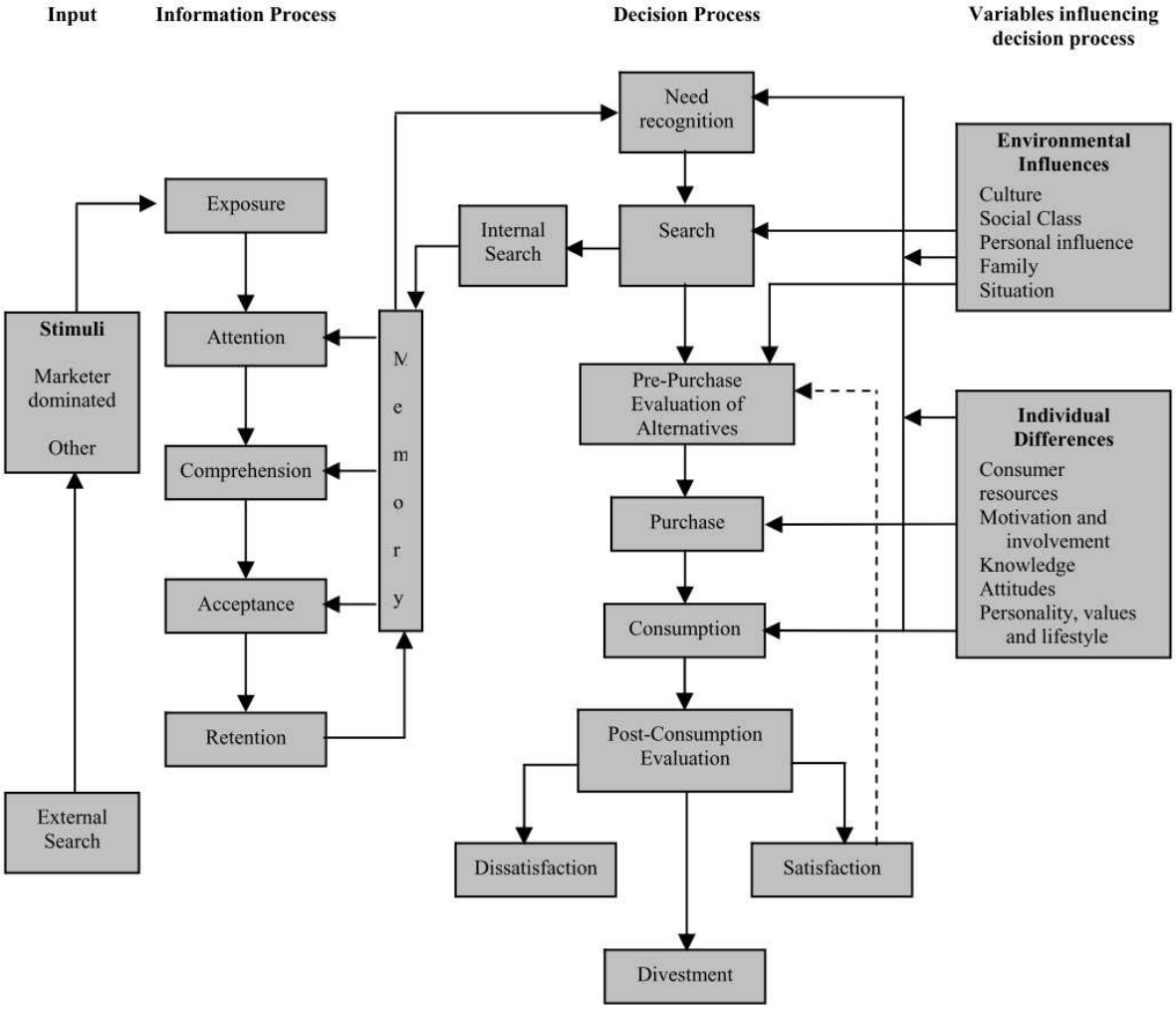


Figure 6: Consumer Decision Model

Source*:* Adapted from Blackwell et al. (2006)

2.2.1 Cognitive Approach

The cognitive approach assigns observed action (behaviour) to intrapersonal cognition. The individual processes the information internally, however, an influential role of the environment and social experience is acknowledged, with consumers actively seeking and receiving environmental and social stimuli as informational inputs aiding internal decision making (Bray, 2000).

Cognitive representation models suggest that individuals have their schema or images of illness and health that are different from the biomedical disease model. Important components of such cognitive schema are the beliefs that comprise the identity of symptoms, the consequences of those symptoms, and beliefs about their cause, cure, or control (Schommer & Hansen, 2005).

Early Stimulus-Organism-Response models (as depicted in Figure 7) suggest a linear relationship between the three stages with environmental and social stimuli acting as external antecedents to the organism.

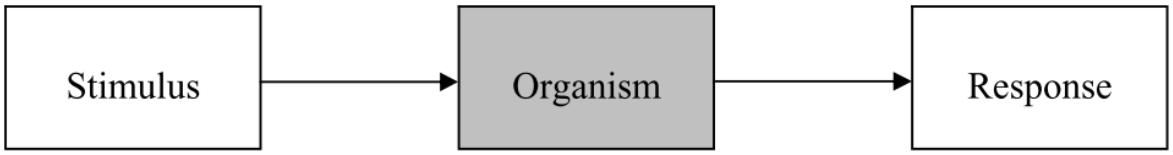


Figure 7: Stimulus-Organism-Response Model of Decision Making

The stimulus factors include content, network, and interaction characteristics. The organism factors include personal traits, value perceptions, affections, self-oriented, and social/relational-oriented perceptions. Finally, the response factors include browsing, information seeking, attitude, information sharing, participation, and website usage (Zhang & Benyoucef, 2016). The stimulus factors concentrate on content, network, and interaction characteristics.

2.2.2 Theory of Persuasion

Persuasion influences everyone regularly, by controlling decision making or a successful attempt to convince or influence. Persuasion is described as human communication aimed at persuading others to change their minds, principles, or points of view. Persuasion comprises both emotional and cognition responses to the condition in which people find their selves (Hunter, 2018). As so persuasion is an interaction between cognition and emotion that may alter the behaviour of an individual towards the objective.

Theoretically, persuasion has four key dimensions: (1) sender of information, (2) the receiver, (3) the exchange between the sender and receiver, either interactive or active, (4) the behaviour modification (e.g., intention to purchase an OTC behaviour), which can be elective, and there is a certain amount of time required for the deal to occur. Persuasion stipulates that the behaviour of individuals changes willingly when they are subjected to a particular stimulus, and thus the mind alters the interaction (Murshid & Mohaidin, 2017).

Persuasion involves the usage of verbal messages to influence and change attitude and behaviour in communication. Persuasive messages, designed to modify human's beliefs, values, and attitudes, exert the force of the contained arguments to influence message recipients in their process of reasoning (Ajzen, 1992).

The theory gives a substantial amount of information for addressing pharmaceutical marketing challenges in the context of non-prescription medicines in social media and eWOM communications.

2.3 Attitude-Behaviour Theories in Social Media Context

Research endeavours have been exerted to study and assess the impacts of different kinds of variables on persuasive messages, such as source credibility, audiences' emotional state, number of arguments, and so on. These variables are related to the source, the message itself, message recipients, and the context in which the message is presented (Petty, Barden, & Wheeler, 2009).

2.3.1 Model for Attitudinal Change

At the basis of persuasion lies human attitude, so the processes of attitudinal change should not be underestimated. Relevant to this is the so-called Yale model for attitudinal change (Petty & Cacioppo, 1986a) in which three main components have been singled out: communication source, communication character (message) and audience character (message receiver).

The Yale Model of Communication and Persuasion developed by Hovland and his associates (e.g., Hovland & Janis, 1959; Hovland, Janis, & Kelley, 1953) is one of the most widely cited models of communication. A graphical depiction of the model (Hovland & Janis, 1959) is presented in Figure 8. For instance, several source factors are thought to affect recipients' acceptance of communication, including the source's level of expertise, trustworthiness, and status (Hovland et al. 1953). In addition, several message factors may influence the effectiveness of the communication process including the order of arguments, the explicitness of requests, and the use of emotional appeals (Hovland, 1957). Furthermore,

the model argues that recipient characteristics also affect communication effectiveness (e.g., individuals' persuasibility, intelligence, and personality) (Hovland & Janis, 1959).

Another basic assumption inherent in the model is that the effect of any given communication depends on the extent to which it influences three mediating processes, (a) attention, (b) comprehension, and (c) acceptance. Thus, for communication to be effective recipients must attend to the information, comprehend what is communicated, and accept it. For instance, individuals may be less likely to attend to communication when sources have low levels of credibility or expertise. Likewise, recipients may be less likely to comprehend or understand a message when the source uses one-way rather than two-way communication. Furthermore, the model suggests that recipients may be less likely to accept a message when it does not capture their attention or enable them to understand the information (Stone & Lukaszewski, 2009).

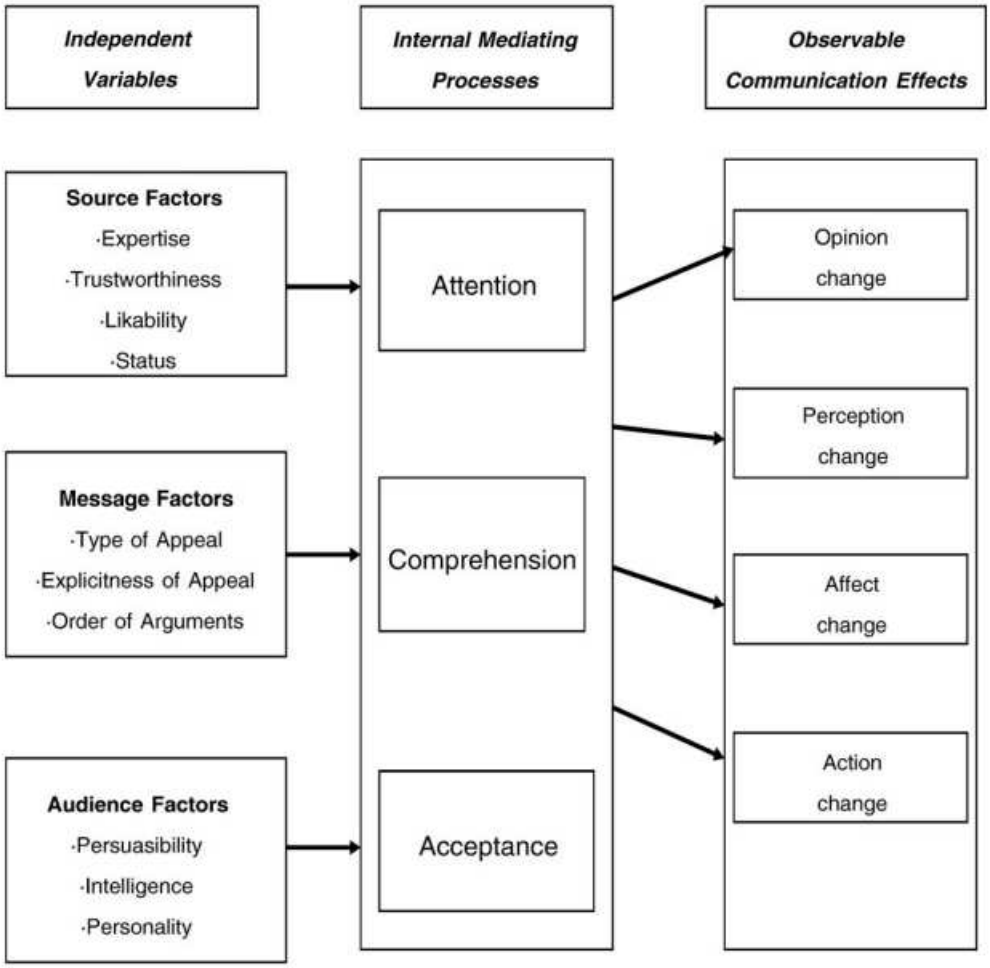


Figure 8: Yale model of communication and persuasion

Source: Adapted from Hovland & Janis (1959)

Cheung et al. (2009) already hypothesized that traditional communication theories state that informational factors (e.g., source, message, receiver) are the major elements that affect a reader's information evaluation. For example, the credibility of a message depends on the reliability of the message sources and the quality of the message arguments. However, since typical online recommendations are submitted by total strangers in text format, it is unclear whether these informational factors would still be important or sufficient in eWOM evaluation. At its core, eWOM is a new form of content media (stimulus or information) that involves people who receive the information (receivers) and those who share it (issuers or source of information) (Cheung & Thadani, 2012).

2.3.2 Elaboration Likelihood Model of Persuasion (ELM)

ELM was developed to solve past disagreements and conflicts in terms of variables and guide researchers in new directions in the persuasive communication theory (Petty & Cacioppo, 1986b) according to which persuasion and individual attitude change are achieved through a central (direct) and peripheral (indirect) routes. ELM assumed that the variations of persuasive messages produce the likelihood that message receivers will engage in the elaboration of the information in the communication (Teng, Khong, & Goh, 2015). The central route of persuasion involves careful listening and elaboration on the arguments. Long-term attitudinal change can be achieved through higher motivation in arguments and continuous influence. Soon behavioural changes are observed. The second route of influence is peripheral, which is used when the public does not listen to the arguments. Here an important role is played by the peripheral signals, such as the length of the message (the longer the more persuasive), the communicator's expertise (authority), the attractiveness of the communicator, etc. (Spasova & Gundasheva, 2019).

Table 1. Dual routes of information processing in the ELM of Petty and Cacioppo

Influence Route	Public	Process	Power
Central route	Analytically inclined and sufficiently motivated public	Considerable efforts for persuasion were exerted: elaboration, agreement, or counter-arguments	Serious arguments provoke long-term attitudinal change
Stimulant	Stimulant	Stimulant	Stimulant
(message)	(message)	(message)	(message)
Peripheral route	Distracted and unconcerned public	No efforts for persuasion were applied: long message and attractive communicator	Peripheral signals change temporary and largely unstable attitudes

Source: Myers (2002) adapted from Spasova & Gundasheva (2019)

ELM is considered one of the most useful models in the theory of persuasion and the most used model to understand information processing toward attitude change. With the introduction of new communication channels, ELM studies have been extended in the social media context providing researchers with a theoretical framework in the context of eWOM.

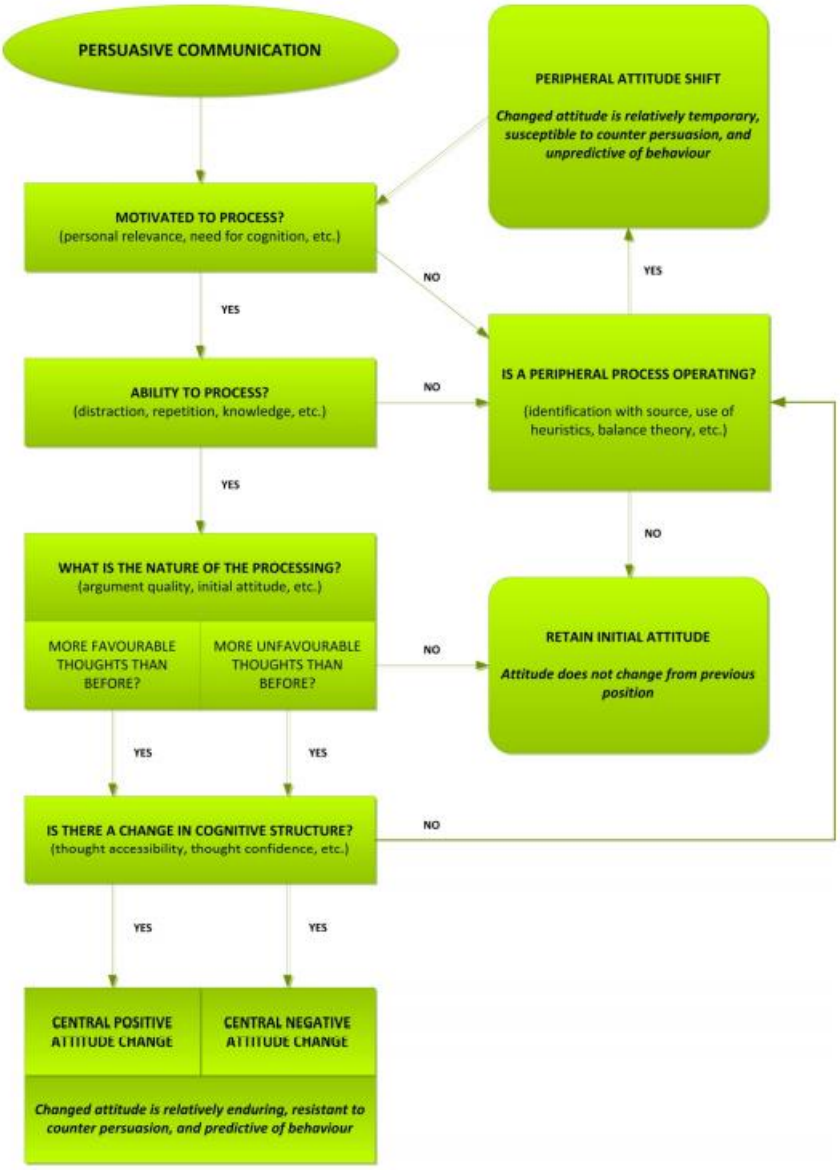


Figure 9: The Elaboration Likelihood Model of Persuasion

Source: Petty and Cacioppo (1986a) adapted from Petty, Briñol, & Priester (2009)

2.3.3 Theory of Reasoned Action (TRA)

TRA (depicted in Figure 10) is a model developed by Fishbein and Ajzen (1967) that seeks to explain the relationships between attitudes and behaviours, postulating that behavioural intentions are decided by subjective and attitudinal norms (extracted from Erkan & Evans, 2016). That is, it is used to predict the intentions and behaviour of individuals,

considering possible changes in intention and pre-existing behaviour and attitude criteria (Sheppard, Hartwick, & Warshaw, 1988).

The best predictor of whether a person would engage or not in a particular behaviour is their intention to do so. Attitudes and subjective norms, in turn, predict intentions. That is, the more positively someone views a certain behaviour or action, and the more they believe it is important to their friends, family, or society, the more likely they are to engage in it (LaCaille, 2013).

According to TRA, the behavioural intention of a person depends on his attitude and subjective norms. Mathematically, it can be interpreted that behavioural intention is the summation of attitude and subjective norms. Moreover, the intention of a person likely to convert to action if there is the intention to behave in a specific manner is strong enough (Sharma & Mishra, 2014).

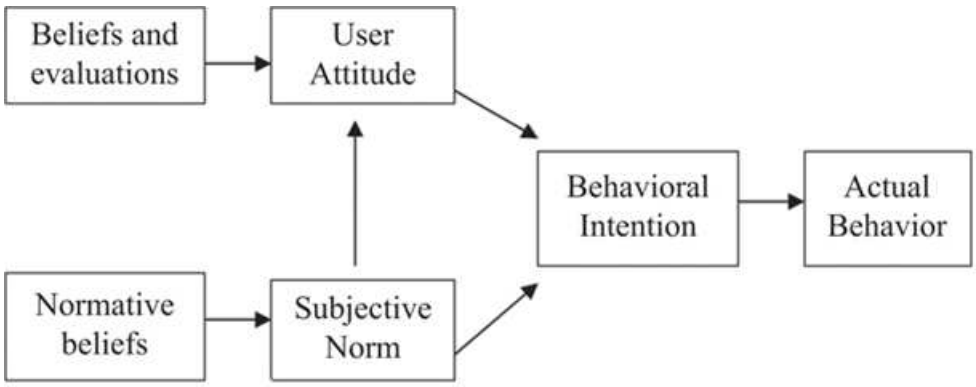


Figure 10: Theory of Reasoned Action (TRA) Model

Source: Adapted from Davis, et al. (1989)

The definition of various constructs used in the theory is given in Table 2.

Table 2. Constructs used in Theory of Reasoned Action

Construct	Definition
Attitudes	"Sum of beliefs about a particular behaviour weighted by evaluations of these beliefs".
Subjective norms	"Influence of people in one's social environment on his behavioural intentions; the beliefs of people, weighted by the importance one attributes to each of their opinions that will influence one's behavioural intention".
Behavioural intention	"Function of both attitudes toward a behaviour and subjective norms toward that behaviour which has been found to predict actual behaviour".

Source: Adapted from Icek Ajzen & Fishbein (1975)

In short, according to TRA, an individual's behaviour is largely determined by his or her intent to do that behaviour, and that such a behavioural intention is a product of the

individual's attitude toward the behaviour. Previous researchers have frequently used TRA to investigate eWOM and purchasing intention (Cheung & Thadani, 2012; Prendergast, Ko, & Yuen, 2010; Reichelt, Sievert, & Jacob, 2014). Ajzen & Fishbein (1975) stated that as people's attitude toward a behaviour is determined by their salient beliefs about the behaviour, their attitude could be changed through influencing their primary beliefs (Yusuf et al. 2018).

2.3.4 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) depicted in Figure 11, was proposed by Icek Ajzen in 1991 and was developed from the Theory of Reasoned Action (TRA) which was proposed by Martin Fishbein and Ajzen in 1975.

Intentions and behaviours are a function of three fundamental factors: personal attribute, social influence and perceived behavioural control (Icek Ajzen, 2005). TPB adds the construct of Perceived Behavioural Control (PBC) to the constructs attitudes and subjective norms which make the TRA. Perceived behavioural control refers to "people's perception of the ease or difficulty of performing the behaviour of interest" (Sharma & Mishra, 2014). It assumes that individuals behave sensitively, they consider the information available, implicitly, or explicitly, and consider the consequences of their actions. According to the theory, self-efficacy is the most important determinant for behavioural change since it leads to the building up of coping behaviour.

The definition of additional construct (PBC) is given in Table 3.

Table 3. Additional Construct used in Theory of Planned Behaviour

Construct	Definition
Perceived Behavioural Control	"People's perception of the ease or difficulty of performing the behaviour of interest which in turn depends on the self-efficacy which is the judgments of how well one can execute courses of action required to deal with prospective situations."

Source: Adapted from Ajzen (1991).

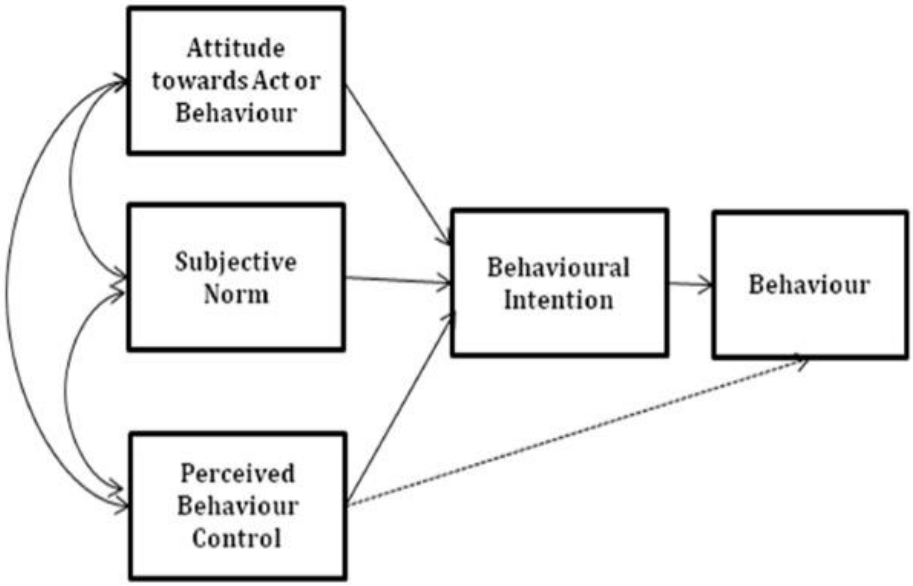


Figure 11: Theory of Planned Behaviour

Source: Adapted from Ajzen (1991)

The TPB (Ajzen, 2005) incorporates behavioural control perceived. However, this theory does not explain situations where purchases are unplanned or impulsive. Therefore, the applicability of this theory is limited in many real-life situations where consumers make impulse purchases.

2.3.5 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is an adaptation to the TRA proposed by Davis et al. (1989). The TAM consists of two main components that influence users' attitudes towards adoption, namely perceived usefulness, and perceived ease of use. Perceived usefulness refers to "the degree to which people believes that using a particular system would enhance his or her job performance". While the perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort".

According to TAM (illustrated in Figure 12), ease of use and perceived usefulness are the most important determinants of actual system use. These two factors are influenced by

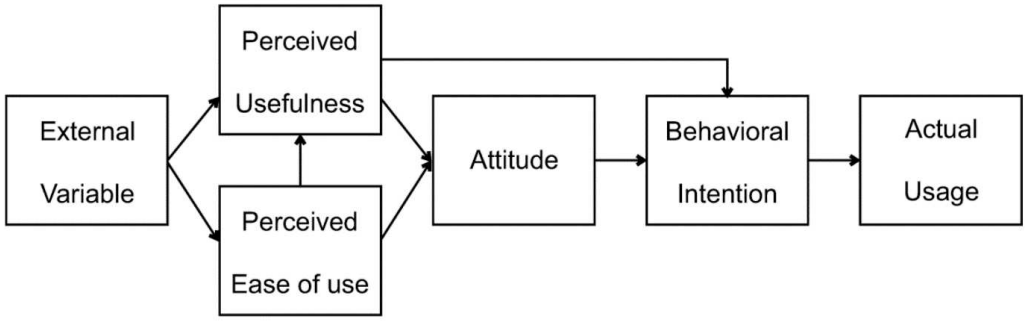


Figure 12: Technology Acceptance Model TAM

external variables. The main external factors that are usually manifested are social factors, cultural factors, and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crises. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioural intention is the measure of the likelihood of a person employing the application (Surendran, 2012).

These constructs are derived from Bandura's Self Efficacy Theory (Bandura, 1977) which defines perceived ease of use as "the judgments of how well one can execute courses of action required to deal with the prospective situation" and from Rogers & Shoemaker (1971) which defines complexity (interpreted as ease of use) as "the degree to which an innovation is perceived as relatively difficult to understand and use". The definitions of these constructs are depicted in Table 4.

Table 4. Definitions of the Constructs used in TAM Model

Construct	Definition	Theoretical Background
Perceived usefulness	The degree to which a person believes that using a Bandura's Self-efficacy particular system would enhance his or her job performance.	Bandura's Self-efficacy theory (1982)
Perceived ease of use	The degree to which a person believes that using a particular system would be free of effort.	Rogers and Shoemaker (1971)

Source: Adapted from Davis et al. (1989)

TAM was originally tested in the context of the adoption of email service and file editor at IBM Canada with 14 items on each of the 2 constructs. The results of the survey on a sample of 112 users validated the model with the finding that perceived usefulness is a stronger factor than perceived ease of use that drives technology adoption. In the next ten years, TAM became well-established as a robust, powerful, and parsimonious model for predicting user acceptance (Sharma & Mishra, 2014).

King and He (2006) presented a meta-analysis of TAM and found that it is a valid and robust model with applications in a wide range of areas. Dwivedi et al. (2010) carried out a comparison of TAM and UTAUT (Venkatesh et al. 2003) and found that focus is now shifting away from TAM to UTAUT while citing in the research articles (Sharma & Mishra, 2014).

TAM has been widely acknowledged as a model to explain online consumer behaviour and has been used to identify any user behavioural issues in the acceptance of new technology (Evans & Erkan, 2014; Mou & Benyoucef, 2021; Yousafzai, Foxall, & Pallister, 2007).

2.3.6 Unified Theory of Acceptance and Use of Technology (UTAUT)

Based on previous consumer behaviour literature, Venkatesh, et al. (2003) proposed the UTAUT model (illustrated in Figure 13) aims to explain consumers' behavioural intentions to use an information system together with their usage behaviour. This theoretical model emphasizes six factors that influence consumer behaviour, namely performance expectancy effort expectancy social influence, facilitating conditions, behavioural intentions, and user behaviour (Mou & Benyoucef, 2021). Moreover, age, gender, experience, and voluntariness of use are proposed to moderate the influence of these factors on usage intention and behaviour (Erkan, 2016). These four moderator variables have been considered in the original model. The model states that these antecedents have a direct influence on behavioural intentions. However, when applying the UTAUT in studying IT innovation adoption, scholars usually do not consider the moderators (Mou & Benyoucef, 2021).

UTAUT was obtained by combining the constructs of eight different models used to explain information technology adoption. Early tests reveal that this model explains 70% of the variance in behavioural intention and around 50% of the variance in usage behaviour (Holden & Karsh, 2010; Venkatesh et al. 2003).

However, it is criticized on the grounds of being overly complex, not being parsimonious in its approach and its inability to explain individuals (Sharma & Mishra, 2014). A comprehensive review of 450 articles that have cited UTAUT was carried out by Williams et al. (2011) and they found that only a small number of articles have used the constructs of UTAUT in their study- rather, it has been used more for theory-building. The definitions of these constructs are depicted in Table 5.

Table 5. Constructs used in UTAUT

Construct	Definition	The root source of the construct from earlier models	Moderators
Performance expectancy	Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance.	The five constructs from the different models that pertain to performance expectancy are perceived usefulness (TAM/ TAM2), extrinsic motivation (MM), job fit (MPCU), relative advantage (IDT), and outcome expectations (SCT).	Gender, Age
Effort expectancy Effort	Effort expectancy is defined as the degree of ease associated with the use of the system.	Three constructs from the existing models capture the concept of effort expectancy: perceived ease of use (TAM/TAM2), complexity (MPCU) and ease of use (IDT).	Gender, Age, Experience
Social influence	Social influence is defined as the degree to which an individual perceives that important other believe he or she should use the new system.	The three constructs related to social influence: subjective norm (TRA, TAM2/IDTPB, TPB), social factors (MPCU), and image (IDT).	Gender, age, voluntariness, and experience

Facilitating conditions (no effect on use intention but direct effect on user behaviour)	Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system.	Three different constructs used in earlier models are: perceived behavioural control (TPB, DTPB, C-TAM-TPB), facilitating conditions (MPCU) and compatibility (IDT).	Age and experience

Source: Venkatesh, et.al. (2003)

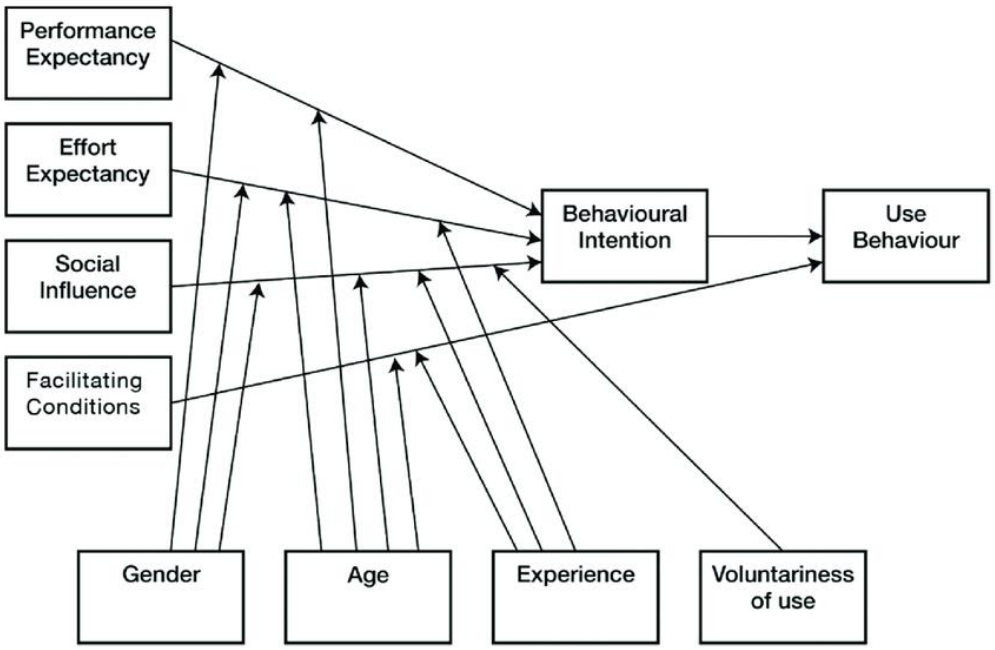


Figure 13: Unified Theory of Acceptance and Use of Technology (UTAUT)

Source: Venkatesh, et al. (2003)

UTAUT, therefore, is considered an important model; and has been applied in different research contexts such as cloud computing services, (Moryson & Moeser, 2016), healthcare informatics, (Chen, et al. 2007), mobile banking (Zhou, Lu, & Wang, 2010) and evaluating the consumer behaviour influencing factors for purchasing intentions in social media (Akgül, et al. 2019).

2.3.7 Information Adoption Model (IAM)

Extended from the TAM, Sussman and Siegal (2003) proposed the IAM which was developed by integrating the TAM Davis et al. (1989) with dual-process models of information influence like the elaboration likelihood model (ELM) Petty & Cacioppo (1986b) and proposed a theoretical model of IAM to explain how people are influenced to adopt information posted in computer-mediated communication contexts.

The IAM postulates that a message can influence people's attitudes and behaviours in two ways: central (rational) - refers to the nature of the arguments in the message - and

peripheral (emotional) - refers to issues that are not related to the subject of the message. Basic information transfer is the focus of EWOM conversations. However, while the information's influence varies from person to person, the same content might generate various responses from different people (Cheung et al. 2008).

This model highlights the assessment of information usefulness as a mediator of the information adoption process. Importantly, the model draws on the dual-process models to make predictions about the antecedents of informational usefulness under different processing conditions. Consequently, the IAM has two key propositions: First, the model considers the construct argument quality (information quality) that refers to the persuasive strength of arguments embedded in an informational message (Bhattacherjee & Sanford, 2006) presented as the central influence and the construct source credibility that refers to the extent to which an information source is perceived to believable, competent and trustworthy by information recipients (Petty & Cacioppo, 1986b) as the peripheral influence. Information usefulness refers to the extent to which the reader perceives the received information as valuable and it can help them to make a better purchasing decision (Sussman & Siegal, 2003). Information adoption refers to a process in which people purposefully engage in using information (Cheung et al. 2008). Figure 14 presents the model.

Figure 14: Information Adoption Model (IAM)

Source: (Sussman & Siegal, 2003)

The IAM aims to explain how individuals are affected by information to adopt it, adapted to the context of communication platforms mediated by the computer, thus being a suitable model for eWOM studies (Erkan & Evans, 2016).

2.3.8 Information Acceptance Model (IACM)

IACM was first developed to explain the determinants of electronic word of mouth (eWOM) information on social media which affect consumers' purchase intentions. The model postulates that information usefulness, which is the antecedent of information adoption and

purchase intention, is decided by information quality, information credibility, needs of information and attitude towards information (Erkan & Evans, 2016).

The authors built this model by considering two well-established theories: the information adoption model (IAM) (Sussman & Siegal, 2003) and the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975, Gökerik, et al. 2018).

This model postulates that the characteristics of eWOM information are not sufficient to examine the influence of eWOM on consumers' purchase intentions; the behaviour of consumers towards the eWOM information should be included in the evaluation. As so the model extends the IAM through the integration of related parts of TRA. The components of IAM are fundamental to this model such as information quality, information credibility, and information usefulness and information adoption. However, as previously stated, these components are insufficient to explain the purchase behaviour (Erkan & Evans, 2016). The IACM model is extending the IAM through integrating the related parts of TRA (Fishbein & Ajzen, 1975) which are attitude and behavioural intention.

In the IACM model (Figure 15), the authors claim that they fulfil the gap of IAM by adding two more constructs: "needs of information" and "attitude towards information" (Erkan and Evans, 2016). The constructs "attitude towards information" and the "behavioural intention" are the parts where they applied TRA (Fishbein & Ajzen, 1975).

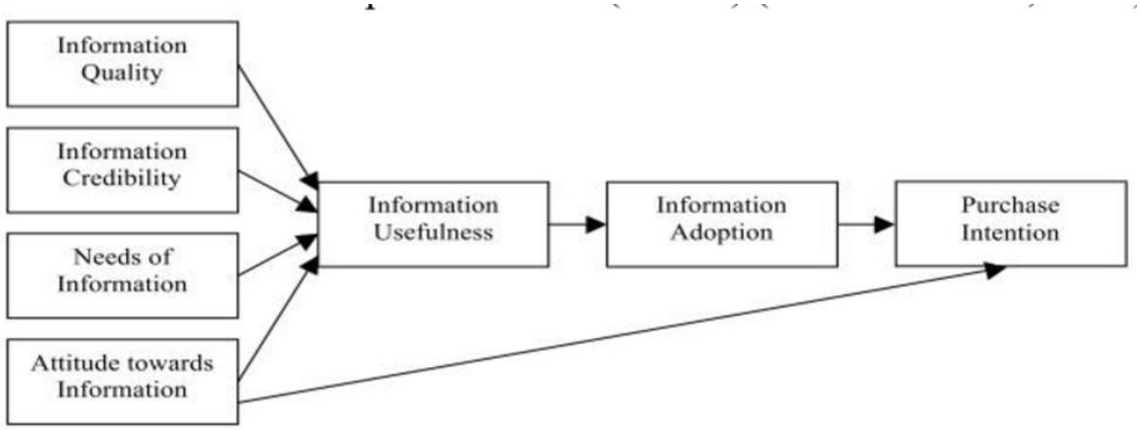


Figure 15: Information Acceptance Model (IACM)

Source: Erkan & Evans (2016)

The IACM mostly focuses on the "attitude towards information" part of TRA (instead of subjective norms) because the model investigates the influence of online information in social media that influences consumers' purchase intentions. The IACM model provides an adequate theoretical framework to understand how different characteristics influence Information Usefulness, Information Adoption, and, finally, Purchase Intention.

2.3.9 Summary

We presented an overview of the technology acceptance adoption theories and models that will be crucial to apply to the present research contributing to the formulation of the theoretical background that will lead to the proposed conceptual framework. We have presented definitions of the constructs and provided literature references to the review and applications of various models.

The evolution of various models relevant to this investigation is presented in Table 6.

Table 6. Evolution of Communication Theories and Models of Technology Adoption

Year	Theory/Model	Developed By	Constructs/ Determinants of adoption
1959	Yale Model of Communication and Persuasion	Hovland & Janis, (1959)	Source factors, message factors, and audience characteristics. Mediating processes, attention, comprehension, and acceptance
1975	Theory of Reasoned Action (TRA)	Ajzen and Fishbein	Behavioural intention, Attitude (A), and Subjective Norm.
1980	Elaboration Likelihood Model of Persuasion (ELM)	Petty and Cacioppo	A dual-process theory describing the change of attitude depending on thinking processes that might occur through communication. Determinants of route: motivation and ability to process the messages.
1985	Theory of Planned Behaviour (TPB)	Icek Ajzen	Behavioural intention, Attitude (A), and Subjective Norm, Perceived Behavioural Control.
1989	Technology Acceptance Model (TAM)	Davis *et al.*	Perceived usefulness and perceived ease of use.
2003	Unified Theory of Acceptance and Use of Technology (UTAUT)	Venkatesh *et al*.	Performance expectancy, effort expectancy, social influence and facilitating conditions.
2003	Information Adoption Model (IAM)	Sussman and Siegal	Argument quality, source credibility, information usefulness and information adoption
2016	Information Acceptance Model (IACM)	Ekran & Evans	Information quality, information credibility, needs of information, attitude towards information, Information usefulness, information adoption, and purchase intention.

Source: Adapted from Sharma & Mishra (2014) and self-elaboration

The first sections reviewed consumer behaviour and the decision-making process. The next sections give an overview of intention to purchase behaviour, digital marketing social media of word of mouth (WOM), Electronic Word of Mouth (eWOM), followed by a section of the study context on the pharmaceutical and healthcare industry.

2.4 Intention to Purchase Behaviour

Lu et al. (2010) consider that rational consumer's purchase decision-making processes follow the three stages of requirement cognition, information gathering and purchase behaviour. The authors believe that today, online communities have profoundly changed consumers' purchase decision-making process because, before buying a new product, many individuals nowadays read other people's reviews and experiences in online communities. As a result, members of these communities use these social media platforms to share information in this context to reduce their uncertainty before engaging in the consumption experience (Erkan & Evans, 2018; Mortazavi, Esfidani, & Barzoki, 2014; Park, Lee, & Han, 2007). Online product reviews are considered one of the most influential types of eWOM in shaping consumer attitudes and facilitating purchase decisions (Plummer, et al. 2007). Intention to purchase has been tested by researchers in many different research contexts because when consumers evaluate eWOM communications, they are more likely to make a purchase, either through the company's website or through shopping websites. This makes eWOM extremely powerful, stimulating academics' curiosity in how it affects purchasing intention (Erkan, 2016). Though, the research is still very limited when it comes to assessing the impact of eWOM in social media platforms on consumers' purchase intentions of an OTC medicine (Popkov & Nono, 2016). Intention to purchase is the dependent variable in this study and this research expects to contribute to the literature on online non-prescription product reviews by looking at the effect of different review features on purchase decisions.

Consumers' willingness to buy a specific product or service that appeals to them is referred to as intention to purchase behaviour. Consumer's intent to purchase typically occurs when a product or brand is in their consideration set. From the ideology perspective, purchase intention is the probability of consumers deciding to purchase a specific product. Consumers need cues or stimuli to prompt them to make a purchase (Grewal et al. 1998). Purchase intention is also regarded as an element of a consumer's cognitive behaviour revealing the way an individual intends to purchase a specific brand. Therefore, since nowadays consumers mostly seek their information online, social media can be a medium for them to initiate their purchasing behaviour. Social media platforms seem to be increasingly and effectively bringing brand awareness and influence consumers' purchase decision-making and later realize repeat purchases that bring about customer loyalty (Chivandi et al. 2020). Therefore, since nowadays consumers mostly seek their information online, social media can be an efficient medium for them to initiate their purchasing behaviour (Roblek et al. 2018; Roblek, 2015)

The market shares of different online social networking websites have grown rapidly in recent years. The growth of social media and social networks not only created a new way

for people to communicate and interact with each other regardless of geographical distance, but it also created a new style of commerce at the same time, known as social commerce. Social commerce evolved from e-commerce, and it exists in a community where consumers can share and refer experiences of electronic transactions with each other before making a purchase decision (Kian et al. 2019).

Consumers are turning to multiple sources of information to help solve the problems associated with medicine use. Consumers rely on the following information sources (Gore et al. 1994) to determine which non-prescription pharmaceuticals are most suited to their conditions: commercials, common, and individuals' sources. In general, most consumers obtain product information through commercial sources, which are dominated by marketers. Nevertheless, the most effective information produced from such sources, due to its benefits over other sources of information, is to assist consumers in comprehending product information by ordinary explanation, appraisal, and individualization of information (Gore et al. 1994; Kotler et al. 2013). The trustworthiness of the sources that supply information on these products will determine the success of the information (Roblek & Bertoncelj, 2014). The credibility of information sources can be interpreted as how much the consumer see the source of knowledge, skill, or experience as relevant and trusted sources to provide an unbiased and objective, consequently, a source of information with high credibility will influence consumers when deciding to buy drugs (Mittelstaedt et al. 2000). Further, sources that have high credibility in the health sector can affect consumer decisions to buy medicines (Kautsar, Widianto, Abdulah, & Amalia, 2012). Source credibility has been identified as a major heuristic cue in the dual-process models. However, previous studies have found that reviews written by consumers are perceived as more believable and understandable than those written by experts or companies because they provide users with information based on their actual product experience (Kim, Maslowska, & Malthouse, 2018; Li, et al. 2013). Source credibility highly influences attitudes, and attitudes lead to positive behavioural outcomes on non-prescription pharmaceutical product purchases (Natarajan & Kanagarathinam, 2020).

Consumers require reliable and good information to make a purchase decision because they cannot touch and test the product. As a result, easiness to access product and services information on social media websites affects their purchasing intention. Social influence or subjective norms represent the effect of social pressure on a person to behave. Social influence is the effect on an individual based on the behaviours of others. Friends, family, peers, co-workers and individuals or groups of individuals who are related to a person behavioural intention can alter a person's thought, thinking and action (Ajzen & Fishbein, 1972). When reading an online review, consumers are simultaneously exposed to normative and informational influences (Cheung et al. 2009). When it comes to social media purchasing,

social influences refer to a person that can be influenced by another social media user on whether he or she should purchase something or not. Social influence in the adoption of a new product can be divided into two forms (Kian et al. 2019). Informational social influence is defined as the process of social media users purchasing decision making by learning and observing the experience of other users who had adopted the products in social media websites. In social media websites, opinions, experiences, and other information shared among users influence their purchasing intention. Normative social influence creates social pressure for people to use a product or a service to avoid people being outdated or left behind by other people in the communities regardless of whether people have an interest in that product or service or not. Informational social influence is defined as the process of social media users purchasing decision making by learning and observing the experience of other users who had adopted the products in social media websites (Bearden & Etzel, 1982).

Strong ties frequently share a variety of messages about a product, including their own experiences in social media platforms individuals, can more frequently and conveniently communicate with their strong-tie relationships (e.g., families, close friends) (Choi et al. 2017). According to social support theory, consumers are more inclined to seek social support from their strong social relationships when they are having problems deciding. Today, consumers can interact more frequently with their strong-tie relationships and more easily access messages from weak-tie relationships. eWOM messages from strong ties are often considered to be trustworthy and reach a chord with strong-tie individuals, who know each other well and share a lot of common preferences. As a result, consumers are susceptible to strong-tie suggestions and think highly of the product's overall evaluation, resulting in a high perceived value and strong purchase intentions (Wang et al. 2018).

According to Koo (2016) both the local effect found among people with strong ties in a closed social group and the network effect found among people with weak ties in different social groups could occur simultaneously on a social networking site when people exchange information about their product and service experiences. The results showed that tie strength and recommender experience positively affect message credibility and intentions to purchase. There is a gap in the literature analysing the impacts of tie strength between two communicators, recommender experience, and their interactions on eWOM message credibility and purchase intentions for non-prescription medicines.

When the consumer is highly engaged and involved in a purchase decision, there is a greater motivation to rely on eWOM information (Iyer & Griffin, 2021). Purchases of lesser importance and involvement by the consumer, on the other hand, will not motivate people to seek or follow information. This relates to the concept of central and peripheral routes (Petty

& Cacioppo, 1986). That is, with high involvement the central route will consider the ideas and content of online reviews evidence, while with lower involvement peripheral routes will be more important. When it comes to pharmaceutical product purchasing, a study shows that consumers perceive OTC drugs as a product with a high level of involvement (Gore et al. 1994). As a unique behaviour of purchasing OTC drugs, the cognition phase is an essential step for consumers, and it can be described as an extended problem-solving process (Gore et al. 1994; Hustad et al. 1979).

Following the research of Mackie & Asuncion, (1990) suggestion that central processing can occur through online and memory-based processing and that peripheral processing can also concur with online and memory-based processing. Choi (2011) proposes four types of information processing: central online processing, peripheral online processing, central memory-based processing, and peripheral memory-based processing as depicted in Figure 16.

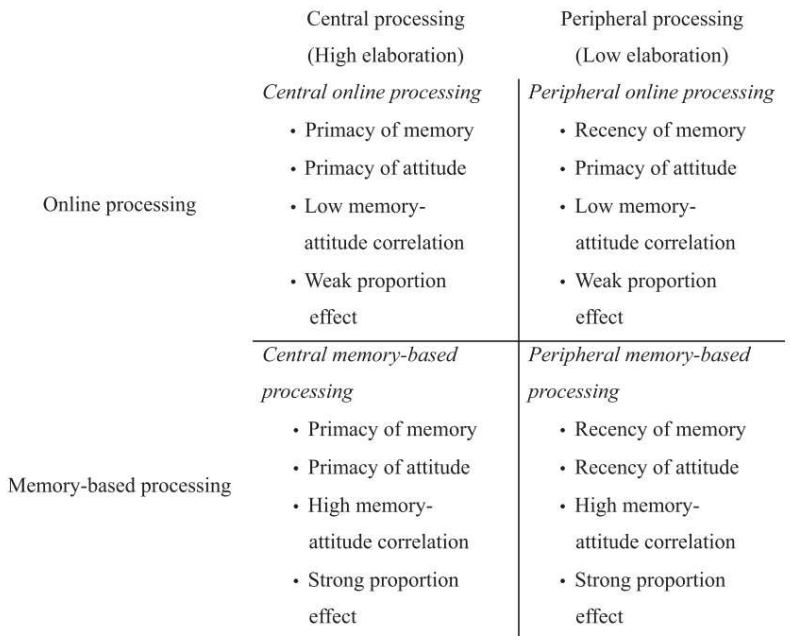


Figure 16: Typology of online information processing

Source: Adapted from Choi (2011).

Peripheral online processing suggests that impressions can be formed online also through the peripheral route. The case in which credible sources cause peripheral route processing in the ELM is an example of peripheral online processing. If people believe the message source is credible, they may be persuaded by the message instantly without giving it much thought as they process the information. When a well-known and respectable news journalist expresses an opinion on a topic, people are more likely to accept it without question.

Central memory-based processing can happen when people do not form impressions during message processing. This is what distinguishes this type of processing from central online processing. Central memory-based processing is possible when people do not have existing schema or predispositions about the issues or people presented in a story. When people process information that they are not very familiar with, they tend to pay attention to all information before making judgments about the subject (Choi, 2011).

In the peripheral route, consumers rely on non-content shortcuts, best represented by source credibility. As mentioned above, social media platforms facilitate consumer perceptions of issuer credibility, which is a crucial factor in the persuasion process (Tien, Amaya Rivas, & Liao, 2019). Since the non-prescription decision-making process of medicines is highly complex and with a moderately high degree of involvement sort of purchase decision (Gore et al. 1994), source credibility might play a significant role in the decision-making process enabling the consumer to quicker decisions since peripheral routes are mental shortcuts. Because credibility reduces perceived risk and uncertainty in both social and business interactions and thus is vital in consumer purchase decision-making (Tien et al. 2019). Also, Gore et al. (1994) postulate that females show a high degree of involvement than males in non-prescription medicines.

In Park et al. (2007) study, they found that the quality (central route) and quantity (peripheral route) of online reviews positively affect consumers' purchase intention. They further showed that involvement moderates the effect from the quality of reviews (Lee, 2009).

Cheung et al. (2008) used four dimensions of information quality, namely relevance, timeliness, accuracy, and comprehensiveness, as central route factors and employed source expertise and source trustworthiness as peripheral factors and found that information relevance and information comprehensiveness were the most vital elements for influencing information usefulness and information adoption within an online consumer community.

Corporate reputation affects purchase intention (Roblek & Bertoncelj, 2014). Consumer trust in pharmaceutical companies is built on product evaluations and opinions about the company's credibility, reputation, distribution channels, and transparent and independent information about the company's products (Roblek & Bertoncelj, 2014). A study showed that reputation is the main success sign of any corporate to fulfil their customers' needs. Customers' satisfaction has an explicit influence on corporate reputation. A good reputation is translated to customers' loyalty and word of mouth (Walsh, et al. 2009). Corporates with a great reputation have attributes that inspire customers to trust them and, as a result, encourage them to buy their products again. Furthermore, the evident association between consumers' reactions to social media advertising and their behavioural responses is

enhanced by business reputation (Mekawie & Hany, 2019). A firm reputation positively influences offline attitude, which in turn positively influences online attitude. Offline attitude positively influences offline-purchase intention, which positively influences online-purchase intention (Chu, et al. 2016).

The IAM model has four constituents: argument quality, source credibility, information usefulness, and information adoption. Thus, according to this model, consumers filter and analyze a specific piece of information centrally and peripherally to determine whether to follow the related recommendation, evaluating its usefulness. In the central route, consumers closely scrutinize the content quality of the task-related advice presented on social media. When forming an opinion, consumers prefer powerful and convincing arguments over weak and unreal ones (Petty & Cacioppo, 1986).

Cheung et al. (2008) found that the original IAM model had relatively weak explanatory power in the context of online forums, and they suggested integrating an additional mediator with information usefulness to explain adoption behaviour.

Source credibility reduces perceived risk and uncertainty in both social and business interactions and thus is vital in consumer decision making (Awad & Ragowsky, 2008; Natarajan & Kanagarathinam, 2020; Popkov & Nono, 2016). According to Erkan & Evans (2016), the characteristics of the eWOM message as well as a consumer's reactions to the message reflect the impact of eWOM on consumer purchase intentions. Looking specifically at the characteristics of eWOM information, previous researchers found several determinants such as information quality (Aufegger, Yanar, Darzi, & Bicknell, 2021; Filieri, Hofacker, & Alguezaui, 2018; McKnight & Kacmar, 2007; Park et al. 2007; Shuang, 2013; Zhao & Zhang, 2017), information credibility (Cheung et al. 2009; Koo, 2016; Martínez-López et al. 2020; McKnight & Kacmar, 2006; Reichelt et al. 2014) and the usefulness (Hussain, Ahmed, Jafar, Rabnawaz, & Jianzhou, 2017; Khwaja, Mahmood, & Zaman, 2020; Khwaja & Zaman, 2020; Sussman & Siegal, 2003). As a result, this study would like to concentrate on these characteristics of eWOM messages and their impact on consumer purchase intentions of non-prescription pharmaceutical medicines.

Using the ELM, IAM, and IACM models, this research proposes that individuals who obtain information online will retain brand or product information into their memory to act subsequently, based on the advice or suggestions of other social media users. UTAUT model will provide the basis to evaluate the impact of gender differences as a moderator of consumer behaviour intention to purchase.

2.5 Web 2.0 and its Impact on Communication

The internet's advancements have radically changed how people communicate, work, have fun, and interact with one another. It has become part of our daily lives over the last decades it changed the business environment with the opportunity of a marketing approach based on the rise of digital media, which encompasses a variety of digital platforms such as interactive television, the Web, mobile phones, and the Internet (Gaur & Tonk, 2021). Web 1.0 was the first implemented and it lasted from 1989 to 2005. It was defined as a web of information connections. According to the innovator of the World Wide Web, Tim Berners-Lee[7] considers Web 1.0 as “read-only” for user consultation only, being so a data repository (Choudhury, 2014). Web 1.0 allowed people to switch from offline to online to seek information and buy items or services, but they were unable to connect with or contribute to the content creation process (Solanki & Dongaonkar, 2016). With the development of technologies, it evolves to Web 2.0 format, its features have also changed and progressed. The term Web 2.0 is used to define the new wave of communities and services, which thinks of the web as a platform, integrating blogs, social networks and technologies from information and communication in a more collaborative way (Kaplan & Haenlein, 2010; Riegner, 2007).

Web 2.0 facilitates major properties like participatory, collaborative, and distributed practices which enable formal and informal spheres of daily activities ongoing on the web. In other terms, major distinguishing characteristics of Web 2.0 include “relationship” technologies, participatory media and social digital technology which in term can also be defined as the “wisdom web”. People-centric web and the participative web is taken into concern and which facilities reading and writing on the web makes the web transaction bi-directional (Choudhury, 2014; Kaplan & Haenlein, 2010). In other words, the user of Web 2.0 has more interaction with less control.

These new features, allow one faster browsing and access speed, it also contains new software that has as its main objective, the creation and sharing of content and information, as well as the creation of communities, such as blogs and social networks, for example. In this format, undeniably more progressive, the internet has become a platform for interaction between users, sometimes organized into groups, and with faster and easy access to more information (Kaplan & Haenlein, 2010; Solanki & Dongaonkar, 2016). Communication is no longer unidirectional, and users, act as content producers, thus assuming the role of opinion makers, since they are the ones who have the power to choose the subjects with the most importance and interest to be debated on the net, social media provides an unparalleled

[7] The World Wide Web: A very short personal history [Internet]. Available at: https://www.w3.org/People/Berners-Lee/ShortHistory.html Accessed 10 Set 2021

platform for consumers to freely express their feelings and publicize and share their product experiences and opinions e.g., through WOM or consumer reviews (Chen, Fay, & Wang, 2011). Everyone can share their opinion and experience related to products with strangers who are socially and geographically dispersed. This new form of WOM, known as electronic word of mouth (eWOM), has become an important factor in shaping consumer purchase behaviour (Cheung & Lee, 2012). Hennig-Thurau et al. (2004) argued that information provided on consumer opinion sites is more influential among consumers nowadays. People are increasingly using social media sites to share or seek health information, share personal experiences with diseases, medical treatments, and medications, and communicate with healthcare professionals or other patients, among other things, making social media a key component of ‘‘social health” (Zhou et al. 2018).

According to the report of European Citizens' Digital Health Literacy[8] published in 2014, over 75% of Europeans considered the Internet as a good resource for looking up health information and 60% reported using the Internet to search for health information (Zhao & Zhang, 2017). The combination of the Internet and the health care industry is an inevitable trend of today's development. Online health consumption could increase consumers' medical knowledge and more access to medical information, meanwhile, it also promotes health care quality. Through network information technology, healthcare management services can be better provided for the public. Mobile commerce technology based on Web 2.0 plays a key role in the field of mobile health (m-health) and promotes the mobile socialization of healthcare management (Wang, Zhang, Zhou, & Lai, 2019).

According to SimilarWeb[9], social media are among the world most popular websites, in second place is Youtube which received almost 34.6 billion visitors in May 2021 and third place Facebook with 22.8 billion visitors as depicted in Figure 17.

[8] European citizens' digital health literacy [Internet]. Available at https://op.europa.eu/en/publication-detail/-/publication/fd42f9e7-937c-41f3-bf03-4221b2db712b Accessed 11 Set 2021

[9] The World's Most Popular Websites [Internet]. Available https://www.statista.com/chart/17613/most-popular-websites/?utm_source=Statista+Newsletters&utm_campaign=ed2b6879c2-All_InfographTicker_daily_COM_AM_KW34_2021_Fr_COPY&utm_medium=email&utm_term=0_662f7ed75e-ed2b6879c2-334700466 Accessed 16 Set 2021

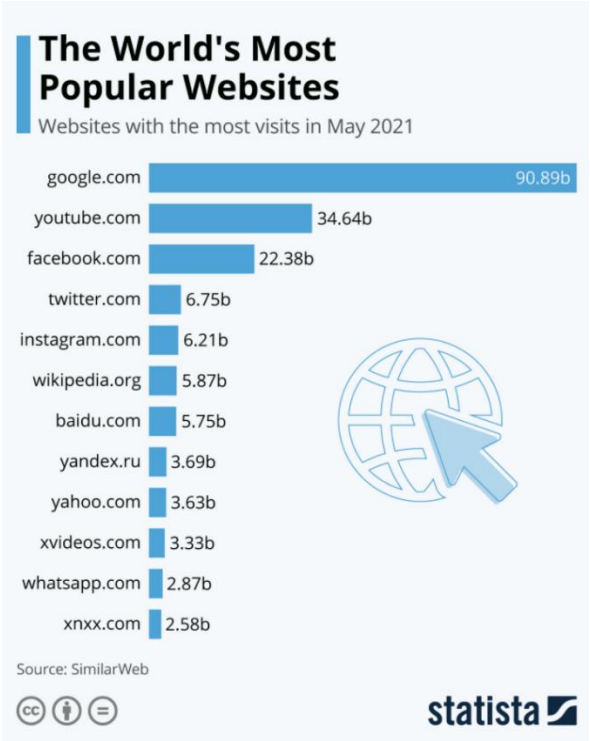


Figure 17: The world´s most popular websites

These new methods of communication have led to increasingly significant changes in consumer behaviour. These changes have produced a shift in focus in companies' marketing strategies and business administration, especially in the pharmaceutical and healthcare industries. Currently, we moving toward using artificial intelligence techniques to be a massive web of highly intelligent interactions (Choudhury, 2014).

2.6 Digital Marketing

The use of technology to help marketing efforts in improving customer understanding by meeting their needs is known as digital marketing (Chaffey & Ellis-Chadwick, 2019). Companies in the developed world have understood the value of digital marketing. For businesses to be successful, they will need to combine online and traditional ways to better satisfy the demands of their customers. Online advertising is a powerful marketing vehicle for building brands and increasing traffic for companies to achieve success. Expectations in terms of producing results and measuring success for advertisement money spent, digital marketing is more cost-efficient for measuring ROI on the advertisement (Bala & Verma, 2018).

The biggest advantage of digital marketing is reaching the target audience in the right way by using social media and search engines (Sinha & Singh, 2018). For digital marketing to deliver a result for businesses, digital content such as accessibility, navigation and speed are defined as the key characteristics for marketing. Another tried and tested tool for achieving success through digital marketing is the use of eWOM on social media and for making the site

popular (Trusov et al. 2009). In addition, eWOM is linked with creating new members and increasing traffic on the website which in return increases the visibility in terms of marketing. As the Internet has grown as a powerful source for consumer health information seekers, it has also become a commercial tool for marketing health products and services (Ledford, 2009).

The most common digital marketing applications are a) Digital Marketing via Social Media (social media marketing); b) Digital Marketing via Search Engines or Search Engine Optimization (SEO) c) Digital Marketing via Viral Applications and e) Email Marketing (Bala & Verma, 2018; Sinha & Singh, 2018).

Web analytics is one of the most important aspects of digital marketing. In essence, Web analytics helps in the collecting, measurement, understanding, analysis, planning, reporting, and prediction of web activity for businesses (Bala & Verma, 2018).

2.6.1 Social Media

The great importance of social media for companies was first identified by Kaplan and Haenlein (2010) unveiling the enhanced impact of social media on their marketing strategies and, providing a clear definition of the concept of social media as well as identifying the challenges and opportunities of these digital platforms. Kaplan & Haenlein (2010) described how to efficiently make use of these applications by providing ten pieces of advice for companies deciding to use social media and concluded that the use of these approaches will allow firms to engage in timely and direct end-consumer contact at relatively low cost and higher levels of efficiency than can be achieved than with more traditional communication tools (Dwivedi, et al. 2015).

Although the increasing research, focusing on digital consumer behaviour issues, the literature is still relatively nascent, and more research is needed particularly given the ever-changing nature of the digital/social and media/mobile environments in which consumers are situated and interact with brands and each other. People browse and contribute to their social media accounts regularly using smart devices; some people even prefer to communicate using social media rather than participating in face-to-face interaction. Yet communication using social media might be more challenging as emotions can be difficult to detect and comprehend (Dwivedi et al. 2016).

Stephen (2016) presents a comprehensive literature review suggesting that the most popular theme in digital marketing was eWOM, which was addressed by almost half of the articles. The active presence of healthcare providers on the Internet is now considered mandatory by most consumers (Koumpouros et al. 2015; Roblek, 2015; Roblek & Bertoncelj,

2014) since there is a significant increase in consumer interest in obtaining health-related information on the internet. Rader et al. (2014) conclude that marketing in the pharmaceutical industry should integrate social media for engagement with consumers (Roblek et al. 2018). Moreover, the increased importance of digital media for marketing drives the OTC medical industry to include the use of social media in its customer relationship management strategy because of increased pressure on sales margins. The development of Web 2.0, Web 3.0, and social media technologies allow low-cost online marketing, including e-commerce. Because of the extensive use of the internet and social media, organizational adaptation is required to cope with changes in the OTC medicine industry (Roblek, 2015). Social networks have played a key role during the COVID-19 pandemic that started in the early 2020s (Pianese & Belfiore, 2021) and since consumer health behaviour has also evolved quickly[10] it is required that consumer health companies adapt their strategies to this "new normal" by including social networks in their digital marketing strategies.

Ventola (2014) identifies the best practices in the use of social media by healthcare professionals and concluded that when used wisely and prudently, social media sites and platforms offer the potential to promote individual and public health, as well as professional development and advancement.

In Portugal to improve digital marketing engagement, marketers must focus on relationship-based interactions with their customers. Marketers can use social media to create digital linkages with customers. All efforts in this domain should lead to increased engagement, stronger relationships with customers, and subsequent customer engagement (Tiago & Veríssimo, 2014).

2.6.2 Definition and classification of Social media

Social media has a broad definition that is continually changing. Individuals and communities can use the concept to refer to Internet-based tools that allow them to congregate and interact; share information, ideas, personal messages, images, and other content; and, in some cases, collaborate with other users in real-time (Kaplan & Haenlein, 2010; Ventola, 2014).

According to Kaplan and Haenlein (2010), there are six different types of social media: collaborative projects, blogs and microblogs content communities, social networking sites, virtual game worlds, and virtual social worlds providing a variety of characteristics that serve different purposes for the individual user, serving functions such as; Social networking

[10] At the heart of a crisis: How consumer-health companies can lead in the time of coronavirus. [Internet]. Available at https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/at-the-heart-of-a-crisis-how-consumer-health-companies-can-lead-in-the-time-of-coronavirus Accessed 13 Set 2021

(Facebook, MySpace, Google Plus, Twitter, Instagram); Professional networking (LinkedIn); Media sharing (YouTube, Flickr, TikTok); Content production (blogs [Tumblr, Blogger] and micro-blogs [Twitter]); Knowledge/information aggregation (Wikipedia) and Virtual reality and gaming environments (Second Life, World-of-Warcraft; which are computer-based simulated environments inhabited by three- dimensional avatars) (Childs & Martin, 2012; Ventola, 2014). The higher the social presence, the larger the social influence that the communication partners have on each other's behaviour and applied to the context of social media these platforms can be classified depending on the degree of self-disclosure it requires and the type of self-presentation it allows and also based on the richness of the medium and the degree of social presence it allows (Kaplan & Haenlein, 2010) thus, social media sites provide a variety of features that serve different purposes for the individual user (Childs & Martin, 2012; Ventola, 2014).

Pharmaceutical companies, patient advocacy groups, and pharmacy companies are using social media for many purposes, those uses include communicating with the community and patients; enhancing organizational visibility; marketing products and services; establishing a venue for acquiring news about activities, promotions, and fundraising; providing a channel for patient resources and education; and providing customer service and support (Ventola, 2014).

Technology will continue to evolve, and social media has emerged as a game-changer. Human interactions and intimacy have been digitized, bringing the world closer at the touch of a button. Social media is a communication benefit for the public health community in today's fast-paced world, and it can promote and change many health-related behaviours and issues, particularly in times of crisis (Gupta, Tyagi, & Sharma, 2013).

2.6.3 The importance of Social Media Platforms

Using the internet, social media mobile apps, and other digital communication technologies have become part of billions of people's daily lives. As of January 2021, there were 4.66 billion active internet users worldwide (59.5 per cent of the global population). Of this total, 92.6 per cent (4.32 billion) accessed the internet via mobile (Statista, 2021).

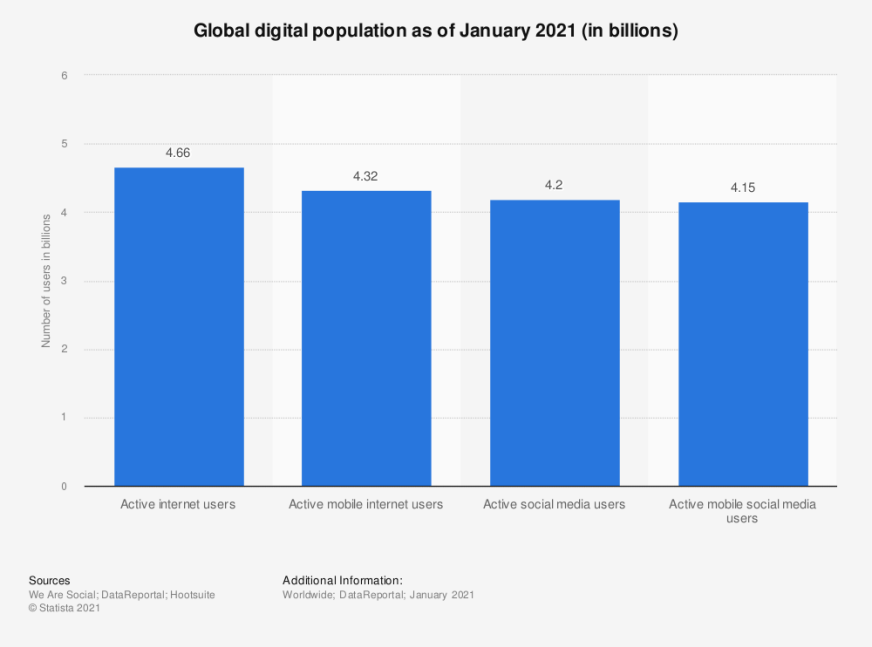


Figure 18: Global digital population as of January 2021(in billions)

China ranks first at the top of countries with most internet users. Due to its ongoing and fast-paced economic development, but also to a cultural inclination towards technology, more than 854 million of the estimated 1.38 billion population in China are online, the most common language in the online medium is still English, which is preferred by over 26 per cent of the total number of internet users (Statista, 2021). (Figure 18)

The leading social networks are usually available in multiple languages and enable users to connect with friends or people across geographical, political, or economic borders. In 2022, Social networking sites are estimated to reach 3.96 billion users and these figures are still expected to grow as mobile device usage and mobile social networks increasingly gain traction in previously underserved markets. The United States and China account for the most high-profile social platforms (Statista, 2021).

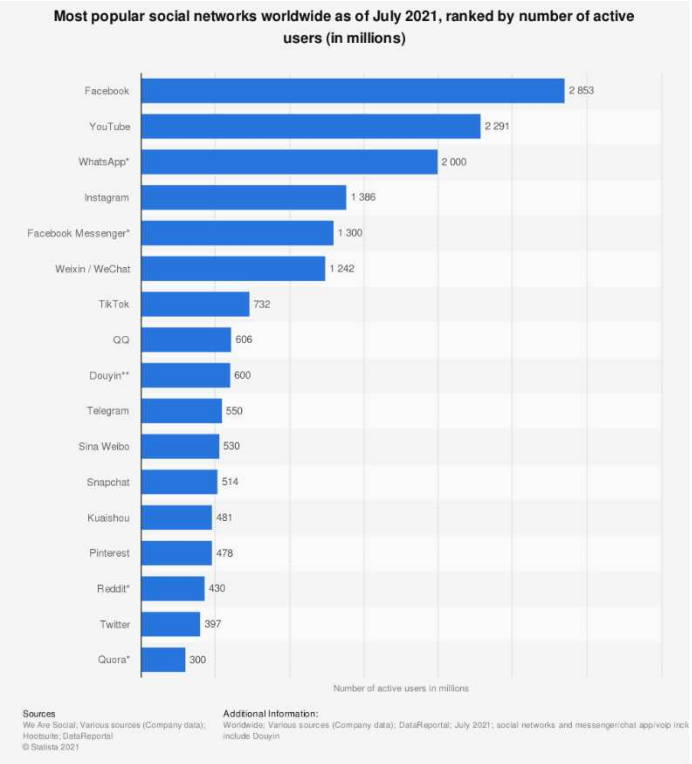


Figure 19: Most popular social networks worldwide as of July 2021, ranked by number of active users (in millions)

Market leader Facebook was the first social network to surpass one billion registered accounts and currently sits at more than 2.85 billion monthly active users. The company currently also owns four of the biggest social media platforms, all with over one billion monthly active users each: Facebook (core platform), WhatsApp, Facebook Messenger, and Instagram. In the first quarter of 2021, Facebook reported over 3.51 billion monthly core Family product users (Statista, 2021). (Figure 19)

According to (Social, 2021b) currently, there are 55,1% of active social media users that corresponds to 4.33 billion of the global population and 27,5% use social media to research products to buy. Depicted in Figure 20 is a summary of key global social media trends.

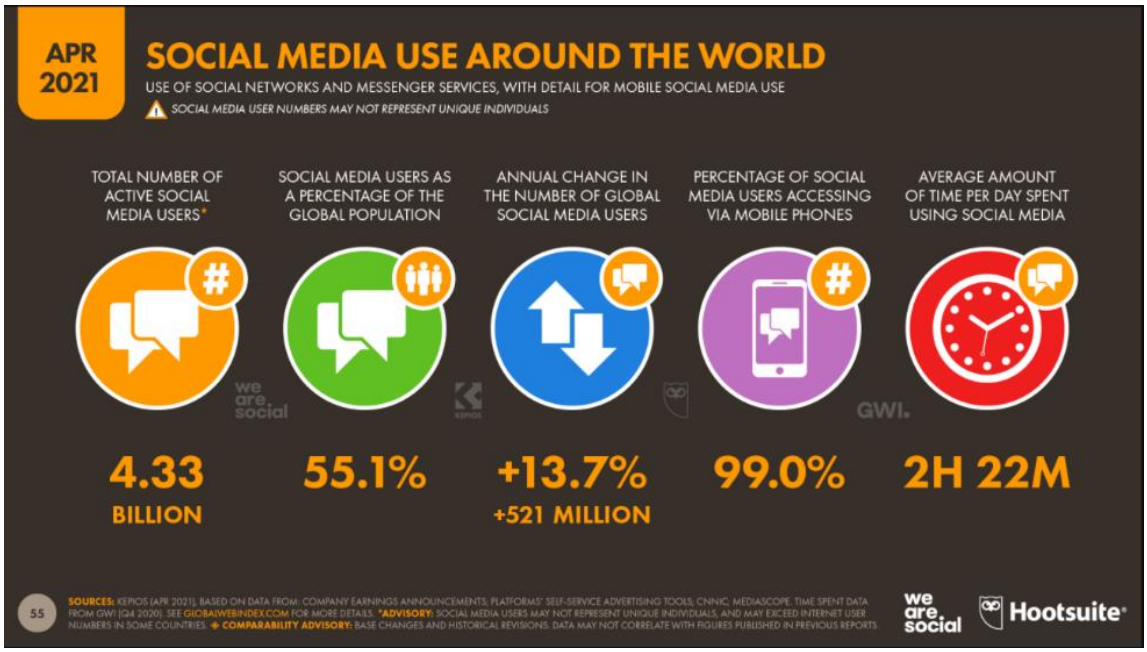


Figure 20: Summary of global key social media trends (We are social)

Social media has a wide-reaching and significant impact on not only online activities but also offline behaviour and life in general. In a global online user survey in February 2019, a significant share of respondents stated that social media had increased their access to information, ease of communication, and freedom of expression (Statista, 2021).

A majority of adults in the EU-27 also used the internet to participate in social networks (54%) (Eurostat, 2020a). It is important to notice that 53% of companies in Europe actively use social media to communicate with customers (Eurostat, 2020b).

2.6.4 The importance of Social Media Platforms in Portugal

There were 8.58 million internet users in Portugal in January 2021. The number of internet users in Portugal increased by 62 thousand (+0.7%) between 2020 and 2021 and the Internet penetration in Portugal stood at 84.2% in January 2021. Regarding social media usage currently, there are 7.80 million social media active users in Portugal and in January 2021 the number of social media users in Portugal increased by 800 thousand (+11%) between 2020 and 2021. The number of social media users in Portugal was equivalent to 76.6% of the total population in January 2021[11] (Social, 2021a). Portugal is a country with one of the highest social media penetration shares and digitalization habits in Europe. Depicted in Figure 21 we conclude that the most used social media networks in Portugal are Youtube with 92% users, Facebook with 88.2% and WhatsApp with 82.8%.

[11] DIGITAL 2021: PORTUGAL [Internet]. Available at https://datareportal.com/reports/digital-2021-portugal Accessed 14 Set 2021

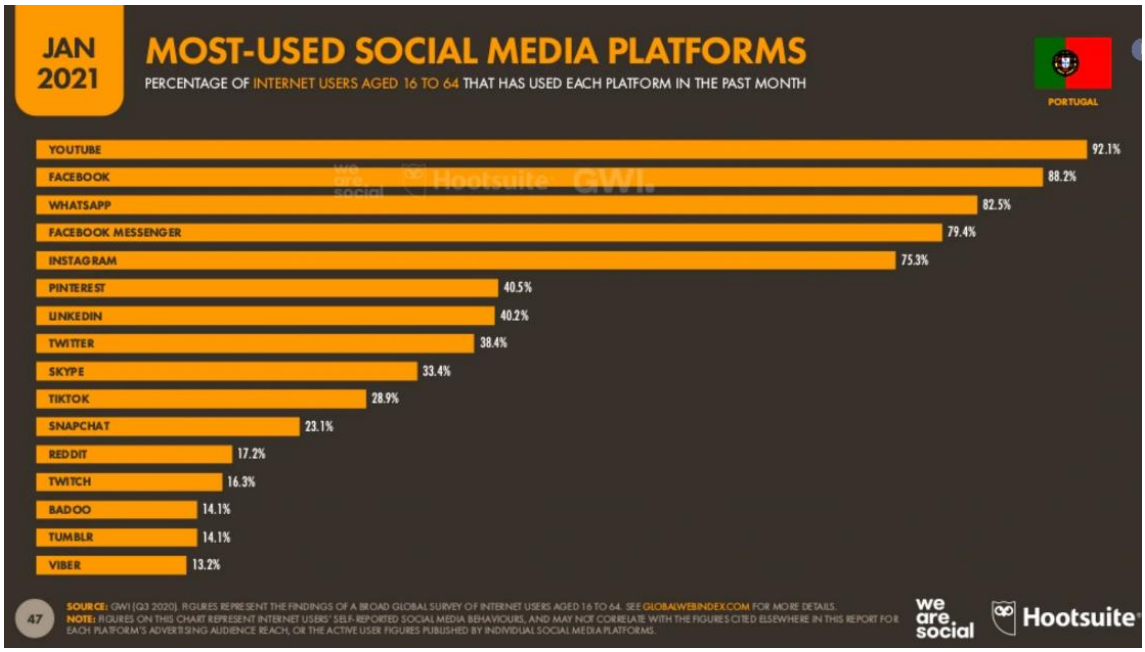


Figure 21: Most-Used Social media platforms (Portugal)

2.6.5 The Social media platforms habits in Portugal after COVID-19

The COVID-19 pandemic has compelled policymakers to impose mandatory confinement to prevent a quick and widespread spread of the virus. However, societies are required to establish a balance between the necessity to minimize infection rates and the need to reopen their economy after that stage.

Social media is the fastest communication network among worldwide people. During the outbreak of COVID-19, the usage of social media platforms increased two times more compared with normal days. Any kind of information related to a pandemic is available on social media and its networks. Engagement in social media platforms increased during lockdown to interact with family and friends. People were more active on Facebook, Twitter and other social media platforms to stay updated. Worldwide people were online for various reasons during this pandemic crisis such as working from home, organising a web meeting, to attending online classes conducted by the education department using various applications. Online purchases were one of the main reasons to be active on social media, as the stores were closed and people buying behaviour through the online network also increased during this crisis (Navithasulthana & Shanmugam, 2021).

According to Associação do Comércio Eletrónico e da Publicidade Interativa (ACEPI) report (ACEPI, 2020) the outbreak had a significant impact on internet use and accelerated the digital transition in Portugal. The percentage of companies with a presence on the Internet is now 60% of the total number of companies, whereas in the previous study only 40% of companies had an online presence and 51% of Portuguese internet users shopped online in

2019. The pandemic is also responsible for changing the online shopping behaviour of the Portuguese: around 60% of online shoppers confirmed they have increased the value of their purchases online. The investment of companies in digital marketing continues to grow. Companies intend to allocate 23% of the marketing budget for digital marketing, with the most used channels and the highest satisfaction rate being social networks, email and advertising on search engines. The study also estimates that the value of e-commerce in Portugal exceeds 1.10 billion euros in 2020 in B2C plus B2B market segment and that 10% of the online retail purchases are medicines. It also reveals an increase in consumption habits regarding online purchases with 59% of the consumers claiming to have increased their online purchases due to COVID-19. Social media has the highest level of implementation of digital technologies in Portuguese companies with 69% stating they already use this strategy and the other 5% more intending to implement it over the next year.

2.6.6 Social Media Marketing

The use of social media has resulted in the development of complex, multifaceted, and amplified relationships between businesses and their clients during the last decade. Firms are taking advantage of social media platforms to expand geographic reach to purchasers reinforce brand evaluations and build closer connections with the consumers. At the same time, customers are increasingly empowered by social media and taking control of the marketing communication process, and they are becoming creators, collaborators, and reviewers of messages (Larimo, & Leonidou, 2021).

As the role of social media has gradually evolved from a single marketing tool to that of a marketing intelligence source (in which firms can observe, analyse, and predict customer behaviours), it has become increasingly imperative for marketers to strategically use and leverage social media to achieve competitive advantage and superior performances (Lamberton & Stephen, 2016). For example, social media can strategically improve two-way communication between firms and customers and, accordingly, connect more customers to organizations with the ability to allow the presentation of content that is published visually, verbally or textually, or using a combination of text, visual and verbal content. In different contexts, firms have been enthusiastically anticipating the use of social media in many aspects of their customer interactions, such as enabling information retrieval, interactivity, promotion and improving customer purchasing behaviour (Ziyadin et al. 2019). However, for most companies, the ongoing challenge is not to initiate social media campaigns but to combine social media with their marketing strategy to engage customers to build valuable and long-term relationships with them (Lamberton & Stephen, 2016).

In a marketing context, social media are considered platforms on which people build networks and share information and/or sentiments (Kaplan & Haenlein, 2010). Although researchers have often used the term “social media marketing strategy” in the studies they have yet to propose a clear definition (Li et al. 2021) what is therefore required is an all-encompassing definition of social media marketing strategies (SMMS) that will capture two fundamental elements: namely, social media and marketing strategy. Table 7 compares the five dimensions (eg, basic, familiarity, resources, purpose and basis) between social media and marketing strategies and presents a profile as a result of SMMS.

Table 7. Comparison of Social Media, Marketing, and Social Media Marketing Strategy

Dimension	Social media	Marketing strategy	Social media marketing strategy
Core	Interaction and connectedness	Long-term customer relationship building	Customer engagement
Orientation	Passive actor versus active actor	Transactional-oriented versus relational-oriented	Transactional-oriented versus engagement-oriented
Resource	Resource integrator	Basic resources and high-order resources	In an exchange with customer-owned resources
Purpose	To interact and connect	To achieve a competitive advantage	To generate, integrate, and reconfigure social media resources to achieve specific marketing objectives
Premise	To recognize different customer motivations of social media brand-related activities	To enhance long-lasting customer relationships by delivering superior value	To capitalize on social media interactions and customer engagement to generate marketing resources

Source: Adapted from Li et al. (2021)

Social media have transformed the way firms and customers interact and influence each other. Social interaction involves “actions,” whether through communications or passive observations, that influence others’ choices and consumption behaviours (Dwivedi, et al. 2015; Li et al. 2021; Thies, Wessel, & Benlian, 2016) two distinct types of social interactions that are particularly relevant in an online context, namely opinion-based or preference-based and action-based or behaviour-based social interactions. The former type is often referred to as electronic word-of-mouth (eWOM) communication in an online context (Thies et al. 2016) and can be described as a statement by potential, actual, or former customers about a product or company. Consumers are better informed and also misinformed at times due to the flood of various pieces of information through traditional WOM and eWOM via social media (Sarma & Choudhury, 2015).

The Internet offers consumers various opportunities to engage in online social interactions with their peers and other consumers via, for example, online review platforms,

social networking websites, blogs, and online forums. These interactions help them to overcome the information asymmetry for products and services whose quality is difficult to ascertain before purchase (Thies et al. 2016). Given that online transactions restrict consumers' ability to assess a product's quality due to the lack of direct interaction with product and seller, these social interactions play a particularly critical role in electronic markets and have become a vital quality indication for consumers to use for decision support. So, consumers often put trust in personal opinions, recommendations, and suggestions from friends, family, and acquaintances when making many of their purchasing decision. In the marketing context, traditional WOM and eWOM can exclusively play a significant role, since it is assumed it provides more efficiency than conventional marketing tools like advertising and personal selling (Kumabam et al. 2017). WOM marketing is an increasingly important technique for a firm to intentionally influence the customer to customer communications (Kozinets et al. 2010).

Both traditional WOM and eWOM play an important role in expanding the horizon of marketing. Figure 22 depicts the potential cause-and-effect relationships of both traditional (offline) and electronic (online) WOM regarding high-involvement products and purchase decision-making.

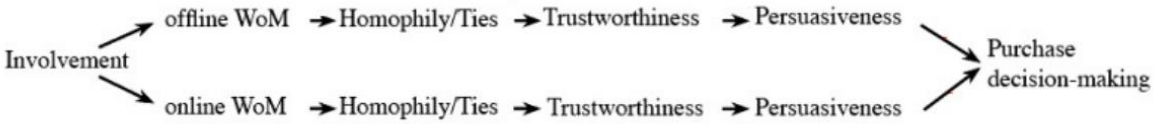


Figure 22: Customer involvement increases the purchase decision-making

Source: Adapted from Pokrywka & Gfrerer (2012).

According to Pokrywka & Gfrerer (2012), within a high involvement context, factors impacting traditional (offline) and electronic (online) WOM are homophily with connection to social ties, and trustworthiness that are regarded as a behavioural belief crucial in leading to a possible persuasion. Accordingly, in the context of persuasiveness, it is reasonable to expect potential influences on the consumers' decision-making process.

Offline and online communications are complementary and marketers need to see both channels holistically. Enterprises are adapting themselves to the present situation because consumers use cross-channel information. Years ago, businesses focused on developing multi-channel selling approaches and now they are turning into omnichannel strategies where consumers check information on offline and online channels and then they

decide where to buy. As so the interconnection of eWOM and WOM is crucial to consumers due to their omnichannel behaviour (Aramendia-Muneta, 2017). (Figure 23)

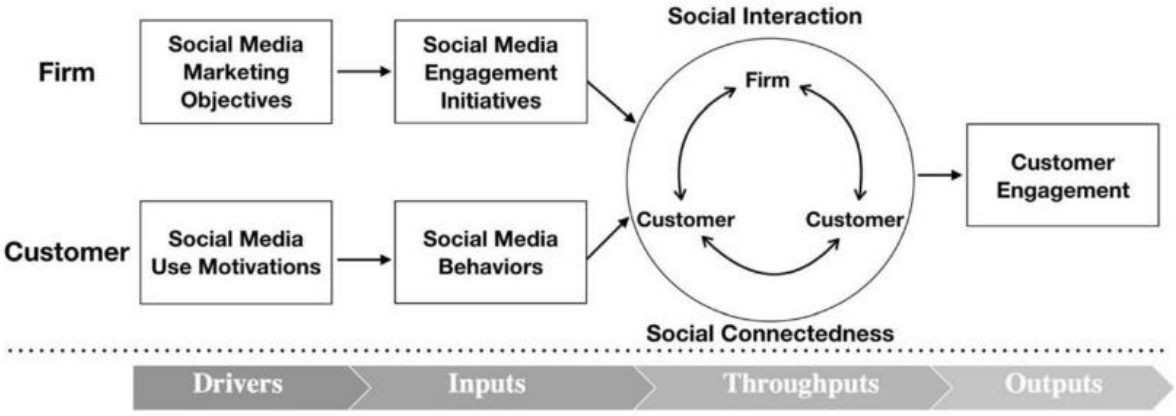


Figure 23: Conceptualization of the process of developing SMMS

Source: Adapted from Li et al. (2021).

Marketers are searching for lower-cost alternatives to traditional means of advertising such as television and radio ads, which has led many to WOM Marketing which has long been known to be an effective means of spreading the message about a great product or service, and with the rise of the Internet, eWOM has taken a lead role in increasing the velocity and reach of traditional WOM (Kumabam et al. 2017).

In conclusion, there are four types of social media marketing objectives with four different mental models that can guide SMMSs: namely, to promote and sell (e.g., business-to-customers), to connect and collaborate (e.g., business-with-customers), to listen and learn (e.g., business-from-customers), and to empower and engage (e.g., business-for-customers) (Chu & Chen, 2019; Dwivedi et al. 2015; Li et al. 2021).

The direction of social media interactions can take three different forms: (1) one-way interaction, that is, traditional one-way communication in which the firm disseminates content (e.g., advertising) on social media and customers passively observe and react; (2) two-way interaction, that is, reciprocal and interactive communication with exchanges on social media, which can be further distinguished into firm-initiated interaction (in which the firm takes the initiative to begin the conversation) and customer participation (by liking, sharing, or commenting on the content) and customer-initiated interaction (in which the customer is the initiator of conversations by inquiring, giving feedback, or even posting negative comments about the firm, while the firm listens and responds to customer's voice); and (3) collaborative interaction, that is, the highest level of interaction that builds on frequent and reciprocal activities in which both the firm and the customer have the power to influence each other (Li et al. 2021). With these three classificatory criteria, we can identify four distinct SMMSs,

representing increasing levels of strategic maturity: social commerce strategy, social content strategy, social monitoring strategy, and social CRM strategy. (Figure 24)

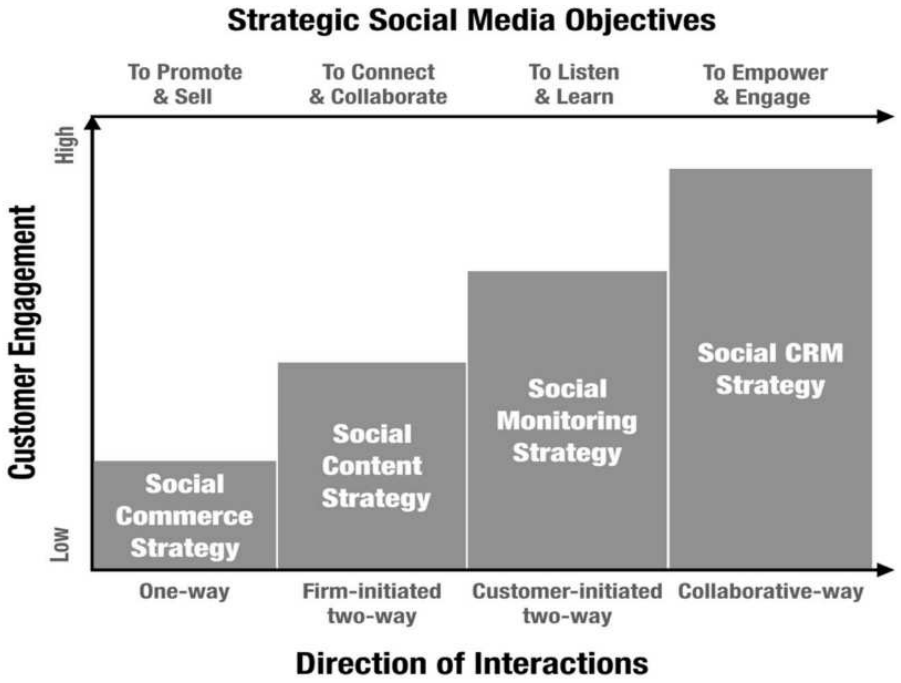


Figure 24: Taxonomy of social media marketing strategies

Source: Adapted from Li et al. (2021).

2.7 From Word of Mouth to Electronic Word of Mouth

Indeed even though conventional word-of-mouth (WOM) communication has long been recognized, the definition has been changed a lot extending from explicit consumer enthusiasm for a product or service to positive or negative evaluative communication, information dissemination, and collective consumer "buzz"(Daugherty & Hoffman, 2014).

The power of WOM is so well known that in 2004 the Word-of-Mouth Marketing Association (WOMMA) was founded to lead the WOM industry through advocacy, education, and ethics. According to WOMMA (2014), WOM is the driving force behind 13% of sales, while paid marketing in total accounts for 20-30% of sales (Aramendia-Muneta, 2017).

For this research, we consider that WOM communication is traditionally defined as face-to-face communication between consumers regarding any product, brand or service, (Ghosh et al. 2015) and it is one of the oldest forms of marketing communication (Arndt, 1967). Hence, WOM is defined as the act of exchanging marketing information among consumers and is critical in changing consumer attitudes and behaviour toward products and services because WOM is created and delivered by a more trustworthy source of information about

products and brands than company-generated persuasive messages as so consumers often rely on it when they search for information on which to base their purchase decisions (Chu & Kim, 2011). Since consumers tend to search for information and rely on recommendations from other consumers before making decisions, in particular, people who are important to the one in need of information, such as friends and family members, are primal information sources to comprehend what the ones close to them might already know about the products, services and companies of interest (Ghosh et al. 2015; Steffes & Burgee, 2009). WOM's credibility, combined with the fact that consumers will be more involved with it than, say, advertising, allows for the establishment of higher-order cognition and stronger impacts. Hence WOM is been recognized to be an effective method of obtaining useful information for purchase decisions (Brown & Reingen, 1987). WOM strongly affects health behaviour (Martin, 2017), it plays a key role in influencing consumer attitudes, tendencies and behaviours. In addition, WOM has a major impact on consumer choice and post-purchase perceptions (Temechewu, 2020). In terms of reliability, the relationship between the sender and the receiver is the most important factor. If the sender and receiver of the information have strong ties, the information's credibility will be high enough for the receiver to believe that the seller is trustworthy (Brown & Reingen, 1987).

The emergence and development of WEB 2.0 platforms have completely changed the way consumers look for information and how they interact with each other. Communication has gone from being just “one-to-one” to “one-to-many” to even “many-to-many”. In this way, the sharing of information between individuals does not necessarily occur face-to-face, thus giving rise to eWOM this reality profoundly changed the way WOM is transmitted and has transcended the traditional limitations of WOM. The otherwise ephemeral WOM targeted to a few friends because involves face-to-face communication and it has been transformed into enduring messages visible to the entire world (Cheng & Zhou, 2010b). The eWOM content can be transmitted through textual information, images, videos, and animations, given the excellent technological flexibility in the different online platforms, while traditional communication is only transmitted through speech. Consumers can share opinions and experiences regarding products and services with other consumers through eWOM platforms, which include blogs (Kaplan & Haenlein, 2010; Kozinets et al. 2010), review sites (Dellarocas, 2003; Hennig-Thurau et al. 2004), discussion forums (Khwaja & Zaman, 2020; Luo et al. 2013) company brand and product websites (Chu & Chen, 2019; Lee, et al. 2014) and social networks (Chu & Kim, 2011; Daugherty & Hoffman, 2014; Erkan & Evans, 2016; Popkov & Nono, 2016). Online communication allows the sender as well as the receiver to stay anonymous (Martin, 2017). Still as suggested by Chu & Kim (2011) given the collaborative and social characteristics of social networking sites, consumers are enabled to connect with others

by exchanging information, opinions and thoughts about products and brands, and become an emerging scene for consumer-to-consumer conversations, namely brand-related WOM. (Figure 25)

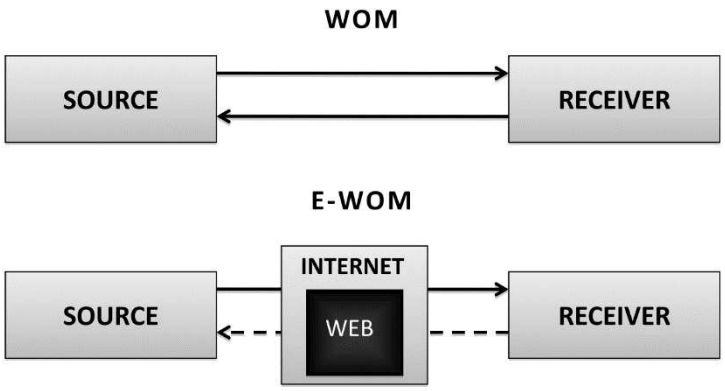


Figure 25: WOM vs eWOM

Source: Adapted from López and Sicilia (2013).

The Internet has facilitated WOM communications by providing ever-increasing space for consumers to share personal opinions and experiences (Evans & Erkan, 2014). Companies have massively engaged in social commerce largely due to their ease of use and low cost compared to conventional methods of marketing and commerce (Kaplan & Haenlein, 2010). Therefore eWOM communication strategies are appealing because they combine the prospect of overcoming consumer resistance with significantly lower costs and fast delivery especially through technology, such as the Internet (Trusov et al. 2009). While expanding information, it is common for eWOM to have no direct tie to a company. Contrary to traditional WOM because a WOM sender is considered independent of manufacturers or sellers, WOM is regarded as more reliable and trustworthy than other forms of marketing communication such as advertising, promotion, or conversations with salespeople. As a result, there is no commercial motive to distort the truth about products or services, while also assisting consumers to deal with or avoid information overload (Cheng & Zhou, 2010b; Lis, 2013). Moreover, consumers consider WOM to be more reliable than traditional advertisements (Cheung & Thadani, 2010).

Table 8. Different Types of eWOM Platforms

Platform	Example
Social media websites	Facebook; Instagram
Shopping websites	Amazon.com; afarmaciaonline.pt
Consumer review websites	Epinions.com; Aveirofarma. pt
Discussion forums	Saude.ccm.net/forum

Blogs	Blogger.com; saudebemestar.pt

Source: Adapted from (Cheung & Thadani, 2010; Erkan & Evans, 2018) and self-elaboration

With the advancement of technology and the Internet, conventional WOM interaction has gradually moved to eWOM interaction (Ghosh et al. 2015; Krasila, 2021). Contrast to traditional WOM reviews, eWOM will have a potentially larger audience because they are published online (Martin, 2017). Unlike what happens with traditional WOM, eWOM communication has no temporal or geographic restrictions (Dellarocas, 2003). As a result, eWOM plays an increasingly significant role in consumer purchase decisions. With the shift of empowerment of health information to consumers, health consumers are aggressively using social media to share their experiences and collect opinions from others (Lee et al. 2019). Previous studies show that this type of communication has a greater impact on consumers than information disclosed by companies on the Internet (Bickart & Schindler, 2001).

One of the advantages of eWOM communication compared to traditional WOM is the fact that it remains stored online, in this way, both consumers and companies can access it when they need it, the first to search for information (Chueng et al. 2009) and the second to evaluate the feedback. The ease and quick access to this type of communication makes it one of the most recurrent sources of information by consumers (Zhu & Zhang, 2010). Furthermore, studies reveal that eWOM has a greater influence on purchase intent than offline WOM communication. In light of the advances in online choice assistance techniques such as collaborative filtering and recommendation agents, both of which harness the power of eWOM, firms need to understand the value of eWOM to the consumer (Steffes & Burgee, 2009).

The influence of eWOM even changes the lifestyle of consumers and it has brought unprecedented opportunities and challenges for corporate marketing activity. Therefore, eWOM communication has received extensive attention from both academics and practitioners for decades (Cheng & Zhou, 2010b).

2.7.1 Electronic Word-Of-Mouth

People's interaction has been transformed and facilitated by the Internet. As a result of this progress, unlike conventional WOM in which people share their views depending upon oral\interpersonal communication with the people they know (Cheung & Thadani, 2010), in this era, filled with technology, the internet has made it possible for users to share their product experiences and opinions regarding products through eWOM.

Hennig-thurau, et al. (2004) defined eWOM as “any positive or negative statements made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet”. An eWOM recommendation

is characterized by a positive, neutral, or negative provider-relevant piece of information published on the internet by a consumer (Lis, 2013). In light of the dynamic changes in the marketplace and the digital context, the prevailing views on eWOM have become outdated as so Rosario et al. (2020) propose a revised definition of eWOM: “consumer-generated, consumption-related communication that employs digital tools and is directed primarily to other consumers” mainly because eWOM is not only statements which evokes mainly textual postings while ignoring other available formats (video, memes, images etc.). Similarly, eWOM may be directed to non-consumer audiences, such as company customer service representatives on specialized social media accounts, and still be visible to other consumers, due to the open nature of many platforms. This revised definition of eWOM allows delineating the key components for theory development: the source (e.g., consumers as senders of eWOM), the message (e.g., consumption-related content), the channel (e.g., digital conversation tools), and the receiver (e.g., primarily other consumers), in line with the source–message– channel–audience model of communication (Rosario et al. 2020).

Consumer attention is a critical variable that should not be neglected in research, theory, and practice relating to eWOM communication within social media. Daugherty and Hoffman (2014) found that eWOM messages and brand classifications interact to influence attention, providing support for the notion that consumer attention is a complex phenomenon. The authors stress that the full effect on valued eWOM outcomes is only now beginning to be understood. Therefore, communication strategies cannot ignore consumer-generated eWOM in favour of facilitating other types of brand or promotion opportunities within social media. As information thus spreads exponentially and at a low cost, eWOM communication is an important factor for businesses (Lis, 2013). As so, eWOM plays an important role in electronic marketing (e-marketing) nowadays because comments can evoke emotion and affect behaviour. Being part of a group and being altruistic are more relevant to the benefit of the group and being individual and personal growth are more related to personal values. Consumers generate and distribute information and disinformation, which can lead to a response from other consumers or enterprises (Aramendia-Muneta, 2017).

Cheung and Thadani (2010) conducted a systematic review of eWOM research and identified key factors that are specific to the context of eWOM communication. They propose a conceptual framework that integrates all relevant factors of the four major elements of eWOM communication: Communicator, Stimulus, Receiver, and Response. According to these authors, there is still a limited number of empirical studies, understanding the relative impacts of the three elements (Communicator, Receiver, and Stimulus) on the responses of eWOM communication. In this research, we integrated all three elements to fulfil this gap.

eWOM communications have become more visible due to their presentation format, quantity, and persistence. When compared to the information obtained from traditional offline interactions, the amount of eWOM information available online is significantly greater (Soares et al. 2012). What distinguishes the mechanisms of online content sharing of the content streamed offline (WOM) is the combination of three factors: a) its unprecedented scalability and speed of diffusion, achieved by exploiting the capabilities of low-cost two-way internet communication; b) the ability of its creators to control and monitor its operation through the introduction of automated feedback mediators; c) new challenges introduced by the unique properties of online interaction, such as the nature of online identities. eWOM communications are more persistent and accessible. Most of the text-based information presented on the Internet is archived and thus would be made available for an indefinite time and d) eWOM are more measurable than WOM (Cheung & Thadani, 2012; Dellarocas, 2003; Ismagilova, et al. 2016). Although WOM emanates from a sender who is known to the receiver of the information, thereby the credibility of the communicator and the message is known to the receiver and therefore more trustworthy (Cheung & Thadani, 2010) the influence of eWOM can affect the attitude and purchase intention of consumers, and hence sales even though eWOM may be less personal, mostly anonymous and happens between people with weak ties in comparison with WOM, it is seen as a more powerful tool because it is credible, publicly available and has significant reach (Ismagilova et al. 2017; Ismagilova et al. 2016).

To be persuasive, the message should be considered as helpful and credible. Several studies prove the link between credibility and usefulness of eWOM and information adoption which can influence consumers' attitudes and purchase intentions and also propose that message, source of information and reviewer characteristics affect perceived eWOM helpfulness and credibility (Cheung, Luo, Sia, & Chen, 2009b; Ismagilova et al. 2016; Lis, 2013; Tsao & Hsieh, 2015). There are limited studies on this issue on the scope of the influence of eWOM related OTC medicines consumers and purchase intention in the social media setting however Purcarea and Petrescu (2013) identified the drivers that influence a reader to adopt information from an eWOM message posted on a forum in health care services and found both argument strength and source credibility had the strongest and significant impact on a consumer's decision. Also following Ismagilova et al. (2016) message, source of information and reviewer characteristics affect perceived eWOM helpfulness and credibility. Determinants of eWOM persuasiveness are; a) Message: Quality, argument strength, content, valence and other factors can influence the persuasiveness of the eWOM message; b) Source: Characteristics of information sources like expertness and trustworthiness, as well as source attractiveness (familiarity and likeability), social tie, and homophile influence affect eWOM

persuasiveness and c) Receiver: The evaluation of eWOM can vary from person to person. As a result, the same message can be considered differently by consumers.

Studies focusing on consumer behaviour and intention to purchase in social media enhance the importance of the impact of positive eWOM on consumer online purchasing decisions. Cheung et al. (2009) show that positive eWOM strengthens the relationship between consumers' emotional trust and their intention to shop online, as well as the relationship between consumers' perceived integrity and attitude.

The impact of eWOM has the main role in assessing consumer behaviour purchase intentions, pointing out the effect of positive eWOM on the relationships among consumers' beliefs and trust (Cheung et al. 2008; Daugherty & Hoffman, 2014). eWOM buzz is one effective key performance indicator (KPI) to measure the efficacy of a Digital Marketing Campaign (Tiago & Veríssimo, 2014).

It becomes clear that examining the influence of these conversations in social media on consumers' purchase intentions will have a significant impact on digital marketing strategies with management implications. Erkan & Evans (2016), developed the conceptual (IACM), which examines the relationships between the following variables: information quality, information credibility, needs of information, attitude towards information, information usefulness, information adoption and purchase intention and finally claims that the influence of eWOM on social media not only depends on the characteristics of eWOM information, such as quality and credibility, but it also depends on the consumers' behaviour towards eWOM information. To meet with the previously mentioned gap we will introduce the new variable source credibility on this model and we will discuss this matter further in chapter three.

Cheung et al. (2009) postulate that consumer reviews significantly affects their trusting beliefs, emotional trust, and online purchasing decision. Erkan & Evans (2018), corroborate that, marketers can develop better eWOM marketing strategies by considering consumers' expectations.

According to Martin (2017), WOM strongly affects health behaviour, although, a research gap exists when it comes to the analysis of the current state of eWOM research in the health care sector.

2.8 The Study Context

Pharmaceutical Industry is one of the largest and most profitable industries worldwide (Pieriegud, 2019). According to Statista[12], the market has experienced significant growth during the past two decades, and pharma revenues worldwide totalled 1.27 trillion U.S. dollars in 2020. The industry of non-prescription medicines had also a positive evolution because of the changing behaviour and needs of consumers (Bhargava et al. 2020), the new trends that appear every day, and the free exchange of ideas and opinions through the (Cîrstea et al. 2017; IQVIA Portugal, 2021; Marathe, et al. 2020). The ongoing coronavirus (COVID-19) pandemic is defining the global health crisis of our time and with the new practices and changing consumer behaviour (as an outcome of this pandemic), the OTC industry which was growing at a very small pace has got a sudden boost (Krishnamoorthy, 2021).

According to IQVIA[13] with increasing health literacy and access to technology, consumers are becoming more "health-smart" and proactive towards self-care, their needs are evolving and want more than simple treatments based on market trends like the changing demographics, Government-led Health Campaigns, Focus on Wellness and Prevention and Empowered Digital Consumer. Consumers are now more engaged and want solutions that work best for them, but the industry has been slow to respond in terms of innovating to modern consumer needs. Social media is an example of a digital channel that has impacted all sectors and companies (Straker, Wrigley, & Rosemann, 2015) and pharma is no exception therefore, innovation strategies must keep up with what consumers want and expand the scope of innovation to meet evolving consumer expectations engaging with the consumer to generate the evidence needed to bring forward new claims, indications and products to OTC.

Pharma needs to develop a business that focuses on providing a positive customer experience to drive profit and gain a competitive advantage. The consumer-centricity approach will help to build trust and loyalty, but also a solid reputation based on products and services that deliver significant new benefits and claims that are validated through scientific evidence-based and promote advanced Rx-to-OTC switches. At the same time assume Holistic Health & Wellness concepts by integrating validated tools to support consumers on their health & wellness journey and develop a higher level of personalization. As so digital health tools will be a key driver in developing new consumer-centric scientific evidence and expanding the product eco-system. Creating more options for consumers will continue to be the major topic for the self-care industry and pharmacy and since consumers connect through social media

[12] Global pharmaceutical industry - statistics & facts [Internet]. Available at https://www.statista.com/topics/1764/global-pharmaceutical-industry/#dossierSummary__chapter2 Accessed 25 Set 2021

[13] OTC Growth in Europe: Internet]. Available at https://www.bachi.be/docs/events/OTC%20growth%20in%20Europe%20(IQVIA).pdf Accessed 25 Set 2021

these strategies will be a key driver in developing OTC and Consumer healthcare markets in the future (Mekawie & Hany, 2019; Mishra & Sanghvi, 2020). Digital consumers are seeking health information through digital communication and use it for their health decision. The health information seeking in the digital consumer and professionals push pharmaceutical businesses, to prioritize going online despite there being no appropriate, clear-cut guideline for their digital practices (Ngamvichaikit, 2021).

Consequently, social media have become a significant tool for Pharmaceutical marketing and branding. Hence it is important to have a structured strategy addressing the best ways for OTC brands to represent themselves, and because social media help consumers to search and do a better decision on what product they should buy (Lamberton & Stephen, 2016) developing a social media community with a dedicated fan base (e.g., a Facebook page) can significantly strengthen customer–firm relationships and can lead to a definitive impact on the firm's revenues and profits (Kumar et al. 2016). Thus, social media became a tool that influences consumer behaviour and purchase (Batra & Keller, 2016).

In the future consumer, marketing will largely be carried out in digital settings, particularly social media and mobile. It is, therefore, necessary for consumer research to examine and understand consumer behaviour in digital environments. This has been happening over the last decade, with increasing amounts of research focusing on digital consumer behaviour issues (Stephen, 2016). The modification in regulations and policies such as reaching out to direct-to-customer (DTC) has provided ease in the online Pharmaceutical business. Pharmaceutical industries are exploring options for providing online medical education based on Web 2.0 concepts. Here is a strong opportunity to integrate online and social media with traditional marketing strategies to reach out to a larger human population to meet the expected business objectives (Mishra & Sanghvi, 2020). There is still very little research regarding the application of digital marketing strategies and social media consumer behaviour in particular in the Pharmaceutical sector.

2.9 Portuguese Pharmaceutical Market

All European countries have common healthcare goals, particularly the provision of high-quality care at a reasonable cost. The causes of increased drug spending in different European countries are similar and include evolution in the proportion of elderly people, an increase in the incidence and duration of chronic diseases, the continued development of health technologies, and intensification in patients' and society's health expectations. The general public's access to the medication has undeniably assisted in improving the quality of life and increased the average life expectancy of European citizens over the years. The

expenditures on pharmaceuticals, as well as total health expenditures, have grown faster than the gross national product in all European countries (Ess, Schneeweiss, & Szucs, 2003).

As a result of the improved health quality indicators, the public spending growth on medications is putting pressure on several European Union (EU) member states to adopt measures to reduce the expenditure and ensure the balance of their respective public accounts. On average in the EU, healthcare expenditure amounted to 9.9% of GDP in 2018 and 9.5% in Portugal[14]. According to INFARMED[15] in the year 2019 medications represented 26.1% of the share in the percentage of health expenditure in Portugal (Figure 26).

	2015	2016	2017	2018	2019
Orçamento do SNS / *NHS Budget*	8 654	8 943	9 311	9 462	10 060
Encargos do SNS com Medicamentos em ambulatório e Hospitalar no Orçamento SNS / *Ambulatory and Hospital NHS Expenditure with Medicines in NHS Budget*	25,60%	25,40%	25,27%	26,01%	26,10%

Fonte / *Source* : ACSS/CCF, Hospitais (CHNM) e DGO — Unidade: 10^6 EUR | *Unit* 10^6 *EUR*

Figure 26: NHS Budget and NHS Expenditure (Ambulatory and Hospital)

Source: INFARMED monotorização do mercado.

This special attention to the pharma market has been flourishing in the current context of weak economic growth creating fiscal difficulties in many EU states and that may sustainably compromise access to medicines.

The objectives of pharmaceutical policies to reduce expenditure, are multidimensional and must take into account issues relating to public health, public expenditure and industrial incentives. Both price levels and consumption patterns determine the level of total drug expenditure in a particular country, and both factors vary greatly across countries. Licensing and pricing policies are intended to influence the supply side. Three types of pricing policies can be recognised: product price control, reference pricing and profit control. For drug wholesalers and retailers, most governments have defined profit margins (Ess et al. 2003).

The Portuguese pharmaceutical market has been subject to a large number of policy measures over the last decade. These included the introduction of a reference price system whenever competition from generics was possible (since 2003) and changes in the way the

[14] Eurostat: Your Key to European Statistics [Internet]. Available at https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20201202-1 Accessed 23 Set 2021

[15] Estatistica do Medicamento e produtos de Saúde [Internet]. Available at https://www.infarmed.pt/documents/15786/1229727/Estat%C3%ADstica+do+Medicamento+2019/b2e448a8-dc71-c2e8-a93a-f0cbef7ad6eb?version=1.0 Accessed 24 Set 2021

reference price is defined; administrative yearly price reductions; several changes in co-payment rules and values; and the further use of economic evaluation as a hurdle to the introduction of new products, both in ambulatory care and hospitals (Barros, 2012). These regulatory measures regarding medicines price legislative revisions, as well as changes of marketing margins (DL. 19/2014) corroborated by annual price reviews and the intervention in prescription patterns with the introduction of national guidelines, had a noticeable positive impact on the Portuguese GDP, with a reduction in public expenditures on pharmaceutical products in ambulatory care and a slight slowdown in the growth of hospital expenditures.

In the last decade, medicine policy in Portugal has suffered some important transformations. Many of the measures taken in this regard have been conditioned by the Economic and Financial Assistance Program agreed in May 2011 (Memorandum of Understanding (MoU). The administrative price reductions, introduced in 2010, included changes in the setting of maximum prices for pharmaceutical products and changes to co-payment rules for products included under National Health Service (NHS) coverage. The main objective was a significant reduction in expenditure on medicines which brought important changes to the pharmaceutical policy.

The pharmaceutical sector is regulated in Portugal and supported by a set of complex legislation. The guiding specificities of the sector justify the intervention of the regulator in a market where several stakeholders interact, such as the State itself (payer), doctors' prescribers, manufacturers, wholesalers, hospital pharmacies, community pharmacies and patients. It is a multi-level market with numerous stakeholders: manufacturers and importers; wholesalers, including pre-wholesalers (e.g. customs warehouses); retailers, including pharmacies and other retailer outlets (shops, petrol stations, supermarkets, outlets), and e-pharmacies; healthcare providers (hospitals, clinics, health centres, diagnostic centres); physicians and pharmaceutical sales REP; health insurers; government agencies, regulatory bodies, inspectors, chambers of commerce; professional foundations and associations; universities, research institutes, and laboratories; technological parks and clusters; consulting firms and marketing agencies; and individual consumers, including patients (Pieriegud, 2019).

Communication in the pharmaceutical industry is complex, involving a variety of tactics, limitations, formats, and objectives. They are split into four major categories: characteristics of Portuguese pharmaceutical companies, Portuguese legislation, internet usage, and health communication agencies in Portugal. In contrast to other countries, advertising drugs that require a medical prescription in any media that is not primarily targeted to health professionals is forbidden in Portugal. Despite this limitation, communication is an important strategy for pharmaceutical businesses with an emphasis on corporate or

institutional communication (Fischer, 2014) using strategies like public relations to increase the reputation of companies and, consequently, of their brands. So, the audiences to which the marketing communication plans of pharmaceutical companies are settled are divided into several targets: who prescribes (doctors), who pays (hospital administration, patient), who approves (Infarmed), who legislates (government), who purchases (patient), who advises (pharmacist), who puts pressure on (patient groups, medical societies) and who influences (media, online communities) (Margarida & Francisquinho, 2013; Aroso, 2013). With the advent of social media and Web 2.0, the internet reinforces the role of the final consumer of pharmaceutical industry products in the decision-making process combined with the ability to express their opinions. This assumes greater importance in the OTC segment of the market since direct-to-consumer advertising (DTC) is not forbidden (but with some restrictions). However, INFARMED is responsible for monitoring the market, by consulting different advertising media (television, radio, press, internet) and/or complaints received. In any of the situations, the regulator proceeds to an evaluation of the parts advertising, aimed at the public in general, or to health professionals, having in attention to its effects and benefits, aimed at promoting the rational use of medication and health products. In the case of medicines, Marketing Authorization holders must send advertising material to INFARMED, for the respective registration and assessment (Aroso, 2013). But, due to less regulation (compared to prescription products - Rx), and more freedom of promotion and advertisement, there is a face-level deceptive similarity between the fabric of Fast-Moving Consumer Goods (FMCG) marketing and OTC products marketing (Krishnamoorthy, 2021).

Even though all these constraints, Pharmaceutical Industry is amongst the biggest spenders on marketing. Since product development, distribution, and pricing are highly regulated across the world, pharmaceutical firms are not as flexible as firms in other industries in using these elements of the marketing mix. Special focus is therefore placed on communication activities, spanning from sales calls (visits paid to physicians and pharmacists by sales REP), through advertisements in medical journals, to TV and radio commercials targeted at end consumers, as well as other channels like the internet (Fischer, 2014). As a result, pharmaceutical companies spend about one-third of all sales revenue on marketing their products, which is about twice as much as they spend on R&D (Pieriegud, 2019).

The pharmaceutical market is composed of two segments governed by different regulations: prescription-only and OTC medicines. Prescription-only medicines (POM), also known as Rx, or ethical drugs, need a prescription from a physician to be purchased. The other segment is OTC pharmaceuticals, including products registered as medicines and dietary supplements. Overall the Consumer Healthcare segment of the market includes OTC medicines, Personal Care (PEC) (medical devices, pharmacy cosmetics and oral health),

Patient Care (PAC) (diagnostic tests, commodities, para-pharmaceutical products) and Nutrition (NTR) which are distributed through different channels, depending on local regulations. Both POM and OTC medicines can be marketed as innovative drugs under long-term patent protection, or as generic drugs having the same active chemical ingredients as the original innovative drug but produced only after the initial patent expires (Pieriegud, 2019).

According to IQVIA[16], the total Pharmaceutical market in Portugal includes POM representing 71% of the value share as well as Consumer Health products with the remaining 29% of market share. There is an overlap of the OTC segment, which are included both in the drug category and in the Consumer Health classification, given the free nature of the medicine (Figure 27).

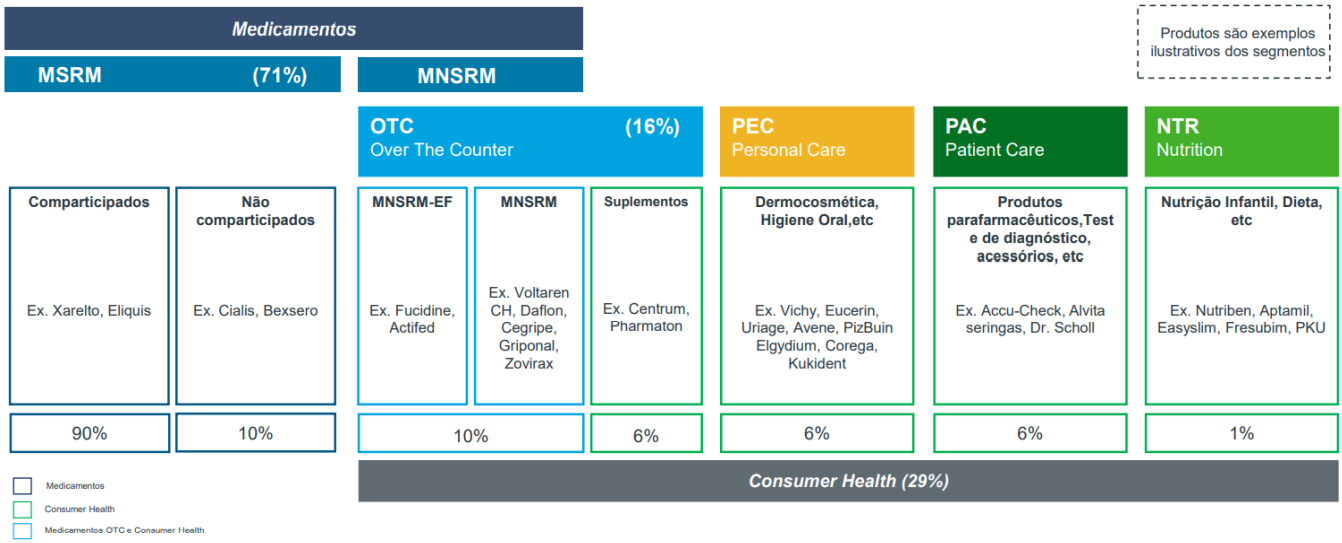


Figure 27: Pharmaceutical Segments of Market in the Pharmacy (€ SP MAT 8/2021)

Source: IQVIA Portugal; PharmaScope Sell-Out, amostra 1.800 Farmácias; Produtos ilustrativos dos segmentos.

The same IQVIA report declares Rx sales represented € 3.174 billion, (including generics) with the growth of + 2.9% compared to the previous year and the total Consumer Health market value is €1.131 million and with a growth of 2.8% compared with the previous year (only in pharmacy channel) in the period MAT/08/2021.

With all the regulator interventions in the pharma sector, there was a dramatic reduction in drug margins[17] as well as the margins in the entire distribution chain. As a result,

[16] Evolução do mercado de Farmácia em Portugal [Internet]. Available at https://www.iqvia.com/-/media/iqvia/pdfs/cese/portugal/library/publications/2019/overview-farmacias-portugal-julho-2019.pdf Accessed 23 Set 2021

[17] Decreto-Lei n. º 19/2014 de 5 Fevereiro

the competitive pressure increased which led the Pharmaceutical Industry to reduce costs and triggered numerous downsizing and reorganization of internal and commercial structures, mergers and acquisitions across the sector readjusting the business models to face new threats by the economic and political environment and, at the same time, increasing the investment in innovation and business diversification with the development of Generic and Consumer Healthcare business units.

As so European countries are gradually widening access to the OTC market: following other EU countries, Portugal deregulated OTC sales in 2005 and allowed the sale of the key therapeutic categories of OTC medicines outside pharmacies in 2005[18] at authorized point of sales, that same year the price of these drugs was liberalized. In addition to the reclassification of some drugs in OTC, also in 2007[19] the list of situations subject to self-medication was revised allowing a broader range of situations and at the same time, the legislation regarding prescription by active principle or International Nonproprietary Name (INN) and a new category of OTC medicines to be sold exclusively in pharmacy was created[20]. As a result of these measures, Pharmaceutical companies are being forced to change their approach to the OTC drug market because of the intensified pressure on sales margins along with promotional restrictions. The development of the internet (Web 2.0 and Web 3.0) and social media technologies allow low-cost online marketing, including e-commerce. Organisational adaptations for coping with changes in the OTC drug market are therefore required (Roblek, 2015). In the future, the key market drivers for the Portuguese OTC Pharma Industry will be the shift in consumer attitude towards self-medication; b) the rise of the geriatric population; c) Encourage shift from Rx (prescription based) to OTC (self-medication); d) Liberalization of OTC Drugs sale and e) Affordability of OTC drugs (Krishnamoorthy, 2021).

In conclusion, the main objective of the more recent set of regulatory measures is to lower government expenditure and a mix of instruments is being employed: tougher pricing rules; promotion of a framework more conducive to competition from generics; reduction of distribution margins, more rational prescription patterns by doctors and the regulation of marketing and promotional activities. Most of the measures set in the MoU have been adopted (Barros, 2012). These measures are implemented and controlled by INFARMED.

[18] Decreto-Lei nº 134/2005 de 16 de agosto
[19] Despacho n.º 17690/2007, de 23 de julho.
[20] N.º 3 do artigo 115.º do Decreto-Lei n.º 176/2006, de 30 de agosto

2.9.1 Distribution Channels in the Portuguese Pharmaceutical Market

The pharmaceutical industry is responsible for the development, production and distribution of medicines. In the pharmaceutical market, distribution stands for the process of moving goods (medicines) from a production facility to end consumers (patients), spanning two principal areas: distribution channels between customers and sellers, and logistics, e.g. the physical movement of products. There are several drug distribution channels including, in particular, direct selling, wholesaling, retailing through full and limited pharmacies, and non-pharmacy channels. Distribution channels employed by the pharmaceutical market are multi-tier and complex, as they involve pre-wholesaling, wholesaling, and retailing. This is because many medicinal products are initially moved from manufacture to pre-wholesale storage, and only then distributed to wholesalers. As a next step, pharmaceutical wholesalers supply pharmacies and other retail outlets dealing with OTC medicines. Some medicines are also sold through hospital pharmacies, and certain medicines are available from para-pharmacies, super and hypermarkets, discount and convenience stores (independent and chains), gas stations (Pieriegud, 2019) and online commerce (Figure 28). These points of sale outside the pharmacies are commonly designated “Mass Market”, the online sales are designated e-commerce, but there are not much reliable data available regarding this channel in Portugal.

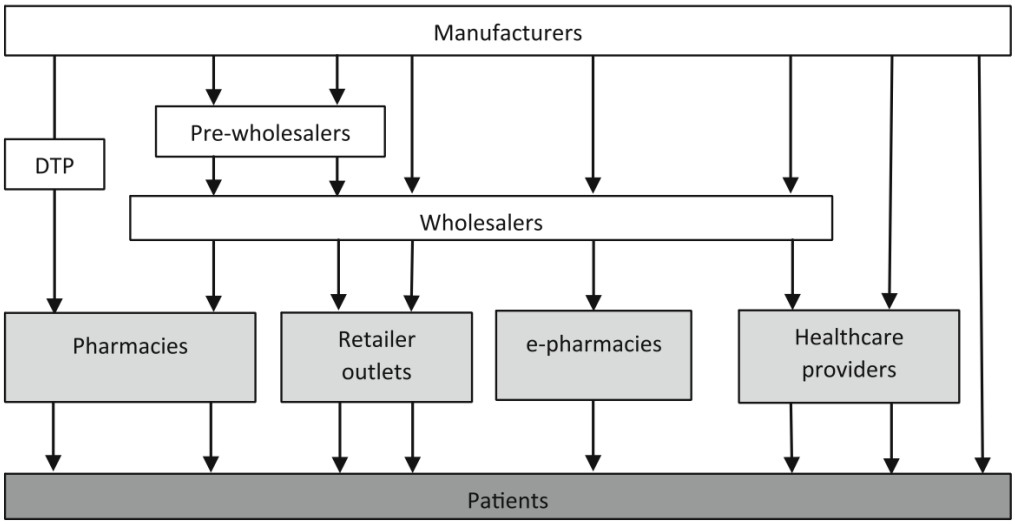


Figure 28: Pharmaceutical distribution channels

Source: Adapted from Pieriegud (2019).

Companies' distribution channel decisions are based on a complex set of criteria, which are further impacted by their financial resources and production capabilities. Large manufacturers who can afford it are increasingly combining their direct sales systems (direct-to-pharmacy (DTP)) with their collaboration with non-pharmacy retailers (Pieriegud, 2019). Also building direct interfaces to the pharmacy systems that are already organized into large

chains and therefore selling directly without human interaction. Therefore, interpersonal communication through sales calls by medical sales REP is no longer suited in a B2B approach with great advantages in the reduction of costs and with a direct impact on the margins.

2.9.2 Self-medication Market in Portugal

Self-care can be the first care delivery method ever used; this concept includes self-medication. Scientific developments, especially in the pharmaceutical sector, have resulted in previously unimagined possibilities and positive outcomes in the practice of care (AESGP, 2012). Self-medication has traditionally been defined as "*the taking of drugs, herbs or home remedies on one's own initiative, or on the advice of another person, without consulting a doctor"* (Bennadi, 2014). Also known as nonprescription drugs, OTC medications are used to self-treat mild transitory symptoms, conditions, and illnesses that do not require the approval and supervision of a physician. Most health events treated by OTC drugs are "self-limiting", referring to a condition that runs a limited and definitive course. OTC medicines are required to be thoroughly screened and approved as reasonably safe and effective for self-medication (Cîrstea et al. 2017; Delorme, Huh, Reid, & An, 2010).

People want to self-care using medicines following self-diagnosis, some reasons that lead consumers to recourse to self-medication are the desire to intervene and take care of their health; the increase in DTC advertising using traditional and digital media; the increase in consumer trends in all areas; the loss of credibility of health professionals, previous experience and increasing patient autonomy trends (Díez & Albaladejo, 2002; Ventola, 2014; Ventola, 2011). Still, the pharmacist recommendation plays an important role among the influential factors that affect the consumer's purchase decision (Temechewu, 2020).

Consumers do not hesitate to take medications that have been suggested by family, friends or who have searched on the internet. Self-medication can offer several advantages to patients including quick access to treatment, self-independence in alleviating symptoms, reduction in the cost of accessing healthcare and frequency of visits to health centres; and also, to the community, its advantages include saving medical resources, decreasing absence from work, declining pressure on medical services and providing more time for critical conditions however there are some risks at the individual level such as incorrect diagnosis, serious adverse effects, increased antimicrobial resistance, dangerous food and drug interactions, as well as drug misuse and abuse. Also, at the community level, unguided self-medication may lead to increased drug-induced disease and public expenses (Akande-Sholabi, Ajamu, & Adisa, 2021).

Portugal is still withstanding a financial crisis that is resulting in the adoption of several political measures by force of legislation to decrease the price of prescription medicines and

so creating the conditions for a positive evolution of both generics and non-prescription medicines. As a result, the self-medication market has been growing consistently over the last few years. Self-medication empowers patients to treat or prevent short term or chronic illnesses which they consider not requiring the consultation of a physician or which may be treated by the people after an initial medical diagnosis (AESGP, 2012).

2.9.3 Consumer Healthcare Market General Description

The non-prescription medicines and consumer OTC self-medication market includes several segments of the market: OTC, patient care, personal care, supplements, and nutrition segments. In Portugal, this market is deregulated, which means liberalization of the established rules for new pharmacies, liberalization of ownership and liberalization of OTC medicines sale outside pharmacies and, also the liberalization of the price and margins. Consequently, OTC medicines are sold mainly in two channels: Pharmacy and Mass Market (drugstores). There is still no data available regarding e-commerce, but it is an emerging trend.

According to INFARMED, (2020), during the year 2020, the Mass-market represented 22% of the total share of the OTC market in units and 18% in value, in Portugal. Generating a total gross value of 325 Million Euros it represents roughly 11% of the total Pharmaceutical market in Portugal. (Figure 29)

The share of "Mass Market" in the total OTC market has consistently increased since 2005, it increased by 1.4% over the same period of the previous year (INFARMED, 2020).

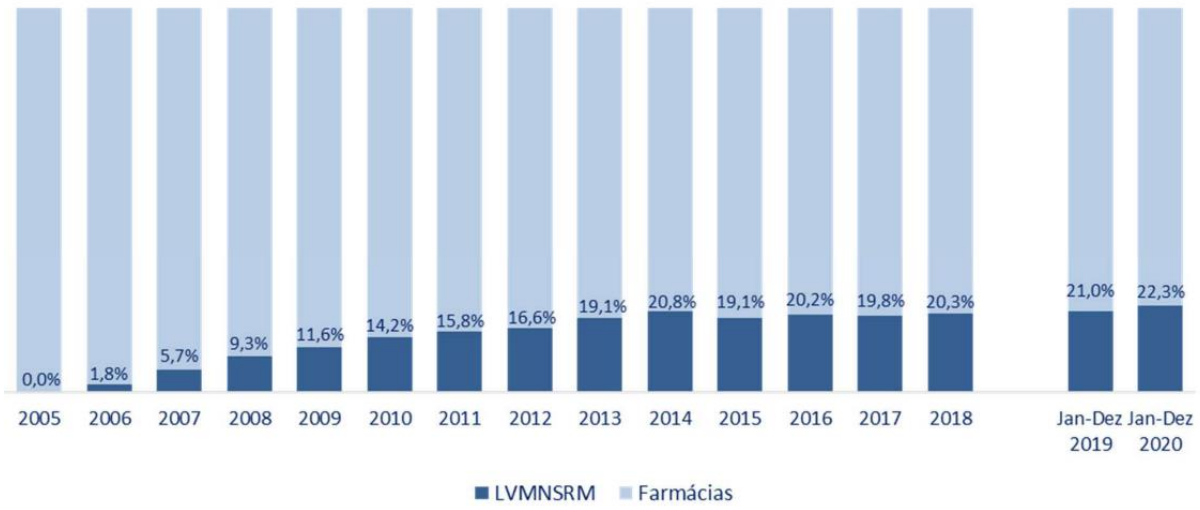


Figure 29: Evolution of market share Mass Market vs Pharmacies (Units)

We can also detect an increase in consumer prices with a price index increase of 0.4% compared to the previous year (INFARMED, 2020).

According to IQVIA Portugal, (2021)[21] the pharmacy Consumer Health (CH) represents 26% of the total Pharmaceutical market in value. (Figure 30)

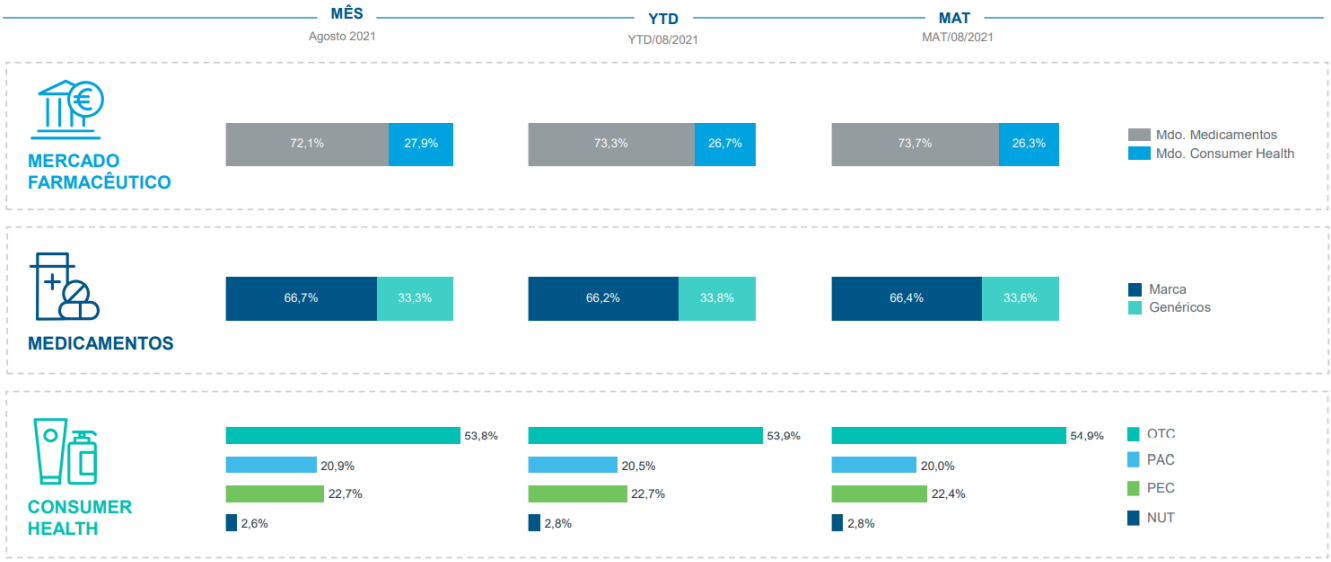


Figure 30: Pharmaceutical Market (POM; CH), Sales Value (MAT 8/21 Eur SP)

Source: IQVIA Portugal; PharmaScope Sell-Out. Pharmacy Channel. Sample of 2000 pharmacies.

The total Consumer Health market in value is worth €1,131 million and is growing 2.8% in MAT 8/2021 and is valued in compared to the previous year. (Figure 31)

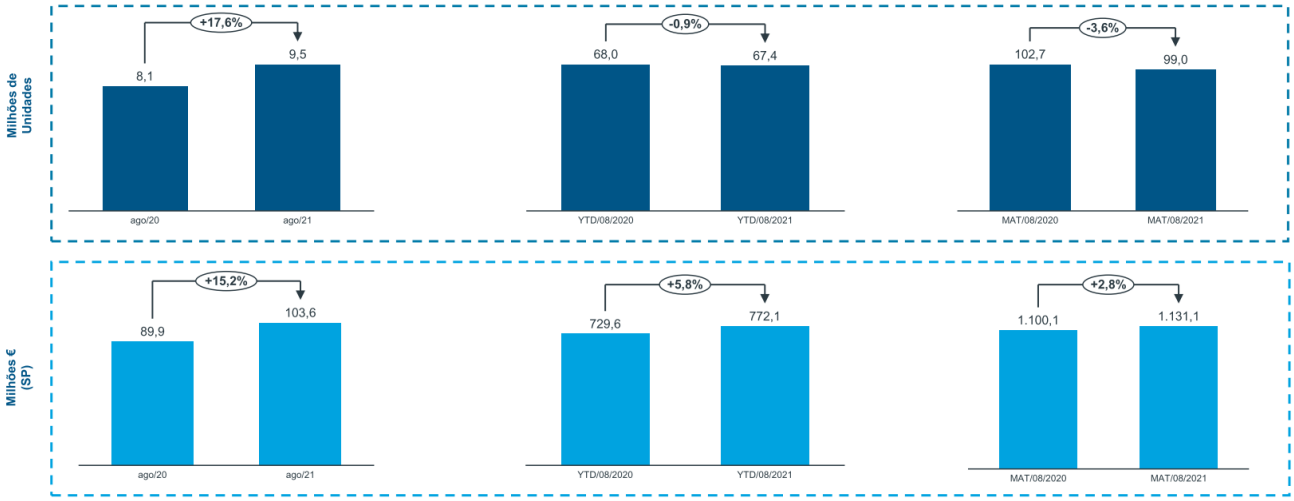


Figure 31: Consumer Health Market

Source: IQVIA Portugal; PharmaScope Sell-Out. Pharmacy Channel. Sample of 2000 pharmacies.

[21] Evolução mensal do mercado Farmacêutico em Farmácia : Agosto 2021 [Internet]. Available at https://www.iqvia.com/-/media/iqvia/pdfs/portugal/publications/agosto2021_iqvia_overview-mensal-farmcia.pdf Accessed 25 Set 2021

In August, the Protein Tests category was the one with the highest growth (+4.620K€) compared to the same period of the previous year in this category, are included COVID-19 tests developing the market with very significant growth. We can also observe that the main categories are OTC medicines analgesics and anti-inflammatory also positive growth which is consistent with the current epidemiological status of the population. (Figure 32)

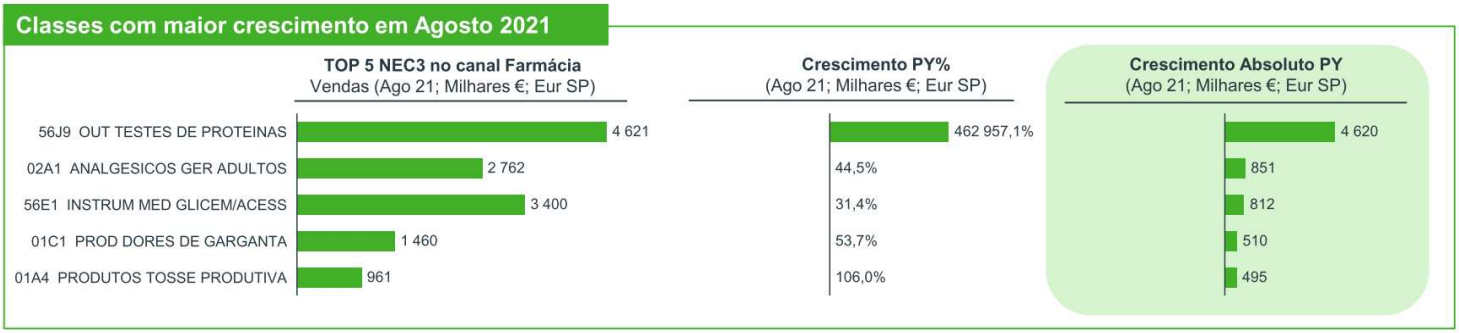


Figure 32: Main Consumer Health Categories

Source: IQVIA Portugal; PharmaScope Sell-Out. Pharmacy Channel. Sample of 2000 pharmacies.

On MAT/08/2021, the OTC segment is the most representative segment of CH sales (55%) in the pharmacy channel. (Figure 33)

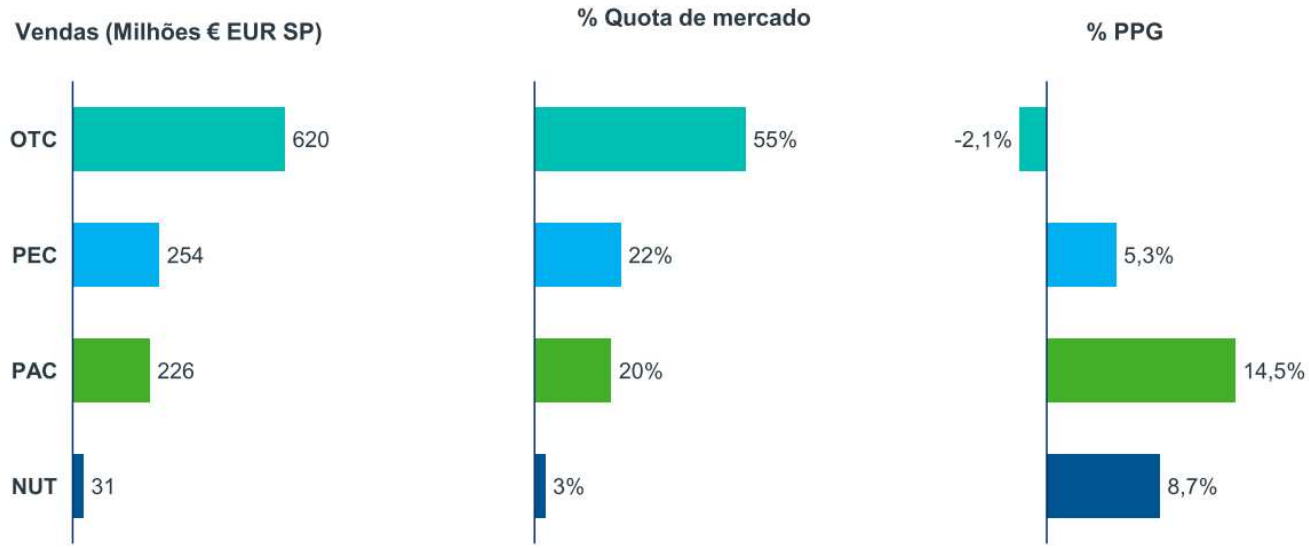


Figure 33: Consumer Health Pharmacy Market (Million € Eur SP, MAT/08/21)

Source: IQVIA Portugal; PharmaScope Sell-Out. Pharmacy Channel. Sample of 2000 pharmacies.

We can observe a negative growth of - 2.1% which is also consistent with the current pandemic situation because since the 1st emergency state declared by the Government and the mandatory confinement measures, not only did we verify a decrease in the OTC medicines

demand but also the use of masks and social distancing contributed to lower incidence on the typical seasonal influenza with a direct impact on sales.

The overall market growth registered in August'21 compared to the same period of the previous year is particularly relevant, as it may be an indicator of the recovery and, consequently, stabilization of markets in the context of the pandemic in the last year.

According to HMR: Health market research, (2021)[22] the TOP 3 brands in the OTC segment with the highest absolute variations, Daflon® in the YTD Aug'21 vs. the same period last year showed a positive evolution, both in value and in units (growths of +11.5% and +10.2%, respectively). On YTD Aug'21 occupies the top positions in the segment ranking in value and units. It is followed by Voltaren-GSK® (+6.3% growth in value and +5.3% in units) and Sargenor® with an evolution of +41.7% in value compared to the same YTD. Brufenon® is also worth mentioning, with a dynamic growth in volume associated with its launch (+65 367 Units) which allows it to occupy the third position in the TOP3 of brands with the greatest absolute variation in volume. (Figure 34)

OTCs em valor
YTD Agosto 2021

Rank var abs	Rank Valor	Marca	Var. Abs. €	Var.
1	2	Daflon	1 728 836	11,5%
2	1	Voltaren - GSK	1 146 564	6,3%
3	18	Sargenor	759 525	41,7%

OTCs em unidades
YTD Agosto 2021

Rank var abs	Rank Volume	Marca	Var. Abs. Unid	Var.
1	3	Daflon	76 262	10,2%
2	1	Voltaren - GSK	67 214	5,3%
3	96	Brufenon	65 367	-

Figure 34: Top 3 Brands (Value and Units)

Source: (HMR: Health market research, 2021)

Over the last years, the self-medication OTC segment of the market has had a positive evolution mainly due to the market liberalization, the update of the list of situations subject to self-medication, the launch of new products and the switch from Rx to OTC like, for instance, the brand Daflon®. (Figure 35)

[22] Market Watch Portugal :Agosto 2021 [Internet]. Available at https://www.hmr.co.com/wp-content/uploads/2021/09/Market-Watch-Portugal_2021_Agosto.pdf Accessed 25 Set 2021

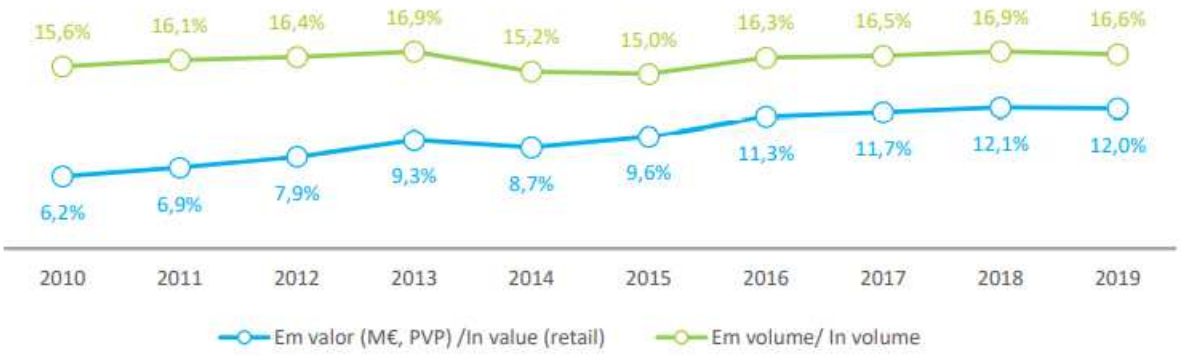


Figure 35: OTC Share evolution (%) of the total market

Source: APIFARMA (2019)

Also, regarding pricing policies, since 2010 we can observe an average absolute growth of €2.75 per unit which corresponds to an increase in prices of 35% and contributes to the positive market evolution in value. (Figure 36)

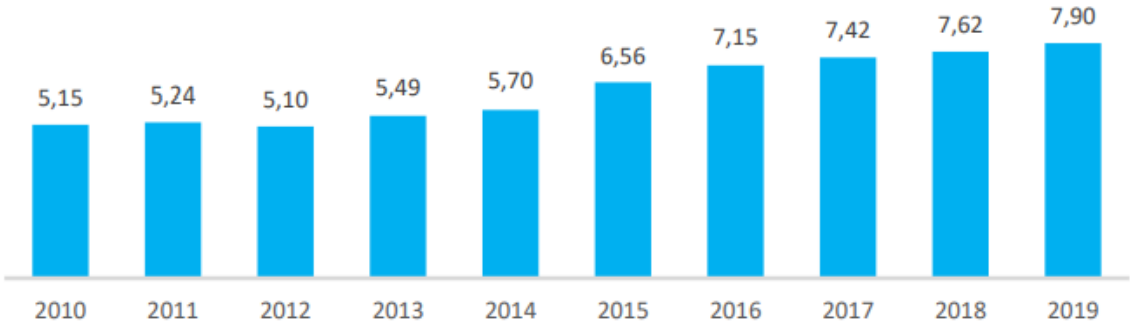


Figure 36: Average Retail Price (OTC)

Source: APIFARMA (2019)

Portuguese data on the prevalence of self-medication show it is a common practice amongst consumers, which is following international literature (Cruz, Caramona, & Guerreiro, 2015). People have gradually accepted self-medication, and the OTC market has entered a well-managed and rapidly developing period. OTC firms now face a “once-in-a-lifetime” opportunity, and there is an imperative need for them to innovate their marketing practices to find a futuristic commercial model that can adapt to a new environment. Pharmaceutical businesses are at risk of losing market share after a patent expires. Switching a POM brand drug into an OTC drug is one of the strategies for sustaining revenue and profit from the sale of this brand. The trend of reclassifying medical items as OTC medicines is in line with the already prevalent model of patient-centred care in health systems, as well as the increased autonomy of the individual patient in health care.

2.9.4 Pharmaceutical Manufacturers in Social Media

According to Ogilvy Health UK (2020) in their Social Check-up[23] best practice report of Big Pharma activities in social media and grounded in the latest guidance from the social platforms. This report identifies a new set of social leaders in Pharma's social media, scoring their practices from 0 to 20 regarding the features Corporate Identity; Content; Community management; Tech Optimization and Paid Social. Of the companies in the lowest-scoring, one third managed to keep up with the leaders in the Corporate Identity category, however, they fall behind in the other features. Most notably, they all scored just 1 point in Paid Social, showing that even when companies spend time crafting good content, it's important to use effective paid advertising to ensure posts that are seen by a relevant audience.

The corporate identity was the highest scoring category in the research, with the average company reaching 3.33 out of a possible 4 points. A notable eight companies achieved top marks and twelve companies were operating at good Social Health, 27% of the firms evaluated didn't link to all social channels from their corporate website. It was also found that all 15 companies had a consistent brand tone of voice from platform to platform and logos were used correctly across the channels. 20% of the companies were inconsistent in the look-and-feel across the channels, with no distinct visual style that linked them.

Consistent messaging and visual branding (logos, colours, tone of voice etc.) across all platforms is key to reinforcing company identity and driving positive sentiment and trust. This review analysed whether each social media post had one clear and simple message and if the post format was optimised for the objective. It looked at whether the companies worked with internal or external social media influencers in the creation of their content, and if the company shared useful content from other users. While the average score in the category seems promising at just under the good Social Health threshold (2.93/4), only 40% of the companies were individually scored as socially healthy. This was the lowest percentage seen across all categories. Only five companies (33%) were able to consistently demonstrate that all their posts had one clear message and used an appropriate post format to achieve the objective. Posts using video or an image have risen by 13%. In many cases, posts seemed to be aimed at more than one audience. Interestingly, for corporate channels, most posts were written with messaging that spoke directly to patients, Health-Care Professionals (HCPs) and the general public, with fewer employee/careers focused posts and those directed at shareholders and investors. Overall posts were aimed at more than one target audience.

[23] The Social Check-up: 2020 [Internet]. Available at https://www.slideshare.net/OgilvyCommonHealth/the-social-checkup-2020-231998480 Accessed 25 Set 2021

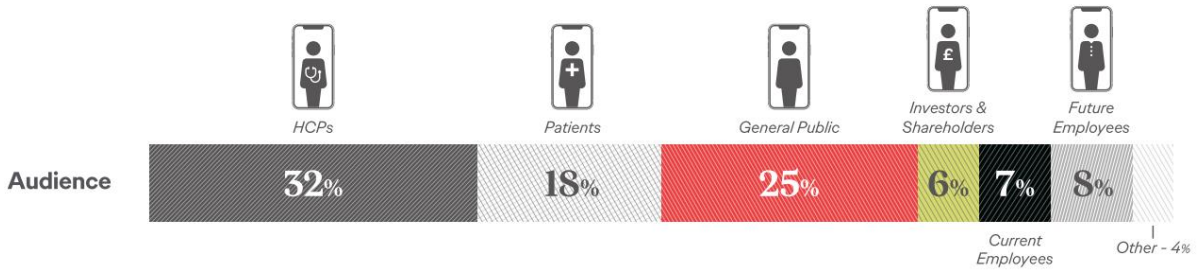


Figure 37: Big Pharma Social Media Audiences

Source: Ogilvy Health UK (2020).

Ogilvy Health UK (2020) also analysed how the pharma companies interacted with their followers, including frequency of posting, speed of response, tone of voice, and whether their pages linked to clear community guidelines. Only two companies managed to score top marks in this category so, it became clear that the time taken to respond to posts was an area where most companies dropped points and 20% of the companies analysed did not update their social channels during 2 weeks. Only three out of the 15 companies responded to user comments consistently within one working day of the original post. Five companies inconsistently, rarely, or never made a public response to user comments. Regarding the tone of response 80% of companies responded appropriately on social media, but only 25% of these used personalised responses. Regarding tech optimization, 67% of the companies had images and videos optimized for social and 87% used correct hashtags and the text was a suitable length for social media. Regarding accessibility, seven pharma companies showed evidence of proper mobile consideration in their social posts and 99% of global social users already access social media from a mobile device[24].

Ogilvy Health report also analysed whether the company used social media ads on Facebook, Twitter, Instagram and/or LinkedIn. It also analysed whether there was pixel tracking set up on the corporate website homepage. And concluded that Paid Social was the weakest area of social media within Pharma, six companies scored a total of just one point additionally 57% of the companies didn't use paid social.

In conclusion across the five categories, Corporate Identity was the strongest, overall, with 80% of companies operating at good Social Health by ensuring a consistent tonal and visual presence across channels. On the other hand, Content was the weakest category, with 60% of companies not operating at good Social Health, due to trying to put too many messages in each post, and a lack of curated content (a tactic widely used across other industries to reinforce community engagement and help make connections with relevant influencers and

[24] We Are Social & Hootsuite, Digital 2020 Global Digital Overview

leaders). Whilst the use of social media by Pharma is more advanced than in previous years, 53% of companies were not operating at good Social Health (Ogilvy Health UK, 2020).

Although overall, pharma companies have started to refine the way they are using social media, posting less frequently with a more targeted approach to ensure their content reaches the right user at the right time the companies avoid making drug product claims on their social media accounts but frequently post content that is consistent with FDA or EMEA definitions for help-seeking DTC (Tyrawski & De Andrea, 2015). All the sectors have been adapting to the digital era at a faster rate. However other than the website, the pharma industry has not quite been able to adopt digital marketing. In this era, more pharmaceutical companies exploit social media sites or e-commerce sites as digital marketing platforms. This enables the online purchase of products by the customers. Some organisations are trying to understand the true value of digital, while others are integrating it into the wider marketing strategy (Parekh, Kapupara, & Shah, 2016).

Social media brings a new dimension to health care as it offers a medium to be used by the public, patients, and health professionals to communicate about health issues with the possibility of potentially improving health outcomes. Social media is a powerful tool, which offers collaboration between users and is a social interaction mechanism for a range of individuals. Although there are several benefits to the use of social media for health communication, the information exchanged needs to be monitored for quality and reliability, and the users' confidentiality and privacy need to be maintained (Moorhead et al. 2013). Considering that consumers are increasingly using the internet, predominantly social media, to research information related to their health issues (Zhou, Zhang, Yang, & Wang, 2018), although social media have been leveraged in a variety of ways aiming to improve health care, current research is still in the early stage. As so this research attends to address that gap and is very innovative because it will provide a better understanding of the consumer behaviour and decision making-process by focusing on the influence of eWOM in intention to purchase an OTC medicine in Portugal, with the purpose to design the suitable background for the improvement of the Pharmaceutical Digital Marketing strategies, by providing rich insights to promote healthier consumer engagement with the brands.

2.9.5 Consumer Trends and Omnichannel

The emergence of new technologies has revolutionised the way companies interact and engage with customers. With the explosive growth of online shopping in the wake of the COVID-19 pandemic, today's consumers would like to buy anything from anywhere, anytime without visiting the physical stores. In particular, customers constantly seek ways to compare different product offerings at different prices, check inventory statuses, and then order products

online for local in-store pickup, using mobile devices and personal computers (Min, 2021; Straker et al. 2015). Pharma Industry is adapting to this “New Normal” and is slowly developing the skills to understand and exploit new digital channel opportunities. The COVID-19 pandemic has put a spotlight on the vital role that the medical affairs and marketing functions play within a pharmaceutical organization during a crisis.

Social networks allow retailers to contact millions of consumers and promote their products and services (Belu & Marinoiu, 2014). Nowadays the major tendency in the pharmaceutical industry is digitalization. Digital technology influence both external media-related and internal aspects of the company’s business operations. Given that, the defining element of pharmaceutical companies is the fact that they operate in B2B and B2C markets. Integration of online and offline environments, application of omnichannel approach allows for the creation of a continuous process of a company’s interaction with partners and intermediaries, as well as end customers (Azoev, Sumarokova, & Butkovskaya, 2019; Pieriegud, 2019). Information technology has produced significant changes, not only in consumer behaviour but also in the relationship that it has with the retailer. If until recently the consumer was the one who went to the store, today, the situation has reversed, consumers who have grown accustomed to good customer service from online retailers are raising their technology expectations across the spectrum (Belu & Marinoiu, 2014). And the digital revolution that is driving that development is now causing major changes in the way healthcare and pharmaceutical companies do business. Pharmaceutical businesses are increasingly expected to provide high-level, non-promotional scientific material and interaction to health care professionals, as well as fast access to digital resources and services and develop consistent communication to the patients developing consumer-centric strategies (Agarwal et al. 2020).

Omnichannel marketing allows the synergistic management of all customer touchpoints and channels both internal and external to the firm to ensure that the customer experience across channels as well as firm-side marketing activity, including marketing-mix and marketing communication (owned, paid, and earned), is optimized for both the firms and their customers (Cui et al. 2021)

Experts say that properly integrating digital channels into an omnichannel environment reduces barriers for consumers on the one hand and business growth on the other, allowing businesses to use their capabilities and skills to benefit their traditional channels. Digital transformation allows you to combine channels and create a more efficient customer communication strategy. Innovative businesses combine the characteristics of each channel that their customers appreciate the most to produce a more valuable overall

experience (Azoev et al. 2019). Omnichannel transcends multi-distribution, multi-media channels connecting the Internet (e.g., social media, web sources), mobile tech (including ubiquitous), and conventionally operation into a seamless integration through multiple touchpoints (Min, 2021; Straker et al. 2015). (Figure 38)

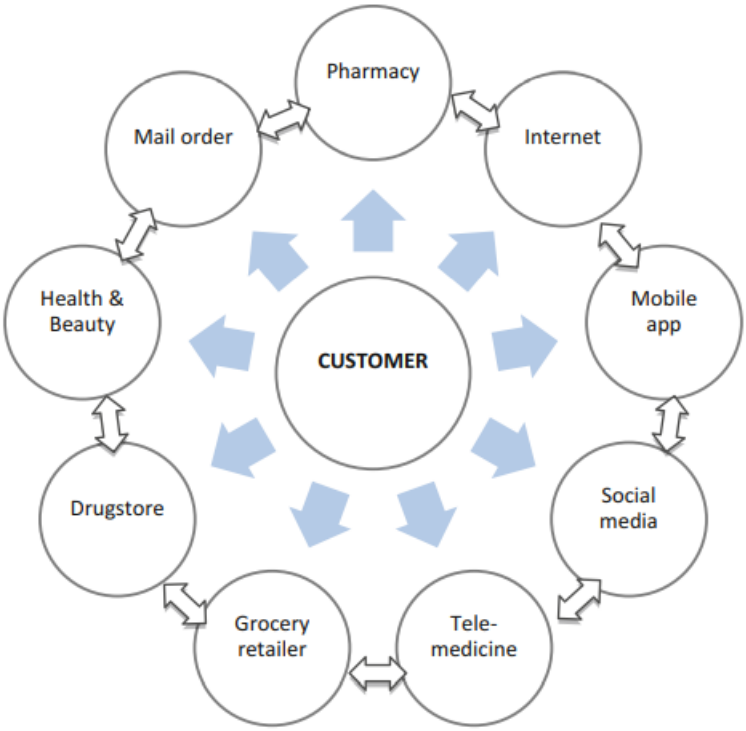


Figure 38: Omnichannel in the retail pharmaceutical market

Source: Adapted from Pieriegud (2019)

Instead of one-way communication, omnichannel allows online customers to have two-way conversations with retailers through interactions between the customer and the business (e.g., advertisements) (Min, 2021). The huge number of users on the Internet is a useful means of spreading information and thus the “go viral” effect has a higher potential in eWOM than WOM (Aramendia-Muneta, 2017). The multichannel approach is being gradually replaced by omnichannel using the most effective channels, which must be integrated, with each other. Omnichannel is a marketing term, which means mutual integration of separate communication channels into a unified system with the goal of continuous and uninterrupted communication with the client (Azoev et al. 2019). Though the omnichannel and multi-channel are similar in that the omnichannel is a specific example of a multi-channel, the omnichannel differs from the multi-channel in several ways, as revealed in Table 9.

Table 9. Differences between the Multi-Channel and Omni-Channel

Multi-Channel	Omni-Channel
Provides customers with a variety of platforms or channels to facilitate the sale of products.	Integrates the various retail channels to provide customers with a consistent brand experience through empowerment
Channels are disconnected and separated from each other with silos (or no overlap).	Channels are integrated.
Information across the channels is disjointed	Information across the channels is seamlessly coordinated and shared with customers.
	Tends to utilize social media and mobile technology more than the traditional channel.

Source: Adapted from Min (2021)

Consumer-centric approaches imply the use of multiple channels to interact with clients, and precisely due to the use of a unified system, clients view their interaction with a brand or company as uninterrupted (Martínek, 2021). The efficiency of said strategy is proved by the successful experience of leading healthcare companies, such as Johnson&Johnson, which created a flexible, yet secure digital IT organization to support the faster development of smart healthcare products and improve customer and patient experience with the company (Azoev et al. 2019; Cordon, Garcia-Milà, Vilarino, & Caballero, 2016).

Omnichannel marketing has been fuelled by the idea that the different stages of the customer journey can be decoupled and delivered by various entities. In consequence, for firms, omnichannel marketing entails managing a combination of different types of channels such that they align well with the way their customers search, purchase, and consume their products and share those experiences with others spreading positive eWOM (Aramendia-Muneta, 2017; Cui et al. 2021). Advertising and online selling of POM are forbidden by law, there are also some restrictions regarding OTC and dietary supplements and other similar products. As so to comply with these regulations, large companies carefully check all communication content to eliminate possible risks, although it is these kinds of restrictions that encourage marketers of pharmaceutical companies to use non-standard marketing technologies like online events on the Internet, creation of medical social networks, integration into life-trackers, digital channels of interaction with doctors and pharmacists in the framework of educational or loyalty programs (Azoev et al. 2019).

The promotion of OTC medicines allows the use of digital marketing strategies. Rendering Azoev et al. (2019) depending on the characteristics of a particular medicine, pharmaceutical companies use video advertising, Search Engine Optimization (SEO), native and performance advertising in differing proportions. Common digital marketing pharmaceutical practices are:

- Online video advertising allows to optimize a traditional TV channel and reach a larger share of the target audience;
- SEO and native advertising allow converting already interested Internet users. For example, the recommendation widgets in native format allow to solve the problem of banner blindness and the transfer of negatives from the already familiar media format of advertising to the advertised brand itself;
- Creation of mono-brand sites and landing pages: communication strategy "one brand = one site" is very common in the pharmaceutical market. Corporate website with designed landing pages for their key OTC brands;
- Audience retargeting with the help of performance: allows to influence undecided users and to achieve an increase in targeted actions about the brand, e.g. purchase of medical equipment and feedback.

According to McKinsey (2019),[25] Omnichannel strategies delivers an integrated sales and service experience throughout an entire consumer journey, whilst the company is always reachable and perfectly informed about the consumer's needs, and its offerings are consistent at all touchpoints. In an omnichannel era, attracting and retaining consumers' attention requires the capacity to harness customer data so that communications can be personalized to the purchaser's chosen channels and communication behaviour, as authorized by local legislation. For this reason, all forms of modern advertising should offer a consistent message that is relevant to the needs of consumers. To do this, systematic leads management must collect promising leads and integrate them into a single view. A leads engine should then identify the most promising leads and determine each consumer's preferences. Existing internal and third-party data can be leveraged to provide intelligent plan recommendations without requiring the consumer to provide any information. Finally, cross-channel campaign management ensures that potential members are engaged in the most effective manner possible. From a consumer's perspective, continuous integration is the ability to switch easily between channels at any time without having to provide information twice (Figure 39).

[25] Omnichannel consumer interactions – a payer perspective [Internet]. Available https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/omnichannel-consumer-interactions-a-payer-perspective Accessed 27 Set 2021

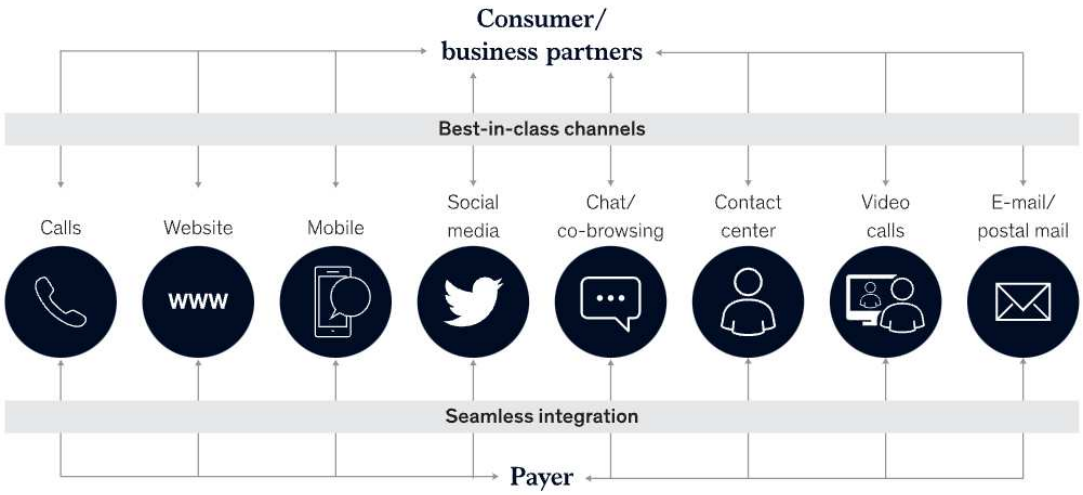


Figure 39: The most relevant channels for payers' omnichannel capabilities

Source: Adapted from McKinsey (2019).

McKinsey (2019) states that in addition to improved consumer experience, omnichannel can yield substantial business driving their efficiency whilst reducing operational expenditures on companies' service in three ways:

- Lower volume: In addition to reducing the number of personal interactions that posts a request, the self-service made possible by omnichannel decreases the total number of affiliate requests.
- Higher throughput: Omnichannel provides greater efficiency in request handling and more effective deployment of customer service representatives, yet the increase in costs for digital channels is negligible.
- Reduced structural costs: The decreased need for contact centres and branch networks made possible through omnichannel reduces property costs and administrative overhead.

Pharmaceutical companies will be able to increase the value of their products by integrating advanced technologies to transform businesses and marketing tools. The scope of digital innovation is vast, but the fundamental goal is to improve the efficiency and personalization of products and services. To do so, each organization must first determine how much of its business is affected by digital transformation and then develop a strategy to address it. Omnichannel adoption will assist pharmaceutical companies in both the B2B and B2C segments to achieve a double synergistic effect. First and foremost, if communications for the B2B and B2C markets are integrated, for example, by combining the target audience of marketing and advertising activity (Pieriegud, 2019).

2.10 Literature gaps and main objectives

Limited studies have examined the role of eWOM in accessing the consumer behaviour intention to purchase an OTC medicine; this is a research gap.

The relationship between WOM and purchase intention has been studied by a great number of previous researches; thus, the impact of WOM on consumers has long been acknowledged (Brown & Reingen, 1987; Trusov et al. 2008). The relationship between eWOM and purchase intention has also been studied by many researchers, with the majority of them finding that eWOM influenced consumers (Cheung & Thadani, 2012; Prendergast et al. 2010). More specifically, previous researchers have focused on eWOM in a variety of different platforms provided by the Internet. The impacts of eWOM on blogs (Chang & Wu, 2014; Cheung & Lee, 2012; Zhu & Zhang, 2010), consumer review (Tajuddin et al. 2020; Chang, Lee, & Huang, 2010; Park & Kim, 2008; Purnawirawan et al. 2012; Zhang, Zhao, Cheung, & Lee, 2014; Zhu, Chang, & Luo, 2016), discussion forums (Fan, Miao, Fang, & Lin, 2013; Mikalef et al. 2013; Prendergast et al. 2010; Purcarea et al. 2013) and shopping websites (Awad & Ragowsky, 2008; Elwalda et al. 2016; Erkan & Evans, 2018; Fan & Miao, 2012; Lee & Shin, 2014; Park et al. 2007; Yan, Wu, Zhou, & Zhang, 2018) have all been studied by researchers. Nevertheless, due to being relatively new, far less attention has been given to the influence of eWOM transmitted via social media (Cheung & Thadani, 2012). Even though the research continues eWOM on social media and it has become a prominent topic by some researchers over the last years (Alhidari et al. 2015; Arekar et al. 2021; Chen et al. 2016; Erkan & Evans, 2016; Fang, 2014; Huang & Lee, 2021; Jaini, et al. 2020; Kim & Johnson, 2016; Kudeshia & Kumar, 2017; Ladhari & Michaud, 2015; Lam et al. 2019; Leong, et al. 2021; Roblek, et al. 2018; Torres et al. 2018; Shu & Scott, 2014; Sidharta et al. 2021; Teixeira, et al. 2018; Wang, Zhang, Zhou, & Lai, 2019; Wang, Yu, & Wei, 2012), there is still a lack of research regarding the determinants of eWOM information on social media (Dwivedi et al. 2016) which influences consumers' purchase intentions in general and, despite the growing number of studies on social networks in healthcare, efforts to map the overall research on social networks' use in healthcare have so far been rather limited (Pianese & Belfiore, 2021) and even more regarding the consumer purchase behaviours of an OTC medicine in particular.

Previous studies show that researchers emphasize different variables, which are derived from the perspective of the message (e.g., message credibility), the perspectives of the influence of environment on information receivers (e.g., perceived risk and satisfaction), the perspective of receivers themselves (e.g., recipient response) and the perspective of interpersonal factors (e.g., tie strength and social influence). Because of these different perspectives, these researches confirm the influences of different variables on the information

adoption processes of online users (Wang, 2016). So far there is little research in the perspective of information senders and it will be valuable to be analysed because communication is a process by which individuals (namely information senders) transmit stimuli (namely the message) to modify the behaviour of others (namely information receivers) (Hovland, Janis, & Kelley, 1953) the current research intends to address that gap.

Pharmaceutical brands are aware that they should communicate with consumers in an informal style on social media (Rader et al. 2014), however, there is a lack of research on how this communication influences consumer behaviour and its impacts the purchase decision (Ahmad et al. 2020; Rahayu et al. 2017). Consequently, this study analyses how social media impacts consumers intention to purchase OTC products in social media, through a cross-sectional survey methodology (Erkan & Evans, 2016). Ultimately, due to the substantial growth of social media, there is a need for both academics and marketers to understand its relationship with strong marketing tools such as eWOM. This research, therefore, aims to provide a better understanding of eWOM on social media.

2.11 Research Questions

The development of Web 2.0, Web 3.0, and social media technologies allow low-cost online marketing, including e-commerce. An organisational adaptation is required to cope with the changes in the OTC drug market, because of the widespread use of the internet and social media. The increased importance of digital media for marketing has convinced the OTC Pharmaceutical industry to include the use of social media in its customer relationship management strategy (Roblek, 2015). Due to the vast amount of online information that consumers are exposed to, they need to critique and screen the information before using it. The purpose of the present study is to expand the current literature on the mechanism between eWOM on social media and consumers' purchase intentions of an OTC medicine, which has not yet been explained, even though some previous studies discovered the impact of eWOM on social media (Cheung & Thadani, 2012; Cheung, Sia, & Kuan, 2012).

Taking into account the importance that corporate marketing assumes in the Pharmaceutical Industry goals to increase its reputation and consequent credibility (Roblek & Bertoncelj, 2014) we have added the new variable source credibility's effect into the IACM model, intending to find out the influence of the source of information credibility on the purchase intention of an OTC medicine. Marketers must examine consumer responses to consumers´ endorsement when advertising products related to drugs, as it may differently influence the effectiveness of this technique.

Research on the importance and impact of the internet and social media marketing of OTC medicines has, as far as we are aware, not been carried out yet in Portugal. To assess

the consumer's behaviour and intention to purchase an OTC Pharmaceutical product, regarding the usage of social media networks, the following questions will be considered in this investigation:

The main research questions are:

RQ1) *What are the determinants of eWOM information on social media which influence consumers' purchase intentions of OTC medicines?*

RQ2) Which dimensions of source credibility are more correlated to consumer behaviour intention to purchase non-prescription medicines in the context of social media?

RQ3) Is eWOM between familiar people on social media or eWOM between anonymous people on other online platforms more influential on consumers' purchase intentions of non-prescription medicines?

RQ4) How do gender characteristics influence consumers' purchase intentions of OTC medicines in social media?

It is essential to understand and analyse the factors that affect the buying behaviour, for marketers, to better target their efforts. The adoption of digital technologies and social networks have motivated changes in consumer behaviours and the relationship between consumers and firms, giving rise to a digital and multichannel consumer. Nowadays companies face more demanding and rational consumers in their purchases, over which the Internet exerts great influence when searching for information to choose products, as it allows comparisons and the free exchange of information about the brands through eWOM. It will be very relevant and innovative to understand the factors that influence eWOM adoption and consequent consumer buying behaviour of an OTC medicine in Portugal.

The second research question will intend to assess the consumer behaviour towards eWOM information, e.g., if the characteristics of the issuer (source credibility), present greater importance in consumer purchase intent, compared to characteristics of the receiver. The applied methodology will be the IACM model. But we propose an extended eWOM adoption model that provides value beyond the cognitive aspect (credibility) in explaining eWOM adoption on social networks. Specifically, in line with previous literature on information adoption, we have decomposed source credibility into the source: expertise, trustworthiness, homophily, tie-strength and reputation (peripheral cues) as drivers of the credibility of eWOM to manifest the cognitive path.

The third research question intends to explore if the information conveyed by family and friends has more weight in the decision to purchase an OTC medicine than anonymous reviews.

The fourth research question aims to evidence that eWOM communication has a stronger effect on females than males. Behavioural differences between genders might have a significant impact on the digital marketing strategies of a Pharmaceutical product from a managerial point of view. At present, there are no studies about the possible discrepancy of eWOM behaviour regarding, gender, age, culture in the Healthcare segment of the market.

2.12 Summary of the chapter

This research aims to understand the influence of eWOM in the context of social media on the purchase intention of OTC medicines. Therefore, we can briefly state that these correspond to online recommendations, ratings, and statements, positive or negative, about products or services, shared on social networks, forums, among others. Thus, reviews are shared by past or current OTC consumers who, in addition, are users of social media, which makes them reviewers. Therefore, the reviews are within one of the eWOM categories which, is the evolution of the traditional WOM to digital and contributes to its mass dissemination. Consequently, sharing opinions and experiences about a particular product or service become available for all users of social media and potential consumers. Reviews can be created in a variety of ways, in addition to texts, such as videos and/or audios, and reviewers go through to be content creators, but without financial benefit.

Several theoretical attitude behaviour models were developed to explain the influence of these conversations in the technological context, such as the TAM, of Davis (1989), the IAM by Sussman and Siegal (2003) and IACM by Ekran and Evans (2016). In the first, it is clear that the ease of use of a given system influences, the perception of usefulness by consumers and affects the intention to use. In the second, it is understood that the quality of the argument and the credibility of the source positively influence the perception of the usefulness of the information, which, in turn, influences the adoption of this same information by consumers. The third confirms that quality, credibility, usefulness, and adoption of information, needs of information and attitude towards information are the key factors of eWOM in social media that influence consumers' purchase intentions. Taking into account what has been mentioned, the antecedents of the intention to purchase applied in this investigation were adapted from both IAM and IACM models and will be further detailed in the next chapter. We will incorporate relevant factors of the four major elements of eWOM communication: Communicator, Stimulus, Receiver, and Response.

The OTC medicine purchase intention appears as a dependent variable conceptualized as the desire to buy this particular product and as a likely future acquisition. Subsequently, we provide an overview of the study context pharmaceutical market and

consumer healthcare segment in particular. At the end of the chapter, the main literature gaps are referred as well as the research questions which our study aims to answer.

Considering the above discussion, the next chapter considers the conceptual model, proposed objectives, research hypotheses, and operationalization of the constructs that will contribute to the research's object of study as well as the expected managerial and theoretical implications.

CHAPTER 3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

This chapter presents the proposed conceptual model for the research and explains the theoretical arguments that support the research hypotheses that will be empirically tested.

When examining purchase intention, it is vital to remember that this is part of the product or service purchase decision, which is determined by how the consumer seeks and evaluates available information. This study aims to evaluate the influence of e-WOM on the purchase intention of OTC medicines in Portugal, and for this, the same concepts will be used as those analysed in the models proposed by Erkan & Evans (2016) and Sussman & Siegal (2003). Based on the analysis of these studies and the remaining literature review, we identified several dimensions that are crucial to this study to build the theoretical conceptual model, the relationships between the constructs: source credibility, information quality information credibility, needs of information, attitude towards information, information usefulness, information adoption and purchase intention. Those dimensions will be discussed further below.

This chapter is divided into three sections: the first introduces the conceptual framework, the second establishes the research hypotheses to be tested and we anticipate expected research contribution from both theoretical and managerial implications and finally in the third we present the summary of the chapter.

3.1 Conceptual Framework

As this research question focuses on eWOM regarding OTC medicines on social media platforms, the use of the Information adoption model (IAM) model (Sussman & Siegal, 2003) is found inappropriate for this study because it is limited to characteristics of the eWOM information (quality, credibility and usefulness), Erkan & Evans (2016) claim that eWOM's influence not only depends on these but also depend on the behaviour of consumers regarding information.

As discussed in section 2.3.7, the IAM postulates that a message can influence people's attitudes and behaviours in two ways: central (rational) - refers to the nature of the arguments in the message - and peripheral (emotional) - refers to issues that are not related to the subject of the message (Petty & Cacioppo, 1986; Cheung et al. 2008). The IAM aims to explain how individuals are affected by information to adopt it, adapted to the context of communication platforms mediated by the computer, thus being a suitable model for eWOM studies. The components of IAM are fundamental to this study such as source credibility, information quality, information usefulness and information adoption. However, these components are insufficient to explain the purchase behaviour (Erkan & Evans, 2016).

According to Erkan & Evans (2016), the characteristics of eWOM information are insufficient to examine the impact of eWOM on consumers' purchase intentions; the behaviour of consumers toward the eWOM information should also be considered. While developing the IACM, both eWOM information characteristics and consumer behaviour toward eWOM information are taken into account. For this reason, the conceptual model that will be applied in this work will be based on extending this model incorporating variables from the information acceptance model (IACM).

IACM examines the relationships between the following variables: information quality, information credibility, needs of information, attitude towards information, information usefulness, information adoption and purchase intention (Erkan & Evans, 2016). The IACM model is extending the IAM through integrating the related parts of the Theory of reasoned action TRA (Fishbein & Ajzen, 1975) which are attitude and behavioural intention. This model provides an adequate theoretical framework to understand how different characteristics influence Information Usefulness, Information Adoption, and, finally, Purchase Intention.

Yale model for attitudinal change Petty & Cacioppo (1986a) studies how people's opinions and attitudes will be influenced by the persuasion of communication in which three main components have been singled out: communication source, communication character (message) and audience character (message receiver) (Chang, Yu, & Lu, 2015; Cheung et al. 2008). eWOM represents a new way of content media (stimulus or information), involving individuals who receive the information (receivers) and individuals who share it (issuers or sources) (Cheung & Thadani, 2012). Based on these concepts, the model in this study takes into account characteristics of the message (quality of information and credibility of information), such as the characteristics of the issuer (credibility of the source), and characteristics of the receiver (information needs and attitude towards information) defined as consumer behaviour towards information eWOM in the Erkan & Evans, (2016) study, which are considered important determinants that explain the impact of eWOM communication in the decision-making process, more specifically, in the consumer behaviour purchase intention. Precisely, IACM assumes that consumers who adopted eWOM information are more likely to develop purchase intention. Table 10 describes the constructs used in this research.

Table 10. Characterization of variables used in the model

Classification	Constructs
Characteristics of the message (stimulus)	Information Quality Information Credibility
Characteristics of the issuer (source)	Source Credibility multidimensional construct decomposed in: Homophily; Expertise; Trustworthiness; Tie Strength and Reputation
Characteristics of the receiver (audience)	Needs of information Attitude towards information
Dependent Variables (response or expected behaviour)	Information usefulness Information adoption Purchase Intention

3.2 Research hypotheses

To meet this central objective, thirteen hypotheses have been proposed in line with the adopted conceptual model. We have decided also to add another five hypotheses related to the conceptualization of the high order construct source credibility as a sub-research objective.

Information adoption has been defined as the extent to which consumers modify their behaviour by using the suggestions made in online reviews (Filieri & McLeay, 2014; Sussman & Siegal, 2003). It plays a vital role in the process of individual behavioural intention through intentionally adopting information (Cheung et al. 2008; Hussain et al. 2020). Social media has increased consumers' sharing of information, opinion, and experience, which served as a proper information source for individuals who are seeking and adopting information when the information is found to satisfy the social media user's need (Leong et al. 2021). However in the digital environment, the consumers are exposed to a multitude of eWOM information, not all the information has the same impact (Metzger, 2007). Cheung & Thadani, (2012) found that information adoption is one of the determinants affecting consumers' purchase intention. Numerous studies further identified information adoption on social media tends to affect the purchase intention of an individual and there is a positive relationship between eWOM information adoption and purchase intention (Daowd et al. 2021; Khwaja & Zaman, 2020; Sussman & Siegal, 2003; Wang, 2016; Yang et al. 2011). According to Erkan (2016), the adoption of eWOM information that is received on the part of consumers leads to a higher intention to purchase. As so OTC medicine consumers who engage and adopt eWOM information are more likely to have intentions to purchase it. Thus, it is proposed in the present

study that the adoption of information by OTC medicine consumers has a positive influence on their purchase intention.

H_1 Adoption of eWOM information is positively related to consumers' purchase intention of OTC medicines.

The usefulness of information refers to the individual's perception of how useful this may be new information to help you better decisions (Erkan & Evans, 2018; Hussain et al. 2017). This variable is considered an important determinant of the adoption of information either to services and products as well as non-prescription drugs (Davis et al. 1989; Holtgräfe & Zentes, 2012; Ngarmwongnoi et al. 2020). Previous studies related to eWOM showed that the usefulness of eWOM information influences the adoption of eWOM information (Cheung & Thadani, 2012). Consumers who consider a piece of information as useful, the greater the probability that they place confidence in the information and adopt it (Cheung et al. 2008). Therefore, it is anticipated that the usefulness of the eWOM information from OTC medicine consumers that engage on social media positively influence the adoption of eWOM information. Thus, the following hypothesis is proposed.

H_2 Usefulness of eWOM OTC information is positively related to the adoption of OTC eWOM information.

The quality of information refers to the persuasive force of the message (Bhattacherjee & Sanford, 2006). Individuals find the information useful if it is objective, clear and that presents arguments to support the idea. If a consumer believes that a piece of information is of low quality, he or she will disregard it and it will be meaningless in the purchase decision-making process. Erkan & Evans (2016) explored the influence of this type of communication on social media on the purchase intention of consumers and found that the quality of eWOM information has a direct positive influence on the usefulness of eWOM information. As a result, it is expected that the quality of eWOM information derived from OTC medicine consumers that engage in social media will have a positive impact on the usefulness of eWOM information. In the context of eWOM, the quality of information has been identified as an important factor influencing the perception of the usefulness of information (Cheung et al. 2009; Sussman & Siegal, 2003).

H_3 Quality of eWOM OTC information is positively related to the usefulness of eWOM information.

The credibility of the information refers to the recipient's perception of the message's credibility (Erkan & Evans, 2016). Because of the ease of access to information online, any individual can spread information, whether genuine or false. As a result, when searching for information online, consumers can benefit significantly by assessing the credibility of the

message. Cheung et al. (2008) state that when a consumer seeks information through online reviews, this information will be useful if it is credible, otherwise it will be ignored to avoid potential risks. Information provided by highly credible sources are seen as valuable and they promote the transfer of knowledge, it is also the initial factor in the individual persuasion process (Erkan & Evans, 2016). Erkan & Evans (2016) confirmed that the credibility of eWOM information positively influences the usefulness of eWOM information. Therefore, the credibility of eWOM information coming from OTC medicine consumers that engage on social media sites is expected to positively influence the usefulness of eWOM information.

H_4 Credibility of eWOM OTC information is positively related to the usefulness of eWOM information.

IACM model includes the needs of information variable as a determinant of eWOM in the influence of purchase intent when considering that individuals who need and seek information will be more likely to find the most useful and adopt it (Erkan & Evans, 2016).

Fishbein and Ajzen (1975) in the development of the Theory of Reasoned Action (TRA) demonstrated how individuals process information and use it systematically on forming behaviour. Other studies have also shown that consumers behaviour in advice seeking and opinion seeking are the motivators for eWOM engagement (Chu & Kim, 2011; Hennig-Thurau, 2004; Gwinner, et al. 2004; Leong et al. 2021; Wolny & Mueller, 2013; Yusuf et al. 2018). It is expected a great probability that consumers of OTC medicines find information on social media to be helpful and additional adopting it (Mekawie & Hany, 2019), thus, this study anticipates that the need for information on eWOM is positively related to information usefulness that indirectly promotes the purchase intention. Hence, the following hypothesis is proposed.

H_5 Needs of eWOM OTC information is positively related to the usefulness of eWOM information.

The attitude towards information is adapted to the IACM model with TRA (Fishbein & Ajzen, 1975), which is considered an important characteristic in predicting behaviour intent (Erkan, 2016). According to this author, the attitude towards eWOM information has already been studied (Park et al. 2007; Prendergast et al. 2010), however, the influence of this determinant in the usefulness of information had not yet been tested.

In the study by Erkan (2016), contrary to what was expected, it was found that there was no relationship between the attitude towards eWOM information and the usefulness of the information eWOM. However, like IACM, this study predicts that individuals adopt positive attitudes concerning the eWOM information coming from other individuals that they engage in social media, which in this case are OTC medicine consumers (Mekawie & Hany, 2019).

H_6 Attitude towards eWOM OTC information is positively related to the usefulness of eWOM information.

The relationship between attitude towards information and purchase intention was also developed in the TRA (Fishbein and Ajzen, 1975), and this has been established by several authors (Erkan & Evans, 2016; Heijden et al. 2003; Hsu, et al. 2017; Yoon, 2002).

Erkan & Evans (2016) observed that the attitude towards eWOM information has a direct and positive influence on the purchase intention of consumers. Consequently, it is anticipated that consumers of OTC medicines are more likely to have greater purchase intentions if they have positive attitudes towards eWOM information reported by other consumers that they engage within various social media sites (Jinnah et al. 2020; Mekawie & Hany, 2019).

H_7 Attitude towards eWOM OTC information is positively related to consumers' purchase intention of OTC medicines.

3.2.1 Conceptualizing Source of Credibility

Characteristics of information sources can influence the persuasiveness and impact of eWOM communications on the receiver. The receiver considers the source as credible when the information from it can be trusted (Chaiken, 1980). Recipients of the information can be influenced by peripheral cues such as source credibility (Cheung et al. 2008). Information issued by a highly credible source is perceived as useful and reliable, and thus makes the information transfer easier (Brown & Reingen, 1987; Kim & Brown, 2015; Prendergast et al. 2010). Consequently, the informational influence of source credibility can change the recipient's opinions in favour of the opinions advocated by the information source (Cheung et al. 2008). In the context of IAM, source credibility as a peripheral cue is important in the persuasive information process. Consumers prefer to rely on peripheral cues to judge content to save time, simplify search, and minimize misunderstanding (Choi,& Stvilia, 2015; Fogg et al. 2003; Metzger, 2007), emphasizing the importance of source credibility for consumers who accept or reject the online source depending on the judgment they make.

In the context of online reviews, an information source is an individual who has used the product and has an opinion about its performance and usage. However, given the disparities in product knowledge, or the consumer, their opinions may not be regarded as credible (Eisend, 2006; Hu & Shyam Sundar, 2010). Moreover, in line with the increase in involvement, consumers process information more deeply and with the increasing involvement, consumers have a greater motivation to observe, understand and elaborate the necessary information about the product (Kautsar et al. 2012).

Credibility is a multi-dimensional concept that refers to a person's perception of the truth of information (Rahim, et al. 2016). It serves as a measure for the receiver or consumer of the information to rate the source or the sender of the information (Eisend, 2006). Source credibility includes several aspects that when evaluated, show to what extent individuals consider a source to be credible. Two major dimensions of source credibility are expertise and trustworthiness (Hovland et al. 1953; Sussman & Siegal, 2003; Metzeger, 2007). Besides expertise and trustworthiness, a further factor that appears important for the assessment of credibility: social homophily or homophily (McPherson, Smith-Lovin & Cook, 2001; Mekawie & Hany, 2019). The third dimension of credibility concerns the attractiveness of the communicator (Eisend 2006). Social homophily or similarity between sender and receiver emerges as a central component from the source-attractiveness model (McGuire, 1985). The construct describes the similarity of two individuals concerning particular attributes (Brown & Reingen, 1987; Hu & Shyam Sundar, 2010; Muda & Hamzah, 2021; Prendergast et al. 2010). Lis (2013) indicated that the attractiveness of a message sender seems to depend on the similarity to the message receiver. Teng et al. (2014), postulated that source attractiveness consists of three components. These are familiarity, likeability, and similarity. Familiarity refers to convenience when communicating with other consumers, whereas likeability means that there is some sort of attachment between the consumers based, for example, on personal features. In other words, consumers appreciate the same kind of beliefs and values that they have themselves. This influences positively on social homophily and eWOM source credibility. (Ismagilova, et al. 2020b; Lis, 2013; Prendergast et al. 2010).Thus, consumers tend to interact with other consumers who have similar features by exchanging information with each other (McPherson et al. 2001).

WOM recommendation sources can be categorized according to the closeness of the relationship between the decision-maker and the recommendation sources, or the "tie strength" (Brown & Reingen, 1987). Tie strength explains the '" level of intensity of the social relationship between consumers"(Steffes & Burgee, 2009 p.45). Relationship ties amongst consumers generally vary in a wide range. They range from strong primary ties such as the ones shared with family and very close friends to weak secondary ties such as the ones shared with acquaintances (Brown & Reingen, 1987; Steffes & Burgee, 2009). The strength of a tie (relationship) is a result of the combination of the amount of time spent; the emotional intensity shared; the intimacy shared; and the reciprocity of services to each other. Tie strength ranges in a continuum from weak ties to strong ties (Choi et al. 2017; Kapoor et al. 2013; Kim et al. 2018). In other words, message receivers are more likely to imitate friends of similar social groups, where herding behaviour is activated in the context of eWOM communication (Teng et al. 2014). Hence tie strength is another dimension of source credibility.

Reputation can be viewed as the result of an organization's relationship with the context in which it functions. Once a firm has identified appropriate metrics for the reputation of its community's social media engagement, the appropriate evaluation tool must be chosen (Kietzmann, et al. 2011). In this regard, the set of interactions generated between the company and its consumers will serve as a source of information for them to assess the quality of the products in comparison to the available alternatives. From a broader perspective, reputation may be linked to an organization's credibility. In this situation, reputation would be determined by comparing what the company promises to what they eventually deliver. Thus, the company's reputation demonstrates how reliable it is and how much it values its consumers (Casalo, et al. 2007).

Source credibility refers to a message receiver's perception of the credibility of a message source, reflecting nothing about the message itself (Cheung & Thadani, 2012). It is defined as the extent to which an information source is perceived to be believable, competent, and trustworthy by information receivers (Petty & Cacioppo, 1986a).

Sharing information can be considered a "social" phenomenon, which means that consumers are willing to share information that can benefit all other group members through eWOM interactions. This is particularly true if consumers consider themselves to be experts in certain products or services, in which case they share the information without hesitation, and vice versa (Krasila, 2021).

In the context of eWOM regarding OTC medicines, we propose that source credibility is decomposed into five major dimensions: expertise, trustworthiness homophily, tie strength and reputation. Previous studies have been also recognized the connection between eWOM behaviour and some of the source credibility features such as social homophily and trustworthiness (Chu & Kim, 2011), tie strength (Steffes & Burgee, 2009) and corporate reputation (Casalo et al. 2007; Goldsmith et al. 2000). Table 11 summarizes the key factors associated with the communicator in the literature of eWOM communication.

Table 11. Summary of the Source Credibility Hypotheses

Hypotheses	Main supporting references
Source Credibility: Refers to a recipient's perception of the credibility of a message source.	Petty & Cacioppo, (1986a) Eisend, (2006); Brown, Broderick, & Lee (2007)
- **Expertise** *H_{8a}. Message sender's high level of credibility has a positive impact on perceived eWOM source expertise by the message receiver.*	Lis (2013); Tien et al. (2019) Ismagilova et al. (2020);Moran & Muzellec (2017)
- **Trustworthiness** *H_{8b}: A message sender's high level of credibility has a positive impact on perceived eWOM source trustworthiness by the message receiver.*	Lis (2013); Ismagilova et al. (2020); Rahim, et al. (2016)
- **Homophily** *H_{8c} Message sender's high level of credibility has a positive impact on perceived eWOM source homophily by the message receiver.*	Reichelt, et al.(2014) Lis (2013); Ismagilova et al. (2020); McPherson, et al. (2001) Prendergast et al. (2010)
- **Tie Strength** *H_{8d} The source credibility of eWOM messages positively influences strong-tie strength with eWOM message receivers.*	Brown & Reingen, (1987); Cheng & Zhou,(2010);Kim et al.(2018);Rani & Shivaprasad, (2018);Steffes & Burgee (2009)
- **Reputation** *H_{8e} Higher level of credibility from the source of eWOM message positively influences the perceived reputation of eWOM message receiver.*	Casalo, et al. (2007).;Goldsmith et al. (2000);Kietzmann et al. (2011);Lim, et al.(2006); Shan (2016)

A multidimensional construct is a single theoretical concept that is measured by several related constructs (Law, et al. 1998). This conceptualization of multidimensional constructs has been used to relay complex ideas about individuals. We applied four key decision rules suggested by Jarvis et al. (2003) to characterize the nature of the high order construct source credibility. To determine if source credibility was a formative, reflective, or mixed construct, it was considered 1) the theoretical direction of causality between source credibility and its dimensions, and between each dimension and its measures; 2) checked the interchangeability of the dimensions and their measures; and 3) dimensions and measures' covariance with each other; 4) examined if measures and dimensions had the same antecedents and consequences respectively.

In this study, source credibility is a multidimensional construct, which can be decomposed into five dimensions (see Figure 40). Following Jarvis et al. (2003) reflective constructs imply the assumptions of classical test theory; therefore, construct validation through Confirmatory Factor Analysis (CFA) (e.g., convergent and discriminant validity) and reliability testing (e.g., Cronbach's Alpha) is appropriate (this information will be detailed in section 5.7.1).

Thus, in this study, the second-order, source credibility was modelled as a reflexive construct. When going back to the first order to examine the measures of each dimension, the measures used for “expertise,” “trustworthiness,” “homophily”, “tie strength,” and “reputation”, were reflective items.

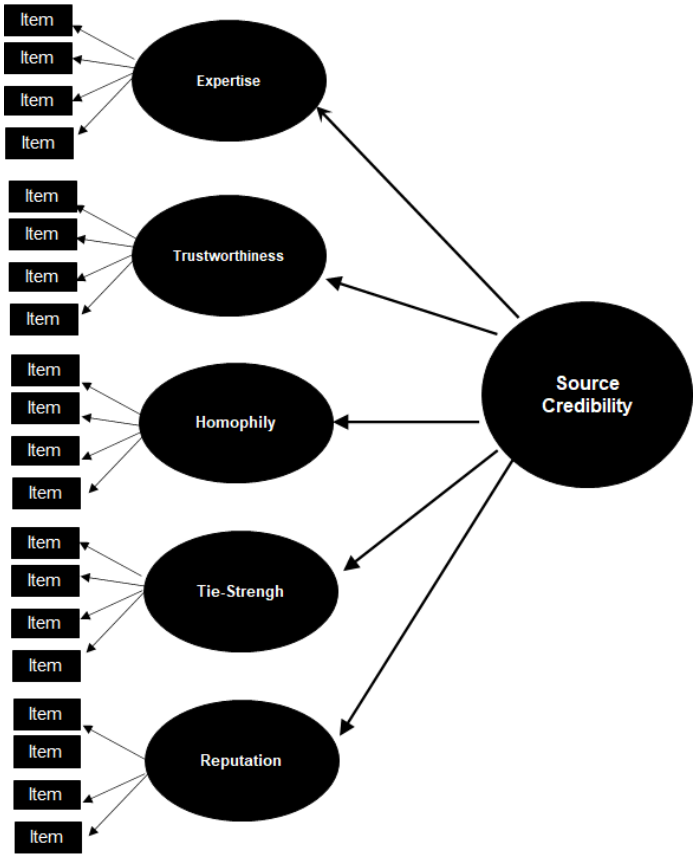


Figure 40: Source Credibility High-Order Construct

Consumers are turning to multiple sources of information to help solve the problems associated with medicine use. To determine the non-prescription drugs that are best suited to their conditions, consumers rely on the following information sources such as commercials, common and people sources (Gore et al. 1994). The credibility of information sources can be interpreted as how much the consumer see the source of knowledge, skill, or experience as relevant and trusted sources to provide an unbiased and objective. Therefore the source of information with high credibility will influence consumers when deciding to buy drugs (Kautsar et al. 2012; Mittelstaedt et al. 2000).

The source credibility theory argues that the source of the information has a significant influence on the credibility of the information and it stated that people or receivers are more likely to be persuaded when the source presents itself as credible (Hovland et al. 1953). Given that credibility strongly influences the impact of a message, it becomes important to understand how users decide what to believe (Wathen & Burkell, 2002). In the context of the information

displayed on the Internet, the factors of the source of the information (source credibility) and (quality of information) will have important effects on the credibility of the information. In fact, according to Cheung et al. (2009), in the context of eWOM, receivers are believed to make judgments as to the credibility of the information based on the quality of the information. As for the credibility of the source, this determinant has also been examined influential in the adoption of information however in (Chang et al. 2015) source credibility does not demonstrate direct influence on the adoption of information, which argues that the credibility of the source will contribute to upholding the credibility of the information. Several authors have already demonstrated the influence exerted by the credibility of the source in the credibility of the information (Cheung et al. 2009; Chang & Wu, 2014; Fang, 2014; Teng et al. 2014) mention that a highly credible source could directly increase the perception of the credibility of the information by the recipients, in addition to message content, font characteristics tend to be important in the assessment of the credibility of eWOM information and its usefulness.

The earliest research on credibility investigated how modifications in source characteristics influenced people's willingness to alter their attitudes toward certain topics (Hovland & Weiss, 1951; Hovland et al. 1953). In the course of this research, it was learnt that source credibility theory leapt out from the war department as a result of research by Hovland and others, to test the communication processes that messages pass through from the source to the receiver. This source-message-receiver model is all that communication is about (Umeogu, 2012). Even though the significant advances made by the Hovland model, scholars quickly criticized it as too simplistic and static in its view of source reliability. Berlo et al. (1969), presumed that source credibility was "multidimensional" and that the factors identified by Hovland had no theoretical foundation, nor had they tolerated the rigours of empirical testing. Through a series of factor analyses of semantic differential scales, they claimed that source credibility had three dimensions: safety, qualifications, and dynamism. Hence, credibility appears to be a variable that can be studied within the context of the communicator, channel, or message itself. Regarding the medium credibility, overall, it appears that media use was marginally connected with perceptions of credibility. Specifically, measures of Internet use were modestly associated with online news credibility (Choi, W., & Stvilia, 2015; Wathen & Burkell, 2002). So, we assume that consumers engage in their preferred social media because they find it credible, so we didn't include this feature in this study.

H_8 The credibility of the OTC eWOM source positively influences the quality of eWOM information.

H_9 The credibility of the OTC eWOM source positively influences the credibility of eWOM information.

H_{10} The credibility of the OTC eWOM source positively influences the usefulness of eWOM information.

H_{11} The credibility of the OTC eWOM source positively influences the needs of eWOM information.

H_{12} The credibility of the OTC eWOM source positively influences the attitude towards eWOM information.

Based on the hypotheses formulated, depicted in Figure 41 we present the research model with the respective hypotheses:

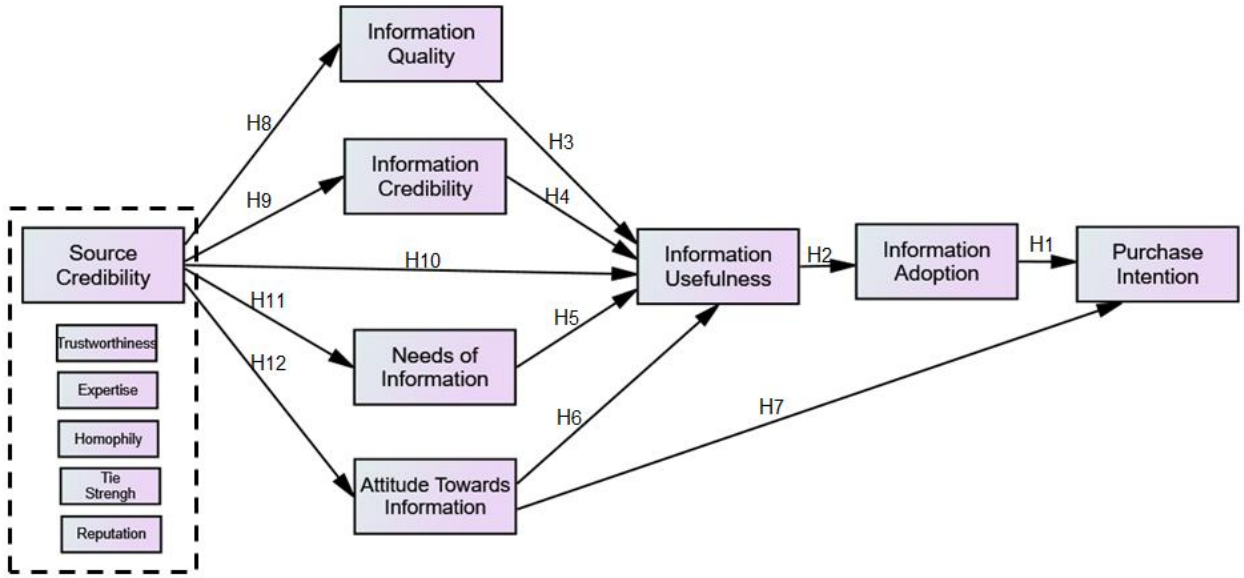


Figure 41: Conceptual Model

Source: Erkan & Evans (2016) and self-elaboration

Even though the gender distribution in the population and Internet usage is nearly identical, there is a tiny difference for general social networks, medicine review websites, and health-related websites. Female users dominate web forums; the number of female users is over four times that of male users (Sadah et al. 2015). This gender gap in the use of the internet is consistent with other studies (Bae & Lee, 2011).

Numerous studies suggest that gender plays an important role in the behavioural and social domains such as information processing, the literature demonstrates that males and females show different attitudes and patterns in perceiving and utilizing information online because they have different motives of online behaviours (Sun et al. 2019). For instance, men are likely to engage on the Internet and eWOM mainly for entertainment and pragmatic purposes, while women tend to focus on interpersonal relationships and communication for

cooperation and collaboration (Fan & Miao, 2012; Gefen & Ridings, 2005). Sociologists believe that females are relationally focused, whilst males are agenda oriented. Females show preferences for maintaining family ties, interacting with friends and engaging in social activities, whereas males focus more on task-oriented activities (Chan et al. 2015).

Many researchers recognize information credibility as a critical construct in explaining consumer attitudes and behaviours, particularly in the context of eWOM communication (Cheung et al. 2009). Perceived eWOM credibility has a significant effect on eWOM acceptance and intent to purchase. Fan & Miao (2012) showed that gender differences did have a significant effect on eWOM credibility, eWOM acceptance, and intent to show that expertise and purchase and that rapport have significant effects on eWOM credibility for females' customers. Moreover, Prendergast et al. (2018) concluded in their research that females tend to trust eWOM more than males.

Regarding the moderating effect of the variable gender, Torres et al. (2018) in a study developed in Spain, found significant differences between males and females in the acceptance of eWOM information and purchase behaviour. In the light of their results, the moderating effect of gender was supported, particularly in factors preceding the perception of information usefulness. Whilst females gave more value to the quality and need of eWOM information, in line with previous studies on the use of social networking sites, for males, the credibility of the information is more relevant in their perception of the eWOM information usefulness.

Mansour & Farmanesh (2020) established significant gender differences in the acceptance of eWOM, source credibility and message credibility and propose that online users tend to redirect online reviews when the message comes from a trusted source and when there are strong links. Following previous researchers, we intend to explore the gender differences in the effects of source credibility, information quality, information credibility, needs of information, attitude towards information, the usefulness of information, information adoption and purchase intention within the eWOM context in Portugal.

Currently, little research has been conducted to investigate the gender gap in the context of social media platforms and the purchase intention of OTC medicines. Understanding the gender effect in this context is crucial both from a theoretical and practical perspective.

H_{13}: Gender has a moderating effect on all relationships proposed in the integrated model of eWOM information acceptance of OTC medicines consumers.

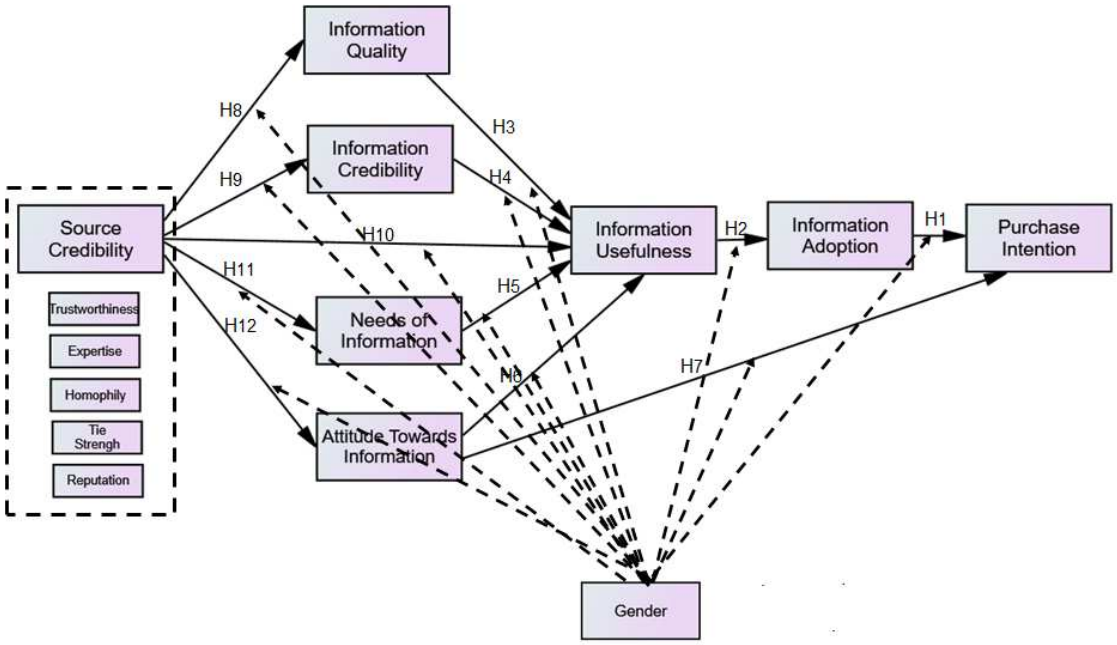


Figure 42: Conceptual Model (Moderating effect of Gender)

Having proposed the research hypotheses and the proposed model the next chapter presents the research approach and context, the survey instrument and the measures used as well as the processes of data collection and data analysis that were performed to empirically test the hypotheses described in Table 12.

Table 12. Summary of Research Hypotheses

Main Effects
H_1 Adoption of eWOM information is positively related to consumers' purchase intention of OTC medicines.
H_2 Usefulness of eWOM OTC information is positively related to the adoption of OTC eWOM information.
H_3 Quality of eWOM OTC information is positively related to the usefulness of eWOM information.
H_4 Credibility of eWOM OTC information is positively related to the usefulness of eWOM information.
H_5 Needs of eWOM OTC information is positively related to the usefulness of eWOM information.
H_6 Attitude towards eWOM OTC information is positively related to the usefulness of eWOM information.
H_7 Attitude towards eWOM OTC information is positively related to consumers' purchase intention of OTC medicines.
H_8 The credibility of the OTC eWOM source positively influences the quality of eWOM information.
H_9 The credibility of the OTC eWOM source positively influences the credibility of eWOM information.
H_{10} The credibility of the OTC eWOM source positively influences the usefulness of eWOM information.
H_{11} The credibility of the OTC eWOM source positively influences the needs of eWOM information.

H_{12} The credibility of the OTC eWOM source positively influences the attitude towards eWOM information.

Moderating Effects

H_{13} Gender has a moderating effect on all relationships proposed in the integrated model of eWOM information acceptance of OTC medicines consumers.

Our contribution to the existing research consists of the use of previously established constructs of eWOM impacts on purchase intention and applying them to a new context: non-prescription pharmaceutical products. Other research has shown that all constructs have a considerable or direct impact on purchasing decisions in quite diverse contexts. Our main findings in this unique situation will evaluate if the effects of eWOM on purchasing intentions of OTC medicines may differ.

Theoretically, we attempt to contribute to the literature in five ways. First, by adding a new multidimensional construct "Source of Credibility" information to the IACM model we intend to reach one of the main research gaps: to explain the relationship between source credibility and reviewer cues that impacts it, hence other researchers also suggest exploring this construct (Moran & Muzellec, 2017; Rani & Shivaprasad, 2018). Therefore we introduce the characteristics regarding the main components of the communication process: because communication is a process in which individuals (namely information senders) transmit stimuli (namely the message) to modify the behaviour of others (namely information receivers) and this is also a gap in the current research (Wang, 2016). We expect to observe the correlation of both the central and the peripheral routes occurs and that the central routes affect the peripheral routes of an individual and vice versa depending on the consumers' high and low motivation to think about the information received is influenced by each other. The addition of the source credibility variable, concerning the work by Erkan & Evans, (2016), introduces in the analysis the role of the eWOM issuer in the purchase intention behaviour.

We expect to contribute to the current knowledge with this research, by bringing explanations on how reviewer cues impact source credibility information. To culminate some of the limitations inherent in the study carried out by Erkan & Evans (2016) this study considered, not only students but all Portuguese older in age, potential OTC medicine consumers. We also intend to contribute to the conceptualization of the multidimensional construct. Also, we expect to analyse the differences between males and females in the acceptance of eWOM information. In this way, the study will contribute to a piece of greater knowledge about the IACM and the matter of the influence of eWOM communication and credibility in eWOM reviews of OTC medicines.

From a managerial perspective, this study will provide marketers with a frame of reference to understand the role of social on consumers' purchase intentions of an OTC medicine, studying the influence of eWOM. Social media websites are important for marketers due to the large numbers of users they have, and likewise, these websites are considered very appropriate platforms for spreading eWOM. We expect to explain the degree to which the social media behaviour outcome indicators contribute to the purchase Intention of an OTC medicine. In addition, we expect to enhance the need for companies to integrate digital marketing strategies related to social media network activity outcomes and then build tailored strategies that can increase business effectiveness. Results can help companies realize that social media activity outcomes favour their brands more and can be used more efficiently in managing social media, by considering the essence and direction of the influence of different social media network activity outcomes. Social networking is an essential source of knowledge that affects customer decision-making. Companies can use social media and other online applications to provide customers with up-to-date, appropriate, and fresh information. Management of social media marketing would promote the brand community on which consumers rely as a significant source of knowledge in decision-making. For this reason, the determinants provided by this study are valuable in terms of practice. They allow marketers to understand the dynamics of eWOM on social media, and thus to develop better marketing and segmentation strategies.

Marketers should adopt procedures to habitually monitor and encourage consumers' opinions Cheung et al. (2009) and therefore this study will contribute to a better understanding of Pharmaceutical consumer engagement strategies in the digital environment optimizing marketing strategies effectiveness and ROI.

3.3 Summary of the chapter

This chapter provides a detailed analysis of the antecedents of purchase intention in four ways. First, it has reviewed the theories related to this study and confirmed that these theories have been appropriately applied to investigate the relationships between the constructs and purchase intention. Second, we developed the conceptualization of the multidimensional construct source credibility and demonstrated how we decomposed it into five variables: Expertise, Trustworthiness, Homophily, Tie strength and Reputation.

Third, this chapter provides details of the antecedents constructed: the hypotheses demonstrate the different relationships between the study constructs in the integrative framework presented. Thirteen hypotheses are proposed to test the model: these hypotheses have been developed using the IACM and the IAM Model. And fourth based on the theories we also developed a new conceptual model to assess the moderator role of gender. Finally,

we anticipate possible research contributions. The philosophy of the research design and the methodology used to test the hypotheses will be identified in the next chapter.

CHAPTER 4. RESEARCH METHODOLOGY

In the previous chapter a conceptual model based on several theories of persuasion and models of technology acceptance previously analysed was developed, including the well-known ELM, IACM, IAM, TAM and TPB models to explore the determinants of eWOM information on social media which influences consumers' purchase intentions. Furthermore, in a second phase, we will complement our findings by analysing the moderator role of gender amongst all variables basing our approach to the theory UTAUT. To take on both studies, this chapter analyses various research methodologies to determine which ones are most appropriate for these two types of studies and introduces several research philosophies, methodologies, and strategies, as well as the explanations for methodological choices.

Following the previous, we begin by outlining the goals and hypotheses of the proposed research, followed by the conceptual model that examines how the information, sender, and receiver characteristics of the eWOM on social media platforms can influence the purchase intentions of an OTC medicine by Portuguese consumers. Then we analyse the sample, the method of data collection, the procedures of the construction of the survey by questionnaire and semantic analysis. Lastly, the data analysis technique used in this study is discussed.

Briefly, explanatory research methodology was adopted for the proposed research, the collection of primary data was carried out through a questionnaire, variables such as source credibility, information quality, information credibility, needs of information, attitude towards information, information usefulness, information adoption and the behavioural intention to purchase as a dependant variable are incorporated along with the demographic variables in the questionnaire design.

Finally, after collecting the data, they were analysed and interpreted using the SPSS statistical analysis software program V.26.0 (*Statistical Package for Social Sciences*) and to test our research framework, we used covariance-based Structural Equation Modelling (SEM), a multivariate statistical technique used mostly in behavioural research in the fields of Marketing, Psychology, and the social sciences in general (Bagozzi & Yi, 2012; Steenkamp & Baumgartner, 2000). The statistical analysis software program V.27.0 IBM SPSS Amos was used given that provides a modelling technique that is well suited for predictive models (Bentler & Chou, 1987).

4.1 Research Approach

After reviewing the literature, defining the theme, and presenting the model theoretically, it is necessary to determine a methodological basis that allows to test and

evaluate the proposed research hypotheses. The developed research model contains twelve hypotheses. From a methodological perspective, quantitative methods are more adequate to examine the relationships between independent and dependent variables and to test the hypotheses through collected data (Saunders et al. 2012).

When conducting research, some variables must be addressed and decided upon so that the researcher may establish a clear picture and course of the study process (Bell, Bryman, & Harley, 2018). This is also done for the researcher to have a better idea of the design and approach that he/she wants to take on for the research, which can be inductive or deductive (Saunders et al. 2012). A broad overview of how research should be conducted is also known as a research approach. It covers a wide range of topics, including the so-called philosophical perspective of ontology, which is the research design in connection to beliefs, as well as the diverse types of methods that are used to enable a research study. It is suggested that it is the relationship between the theories applied, the method used, the collected data, and subsequently the values. It is the relationship between the research that has been done and the theories that have been developed in general (Bell et al. 2018; Saunders et al. 2012).

This investigation follows a deductive approach. The goal of this approach is to use new empirical data in the literature to test concepts and recognized standards. It is intended to contribute to the current knowledge on this subject. In the literature about the impact of consumers positive eWOM in the Intention to purchase an OTC product in the context of social media, using the Erkan & Evans (2016) model adaptation to achieve this goal. As so, this research study adopts the empirical research method to obtain the data through a questionnaire survey, to test the hypothesis of the conceptual model. To ensure the reliability and validity of the measurement scales, the steps for designing the questionnaire are described in section 4.7.1.

An important feature of the deductive approach is that concepts must be operationalized to allow facts to be measurable quantitatively. The deductive approach is thus associated with quantitative research methods, which involves the collection of numerical data. Quantitative studies data generally apply one of two data collection methods: experimentation and questionnaires (Bell et al. 2018).

When it comes to investigation, we must consider the fact that the nature of the deductive approach requires the use of data that has been correctly collected for the study; if not, the hypothesis provided may not be eligible for testing, emphasizing the necessity of ensuring the model fit. Another aspect to consider is that the results could have both positive and negative implications, but they could also be viewed as a contribution to the scientific field under consideration (Bell et al. 2018; Bhattacherjee, 2012).

The present study is therefore based on a quantitative methodology and the self-administered questionnaire survey will be the technique used for primary data collection: a process of collecting observable and expected data, which assumes as the main objective, to contribute to the progress and approval of knowledge, offering also, the possibility of generalizing the results, of predicting and controlling the events (Bhattacherjee, 2012).

The items related to the variables applied in this study will be evaluated with a 5-point Likert scale, which is an appropriate scale for measuring attitudes. Thus, similarly to the study by Erkan & Evans (2016), and for sake of comparability, all items range from strongly disagree (1) to strongly agree (5).

Thus, this chapter will present the procedures and instruments used in this research to analyse the proposed model. First, the characterization of the population and sample selection will be described, as well as its characteristics based on the analysis of descriptive statistics on the profile of our valid sample, followed by a descriptive analysis of the measurements (mean and standard deviation). Then, the method for data collection, the questionnaire, the metrics used for its development and the pre-test phase will be explained, emphasizing the importance of assessing the adequacy of the questionnaire before its distribution based on a study of the internal reliability of the scales (based on the Alpha from Cronbach). Subsequently, to achieve the objectives of the study, the technique of structural equation modelling, based on covariance-based (CB-SEM) was applied.

Since the purpose of this research is to examine the influence of eWOM in social media on OTC consumers' behavioural purchase intentions. Additionally, the current study also aims to test the structure of the dimensions of source credibility high order construct, which needs to be done by a deductive approach.

4.2 Research Design

The general plan of research that contributes to finding answers to research questions is known as research design. Researchers can use a detailed outline that contains clear research objectives, coherent research questions, a specific data collection source, and data analysis techniques to guide and focus their investigations (Saunders et al. 2012).

The classifications of explanatory (casual), descriptive, and exploratory research design are three often debated areas within the research design. The object of the research, the stated purpose, and the chosen method are the differences between these three design approaches. Explanatory research aims to study a situation or a problem, to explain relationships between variables (Bhattacherjee, 2012), and in this case, the present study assumes, therefore, an explanatory research purpose by involving empirical testing of concrete

research hypotheses, being tested causal relationships between variables (Saunders et al. 2012).

To study the proposed relationships between variables, the descriptive quantitative method of analysis is used because it is the most appropriate, as it allows for precision and statistical control, providing data for hypothesis verification (Bhattacherjee, 2012; Cooper, Schindler, & Sun, 2006).

This study is based on conclusive descriptive and causal cross-sectional research. The application of this design is chosen based on the process and goals of this research and its purpose and the method which is to explain the impact that the independent variables have on the dependent variable (Awang, 2012; Bell et al. 2018). The quality of the research design can be defined in terms of four key design attributes: internal validity, external validity, construct validity, and statistical conclusion validity (Bhattacherjee, 2012).

In the first stage, a detailed literature review was performed, and the research needs were identified. Thereafter, a theoretical model and hypotheses were developed, and the research strategy was chosen. In the second stage, the first phase of this research was conducted in two steps: data collection and analysis.

Initially, individual interviews with a panel of experts in the field were conducted to finetune the instrument and to obtain detailed information about the topic from several expert stakeholders (this information will be further detailed in section 4.6.2), then a pilot study was carried out to check the reliability and validity of the questionnaire. The final questionnaire was then developed, and main data collection was conducted. Thereafter the collected data were analysed using the CB-SEM technique, and the results were discussed to draw implications. Figure 43 illustrates the design of this research.

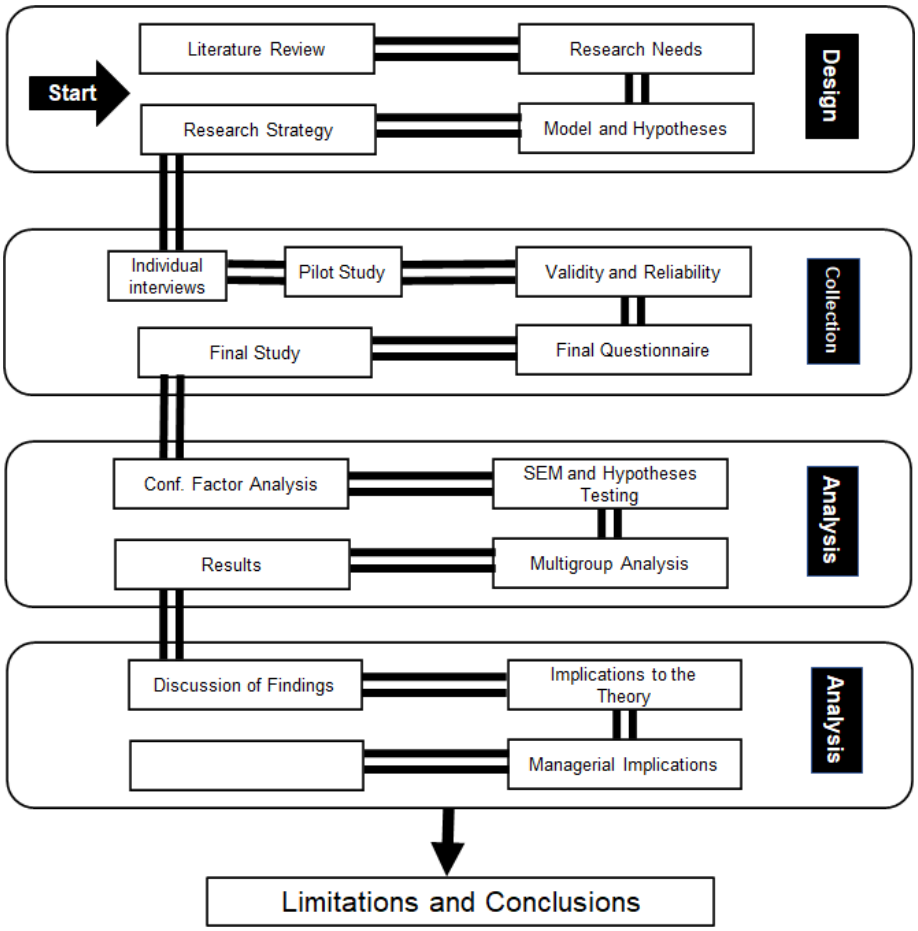


Figure 43: Research Design

4.3 Survey as a Research Strategy

The primary purpose of survey methods is to collect data from a sample and statistically analyse it to generalize the results to a population. Researchers can collect a significant amount of data from a large population cost-effectively with this research strategy (Saunders et al. 2012).

To start, because this study's goal is to evaluate its hypotheses, statistical analysis will require a large amount of data. Survey methods were appropriate for this study because they give a) a fast, b) a simple, and c) a cost-effective approach to collecting data from a large number of individuals in a standardized manner (Bell et al. 2018; Bhattacherjee, 2012). Following this, because the participants are given numerous predefined answers, this method creates consistent data, making it easier to code, analyse, and interpret the acquired information (Malhotra, Nunan, & Birks, 2017). When conducting this kind of research, we must bear in mind three important aspects for conducting a survey: data collection method, instrument development, and sampling. These aspects are discussed in the following sections

of the present work (section 4.4 and 4.7) (Bell et al. 2018; Bhattacherjee, 2012; Olsen, et al. 2006).

As so, to examine the relationship between the identified eWOM characteristics and the purchase decision statistically, we decided on the quantitative primary data collection method of an online survey using Qualtrics software (Hair et al. 2018). Apart from increased reliability through a large data set, using this approach enables us to suggest potential reasons for particular relationships between the tested variables based on statistics. That allowed us to form a model of these relationships, verifying or rejecting previously defined characteristics of eWOM as affecting purchase decisions in this new setting (Bhattacherjee, 2012; Saunders et al. 2012).

The cross-sectional study was conducted between April and June of 2021 and employed several techniques to reduce bias and improve the final instrument with a new sample for each of the procedures: individual interviews (N =11), pilot test (N=46) and the final questionnaire (N = 346). A population size of 982 respondents was obtained and 346 were considered valid for the study: this was mostly because of the existence of control questions to ensure the quality of the sample and also because some respondents did not conclude the questionnaire. Furthermore, the data analysis method used in this study (Section 4.9) is commonly linked to the gathering of primary data using structured questionnaires (Hair et al. 2014). Several social networking sites were employed as the research context in this case. The data obtained were analysed to identify the factors influencing the purchase intention of the consumer on OTC products or more specifically, to investigate the impact of eWOM on OTC medicine users in Portugal.

4.4 Data Sources

Primary data is information gathered by researchers to analyse theories. A quantitative study requires primary data to get numerical data for testing hypotheses (Bell et al. 2018; Wolf, Joye, Smith, & Fu, 2016). One way of gathering the primary data is by creating a questionnaire that the sample of people will contribute to with their answers. To accomplish the research purpose, the data collected by respondents need to be both relevant and objective by being detached and impartial as a researcher (Bell et al. 2018; Cooper et al. 2006).

The primary data in this study is based on the theoretical framework and the method chosen was to create a self-completion questionnaire, which is the technique used to collect and measure the data. The data was gathered using a self-completion questionnaire in the platform Qualtrics, to obtain numerical measures and analyse the relationship between the variables, about the secondary sources so that the researchers can support or fail to support the hypothesis stated, which will be discussed later.

4.4.1 Data Collection Method

A cross-sectional design has traits that are in close connection with other types of data collection methods such as questionnaires, social surveys, and structured interviews (Olsen, et al. 2006). Although many of those terms are indeed used interchangeably, they are not all synonymous. We use the term cross-sectional study to refer to this particular research design and the term questionnaire to refer to the data collection form that is used to ask questions of research participants.

Study participants can remain anonymous by filling out an online self-completion questionnaire, and it is beneficial for researchers to collect data because it allows them to reach out to a much larger population, which not only provides convenience but also saves time and money on both sides by avoiding the need for someone to be interviewed and state questions. Instead, participants can read the questions for themselves and thereby react at their own pace and at their own time. The respondent is only required to contact the researchers if they want to get further involved in the study or if they have any conflicts with the study (Bell et al. 2018).

Furthermore, it is critical that respondents complete the questionnaire rather than abandon it halfway through, as this limits the researchers' ability to use the data acquired. Bell et al. (2018) state that there are variations of ways of motivating the respondents to finish all the questions by stating questions that are clear and that create a willingness to answer. The aim is to keep the questionnaire short so that the respondents do not get bored or tired from finishing it. It is also important that they finish the questionnaire and not leave it half-made, which then leaves the researchers with limited use of the data collected. (Figure 44)

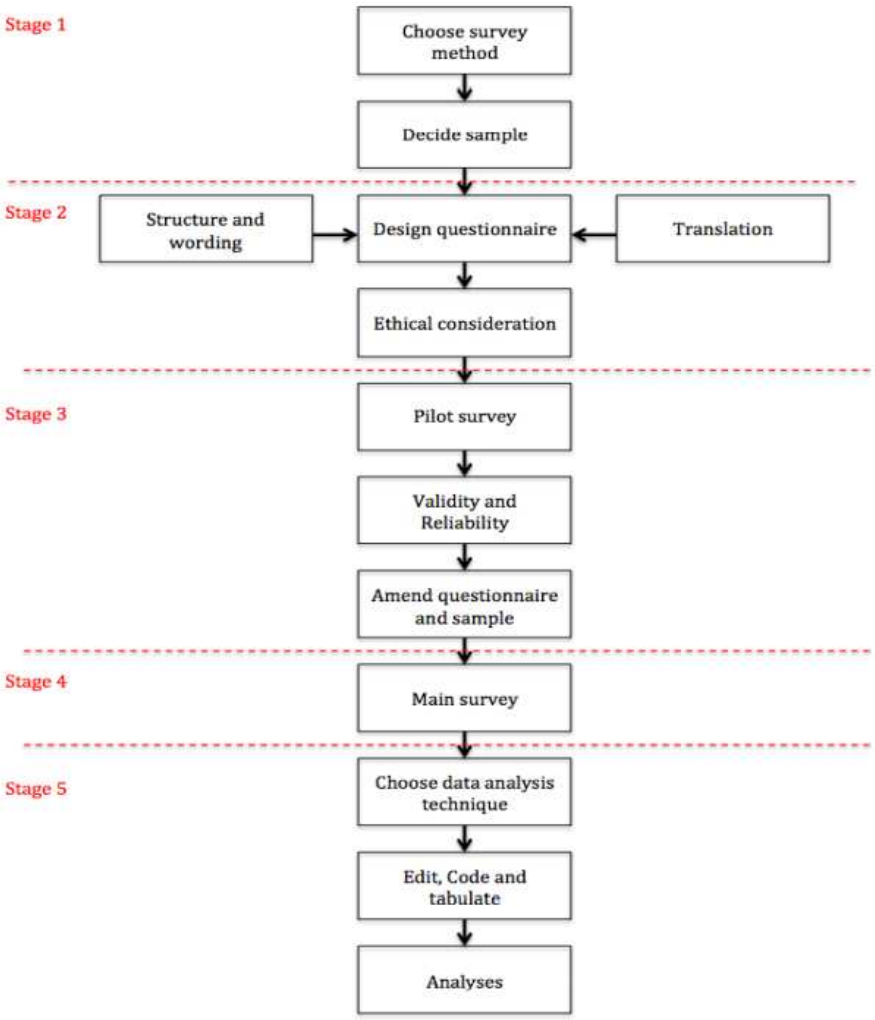


Figure 44: Five-stage processes for conducting a survey

Source: Adapted from Gray (2013)

A self-completion questionnaire benefits both the researchers and the respondents, The respondents benefit from being able to remain anonymous, which is also related to the ethical considerations discussed in section 4.10, since it allows them to feel comfortable and not be harmed in any way by the answers they provide. It is also advantageous for the researchers because they are the responsibility of the respondents' privacy. The key justification for adopting a self-completion questionnaire to collect data is that it allows researchers to reach out to a much larger population while also being less time demanding and cost-free for both parties.

4.5 Population and Sample

Because it is impractical to question the entire population to be researched, quantitative studies usually always require the use of a sample of the target population to be

investigated (Bell et al. 2018; Saunders et al. 2012). Sampling strategies are defined as selecting a subset of the population, statistically analysing that subset, and then extrapolating the findings to the entire population. Therefore, researchers try to select representative samples in their studies. The population of this study are consumers of OTC medicine that engage in social media.

According to the " We are Social – Hootsuite Report" (Social, 2021a), there were 7.80 million social media users in Portugal in January 2021. Between 2020 and 2021, the number of social media users increased by 800 thousand (+11%) and was equivalent to 76.6% of the total population.

To determine which general traits of eWOM influence consumers' purchase decisions of OTC medicines, the targeted sample consists of people who actively use social media (e.g., at least once a month according to Statista, 2021). The respondent was disqualified if he or she used social media less than once a month. Additionally, if the respondent did not consider social media to be a source for finding others' information regarding experience with and opinions about OTC medications they would be also excluded. The main part of the questionnaire was to be answered based on individuals own experience thus improving the applicability of this study.

The study targeted the following population:

- ✓ Age: Respondents had to be over the age of 18 years
- ✓ National status: Respondents had to reside, work or study in Portugal
- ✓ Social media usage: Respondents had to have a social media account and use it once a month or more.
- ✓ OTC medicine social comments: Respondents had to consider comments regarding OTC medicines.

Choosing a sampling method requires a researcher to consider multiple factors (e.g., the research question, the study methodology, knowledge about the population of interest, the size of the population of interest, the degree of similarity or differences for cases in the population, and time and/or financial constraints) and the degree of confidence desired for study conclusions along with generalizability. In truth, however, most populations are too large to sample completely. The sampling method assists the researcher in selecting a representative sample and guides how large the sample needs to be to ensure the degree of confidence desired for conclusions and generalizability (Bell et al. 2018; Berndt, 2020).

There are two sampling techniques: probabilistic and non-probabilistic. Probability sampling methods incorporate an aspect of random selection, which ensures that each case in the population has a probability of being selected, it is a representative sample of the

population that allows generalizing the results to the target population of the study. Common types of probability methods include random sampling, systematic sampling, stratified sampling, and cluster sampling (Bell et al. 2018). However, due to the inherent difficulty in obtaining such a sample, accounting for the time and costs required, in this study the questionnaire data was gathered based on non-probabilistic sampling.

Non-probability sampling methods use an approach in which the sample is selected based on the subjective judgment of the researcher instead of using random selection. Common types of non-probability sampling methods include quota sampling, purposive sampling, snowball sampling and convenience sampling (Bell et al. 2018; Black, 1998). Table 13 defines the common types of non-probability method sampling methods and consider their pros and cons.

Table 13. The pros and cons in the non-probability method of sampling technique

Technique	Descriptions	Advantages	Disadvantages
Purposive	Hand-pick subjects based on specific characteristics	Ensures balance of group sizes when multiple groups are to be selected	Samples are not easily defensible as being representative of populations due to the potential subjectivity of the researcher
Quota	Select individuals as they come to fill a quota by characteristics proportional to populations	Ensures selection of adequate numbers of subjects with appropriate characteristics	Not possible to prove that the sample is representative of the designated population
Snowball	Subjects with desired traits or characteristics give names of further appropriate subjects	Possible to include members of groups where no lists or identifiable clusters even exist (e.g., drug abusers, criminals)	No way of knowing whether the sample is representative of the population
Volunteer, accidental, convenience	Either asking for volunteers, or the consequence of not all those selected finally participating, or a set of subjects who just happen to be available	Inexpensive way of ensuring sufficient numbers for a study	Can be highly unrepresentative

Source: Adapted from Black (1998)

To select a group of respondents, a combination of convenience and network (snowball) sampling techniques was used in this research. While this sampling technique allows easy access to a sample at a low cost, it is susceptible to self-selection and sampling-selection biases, and thus, one might question how representative the sample is (validity).

The chosen sample methodology is considered valid despite these potential biases because the study's questionnaire contains a criterion that screens respondents in the first section. Additionally, background informational questions assure obtaining a relatively homogeneous sample meaning that respondents are all active users of social media platforms.

4.5.1 Sample size

Another crucial difficulty for researchers is determining the sample size. The task of determining the proper sample although widely discussed in the literature on structural equation modelling (SEM), has not been widely recognized among applied SEM researchers (Tabachnick, Fidell, & Ullman, 2007). The sample size needed for a study depends on many factors, including the size of the model, distribution of the variables, amount of missing data, reliability of the variables, and strength of the relations among the variables (Muthén & Muthén, 2002). Simulation studies show that with normally distributed indicator variables and no missing data, a reasonable sample size for a simple CFA model is about N = 150 (Muthén & Muthén, 2002).

A sample of 300 cases has been suggested by Tabachnick & Fidell, (2013). Comrey & Lee (2013) offered a rough rating scale for adequate sample sizes in factor analysis: 100 = poor, 200 = fair, 300 = good, 500 = very good, 1,000 or more = excellent. (quoted also (Kyriazos, 2018; Lingard, & Rowlinson, 2006; MacCallum, et al. (1999) and others). According to Kline (2015) though it is difficult to set a minimum sample size in SEM studies a median sample based on study reviews is N = 200 (Kyriazos, 2018; MacCallum & Austin, 2000). For multi-group modelling, the rule of thumb is 100 cases/observations per group (Kline, 2015). There are no universally accepted criteria of optimal sample size for an SEM analysis; there are several rules of thumb on this subject and the general idea seems to be: the greater the size of the sample the better.

The sample size is often considered in light of the number of observed variables. For normally distributed data, Bentler and Chou (1987) suggest a ratio as low as 5 cases per variable would be sufficient when latent variables have multiple indicators.

Barclay et al. (1995) suggest the rule of thumb of a sample size at least ten times larger than the number of structural paths pointing to the latent variable in the structural model that has the bigger number of structural paths directed to it. Accordingly, since the empirical model in this study shows twelve structural paths then ten times twelve, e.g., 120, is well below the dimension of the sample used in the present work which is 346.

Marôco (2014) stated that the number, the metric, and the strength of the correlation between manifested variables on one hand and the number of latent variables and structural relationships considered in the model on the other hand, as well as the number of parameters to be estimated, are determinants in the size of the required sample. Therefore, he suggested following the formula proposed by Westland (2010) to estimate the sample size (n) through the number of manifest items or variables (p) and latent variables or factors (f) of the model:

$$n \geq 50\, r^2 - 450r + 1100, \text{ where } r = p/f$$

In this investigation, the final model has 56 items and 12 latent variables, that is, the number of items (p) equals 56 and the number of latent variables (f) equals 12. Solving the previous equation, there are about 90 observations needed.

With a sample of 338 valid observations after deleting cases due to missing values, the minimum value valid responses were outshined, as well as the other values according to the most varied authors, enabling the elaboration of a good and robust SEM analysis (Marôco, 2014). From all the above we conclude that our sample size is good.

Overall, from the 982 people that were approached online, 346 individuals contributed to the study, resulting in a response rate of 35.2%. According to Sekaran (2003), a 30% response rate is sufficient if the data is collected through a mail survey. Considering that this was a self-completion online survey, we consider this response rate adequate to proceed with the analysis, as this type of survey is known to have rather low response rates (Bell et al. 2018; Collis & Hussey, 2013).

Several authors suggest a two-step approach to assess the results of the study: first, the assessment of the measurement model and, second, the assessment of the structural model (Anderson & Gerbing, 1988).

4.5.2 Data collection instrument

The self-completion questionnaire of this research was created on Qualtrics online platform using the ISCTE-IUL license. The reason for choosing this platform is that it is very user friendly and easy to administer, provides some distribution features that allow reaching a larger population and the outputs are compatible with the statistical software used in this research. Because of the benefits of performing a self-completion questionnaire, one was created to replicate measurable hypotheses and the relationships between the cues identified in the theoretical chapter. The self-completion questionnaire was constructed to be able to measure the model constructs and also the relationships among constructs.

As previously mentioned, the final questionnaire was distributed through email, social media networks, and several other online platforms, between May 13 up to June 10th, 2021. The participants had to give informed consent to proceed with the questionnaire and their anonymity has been safeguarded.

4.6 Development of primary research instruments

To achieve the objectives of the study and test the relationships of the hypotheses among the variables in the proposed research model a self-response questionnaire survey was developed by combining information derived from the literature review and individual interviews with some experts from the pharma healthcare industry.

Developing instrument measurements is another critical issue for researchers as it has a direct influence on the reliability and validity of model constructs. Bell et al. (2018) advise using current measures that have already been validated by other researchers. As a result, the measures in this study were derived from existing literature and modified by considering the research aim and objectives. The source of constructs and measurement items will be addressed in section 4.7.1.

The original English instruments were translated into Portuguese to allow the survey to be administered in Portugal. Following the guidelines provided by Sousa & Rojjanasrirat (2011), the purpose of the translation process and adaptation of a measurement instrument is to obtain a linguistic version different from the instrument in English, which are conceptually equivalent in the target country (Squires et al. 2012; Wolf et al. 2016). An approach that uses the following techniques is recommended:

- ✓ Forward translation: with a translator who has the same mother language of the target culture, and who has knowledge of the culture.
- ✓ English-speaking; Input from bilingual experts to check if there is any discrepancy between the forward translation and the original version of the instrument.
- ✓ Back translation, which consists of the translation of the translated version of the instrument, for English and revises it carefully.
- ✓ Pre-test with individuals of the target population.

Flaherty et al. (1988) recommend that instruments used across cultures that require translation undergo an evaluation that involves content, context, conceptual, semantic and technical equivalence to ensure that the instrument is appropriate for use in the new location (as depicted in Figure 45 for definitions).

Criteria	Definition
Content equivalence	The content of each item of the instrument is relevant to the phenomena of each culture being studied
Semantic equivalence	The meaning of each item is the same in each culture after translation into the language and idiom (written or oral) of each culture
Technical equivalence	The method of assessment is comparable in each culture with respect to the data that it yields
Criterion equivalence	The interpretation of the measurement of the variable remains the same when compared with the norm for each culture studied
Conceptual equivalence	The instrument is measuring the same theoretical construct in each culture

Figure 45: Cross-cultural validity in instrument translation: definitions

Source: Squires et al. (2012)

As part of our instrument development and testing, we chose to incorporate a qualitative study to evaluate the items retrieved from the literature, for inclusion in the questionnaire that would be applied in the quantitative phase of the study to finetune the instrument and help us decide about the content of questions, the semantics, their wording, format, and sequencing. All of which if not done properly can have important consequences for the survey responses (Bhattacherjee, 2012). Sequentially a pre-test of the questionnaire was conducted the goal at this phase, was instrument testing and measurement validation. For researchers, testing the questionnaire before using it for data gathering is critical.

4.6.1 Pilot Test

Pre-tests are preliminary tests of the measures used on a small sample of the population to be studied. It is the last step in the tool development process. Pre-testing is when a questionnaire is used in a small pilot study to determine how well it works. Thus, a pilot study is a smaller version of a larger study that is conducted to prepare for that study (Bhattacherjee, 2012).

The first phase of the pilot involved individual unstructured individual interviews to establish the issues to be addressed further in a large-scale questionnaire survey. Next, the questionnaire, e.g., the wording and the order of the questions, or the range of answers/options on multiple-choice questions, were piloted. So in this second phase, a final pilot was conducted to check if there were any problems with the measures or internal consistency and to test the research process, e.g., the different ways of distributing and collecting the questionnaires (Bell et al. 2018; Boyce & Neale, 2006; Cooper et al. 2006).

To sum it up, pilot studies are used as feasibility studies, to ensure that the ideas or methods behind a research idea are sound and to understand the study protocol before launching a larger study. Pre-testing, on the other hand, refers to the evaluation of research instruments such as questionnaires or interview schedules.

4.6.2 Individual interviews

Generally speaking, the first step in validating a survey is to establish face validity. There are two important steps in this process. The first is to have experts or people who understand the topic read through your questionnaire. They should evaluate whether the questions effectively capture the topic under investigation. Face validity is established when an individual who is an expert on the research subject reviewing the questionnaire (instrument) concludes that it measures the characteristic or trait of interest. Face validity involves the expert looking at the items in the questionnaire and agreeing that the test is a valid measure of the concept which is being measured just on the face of it (Bolarinwa, 2015).

An individual interview is an open-ended, discovery-oriented method to obtain detailed information about a topic from a stakeholder. Individual interviews are a qualitative research method; their goal is to explore individual a respondent's point of view, experiences, feelings, and perspectives (Boyce & Neale, 2006). This dynamic approach allows healthcare researchers to address the complex and multi-faceted research problems often encountered in the health care sector. Qualitative and quantitative stages were conducted sequentially. Eleven participants were involved in this phase. The initial survey design draft along with information on the study background was sent to several key stakeholders to receive feedback on whether the survey questions were reasonable, practicable, and comprehensible.

Due to COVID-19 confinement restrictions, interviews were performed using the ZOOM platform. The questionnaire, as well as the instructions, were sent in advance and written consent was obtained before the schedule of the meeting. The individuals were interviewed between April 1st 2021 until April 14th 2021 and were composed of: two General Managers, two Marketing Directors, one Digital Marketing Consultant (Consumer Health products), one Associate Director Corporate Affairs and Value&Access (all from Pharmaceutical Industry), one Business Account Manager (from a design and communication agency), two Pharmacy owners, one Pharmacist and one Qualitative Market Research (experienced in healthcare studies). The interviews were unstructured with six opened-ended questions to encourage narrative and response that intended to cover five topics: (i) participants' judgment about the relevance of the matter (ii) consistency and validity of the instrument and variables items, (iii) decision making and information-seeking regarding the use of social media and OTC medications, (iv) pharmacy digital marketing practices; and (v) OTC consumer behaviour and management practices, broadly. Interviews were recorded with participant permission. The interview script is available in Appendix 3.

In a realistic approach, we had very useful comments and recommendations. The most important unanimous comment was the relevance of the topic with all participants emphasizing the importance of this study for their practice, stating that there is a lack of knowledge regarding this topic. At this point, the feedback suggested that survey questions had no major visible flaws however 12 comments were elicited from these participants, based on Bell et al. (2018) recommendations, as reported by Saunders et al. (2012) to determine: How long the survey took to complete; Clarification of instructions; If any question was unclear or ambiguous; If any question made respondents feel uncomfortable answering; If there was an omission of any important topic; If the language was suitable and understanding and whether the layout was clear and attractive. Our objective was achieved and based on the feedback obtained, the survey was revised.

From the analysis of the comments, the following modifications resulted: Texts in the Introduction and Instructions were rewritten to clarify the matter; the request of the residence district was expanded to include all of Portugal's regions. Two statements that contributed to the construct "Source Credibility" were removed. These adjustments were meant to improve the questionnaire's suitability for the study's objectives and to eliminate any potential ambiguity ensuring content, semantic, technical, criterion and conceptual equivalence to make certain that participants had no problem answering the survey. The participants generally concurred that the questionnaire was clear and easy to complete, so no further modifications were made.

4.6.3 Questionnaire Structure

The questionnaire consists of three sections. The first part is a survey of the basic information of users of Social Media. Questions in this section were designed to collect information about social media including their frequency and the condition of how they used it. The second part is the investigation of the factors of eWOM influencing users' intention in purchasing OTC medicines. Measurement items in this part are meant to reflect conceptual variables in the model, Source of Information, Quality of information, Credibility of Information, Needs of Information, Attitude towards information, Information usefulness, Information adoption and Purchase Intention. The third part is composed of the characteristics of the basic demographic variables of the respondents, such as gender, age, education level, monthly income, occupation, residency. Information of this part can reflect the individual and group characteristics of the research object as well as the control variables of the model more comprehensively and intuitively. Some filter questions were introduced to ensure that the final valid sample does engage in reviews regarding OTC medicines. A five-point Likert Scale was used to measure the 56 items as follows: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and lastly 5 = Strongly agree. One of the simplest methods to keep things simple is to use a self-completion questionnaire, which will be detailed in section 4.7.2.

4.7 Measures

The constructs were measured using measurement scales consisting of multiple survey items for each construct. The scales were derived from the literature and customized to the study's needs.

4.7.1 Questionnaire development and processing

As previously stated, to ensure the reliability and validity of the model constructs we based this study using existing measures which were already tested by previous researchers. Therefore, the measures were drawn from the existing literature and modified by considering

the research aim and objectives (Bell et al. 2018). Table 14 provide the conceptual meanings for each construct as well as the source of literature.

Table 14. Construct Conceptual Meaning and Literature Source

Construct	Conceptual Definition	Adapted from
Source Credibility	Judgments that are made by a perceiver concerning the believability of a communicator i.e., refers to a recipient's perception of the credibility of a message source; it is not concerned with the message itself.	Chaiken (1980) Cheung, et al. (2012) Eisend, (2006) Petty & Cacioppo (1986a)
Homophily	The similarity between sender and receiver concerning i.e., the similarity of two individuals concerning particular attributes.	Lis, B. (2013) Eisend (2006) Steffes & Burgee (2009)
Expertise	The extent to which a person is perceived to possess knowledge, skills or experience and thereby is considered to provide accurate information. It refers to the knowledge of a sender on a product or a service.	Ohanian (1990)
Trustworthiness	The source or reviewer recommendation is considered trustworthy if the statement is considered valid, honest, and up to the point.	Hovland & Weiss (1951) Ohanian (1991)
Tie Strength	The depth of a relationship between the source of information and the information seeker. The potency of the bond between members of a network.	Cheng & Zhou (2010) Kim et al. (2018) Steffes & Burgee (2009)
Reputation	Stakeholders' accumulated beliefs or opinions about the characteristics and behaviour of people or objects from the past to the present. Previous researchers characterized reputation as an attitudinal construct consisting of cognitive (knowledge-based) and affective (emotions-based) components.	Casalo, et al. (2007) Highhouse et al. (2009) Suárez, et al. (2020)
Information quality	The extent to which information is clear, substantial, and reliable, and helps consumers evaluate products or services accurately.	Lee, et al. (2002) Park et al. (2007)
Information credibility	The extent to which an information source is perceived to be believable and trustworthy by information recipients	Prendergast et al. (2010) Erkan & Evans (2016)
Needs of information	Users' information-seeking behaviour to satisfy a conscious or unconscious need.	Chu & Kim (2011)
Attitude towards information	General evaluations people hold regarding themselves, other people, objects, and issues. Associated beliefs and behaviour towards some object	McGuire (1985) Park et al. (2007) Petty & Cacioppo (2018)
Information usefulness	People's perception is that using new information will enhance his/her performance.	Bailey & Pearson (1983) Cheung et al. (2008)
Information adoption	Intentions toward adopting, particular advocated ideas and behaviour.	Sussman & Siegal (2003) Sharma & Mishra (2014)
Purchase intention	The degree to which the consumer has formulated conscious plans to purchase the products or services under study. The willingness to purchase a product in the future.	Fishbein & Ajzen (1975) Cheung & Thadani (2012)

All constructs were measured by reflective indicators. A reflective indicator is a measure that "reflects" an underlying construct. The construct of "Source credibility" is a highly complex multidimensional construct, composed of several underlying constructs. Hence source credibility construct includes five dimensions as, so it was measured with reflective

items. More precisely, “Source credibility” being a high order construct is decomposed into five latent exogenous variables: Homophily (HOM), Expertise (EXP), Trustworthiness (TRU), Tie-Strength (TIE) and Reputation (REP). Concerning the measurement scales: HOM, EXP and REP were assessed by five-item scales, TRU was assessed by a six-item scale and TIE was assessed by an eight-item scale.

Furthermore, Information quality (IQUA) and Information usefulness (IUS) were assessed by a five-item scale each. Four-item scales were used to measure Information credibility (ICRE), Attitude towards Information (AINF), Information adoption (IAD), Purchase intention (PINT) and a two-item scale was used to measure Needs of information (NOI). Table 15 demonstrates all the measures employed in this study.

Table 15. Instrument Constructs, Items and Measurements

Constructs	Items	Instrument
	… to consider information or comments about over-the-counter (OTC) pharmaceutical medicines shared by my contacts or others on social media:	
Homophily	HOM1	The reviewer must be very similar to me
Eisend (2006)	HOM2	The reviewer must be the same gender as me.
Lis (2013)	HOM3	The reviewer must think like me.
	HOM4	The reviewer must belong to the same age group as me.
	HOM5	The reviewer must have a “lifestyle” similar to mine.
Expertise	EXP1	The reviewer must be an expert on the subject.
Ohanian (1990)	EXP2	The reviewer must be experienced
	EXP3	The reviewer must reveal knowledge about the subject
	EXP4	The reviewer must be qualified
	EXP5	The reviewer must be skilled
Trustworthiness	TRU1	The reviewer must be independent.
Ohanian (1991)	TRU2	The reviewer must be honest.
	TRU3	The reviewer must be reliable
	TRU4	The reviewer must be sincere.
	TRU5	The reviewer must be authentic.
	TRU6	The reviewer must be trustworthy
Tie Strength	TIE1	The author mustn't be anonymous
Cheng & Zhou (2010)	TIE2	The author must be someone I know
	TIE3	I value the comments of my friends more than anonymous
	TIE4	I value the comments of my family more than anonymous
	TIE5	Comments from my friends more easily influence my choices
	TIE6	Comments from my family more easily influence my choices
	TIE7	The positive comments from my friends have great relevance to me

	TIE8	The positive comments from my family have great relevance to me
Reputation	REP1	I always consider if the source has a good reputation in the field.
Casalo, et al. (2007)	REP2	I always consider if the source has a good corporate reputation
	REP3	I always consider if the source is well known
	REP4	I always consider if the source has a good integrity
	REP5	I always consider my past, experience with the source
Information quality	IQUA1	I think they are understandable.
Park et al. (2007)	IQUA2	I think they are clear.
	IQUA3	In general, I think the quality of them is high.
	IQUA4	I think the information is objective
	IQUA5	I think the information is complete
Information credibility	ICRE1	I think they are convincing
Prendergast et al. (2010)	ICRE2	I think they are strong
	ICRE3	I think they are credible
	ICRE4	I think they are accurate
Needs of information	NOI1	I like to apply them when I consider new products
Chu & Kim (2011)	NOI2	If I have little experience with a product, I often use them
Attitude towards information	ATI1	I always read them when I buy an OTC.
Park et al. (2007)	ATI2	They are helpful for my decision making when I buy an OTC.
	ATI3	They make me confident in purchasing an OTC
	ATI4	They make my decision process easier in purchasing an OTC
Information usefulness	IUS1	I think they are generally useful
Cheung et al. (2008)	IUS2	I think they are generally informative.
	IUS3	I think they are generally practical.
	IUS4	I think they are generally profitable.
	IUS5	I think they are generally relevant.
Information adoption	IAD1	They make it easier for me to make a purchase decision.
Sussman & Siegal (2003)	IAD2	They enhance my effectiveness in making a purchase decision.
	IAD3	They make me decide to purchase faster.
	IAD4	They motivate me to make a purchase decision.
Purchase intention	PIN1	I will most likely buy the product.
Cheung & Thadani (2012)	PIN2	I will purchase the product next time I need it.
	PIN3	I will certainly buy the product.
	PIN4	I will recommend the product to my friends and contacts

The questionnaire of this study was designed using a multi-item approach; each construct, therefore, was measured with several items to improve validity and reliability. All variables were carried out using the Likert scale (Bell et al. 2018). Furthermore, this study

included both positive and negative questions to ensure that the participants read and answer each question carefully (Saunders et al. 2012).

The preliminary instrument was the pilot tested and reviewed by eleven key stakeholders' experts. Minor revisions were made based on their feedback. Finally, after the translation was checked the Portuguese instrument was finalized.

We used a group of variables to assess possible differences between respondents regarding social media usage habits as well as their demographic characteristics. They are depicted in Table 16.

Table 16. Characterization of the Target Variables

Variables	Type	Categories
Respondent information regarding social media usage habits		
Q2 Frequency of Usage	Ordinal	6 categories: >Occasionally to > 10 times a day
Q4 Usage and COVID-19	Nominal	Yes or No
Q5 Platforms	Nominal	8 categories
Q7 Adoption	Ordinal	5 categories: < 6 months to > 5 years
Q8 Intensity	Ordinal	7 categories: < 30 min to > 8 hours
Q10 Interaction	Ordinal	7 categories: Never to > 10 times a day
Respondent information		
Q22 Gender	Nominal	Male, Female and Other
Q23 Age	Ordinal	6 categories: >18 years, to > 65 years
Q24 Occupation	Ordinal	7 categories: student to other
Q25 Income	Ordinal	6 categories: > 1000 Euros to N/A
Q26 Education	Ordinal	7 categories: basic education to other
Q27 Residence	Nominal	All Portuguese districts

4.7.2 Survey distribution

In this research, an online link to the web-based questionnaire (Qualtrics) was sent to the researcher's contacts by email and social networking sites such as Facebook, LinkedIn, Twitter to reach more potential respondents, as well as the Line and WhatsApp applications on the mobile phone. Contacts from both channels were encouraged to forward and share the

online survey link to their relevant contacts or friends. The participants were gently asked to complete the online questionnaire. A pilot study was conducted before the main study, as discussed below.

The objective of the questionnaire should be clear and related to their interest so that they will read the items carefully and provide precise answers (Cooper et al. 2006; Hair Jr. et al. 2018). The researcher made efforts to minimise the questionnaire abandonments by the respondents by using a pilot study for pre-testing to gain feedback and comments from participants. This information was used to enhance the final instrument.

The authors' network members were asked to respond to the survey and share the post with their respective networks. The main reason for this procedure was to access as many respondents as possible to achieve reliable results and to reach people who were not in any relation to the authors. Over the course of four weeks, between the periods of May 2021 to June 2021, a total of 982 people were reached using the described methods.

4.7.3 Data screening and data cleaning

To analyse the data we followed the steps defined in Hair, et al. (2009). The first step in data analysis is the cleaning and coding of the gathered data. The data can have missing values (respondents who forgot to answer a question or simply did not have an answer for a question) and outliers (values that are far from the accepted answers). Missing values were checked and defined procedures for data replacement persisted. This is possible to do if the number of variables with missing values is small and not for the key variables (Malhotra & Birks, 2017). Data screening techniques have the potential to improve the rigour of research in the social literature and beyond. The correct implementation of screening techniques can improve both researchers' and readers' confidence in a study's findings.

All gathered data must be coded to be entered into the software quickly and with fewer errors. Codes also need to be labelled in the statistical software for the researcher to remember which code is assigned to which data (Saunders et al. 2016). The proportion of missing values is depicted in Table 17.

Table 17. The Proportion of Missing Values

Variable		Number of Items	Number Missing Values	Percentage of Missing Values
Source of Credibility (SC)		29	17	4.9
SC	Homophily	5	0	0.0
	Expertise	5	0	0.0
	Trustworthiness	6	0	0.0
	Tie Strength	8	14	4.0
	Reputation	5	17	4.9
Quality of Information		5	11	3.2
Information Credibility		4	14	4.0
Needs of Information		2	16	4.6
Attitude Towards Information		4	18	5.2
Information Usefulness		5	21	6.1
Information Adoption		4	23	6.6
Purchase Intention		4	26	7.5
Gender		3	27	7.8
Age		6	27	7.8
Occupation		7	27	7.8
Income		6	27	7.8
Education Level		7	28	8.1
Residence		21	37	10.7

Missing data can represent an increased risk of reaching incorrect conclusions because absent values may bias parameter estimates, inflate Type I and Type II error rates, and significantly reduce statistical power (Collins, Schafer, & Kam, 2001). Analysing the 57 pre-selected numeric variables, the proportion of missing values ranged from zero to as high as 7.8 per cent. All the variables containing a significantly high proportion of missing values (over 10%) were signalled. We decided to delete every case where the percentage of missing values was higher than 10% of the questions. Eight cases were deleted and the remaining missing values were replaced by the mean, one of the most used methods to replace missing values (Hair et al. 2009).

4.8 Quality Criteria

When performing quantitative research, it is critical to assess the research's quality using a variety of criteria. Validity and reliability are two important criteria to consider when evaluating the quality of a study (Bell et al. 2018). The above-mentioned criteria are discussed in greater depth in the following sections.

We will use several criteria to assess the conceptual model based on Hair et al. (2017) that will be detailed in section 4.9.1.

4.8.1 Validity

We assess convergent validity by calculating the Average of variance extracted (AVE). AVE was originally proposed by Fornell and Larcker (1981). AVE is an indicator of convergent validity that measures the amount of variance that is captured by a construct

concerning the amount of variance due to measurement error (Chin, 2010; Dakduk, González, & Portalanza, 2019). Generally, an AVE of at least 0.5 or higher is demanded as an indication of convergent validity, this means that, on average, a latent variable can explain more than half of the variance of its indicators, otherwise, the variance of the error is more than the variance explained, which is considered unacceptable (Henseler, Ringle, & Sinkovics, 2009).

Discriminant validity is assessed by the Fornell and Larcker (1981) criterion which is assessed by comparing the AVE with the squared correlations between latent variables. Discriminant validity determines whether the constructs in the model are highly correlated among themselves or not. It compares the Square Root of AVE of a particular construct with the correlation between that construct with other constructs meaning that each construct is more related to its measures than with other constructs. It is generally suggested that the Square Root of AVE should be higher than the correlation of the construct with others (if not, the individual construct does not provide much discrimination) (Dakduk et al. 2019; Henseler et al. 2009).

4.8.2 Reliability

Cronbach's alpha and Composite Reliability (CR) can be used for checking the internal consistency of indicators for each latent variable. Values of Cronbach's alpha above 0.80 in later stages of the research are recommended (Chin, 2010; Dakduk et al. 2019; Henseler et al. 2009). A construct is considered unidimensional when the CR is larger than 0.7. This statistic is considered to be a better indicator of the unidimensionality than Cronbach's alpha (Chin, 2010).

4.8.3 Questionnaire pre-test

In April 2021 a pilot study with a written questionnaire was conducted. It was distributed online from the 27th of April 2021 to the 30th of April 2021. The reliability of the questionnaire items was tested through the pilot sample composed of 46 respondents from the population. The IBM SPSS Statistics 26 and the Cronbach alpha test was applied to examine internal reliability from the pilot study. Consequently, acceptable outcomes of alpha for measurement items were obtained. The ideal Cronbach's alpha value is considered over 0.70 by Hair et al. (2010). More specifically, as a rule of thumb, higher than 0.90 is considered as excellent reliability, 0.70-0.90 is regarded as high reliability, 0.50-0.70 is viewed as moderate reliability, and below 0.50 is considered as low reliability (Hinton et al. 2014). The Cronbach's alpha figures for all seven variables of this study are presented in Table 18.

Table 18. Internal Reliability Assessment for the Pilot Study

Constructs	Item	Number of Items	Cronbach's Alpha	Classification
Source Credibility	SC	29	0.933	Excellent Reliability
Dimension Homophily	HOM	5	0.880	High Reliability
Dimension Expertise	EXP	5	0.879	High Reliability
Dimension Trustworthiness	TRU	6	0.933	Excellent Reliability
Dimension Tie Strength	TIE	8	0.824	High Reliability
Dimension Reputation	REP	5	0.801	High Reliability
Information quality	IQUA	5	0.954	Excellent Reliability
Information credibility	ICRE	4	0.931	Excellent Reliability
Needs of information	NOI	2	0.839	High Reliability
Attitude towards information	ATI	4	0.923	Excellent Reliability
Information usefulness	IUS	5	0.942	Excellent Reliability
Information adoption	IAD	4	0.944	Excellent Reliability
Purchase intention	PIN	4	0.915	Excellent Reliability

The final results show that all variables have excellent or high reliabilities which highlight the internal consistency for all the scales used in this study (Hair, 2009; Hair et al. 2012; Tavakol & Dennick, 2011). Hence based on this assessment each questionnaire scale is considered internally consistent and reliable.

4.9 Structural Equation Modelling

Structural equation modelling (SEM) is a powerful multivariate analysis technique that is widely used in the social sciences (Chin et al. 2008; Hair et al. 2009; Marôco, 2014). Its applications range from the analysis of simple relationships between variables to complex analyses of measurement equivalence for first and higher-order constructs. It provides a flexible framework for developing and analysing complex relationships among multiple variables that allow researchers to test the validity of theory using empirical models. As the study goal was theory testing we choose to use Covariance-based SEM (CB-SEM) to test the hypothesized model (Hair et al. 2011, 2017).

SEM is a six-stage overall process consistent with a two-step approach as depicted in Figure 46. Indeed, the SEM technique includes two main steps which are confirming the measurement model and testing the structural model (Anderson, & Gerbing, 1988). In the first step, the Confirmatory Factor Analysis (CFA) confirms the relationships between the variables

and their measures, e.g., the measurement model, while the structural model confirms the relationships between the variables as hypothesized in the second step. More specifically, in the first step, we test the construct validity and fit of the proposed measurement model and, once a satisfactory measurement model is obtained, the second step is concerned to test the structural theory.

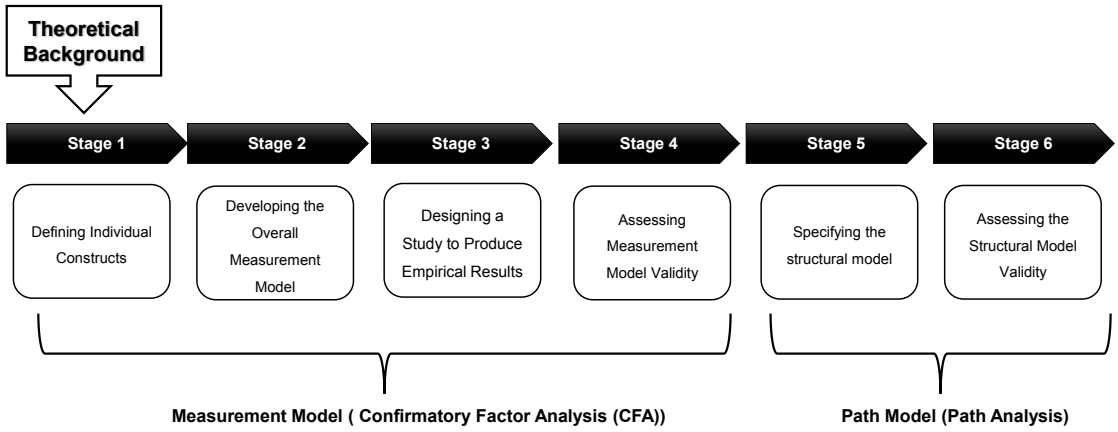


Figure 46: Stages in testing structural theory

Source: Adapted from Hair et al. (2009)

CFA is used to empirically study the relationships between the observed and latent variables of the measurement model, respectively referred to as factor indicators and factors. The structural model specifies the relationships among the constructs: factors and the observed variables not used as factor indicators. Moreover, it is an inferential model that allows for statistical estimation of the model parameters. As mentioned before, appropriately, we tested the proposed research framework in two consecutive steps. First, we tested the measurement model specifying the relationships between the latent constructs and their indicators. Next, the full structural model was estimated, encompassing the simultaneous estimation of the measurement and structural models (Anderson & Gerbing, 1988).

The first step in CFA is to conduct data screening. We scrutinized the sample data with SPSS before conducting CFA to check whether the basic assumptions of conducting SEM can be met. Howell (2008) stated that survey methods usually include failure to respond to some of the questions, which causes the problem of missing data. This can occur when a respondent fails to answer at least one question, which means that his answer cannot be used in the analysis.

4.9.1 Measurement Model Assessment

In conjunction with the structural model, the measurement approach allows for a comprehensive, confirmatory assessment of construct validity and reliability. The measurement model enables a confirmatory assessment of convergent and discriminant validity (Anderson & Gerbing, 1988) and constructs reliability. The fundamental purpose of this stage is to evaluate the assumptions related to the validity of the structural measurement model.

Validity is the measure of the accuracy of an instrument used in a study, to measure what is supposed to be measured for a construct (Ahmad et al.,2016; Martínez-López et al., 2013). The validity and reliability of the constructs are assessed based on the requirements stated in Table 19.

There are two types of validity required for each construct:

a) Convergent validity: is defined as the degree to which a set of items converges in reflecting the concept of the construct (Bagozzi & Yi, 2012; Hair et al., 2017). This validity may well as well be verified through Average Variance Extracted (AVE).
b) Discriminant validity: is defined as the extent to which a group of variables meant to measure a construct can differentiate the construct from others in the model. The discriminant validity is achieved when the measurement model is free from redundant items (Asyraf & Afthanorhan, 2013). Fornell and Larcker (1981) suggest that discriminant validity is established if a latent variable accounts for more variance in its associated indicator variables than it shares with other constructs in the same model. To satisfy this requirement, each construct's average variance extracted (AVE) must be compared with its squared correlations with other constructs in the model (Jaya et al. 2019). Should be present so that each measured variable corresponds to only a single construct and the constructs that make up a model each represent a unique entity (Hair et al. 2017)

Reliability is the extent of how reliable is the construct items in measuring the intended latent constructs (Awang, 2012; Henseler et al., 2009).

As previously referred, we will use several criteria to assess the reliability and the quality of the measurement model as depicted in Table 19 below, based on Hair et al. (2017).

Table 19. The Criterion for Assessing Measurement Models

Criterion	Measure	Recommendation	References
Internal reliability	Cronbach's Alpha	> 0.7	
Composite reliability (CR)	Internal consistency reliability of scale items: "indicator of the shared variance among the observed variables used as an indicator of a latent construct"	≥ 0.7, early stages of research; ≥ 0.8, later stages. ≤ 0.7 indicates a lack of reliability	(Fornell & Larcker, 1981) (Hair Jr. et al., 2017)
Indicator reliability	Absolute standardized loadings (denotes the indicator variance that is explained by the latent variable)	≥ 0.7 If standardized loading	(Henseler et al., 2009)
Convergent validity	The average variance extracted (AVE) (variance of the indicators explained by the latent variable).	≥ 0.5	(Fornell & Larcker, 1981)
Fornell–Larcker criterion	To ensure discriminant validity, the AVE of each latent variable should be higher than the squared correlations with all other latent variables. Thereby, each latent variable shares more variance with its set of indicators than with another latent variable representing a different set of indicators.	AVE of each latent variable ≥ highest squared correlation with any other latent variable	(Fornell & Larcker, 1981)

Source: Adapted from Hair et al. (2017)

4.9.2 Model Fit

There are several Fit Indices in SEM that reflect how fit is the data to the model. It is recommended that the use of at least one fit index from each category of model fit (Hu & Bentler, 1998). The information concerning the model fit category, their level of acceptance and literature are presented in Table 20.

Table 20. Model Fit Indices Criteria

Model Fit Indices	Descriptive	Acceptable Threshold Levels	Literature
Absolute Fit Indices			
Chi-Square χ2	Tests the equality between the observed and the implicit variance/covariances matrices. It is very sensitive to sample size (n>400)	Low χ2 relative to degrees of freedom with an insignificant p-value (p > 0.05)	(Hooper, Coughlan, & Mullen, 2008)
Root Means Square Error of Approximation Residual (RMSEA)	Is population discrepancy function which implies that how well the fitted model approximates per degree of freedom	< 0.08 acceptable fit <0.050 good fit Values less than 0.03 represent an excellent fit.	(Steiger, 2007) (Hu & Bentler, 1999)
Goodness of Fit Index (GFI)	The relative amount of the observed variances and covariances predicted by the model- implied covariance matrix.	Ranges from 0 to 1 ≥ 0.90 good fit This statistic should be used with caution	(Hooper et al. 2008) (Tabachnick et al. 2007)
Adjusted goodness of fit (AGFI)	Adjusts GFI for bias resulting from model complexity	Ranges from 0 to 1 ≥ 0.80 good fit	(Tabachnick et al. 2007)
Root mean square residual index (RMR)	Residual based. The average squared differences between the residuals of the sample covariances and the residuals of the estimated covariances. Unstandardised	= 0 perfect fit Desirably: <0.10 or 0.05	(Tabachnik and Fidell, 2007)
Standardised root mean square residual (SRMR)	A standardised version of the RMR. Easier to interpret due to its standardised nature.	< 0.08	(Hu & Bentler, 1999)
Incremental Fit Indices			
Normed Fit Index (NFI)	Assesses fit relative to a baseline model which assumes no covariances between the observed variables. Tends to overestimate fit in small samples	≥0.90	(Bentler & Bonett, 1980)
Incremental Fit Index (IFI)	Adjusts the NFI for sample size and degrees of freedom.	≥0.90	(Bollen, 1989)
Tucker Lewis Index (TLI)	Represents the comparative index between proposed and baseline model adjusted for df	≥0.90	(Hu & Bentler, 1999)
Confirmatory Fit Index (CFI)	Is an improved version of NFI. It is a highly recommend index for fitness of the model	≥ 0.90 Normed, 0-1 range	(T. Kline, 2005) (Hu & Bentler, 1999)
Parsimonious Fit Indices			
Parsimonious normed fit index (PNFI)	Is a modification of NFI considering de degrees of freedom of the target and the independence model	Ranges from 0 to 1 ≥ 0.90	(Mulaik et al., 1989)
Normed Chi-square	Chi-Square divided by models degrees of freedom.	1:5 desirable	(Tabachnik and Fidell, 2007) (T. Kline, 2005)

Source: Adapted from Hooper et al. (2008) and self-elaboration

The next chapter will provide the findings in terms of both the measurement and the structural model.

4.10 Ethical Considerations

Research ethics is one of the most important considerations when conducting research. Ethical issues must be discussed since it is a required acknowledgement when making business research (Bell et al. 2018). There are ethical issues with the participants, which can be described as a lack of informed consent, invasion of privacy, and misinformation. Lack of informed consent occurs when individuals are not given the information, they need to understand what they are doing. Invasion of privacy is when the respondents right to privacy is misused. For example, topics in the research might be sensitive for the respondents and the researcher must give the person an opportunity to not answer. Deception is when the researcher lies about their research and makes the research be perceived as something it is not. Deception is usually concerned with undesirable outcomes of research and the professional self-interest of the researcher (Bell et al. 2018).

Burton (2000) defined that “ethical concerns are present in all research designs and go beyond data collection to including analysis and publication”. Collis and Hussey (2013) suggested that researchers should consider four major aspects when conducting their research: participants, data protection, anonymity, and confidentiality. This research focuses on ethics as one of the most important aspects. The researcher of this study has made sure that ethical conduct was followed. The researcher has evaluated possible outcomes of the questions asked in the questionnaire to minimize harm to the respondents and their privacy. The respondents are anonymous to protect their career and their privacy. The participants were notified of the research aim and provided with background information about the study. In addition, the participants were assured that all responses would remain confidential and would be analysed at an aggregate level rather than an individual level. Demographic information was kept confidential, and all answers were saved in a password-protected folder on the researcher’s laptop. Also, the participants had an option to exit the questionnaire if they want to quit the questionnaire. The researcher has taken responsibility when it comes to interpretation and dissemination. When writing the results and interpreting information used in theory, the researcher has made sure to keep this ethical issue in mind. Also, informed consent is clearly shown, and no deception has occurred. In the description of the survey, the respondents have all the information they need to know what they are participating in which is shown in Appendix 4.

Finally, this research was conducted during the year 2021 when the COVID-19 outbreak was in full force. The pandemic came with restrictions in Portugal, mainly to the maintenance of rules of social distance and other restrictions like mandatory remote work and confinement (DGS, 2021; WHO, 2021). As a result, the researcher used digital technology to carry out is investigation. This study's work procedure has no harmful effects on the researcher or participants.

4.11 Summary of the Chapter

This chapter outlines the study's research design and discusses the research methodology used in detail. Then, along with the chosen approach, various research approaches were presented. Following that, this chapter looked at several research methodologies and explored why a survey strategy was selected. Following that, alternative data collection methods were considered, and a selection was made.

The development of measures and the questionnaire, as well as the preparation of interview questions, were all discussed in the same part.

Finally, this chapter has defined the research context; sampling strategies were introduced along with the chosen strategy and sample size. Additionally, pilot testing; analysis of the data; and ethical consideration were also presented. The following chapter presents the results of this research.

CHAPTER 5. RESULTS

This chapter presents the results of the empirical study conducted in this research. For this purpose, the chapter is divided into eight main sections. Over the next sections, we introduce the results of this research which aims to explore the determinants of eWOM information social media which influences consumers' purchase intentions of an OTC medicine.

Firstly, it demonstrates the results of the survey introduced in the previous chapter. As mentioned earlier, this study has employed the SEM technique to analyse how the collected data adjust to the conceptual model. For this purpose, the software AMOS 27 was used. The remainder of the section is organised as follows: Section 5.1 introduces the respondents' target; section 5.2 introduces the demographic profile of the respondents and section 5.3 their social media usage and internet experience. Then section 5.4 presents a descriptive summary of the measures. The following sections present the results of structural equation modelling including CFA, validity assessment and hypotheses testing. In section 5.8 we perform a multigroup analysis to evaluate the moderating role of gender. Finally, the last subsection provides the summary of this chapter.

The data was initially checked for missing values. As mentioned in section 4.7.3 the missing values found were replaced by the mean (Hair et al., 2009). Following that, outliers and normality tests were used to further examine the data in preparing it for further analysis using the CB-SEM technique which as mentioned earlier is the most adequate to perform theory testing and theory confirmation (Dash & Paul, 2021; Hair et al. 2017).

5.1 Respondents' target

The total number of the questionnaire respondents is 982, however, 27 (2.8%) respondents answered "no" on the first two control questions regarding the informed consent including the age to proceed with the study and which asked if they used the internet. The people who answered "no" on the control question could not continue with the questionnaire. Another control question regarding Social Media Engagement resulted in 867 respondents. However, simply 539 (62%) respondents receive information regarding OTC medicines. Since the target population are people who read online reviews about OTC medicines, we had 375 respondents that replied "yes" to the last control question. (Figure 47)

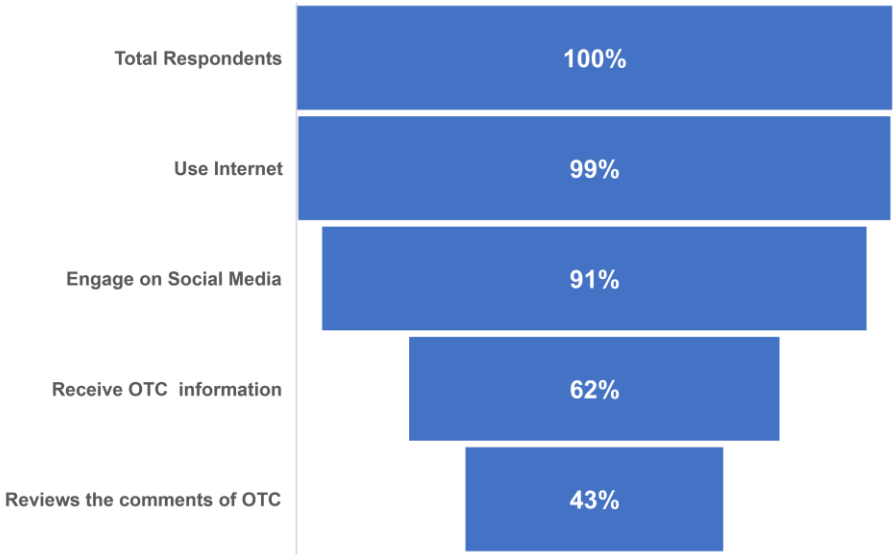


Figure 47: Characterization of the Population

In other words, when we analyse the rough data, we can reveal that 38% of the respondents that engage in social media do not receive any information regarding OTC medicines and 30% of the respondents that receive information do not read the online reviews. Though it is not the purpose of the study it is important to report that 62% of our respondents that engage on social media receive information regarding OTC drugs and of those 70% read and analyse the reviews regarding OTC medicines.

5.2 Demographic Profile

The final sample is composed of 346 respondents since the target population are individuals that engage in social media and review comments about OTC medicines in Portugal. The demographic profiles of the respondents are detailed below.

Table 21. Distribution of Respondents Gender

Gender	Frequency	Valid Percentage
Female	211	66.1
Male	108	33.9

The distribution of the gender of the respondents is shown in Table 21. It is possible to observe that the sample is mostly female (66.1%).

Table 22. Distribution of Respondents Age

Age	Frequency	Valid Percentage
18 - 24	47	14.7
25 - 34	48	15.0
35 - 44	65	20.4
45 - 54	74	23.2
55 - 64	63	19.7
>= 65	22	6.9

Table 22 presents the distribution of age of the respondents. Regarding the age group, the sample distribution by age group is very balanced noting that 63.3% are aged between 35 and 64 years old and finally only 6.9% of the individuals are over 65 years.

Table 23. Distribution of Respondents Education Level

Education Level	Frequency	Valid Percentage
Basic School	1	0.3
High School	54	17.0
Graduation	142	44.7
Post - Graduation	21	6.6
Master	61	19.2
PhD	33	10.4
Other	6	1.9

The distribution of the education level of the respondents is shown in Table 23. The sample is characterized by individuals with qualifications literary at the highest level of education (80.8%) and leaving undergraduate education with 17.0% of the respondents.

Table 24. Distribution of Respondents Occupation

Occupation	Frequency	Valid Percentage
Student	44	13.8
Employed by others	153	48.0
Self-Employed	36	11.3

Unemployed	14	4.4
Student Worker	42	13.2
Retired	26	8.2
Other	2	1.3

The distribution of occupation of the respondents is shown in Table 24. The sample is characterized by individuals employed (72.5%), students (13.8%) and retired (8.2%).

Table 25. Distribution of Respondents Income

Monthly Income	Frequency	Valid Percentage
<= 1.000 €	66	20.7
1.001 € - 2.000 €	99	31.0
2001 € - 3000 €	60	18.8
3001 € - 4000 €	33	10.3
> 4000 €	18	5.6
I don’t want to answer	43	13.5

The distribution of income of the respondents is shown in Table 25. The sample is characterized by 60.2% of individuals that earn between 1.000 euros and 4.000 euros monthly, 20.7% earn less than 1.000 euros monthly only 5.6% of the respondents have a monthly income higher than 4.000 euros. Note that 13.5% of the respondents did not want to reply to this question.

Table 26. Distribution of Respondents Residency

Residency	Frequency	Valid Percentage
Lisboa	197	63.8
Setubal	34	11.0
Porto	23	7.4
Évora	11	3.6
Faro	8	2.6
Coimbra	8	2.6
Santarém	6	1.9
Autonomos Regions (islands)	4	1.3
Other (12)	18	5.8

The distribution of residency of the respondents is shown in Table 26. We had replies from all the 20 districts of Portugal. The sample is characterized by 71.2% of individuals that reside in the main cities of the country (Lisbon and Porto) leaving us to conclude that these respondents are mainly urban people. 23.0% of the respondents live in the largest district capitals from the north centre and the south of the country, including the islands.

5.3 Social media usage and internet experience

Habits of social media platform usage before and after COVID-19 pandemic is depicted in Figure 48.

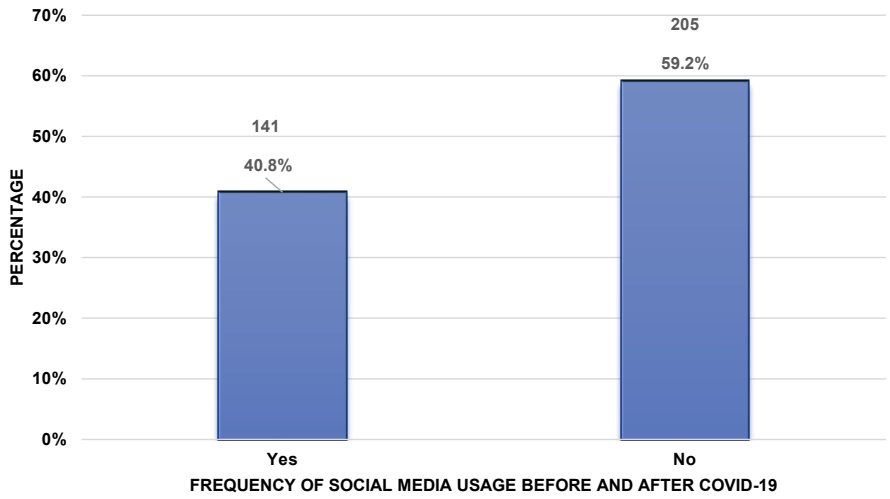


Figure 48: Social Media and COVID-19

When we asked our target if they increased their social media frequency of usage after COVID-19, the majority of the respondents (59.2%) replied that they did not begin using social media platforms more often due to the pandemic situation. Nevertheless, 40.8% of the

individuals claim that they have increased the usage of these platforms due to pandemic issues and this is a relevant percentage.

The social media adoption of the respondents is introduced in Figure 49.

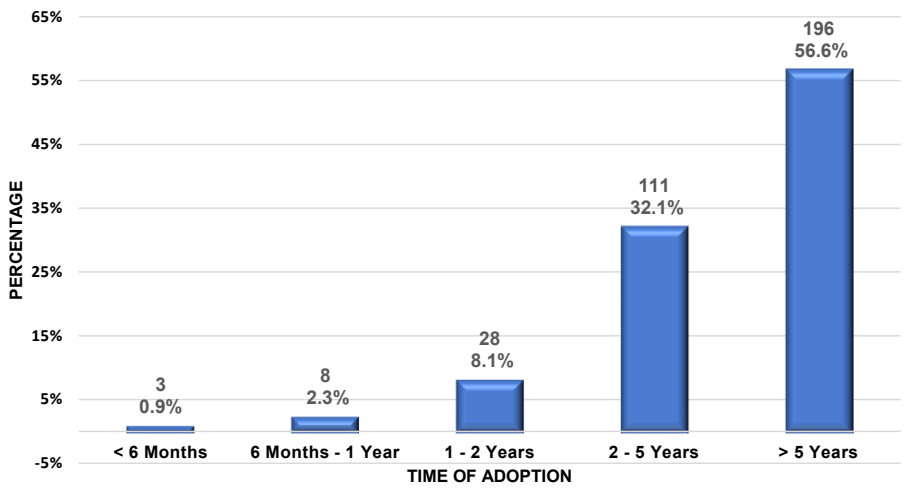


Figure 49: Distribution of the Social Media Adoption

Using the time and percentage of adoption, the adoption curve for study respondents suggests that the majority of the respondents (88.7 %) engage in social media for more than 2 years, whilst 8.1% engage in social media between 1 - 2 years and only 3.2% for less than 1 year.

The social media frequency of daily use of the respondents is introduced in Figure 50.

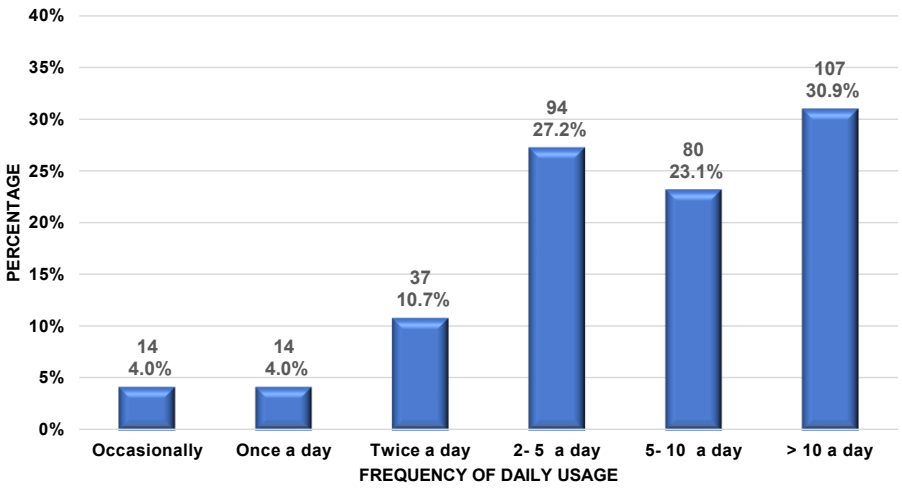


Figure 50: Distribution of Social Media Frequency of Usage

Most of the respondents (30.9%) use social media websites more than 10 times a day, 23.1% of the respondents use social media 5 - 10 times a day and 37.9% use between 2

- 5 times a day, while the usage of 8.0 % of the respondents' is only occasionally or once a day.

The social media daily use intensity of the respondents is introduced in Figure 51.

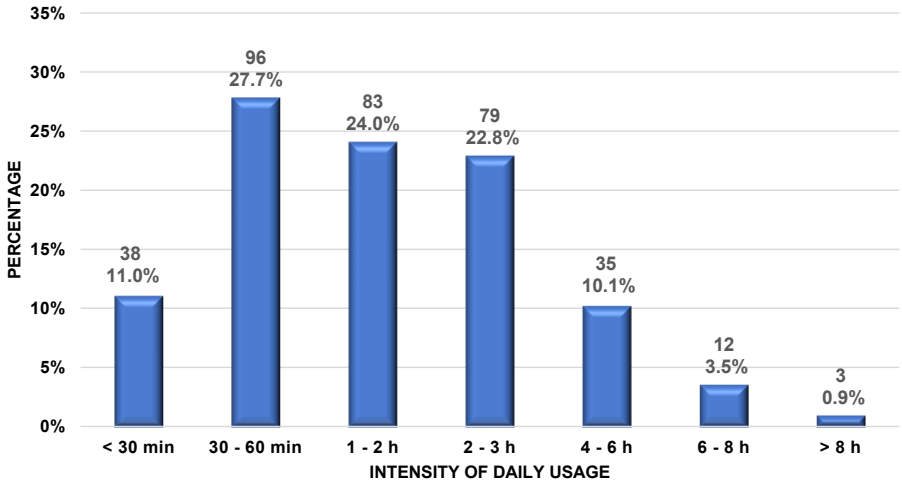


Figure 51: Distribution of Social Media Intensity of Usage

Most of the respondents (46.8%) spend 1-3 hours a day on social media websites. 38.7% of the respondents spend less than 60 minutes, while 14.5% spend more than 4 hours a day.

The social media frequency of posting content of the respondents is introduced in Figure 52.

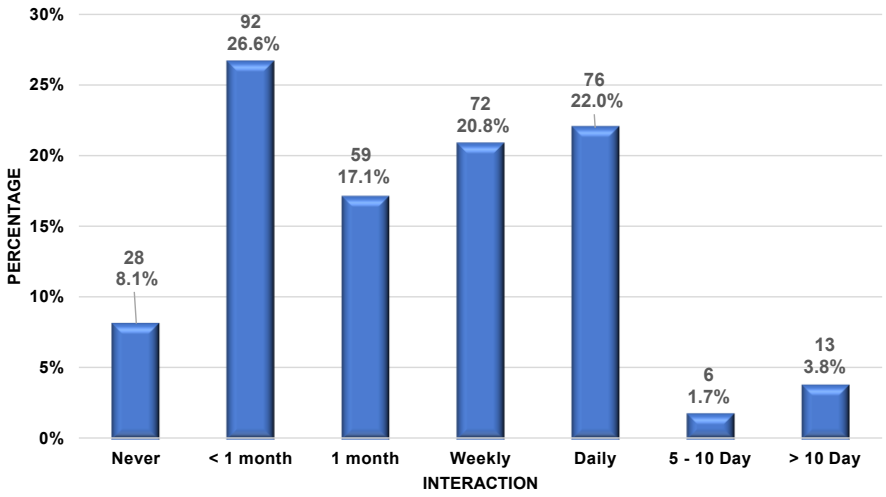


Figure 52: Distribution of Social Media Interaction

Most of the respondents (46.8%) are not much active on social media websites since they post content once a month or less. 20.8% of the respondents are quite active and produce

weekly interactions, 23.7% are very active interacting on daily basis, and 3.8% of the respondents are extremely active producing more than 10 times daily interactions.

Finally, the respondents' adoption of social media applications will be compared to Portugal share of market penetration among social media general users. The use of social media applications by study respondents, compared with general use in Portugal[26] is presented in Figure 53.

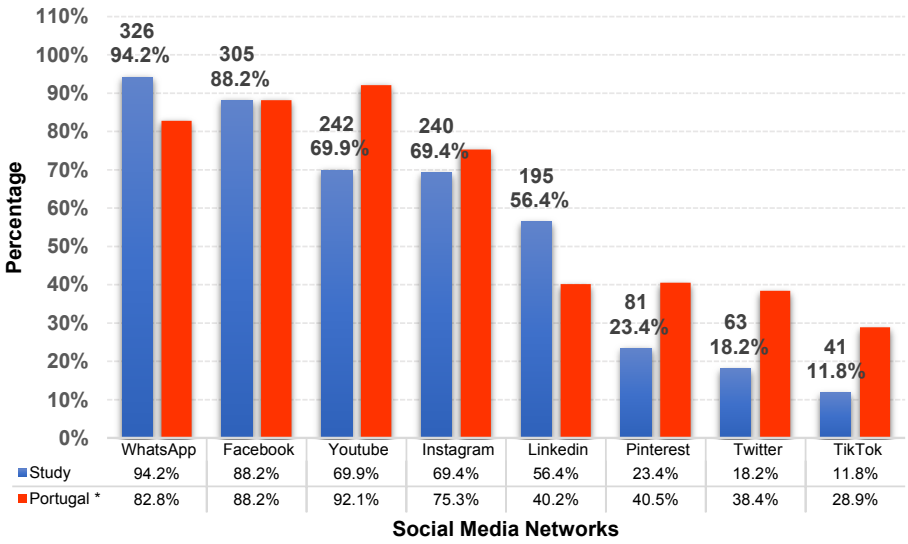


Figure 53: Social Media Applications by Study Respondents

The majority of the study respondents select the use of WhatsApp (94.2%), Facebook (88.2%), Youtube (69.9%), Instagram (69.4%) and LinkedIn (56.4%) which are in line with the national average of main networks utilized according to the Digital Report Portugal (2021) (Social, 2021b).

5.4 Measures Characterization

All measures were carried out by a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The mean shows the centre of the data and if the mean of the question is above 3 that means that the respondents are positive (agree) towards the variable. Below the scale 3 shows the opposite, that the respondents are negatively minded (disagree) towards that variable. Presented in able 25 we can see the mean score for the items of all seven variables and they are as follows: (1) one can see that the homophily items is between 2.27 (HOM2) and 2.72 (HOM5) which means that overall they are as negatively perceived though, the most valued item by the respondents was "The reviewer must have a "lifestyle" similar to mine."; (2) expertise is overall positively perceived ranging between

[26] Source: We Are Social / Digital Report Portugal 2021

3.77(EXP2) and 4.07(EXP3) indicating that the most valued item by the respondents was “The reviewer must reveal knowledge about the subject”; (3) trustworthiness was also positively perceived and is between 3.59 (TRU1) and 4.17 (TRU3) so the most valued item was “The reviewer must be reliable”; (4) tie strength is between 3.13 (TIE2) and 3.94 (TIE1) which overall is perceived closed to undecided or neutral, however the most valued item was “The author mustn't be anonymous”; (5) reputation is between 3.45 (REP3) and 3.90 (REP1) which are closer to the value 3 and therefore considered positive nevertheless we can see that the most valued item was “I always consider if the source has a good reputation in the field”; (6) overall, information quality is perceived positively and the mean ranges between 3.97 (IQUA1) and 4.06 (IQUA4) meaning that the item the respondents most valued was “I think the information is objective”; (7) information credibility was also perceived positively oscillating between 3.80 (ICRE1) and 4.06 (ICRE3) as so, the most valued item by the respondents was “I think they are credible”; (8) needs of information is between 3.07 (NOI1) and 3.28 (NOI2) and therefore considered undecided/neutral; (9) the same analysis could be applied to the variable attitude towards information which range between 3.24 (ATI1) and 3.45 (ATI4); (10) likewise, the variable information usefulness ranges between 3.25 (IUS4 and IUS5) and 3.42 (IUS2 and IUS3); (11) equivalent evaluation for variable information adoption ranging between 3.23 (IAD3) and 3.36 (IAD4); (12) and finally, the variable purchase intention is negatively perceived regarding the item PIN3 (2.63) “I will certainly buy the product” and PIN4 (2.90) and neutral or undecided in the other two items PIN1 (3.03) “I will most likely buy the product” and PIN2 (3.18) “I will purchase the product next time I need it”. The use of mean scores was found appropriate in this study since the sample size was large and did not include outliers. Also, the mean value is the most frequently used measure of central tendency to explore statistical relationships (Saunders et al. 2012). There was a greater dispersion of agreement on Homophily (standard deviation (SD) ranges from 1.122 to 1.070) and lower dispersion in information quality (SD ranges from 0.669 to 0.748). Table 27 lists means and standard deviations for all measurements.

Table 27. Descriptive Statistics of Survey Measurements

Constructs	Code	Items	Mean	Std. Deviation
Homophily	HOM1	The reviewer must be very similar to me	2.60	1.099
	HOM2	The reviewer must be the same gender as me.	2.27	1.070
	HOM3	The reviewer must think like me.	2.53	1.090
	HOM4	The reviewer must belong to the same age group as	2.57	1.081
	HOM5	The reviewer must have a “lifestyle” similar to mine.	2.72	1.122

Expertise	EXP1	The reviewer must be an expert on the subject.	3.98	1.007
	EXP2	The reviewer must be experienced	3.77	0.977
	EXP3	The reviewer must reveal knowledge about the subject	4.07	0.867
	EXP4	The reviewer must be qualified	4.02	0.912
	EXP5	The reviewer must be skilled	4.01	0.883
Trustworthiness	TRU1	The reviewer must be independent.	3.59	0.992
	TRU2	The reviewer must be honest.	4.15	0.864
	TRU3	The reviewer must be reliable	4.17	0.864
	TRU4	The reviewer must be sincere.	4.10	0.915
	TRU5	The reviewer must be authentic.	4.00	0.890
	TRU6	The reviewer must be trustworthy	4.13	0.848
Tie Strength	TIE1	The author mustn't be anonymous	3.94	1.072
	TIE2	The author must be someone I know	3.13	1.066
	TIE3	I value the comments of my friends more than anonymous	3.68	0.975
	TIE4	I value the comments of my family more than anonymous	3.69	0.982
	TIE5	Comments from my friends more easily influence my choices	3.51	0.899
	TIE6	Comments from my family more easily influence my choices	3.56	0.889
	TIE7	The positive comments from my friends have great relevance to me	3.70	0.806
	TIE8	The positive comments from my family have great relevance to me	3.73	0.799
Reputation	REP1	I always consider if the source has a good reputation in the field.	3.90	0.829
	REP2	I always consider if the source has a good corporate reputation	3.67	0.882
	REP3	I always consider if the source is well known	3.45	0.852
	REP4	I always consider if the source has a good integrity	3.89	0.785
	REP5	I always consider my past. experience with the source	3.63	0.926
Information quality	IQUA1	I think they are understandable.	3.97	0.709
	IQUA2	I think they are clear.	4.04	0.669
	IQUA3	In general. I think the quality of them is high.	4.01	0.748
	IQUA4	I think the information is objective	4.06	0.723
	IQUA5	I think the information is complete	4.04	0.727
Information credibility	ICRE1	I think they are convincing	3.80	0.779
	ICRE2	I think they are strong	3.98	0.727
	ICRE3	I think they are credible	4.06	0.721
	ICRE4	I think they are accurate	4.03	0.828
Needs of information	NOI1	I like to apply them when I consider new products	3.28	1.030
	NOI2	If I have little experience with a product. I often use them	3.07	1.119

Attitude towards information	ATI1	I always read them when I buy an OTC.	3.24	1.116
	ATI2	They are helpful for my decision making when I buy an OTC.	3.39	1.008
	ATI3	They make me confident in purchasing an OTC	3.37	1.015
	ATI4	They make my decision process easier in purchasing an OTC	3.45	0.994
Information usefulness	IUS1	I think they are generally useful	3.38	0.876
	IUS2	I think they are generally informative.	3.42	0.859
	IUS3	I think they are generally practical.	3.42	0.866
	IUS4	I think they are generally profitable.	3.25	0.896
	IUS5	I think they are generally relevant.	3.25	0.849
Information adoption	IAD1	They make it easier for me to make a purchase decision.	3.25	0.957
	IAD2	They enhance my effectiveness in making a purchase decision.	3.28	0.980
	IAD3	They make me decide to purchase faster.	3.23	0.961
	IAD4	They motivate me to make a purchase decision.	3.36	0.969
Purchase intention	PIN1	I will most likely buy the product.	3.03	0.948
	PIN2	I will purchase the product next time I need it.	3.18	0.935
	PIN3	I will certainly buy the product.	2.63	0.964
	PIN4	I will recommend the product to my friends and contacts	2.90	1.024

N=346

5.5 Data analysis methods and tools

The data was analysed by Structural Equation Modelling (SEM) using AMOS version 27.0 software. SEM is a multivariate technique, which estimates a series of inter-related dependence relationships simultaneously. The hypothesized model can be tested statistically in simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. In comparison to the other statistical procedures, SEM models enable researcher(s) to evaluate the complex models in terms of their compatibility with all the relationships (covariances) in the data set. While SEM is a general term encompassing a variety of statistical models, covariance-based SEM (CB-SEM) is a more widely used approach in SEM. CB-SEM is more appropriate to affirm theory testing and confirmation and for this reason, it follows a maximum likelihood (ML) estimation procedure that aims at reproducing the covariance matrix without focusing on explained variance (Astrachan et al., 2014; Hair et al. 2011). In other words, with CB-SEM, the R^2 is a by-product of the overall statistical objective of achieving a good model fit (Astrachan et al. 2014; Hair et al. 2021).

5.5.1 Data analysis procedures

As referred to in Chapter 4 section 4.9, we applied the Anderson and Gerbing two-step modelling approach: the measurement model estimated by a confirmatory factor analysis giving a comprehensive means for assessing whether any structural model would give an acceptable fit (Anderson & Gerbing, 1988). A CFA the maximum likelihood discrepancy estimation method was used to assess the measurement model and a structural equation model was used to test the hypothesized relations in the model. The validity and reliability of a measurement model can be assessed in the first step (Hair et al., 2009; Marôco, 2014). Validity is the ability of the construct items to measure what is supposed to be measured for a construct (Henseler et al. 2009). The validity of the measurement model is assessed based on the requirements stated in Table 19.

5.5.2 Data Screening

After cleansing the data following the procedures described in Chapter 4 section 4.7.3, we found that all variables were normally distributed using the criterion that the univariate skewness and kurtosis must be lower than 2 and 7, respectively (Chou & Bentler, 1995). No substantial outliers were identified.

Sample size adequacy, missing data, normality and linearity, outliers and singularity and factorability were verified to conclude if data was appropriate. Three factors typically decide the sample size: type of distribution (observed variables), model complexity as well as the kind of method used for estimation (Kyriazos, 2018; Muthén & Muthén, 2002). We used the maximum likelihood estimation method (MLE). Hair et al. (2014) suggested that CB-SEM can be used for a large sample size (more than 200). The sample size of 338 was considered sufficiently adequate to perform CFA (Jackson, 2003; Marôco, 2014). Table 28 presents the Skewness and Kurtosis scores of all the variables used in this study.

Table 28. Skewness and Kurtosis Scores

Constructs	Items	Mean	Std. Deviation	Skewness	Kurtosis
Homophily	HOM1	2.60	1.096	0.033	-1.053
	HOM2	2.27	1.065	0.349	-0.995
	HOM3	2.54	1.089	0.053	-1.149
	HOM4	2.58	1.076	0.036	-1.128
	HOM5	2.73	1.120	-0.135	-1.146
Expertise	EXP1	3.99	0.996	-1.186	1.219
	EXP2	3.77	0.980	-1.073	1.116
	EXP3	4.07	0.863	-1.368	2.825
	EXP4	4.02	0.916	-1.112	1.475
	EXP5	4.01	0.873	-1.132	1.939

Trustworthiness	TRU1	3.59	0.992	-0.641	0.231
	TRU2	4.15	0.866	-1.367	2.686
	TRU3	4.17	0.866	-1.587	3.621
	TRU4	4.10	0.912	-1.308	2.224
	TRU5	4.00	0.893	-1.061	1.562
	TRU6	4.13	0.849	-1.457	3.306
Tie Strength	TIE1	3.93	1.077	-1.148	0.979
	TIE2	3.12	1.067	-0.141	-0.545
	TIE3	3.68	0.969	-0.900	0.591
	TIE4	3.69	0.973	-0.895	0.657
	TIE5	3.51	0.895	-0.745	0.431
	TIE6	3.56	0.882	-0.858	0.606
	TIE7	3.70	0.800	-1.085	1.778
	TIE8	3.73	0.792	-1.064	1.965
Reputation	REP1	3.90	0.824	-1.258	2.608
	REP2	3.67	0.874	-0.859	1.032
	REP3	3.45	0.844	-0.478	0.306
	REP4	3.89	0.774	-0.998	2.145
	REP5	3.63	0.913	-0.661	0.469
Information quality	IQUA1	3.97	0.705	-1.488	4.904
	IQUA2	4.04	0.666	-1.504	5.906
	IQUA3	4.01	0.745	-1.325	3.862
	IQUA4	4.06	0.720	-1.433	4.777
	IQUA5	4.04	0.724	-1.335	4.349
Information credibility	ICRE1	3.80	0.772	-0.996	1.936
	ICRE2	3.98	0.720	-1.222	3.672
	ICRE3	4.06	0.714	-1.266	4.089
	ICRE4	4.03	0.820	-1.089	2.149
Needs of information	NOI1	3.28	1.017	-0.678	-0.093
	NOI2	3.07	1.106	-0.384	-0.807
Attitude towards information	ATI1	3.24	1.100	-0.380	-0.664
	ATI2	3.39	0.993	-0.654	-0.011
	ATI3	3.37	0.999	-0.647	-0.125
	ATI4	3.45	0.979	-0.833	0.352
Information usefulness	IUS1	3.38	0.859	-0.813	0.498
	IUS2	3.42	0.842	-0.819	0.846
	IUS3	3.42	0.850	-0.832	0.774
	IUS4	3.25	0.879	-0.568	0.372
	IUS5	3.25	0.832	-0.517	0.303
Information adoption	IAD1	3.25	0.935	-0.664	-0.179
	IAD2	3.28	0.958	-0.705	-0.103
	IAD3	3.23	0.940	-0.620	-0.076
	IAD4	3.36	0.947	-0.803	0.181
Purchase intention	PIN1	3.03	0.922	-0.354	-0.440
	PIN2	3.18	0.910	-0.562	-0.059
	PIN3	2.63	0.938	0.089	-0.296
	PIN4	2.90	0.997	-0.173	-0.545
Valid N (listwise)		338			

5.6 Measurement model

Construct validity examines scales and measures to indicate whether they accurately represent the concept of interest or not (Bell et al. 2018). Therefore, in this study, two analyses were conducted to examine the construct validity: (1) convergent validity, (2) discriminant validity. To evaluate the measurement model, we will use the criterion detailed in section 4.9.1 Table 19.

5.6.1 Convergent Validity and Construct Reliability

Table 29. Measurement Model Final Results

Constructs	Code	Item	Standardized Coefficient	Cronbach alpha	AVE	CR
Homophily	HOM1	The reviewer must be very similar to me	Excluded	**0.863**	**0.578**	**0.844**
	HOM2	The reviewer must be the same gender as me.	0.726			
	HOM3	The reviewer must think like me.	0.704			
	HOM4	The reviewer must belong to the same age group as me.	0.866			
	HOM5	The reviewer must have a “lifestyle” similar to mine.	0.833			
Expertise	EXP1	The reviewer must be an expert on the subject.	0.750	**0.912**	**0.708**	**0.924**
	EXP2	The reviewer must be experienced	0.781			
	EXP3	The reviewer must reveal knowledge about the subject	0.861			
	EXP4	The reviewer must be qualified	0.842			
	EXP5	The reviewer must be skilled	0.887			
Trustworthiness	TRU1	The reviewer must be independent.	Excluded	**0.965**	**0.878**	**0.973**
	TRU2	The reviewer must be honest.	0.896			
	TRU3	The reviewer must be reliable	0.947			
	TRU4	The reviewer must be sincere.	0.934			
	TRU5	The reviewer must be authentic.	0.885			
	TRU6	The reviewer must be trustworthy	0.943			
Tie Strength	TIE1	The author mustn't be anonymous	Excluded	**0.897**	**0.699**	**0.920**
	TIE2	The author must be someone I know	Excluded			
	TIE3	I value the comments of my friends more than anonymous	Excluded			
	TIE4	I value the comments of my family more than anonymous	0.691			
	TIE5	Comments from my friends more easily influence my choices	0.812			

	TIE6	Comments from my family more easily influence my choices	0.798			
	TIE7	The positive comments from my friends have great relevance to me	0.847			
	TIE8	The positive comments from my family have great relevance to me	0.858			
Reputation	REP1	I always consider if the source has a good reputation in the field.	0.813	**0.858**	**0.691**	**0.899**
	REP2	I always consider if the source has a good corporate reputation	0.796			
	REP3	I always consider if the source is well known	0.664			
	REP4	I always consider if the source has a good integrity	0.833			
	REP5	I always consider my past. experience with the source	Excluded			
Information quality	IQUA1	I think they are understandable.	0.852	**0.932**	**0.816**	**0.965**
	IQUA2	I think they are clear.	0.877			
	IQUA3	In general. I think the quality of them is high.	0.853			
	IQUA4	I think the information is objective	0.862			
	IQUA5	I think the information is complete	0.846			
Information credibility	ICRE1	I think they are convincing	0.762	**0.900**	**0.806**	**0.943**
	ICRE2	I think they are strong	0.902			
	ICRE3	I think they are credible	0.914			
	ICRE4	I think they are accurate	0.788			
Needs of information	NOI1	I like to apply them when I consider new products	0.803	**0.774**	**0.605**	**0.754**
	NOI2	If I have little experience with a product. I often use them	0.789			
Attitude towards information	ATI1	I always read them when I buy an OTC.	0.690	**0.911**	**0.712**	**0.907**
	ATI2	They are helpful for my decision making when I buy an OTC.	0.862			
	ATI3	They make me confident in purchasing an OTC	0.912			
	ATI4	They make my decision process easier in purchasing an OTC	0.931			
Information usefulness	IUS1	I think they are generally useful	0.846	**0.934**	**0.759**	**0.952**
	IUS2	I think they are generally informative.	0.847			
	IUS3	I think they are generally practical.	0.864			
	IUS4	I think they are generally profitable.	0.877			
	IUS5	I think they are generally relevant.	0.870			
Information adoption	IAD1	They make it easier for me to make a purchase decision.	0.920	**0.952**	**0.847**	**0.957**
	IAD2	They enhance my effectiveness in making a purchase decision.	0.931			
	IAD3	They make me decide to purchase faster.	0.906			

	IAD4	They motivate me to make a purchase decision.	0.890			
Purchase intention	PIN1	I will most likely buy the product.	0.854	**0.910**	**0.738**	**0.918**
	PIN2	I will purchase the product next time I need it.	0.867			
	PIN3	I will certainly buy the product.	0.817			
	PIN4	I will recommend the product to my friends and contacts	0.842			

N = 338

Along the process of assessing the measurement model according to several quality criteria, we excluded the items signalized in grey in Table 29 to improve both validity and reliability. Thus we dismissed HOM1 to improve the convergent validity (AVE), and TRU1, TIE1, TIE2, TIE3 and REP5 because the standardized loadings were low (< 0.70) (TRU1 0.56, TIE1 0.479, TIE2 0.486, IE3 0.687 and REP5 0.507) as these items fail to meet the recommended benchmarks and were eliminated along the process to improve the global model fit.

As a result, from Table 29 we confirm the reliability of the measurement model: first, because all the constructs meet the minimum value of 0.7 for the composite reliability (Table 19); second, because all the items, except for 3 items (out of 50), present loadings well above 0.7 (Table 19). The three items below 0.7 are from the tie strength (TIE4 loading of 0.691), attitudes towards information (ATI1 loading of 0.690) and reputation (REP3 loading of 0.661). However, according to Chin (1998), a factor loading lower than 0.7, but higher than 0.5, can be accepted if other items in the same construct present high scores, which is the case for those constructs. Therefore, due to this fact and to the conceptual importance of those items, they were kept in the model. Other than that, the value of Cronbach Alpha for all constructs is greater than 0.70, AVE is greater than 0.50 and CR is greater than 0.80 except for variable NOI with a CR of 0.754 but within appropriate values for the research.

We can derive from Table 29 that the model achieved all statistical benchmarks for validity.

The recommended procedure to assess discriminant validity is comparing the variance captured by the construct with the variance shared with other constructs. The AVE's square roots for each construct should be higher than the correlation between the constructs (Fornell & Larcker, 1981). That is according to Fornell and Larcker (1981) criteria, discriminant validity is established if a latent variable accounts for more variance in its associated indicator variables than it shares with other constructs in the same model (Henseler, Ringle, & Sarstedt, 2015).

The average variance extracted (AVE) and the correlation coefficients between the constructs are summarized in Table 30.

Table 30. Fornell-Larcker Scale

	HOM	EXP	TRU	TIE	REP	IAQU	ICRE	NOI	ATI	IUS	IAD	PIN
HOM	**0.760**											
EXP	0.156	**0.841**										
TRU	0.140	0.825	**0,937**									
TIE	0.386	0.264	0.362	**0.836**								
REP	0.225	0.664	0.607	0.464	**0.831**							
IQUA	0.165	0.585	0.639	0.483	0.676	**0.903**						
ICRE	0.087	0.560	0.652	0.464	0.653	0.843	**0.898**					
NOI	0.355	0.266	0.350	0.442	0.478	0.419	0.454	**0.778**				
ATI	0.314	0.263	0.317	0.447	0.402	0.408	0.417	0.709	**0.844**			
IUS	0.395	0.310	0.353	0.491	0.383	0.343	0.368	0.761	0.738	**0.871**		
IAD	0.389	0.324	0.398	0.450	0.529	0.432	0.455	0.752	0.678	0.772	**0.920**	
PIN	0.378	0.202	0.286	0.412	0.349	0.259	0.308	0.753	0.711	0.760	0.844	**0.859**

Note - *The square root of the average variance extracted (AVE) (in bold) and correlations between constructs (off-diagonal).*

Referring to Table 30, the discriminant validity was assessed using Fornel and Larcker (1981) criteria by comparing the square root of each AVE in the diagonal with the correlation coefficients (off-diagonal) for each construct in the relevant rows and columns. Overall, discriminant validity can be accepted for this measurement model and supports the discriminant validity between the constructs.

Concerning its reliability and validity, the analysis results did not find any issues regarding the assessment of the measurement model. Hence, the collected data can further be employed to assess the structural model.

5.6.2 Assessment of Normality

The assumption of multivariate normality is critical to CB-SEM. Univariate normality results are presented in Table 31. All indicators are within the rules of thumb defined for normal skewness and kurtosis. The results of Table 31 show that all indicators are within the rules of thumb defined for this criteria. Hair et al (2009) and Byrne (2010) argued that data is considered to be normal if skewness is between -2 to +2 and kurtosis is between -7 to +7. Based on this recommendation the absolute values of the Skewness and Kurtosis of all the items in this study are within the acceptable range (between -1.580 and 0.348 and between -1.149 and 5.801, respectively).

Table 31. Assessment of Normality

Constructs	Variables	Min	Max	Skewness	C.R	Kurtosis	C.R
Homophily	HOM2	1	5	0.348	2.609	-0.998	-3,746
	HOM3	1	5	0.053	0.398	-1.149	-4,313
	HOM4	1	5	0.036	0.269	-1.129	-4,237
	HOM5	1	5	-0.135	-1.012	-1.147	-4,305
Expertise	EXP1	1	5	-1.181	-8.864	1.183	4,441
	EXP2	1	5	-1.068	-8.016	1.082	4,059
	EXP3	1	5	-1.362	-10.223	2.766	10,379
	EXP4	1	5	-1.108	-8.313	1.436	5,389
	EXP5	1	5	-1.127	-8.457	1.893	7,104
Trustworthiness	TRU2	1	5	-1.361	-10.215	2.628	9,863
	TRU3	1	5	-1.580	-11.855	3.550	13,322
	TRU4	1	5	-1.303	-9.777	2.173	8,156
	TRU5	1	5	-1.056	-7.925	1.522	5,710
	TRU6	1	5	-1.450	-10.886	3.24	12,159
Tie Strength	TIE4	1	5	-0.891	-6.686	0.629	2,362
	TIE5	1	5	-0.741	-5.563	0.407	1,527
	TIE6	1	5	-0.855	-6.414	0.580	2,176
	TIE7	1	5	-1.080	-8.109	1.734	6,509
	TIE8	1	5	-1.059	-7.952	1.918	7,198
Reputation	REP1	1	5	-1.252	-9.397	2.552	9,578
	REP2	1	5	-0.855	-6.419	0.999	3,749
	REP3	1	5	-0.476	-3.572	0.284	1,066
	REP4	1	5	-0.994	-7.458	2.095	7,863
Information quality	IQUA1	1	5	-1.481	-11.117	4.814	18,067
	IQUA2	1	5	-1.497	-11.239	5.801	21,77
	IQUA3	1	5	-1.319	-9.901	3.788	14,215
	IQUA4	1	5	-1.427	-10.71	4.689	17,595
	IQUA5	1	5	-1.330	-9.979	4.267	16,013
Information credibility	ICRE1	1	5	-0.992	-7.444	1.889	7,090
	ICRE2	1	5	-1.217	-9.131	3.601	13,512
	ICRE3	1	5	-1.261	-9.463	4.011	15,051
	ICRE4	1	5	-1.085	-8.141	2.100	7,881
Needs of information	NOI1	1	5	-0.675	-5.069	-0.109	-0,410
	NOI2	1	5	-0.382	-2.87	-0.813	-3,052
Attitude towards information	ATI1	1	5	-0.378	-2.837	-0.672	-2,521
	ATI2	1	5	-0.651	-4.886	-0.028	-0,106
	ATI3	1	5	-0.617	-4.632	-0.092	-0,346
	ATI4	1	5	-0.799	-5.998	0.16	0,602
Information usefulness	IUS1	1	5	-0.810	-6.077	0.473	1,775
	IUS2	1	5	-0.815	-6.120	0.815	3,060
	IUS3	1	5	-0.828	-6.218	0.745	2,797
	IUS4	1	5	-0.565	-4.241	0.348	1,307
	IUS5	1	5	-0.515	-3.865	0.280	1,053

Information adoption	IAD1	1	5	-0.661	-4.959	-0.194	-0,729
	IAD2	1	5	-0.702	-5.267	-0.119	-0,447
	IAD3	1	5	-0.617	-4.632	-0.092	-0,346
	IAD4	1	5	-0.799	-5.998	0.160	0,602
Purchase intention	PIN1	1	5	-0.353	-2.649	-0.451	-1,692
	PIN2	1	5	-0.560	-4.203	-0.076	-0,285
	PIN3	1	5	0.088	0.662	-0.309	-1,159
	PIN4	1	5	-0.172	-1.289	-0.555	-2,081

Based on the criteria described in Chapter 4 section 4.9.2, the measurement model fit results show that there is a good fit, as indicated by several goodness-of-fit test indices (Table 32).

Table 32. Fit Indices for Final Measurement Model

Model Fit Indices	Recommended Criteria	Default model	Comments
χ^2	Low χ2 relative to degrees of freedom with an insignificant p-value (p > 0.05)	2412.552	*p*-value 0.000
df		1160	
X^2 /df	1:5	2.078	Good Fit
RMSEA	< 0.05 up to 0.08	0.057	Good Fit
GFI	≥ 0.90	0.780	Poor Fit
AGFI	≥ 0.80	0.749	Acceptable Fit
RMR	<0.10 or 0.05	0.039	Good Fit
SRMR	< 0.08	0.0477	Good Fit
IFI	≥ 0.90	0.923	Good Fit
NFI	≥ 0.90	0.862	Acceptable Fit
TLI	≥ 0.90	0.915	Good Fit
CFI	≥ 0.90	0.923	Very Good Fit

The model fit of this study was improved by following the above-mentioned suggestions for assessing the convergent and discriminant validity and deleting some measures that have already been reported.

5.6.3 Structural Model Assessment

The structural model is evaluated concerning the estimates and hypothesis tests regarding the causal relations between exogenous and endogenous latent variables specified in the path diagram.

Table 33. Fit Indices for Structural Model

Model Fit Indices	Recommended Criteria	Default model	Comments
X^2	Low χ2 relative to degrees of freedom with an insignificant	2918.314	*p*-value 0.000
df		1209	
X^2 /df	1:5	2.214	Good Fit
RMSEA	< 0.05 up to 0.08	0.065	Good Fit
GFI	≥ 0.90	0.739	Poor Fit
AGFI	≥ 0.80	0.714	Poor Fit
RMR	<0.10 or 0.05	0.086	Good Fit
SRMR	< 0.08	0,0947	Acceptable Fit
IFI	≥ 0.90	0.895	Acceptable Fit
NFI	≥ 0.90	0.833	Acceptable Fit
TLI	≥ 0.90	0.889	Acceptable Fit
CFI	≥ 0.90	0.894	Acceptable Fit

The results show that all goodness of fit indices are acceptable (Hair et al. 2020; Hu & Bentler, 1999). Since the measurement model demonstrated an overall good fit and was both valid and reliable, the structural model depicting each of the twelve hypotheses was tested and evaluated. As seen in Table 33, results indicated that the structural model fit the data well in most indices: X^2 /df 2.214; $p < 0.001$; TLI = 0.89; CFI = 0.89 and RMSEA= 0.065.

The explanatory power of the model is very high, as the determinants together explain 79 per cent ($R^2 = 0.790$) of the variance of the dependent variable information adoption which can be interpreted as more than substantial according to previous research (Chin, 1998). In addition, by explaining more than 71 per cent ($R^2 = 0.719$) of the variance of purchase intention, the coefficient of determination is also substantial for the effective relationship between information adoption and purchase intention. Such findings indicate that the proposed model connecting attitudes to behaviour is robust, both theoretically as well as empirically.

5.7 Model Hypotheses Test and Analysis

We will start by assessing the multidimensional construct Source Credibility according to its conceptualization described in Chapter 3 section 3.2.1 then the proposed hypotheses are assessed, and findings are depicted later in section 5.7.2 in Table 37.

5.7.1 Second-order Construct Source Credibility

According to Wright et al. (2012), the second-order construct is supported by significant standardized factor loadings of first-order dimensions. We can support this purpose by the values exhibited in Table 29. As so we need to report CFA results for the source of credibility which will be useful to check the validity and reliability of the theoretical model (Hair et al. 2009) as well as to confirm the multidimensionality of a theoretical construct (Byrne, 2010). (Table 34) To do so, one models the superordinate construct as a second-order factor, its dimensions as first-order factors, and measures of the dimensions as observed variables (Wright et al. 2012).

Table 34. Fit Indices for Source Credibility Second-Order Factor Model

Index / Model	CMIN	CMIN/DF	GFI	CFI	NFI	RMSEA
Source Credibility	681.341	3.002	0.851	0.929	0.898	0.077
Decision criteria	P>0.05	1<CMIN/DF<5	GFI>0.9	CFI>0.9	NFI>0.9	RMSEA<0.1

The goodness of fit model statistics meet acceptable thresholds and it is conceptually consistent with established theory (Wright et al. 2012).

Having assessed the dimensionality, convergent validity, and discriminant validity of our high-order construct, we can proceed to an analysis of the structural model that integrates measurement and structural relationships. Figure 54 depicts our final structural model.

Table 35. Structural Relationship Results Regarding Source Credibility

Model path	Estimate	Standardized Coefficient	S.E	C.R	p Value	Result
$H_{8a.}$ SC → EXP	1.057	0.725	0.090	11.779	***	Significant
H_{8b} SC → TRU	1.160	0.774	0.087	13.405	***	Significant
H_{8c} SC → HOM	0.354	0.246	0.089	3.962	***	Significant
H_{8d} SC → TIE	0.715	0.552	0.080	8.975	***	Significant
H_{8e} SC → REP	1.000 [ne]	0.800				

Note: Estimate = Standardized Regression Weights (Path Estimate), S.E = Standard Error, C.R = Critical Ratio (t-value), P Value = Significance Value, *** = p < 0.001 (two-tailed); [ne] not estimated.

Our results suggest that source credibility is significantly positively related to all its dimensions. The paths analysis indicates that homophily is the least important dimension of source credibility (β = 0.246, p < 0.001) whilst reputation, trustworthiness and expertise are the most important dimensions (β = 0.800 (fixed); β = 0.774,p < 0.001; and β = 0.725, p< 0.001, respectively). Finally, source credibility is also positively related to tie strength (β = 0.552, p < 0.001). The variance of Source credibility explains 64.0 per cent of the variance in reputation, 59.9 per cent of the variance in trustworthiness, 52.5 per cent of the variance in expertise, 30.4 per cent of the variance in tie strength and 6.1 per cent of the variance in homophily.

Table 36. Source Credibility Dimensions

Hypotheses	Finding
Source Credibility: Refers to a recipient's perception of the credibility of a message source.	
- **Expertise** *H_{8a}. Message sender's high level of credibility has a positive impact on perceived eWOM source expertise by the message receiver.*	Supported
- **Trustworthiness** *H_{8b}: Message sender's high level of credibility has a positive impact on perceived eWOM source trustworthiness by the message receiver*	Supported
- **Homophily** *H_{8c} Message sender's high level of credibility has a positive impact on perceived eWOM source homophily by the message receiver*	Supported
- **Tie Strength** *H_{8d} The source credibility of eWOM messages positively influences strong-tie strength with eWOM message receivers.*	Supported
- **Reputation** *H_{8e} Higher level of credibility from the source of eWOM message positively influences the perceived reputation of eWOM message receiver*.	Supported

5.7.2 Other Structural Model Relationships

It is important to mention that, antecedent variables in the model explained a substantial 65.8%, 62.5%, and 71.4% of the variance in information usefulness, information adoption, and intention to purchase behaviour, respectively. Such findings indicate that the proposed model connecting attitudes to behaviour is robust, both theoretically as well as empirically. The model path coefficients from SEM analysis are presented in Table 37.

Table 37. Regression Coefficients Estimate and Statistical Significance

Model path	Estimate	Standardized Coefficient	S. E	C.R	*p* -value	Result
H_1 IAD → PIN	0.647	0.719	0.046	14.108	***	Significant
H_2 IUS→ IAD	0.942	0.790	0.060	15.766	***	Significant
H_3 IQUA → IUS	-0.273	-0.236	0.138	-1.976	0.048*	Significant
H_4 ICRE → IUS	-0.153	-0.142	0.122	-1.248	0.212	Not Significant
H_5 NOI → IUS	0.353	0.431	0.053	6.707	***	Significant
H_6 ATI → IUS	0.318	0.393	0.041	7.692	***	Significant

H_7 ATI → PIN	0.188	0.217	0.038	4.985	***	Significant
H_8 SC → IQUA	0.995	0.874	0.073	13.582	***	Significant
H_9 SC → ICRE	1.065	0.867	0.084	12.669	***	Significant
H_{10} SC → IUS	0.691	0.525	0.269	2.566	0.01	Significant
H_{11} SC → NOI	0.881	0.547	0.107	8.237	***	Significant
H_{12} SC → ATI	0.816	0.501	0.099	8.276	***	Significant

*Note: Estimate = Standardized Regression Weights (Path Estimate), S.E = Standard Error, C.R = Critical Ratio (t-value), P Value = Significance Value, *** = p < 0.001 (two-tailed); * = p < 0.05 (two-tailed)*

The paths analysis indicates that source credibility has the strongest influence on the credibility of eWOM OTC information and the quality of eWOM OTC information validating H_8 and H_9. In contrast, source credibility influences the usefulness of eWOM OTC information, the needs of eWOM OTC information and the attitude towards eWOM OTC in a moderate way (0.53, 0.55 and 0.50, respectively). However, H_{10}, H_{11} and H_{12} are validated. Moreover, the attitude towards eWOM OTC information has a weak effect on the intention to purchase OTC medicines (0.22). As expected, Information usefulness has a significant positive effect on information adoption (0.79), which also have a significant positive impact on consumers likelihood to purchase an OTC medicine (0.72). Therefore H_7, H_2 and H_1 are supported.

Table 38. Support for the Hypothesized Relationships

Hypotheses	Relationship	Finding
H_1 IAD → PIN	Adoption of eWOM OTC information → Purchase Intention of OTC medicines	Supported
H_2 IUS→ IAD	The usefulness of eWOM OTC information → Adoption of eWOM OTC information	Supported
H_3 IQUA → IUS	Quality of eWOM OTC information → Usefulness of eWOM OTC information	Not Supported
H_4 ICRE → IUS	The credibility of eWOM OTC information → Usefulness of eWOM OTC	Not Supported
H_5 NOI → IUS	Needs of eWOM OTC information → Usefulness of eWOM OTC information	Supported
H_6 ATI → IUS	Attitude towards eWOM OTC information → Usefulness of eWOM OTC	Supported
H_7 ATI → PIN	Attitude towards eWOM OTC information → Purchase Intention of OTC medicines	Supported
H_8 SC → IQUA	The credibility of the OTC eWOM source → Quality of eWOM OTC information	Supported
H_9 SC → ICRE	The credibility of the OTC eWOM source → Credibility of eWOM OTC information	Supported
H_{10} SC → IUS	The credibility of the OTC eWOM source → Usefulness of eWOM OTC information	Supported
H_{11} SC → NOI	The credibility of the OTC eWOM source → Needs of eWOM OTC information	Supported
H_{12} SC → ATI	The credibility of the OTC eWOM source → Attitude towards eWOM OTC information	Supported

The empirical testing results in Table 38 show that most of the proposed relationships (H_1, H_2, H_5, H_6, H_7, H_8, H_9, H_{10}, H_{11} and H_{12}) were found statistically significant as the t values are above 1.96 and the *p*-values below 0.001 and therefore entirely supported. Even though the relationship is weak in H_3 it is significant (p-values below 0.05) but the relationship's sign is negative rather than positive, contrasting to the prediction as so we find the result not supported. This unexpected finding will be discussed in the next chapter. In one relationship

(H_4), the association is non-significant and therefore also not supported. Additional discussions concerning the hypotheses testing are presented below.

Since the relationship between source credibility and information usefulness was found significant it implies that if the individual believes the message to be of a highly credible source, they perceive it to be of quality and useful yet the credibility and quality of eWOM information have no effect on the usefulness of the information as so the characteristics of the source overcome the credibility and quality of the message. The outcome can further suggest that there may be other factors that could affect the usefulness of eWOM in terms of the Portuguese OTC market. In summary, the results revealed that all hypotheses except H_3 and H_4 are supported by the achieved figures.

Figure 54 demonstrates the structural model and path coefficients of all relationships.

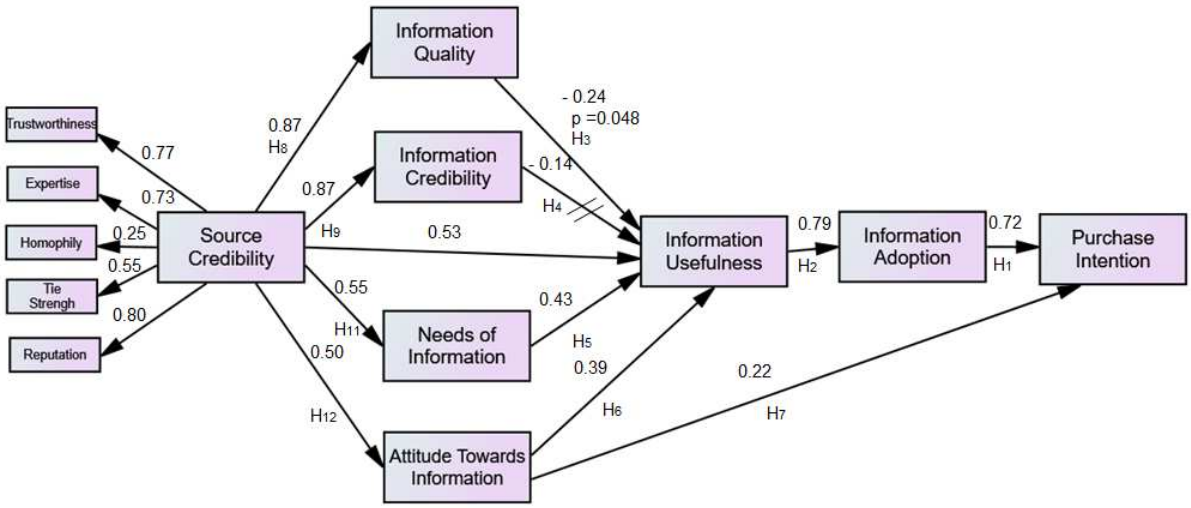


Figure 54: Path Diagram of the Structural Model

5.7.3 Direct, Indirect and Total Effects

To evaluate possible indirect effects in the variable Purchase Intention, we have examined the significant level of the direct and indirect effects by applying the bias-corrected bootstrap method (BC). The results in Table 39 show that there are significant indirect effects of Source Credibility, Needs of Information, Attitude Towards Information and Information Usefulness on Purchase Intention.

Table 39. Direct, Indirect and Total Effects in Purchase Intention

	Standardized Effect Values						
Determinants	**Direct Effects**	***p* - value**	**Indirect Effects**	***p* - value**	**Total Effects**	***p* - value**	**Result**
Source Credibility	---		0.465	***	0.465		Significant
Information Quality	---		-0.134	n.s	-0.134		Not Significant
Information Credibility	---		-0.081	n.s	-0.081		Not Significant
Needs Information	---		0.245	***	0.245		Significant
Atittude Towards Information	0.217	***	0.223	***	0.440		Significant
Information Uselfulness	---		0.568	***	0.568		Significant
Information Adoption	0.719	*	---	---	0.719		Significant

*Note: p-value = Significance Level, *** = p < 0.001* (*two-tailed*); ** = p < 0.05* (*two-tailed*)

Analysing the results deriving from Table 39 we can conclude that the variables information quality and credibility do not have any indirect effect on purchase intention. The attitude towards information positively influences purchase intention both directly and indirectly and finally, information usefulness and source credibility have a significant indirect positive impact on the dependent variable purchase intention.

5.8 Multigroup Analysis

Venkatesh et al. (2003) suggested that the social influence on behavioural intention is moderated by gender, which is stronger for females. Finally, to confirm hypothesis H_{13}, a multigroup analysis is conducted by examining the possible differences in the eWOM information acceptance model between males and females.

5.8.1 Moderating effect of the variable gender

To achieve the goals of our research, we propose to include the study of gender as a moderator variable, together with the antecedents identified in scientific literature, based on a review of the main classical models (IACM and UTAUT). The model proposed in the research works with a sample composed of two groups of individuals: males and females. In this way, with the analysis of the invariance, we seek to confirm that the instrument has an identical behaviour, even when applied to different groups, as in this case, according to gender differences. The confirmation of equivalence is a fundamental assumption for any conclusions made regarding possible differences between the groups. As so, to assess the moderating effect of gender, the sample was divided into two groups based on the gender stated by users from the survey options. Therefore, to confirm hypothesis H_{13}, a multigroup analysis was

conducted to study the variation across gender by examining the possible differences in the eWOM information acceptance model between males and females.

The multigroup analysis was carried out to evaluate whether the structure of the measurement model is equivalent or invariant, that is if it is structurally equivalent in its measurement properties, on separate groups, in this case, for females and males. Hence, the moderation hypothesis was tested using the multigroup analysis of the structural model and tests the Chi-Square differences for models with and without restrictions.

On the first step, the previously validated model was submitted to a multigroup analysis, to examine a progressive set of constraints (measurement factorial loadings, structural coefficients, error variances-covariances and structural residuals) for female and male groups. The statistical significance of the difference between the models with and without restrictions was assessed using the Chi-Square test and the respective degrees of freedom (Marôco, 2014).

Measurement invariance was considered to evaluate the equivalence of a measured construct across different groups. Measurement invariance established the fact that the same construct is measured in each group and provides the opportunity to compare means or factor loadings across both groups (Marôco, 2014). Configural invariance was also carried out to establish measurement invariance. Table 40 show that all the groups had an adequate fit. Three conditions must be satisfied to test measurement invariance, namely metric invariance, scalar invariance, and structural covariances invariance (Marôco, 2014). Metric invariance restricts the factor loadings to be equal across groups. Scalar invariance constraints loadings to be equal across groups, whereas structural covariances constraints loadings, variances, and covariances across groups. For model comparison and assessing measurement invariance, the goodness of fit index difference (Δ goodness-of-fit index) was used according to which ΔRMSEA should be less than 0.01 and ΔCFI, ΔTLI should be less than 0.02 for a good fit, considering the reference values presented by Chen (2007). For all the cases, ΔCFI and ΔTLI were observed below 0.02; and ΔRMSEA was found to be less than 0.01, thus establishing measurement invariance (Table 40).

The invariance of the measurement model was evaluated in both groups by comparison of the unconstrained model (considering factor loadings, structural coefficients and variances/covariances varying among females and males) with the constrained models. In this way, with the analysis of the invariance, we seek to confirm that the constructs have identical behaviour, even when applied to different groups, as in this case, females and males. Confirmation of equivalence and structural invariance is a fundamental assumption for any conclusions carried out regarding possible differences between the groups.

Table 40. Measurement invariance and Model Comparison Chi-Square Test

Model	X^2	df	CFI	TLI	RMSEA (90% IC)	∆df	ΔX^2	p-value
A: Baseline: Unconstrained	4884.810	2418	0.848	0.840	0.057 (0.054-0.059)			
B: Measurement weights	4922.885	2455	0.848	0.842	0.056 (0.054-0.059)	37	38.075	0.420
C: Structural weights	4936.731	2470	0.848	0.843	0.056 (0.054-0.058)	15	13.846	0.537
D: Structural covariances	4943.128	2471	0.848	0.843	0.056 (0.054-0.058)	1	6.397	0.011

The base model for such an analysis is the unconstrained without any restrictions on parameters and variances/covariances (Model A), whose adjustment is considerably acceptable (χ2 = 4884.810; χ2/df= 2.020; RMSEA= 0.057; CFI=0.848; TLI=0.840; GFI =0.636). Except for GFI, these results are following the values accepted in the literature (Hair et al. 2017; Hu & Bentler, 1999). This model served as the basis for the subsequent tests.

Table 40 also presents the statistics that allow to test and compare the several models considered, from the unconstrained model to the most restricted model, with loadings, variances and covariances restricted. The statistical significance difference between the models was performed using the Chi-Square test.

The second step consisted of the measurement weights (Model B). Because the restrictions imposed on the factor loadings have not significantly degraded the second model (DF = 37, CMIN (∆χ2) = 38.075, p= 0.420), also here, we do not reject the null hypothesis that the goodness-of-fit of the unconstrained model and the model with invariant factor loadings do not differ statistically significantly. Therefore, it can be inferred that the relationship between the indicators and the latent variable is similar between both groups, which means that the questionnaire items were understood in the same way between males and females and therefore the answers can be compared amongst them.

The subsequent analysis tested the structural weights (Model C) on the previous model (Model B), (DF = 15, CMIN (∆χ2) = 13. 846, p= 0.537) which was not rejected. As a result of scalar equality and metric between groups so they do not differ in terms, factor loadings, and factor inter-correlations the latent variable can be correctly interpreted between the groups.

Next the invariance of the structural variance/covariance (Model D) in both groups was tested and was rejected at 5% (DF = 1, CMIN (∆χ2) = 6. 397, p= 0.011). Therefore, Model C is the most appropriate. In addition the invariance of structural residuals and measurement

residuals was also tested and rejected at 5% (respectively DF = 13, CMIN (Δχ2) = 69.896, p= 0.000 and DF = 64, CMIN (Δχ2) = 195.975, p= 0.000). This scenario was expected given that the mentioned invariance is considered too restrictive though, in general, the factorial invariance does not require the invariance of the errors (Marôco, 2014).

To conclude, there are no significant differences between the structural model for females relative to the one regarding males despite the structural variances/covariances showing differences. These results indicate that both females and males have the same determinants of eWOM acceptance and purchase intention of an OTC medicine.

5.8.2 Path Analysis (Multigroup Moderation)

After establishing the measurement and structural invariance and concluding by the model invariance, particular analysis by gender were conducted although it is only concerned with this sample, not generalized to the population. Analysing Table 41 we can conclude that the model fit is slightly better when all measurement weights were constrained, and the results were: CMIN/DF = 2.005; GFI = 0.633; CFI = 0.848 and RMSEA = 0.056. As so we will use this model for path analysis and hypothesis testing.

Table 41. Regression weights and statistical significance (Females)

Hypotheses	Estimate	Standardized Coefficient	S. E	C.R	P Value	Result
H_{1F} IAD → PIN	0.643	0.705	0.056	11.558	***	Significant
H_{2F} IUS→ IAD	0.915	0.780	0.069	13.287	***	Significant
H_{3F} IQUA → IUS	-0.228	-0.184	0.149	-1.529	0.135	Not Significant
H_{4F} ICRE → IUS	-0.122	-0.110	0.131	-0.932	0.351	Not Significant
H_{5F} NOI → IUS	0.334	0.413	0.066	5.036	***	Significant
H_{6F} ATI → IUS	0.270	0.335	0.052	5.163	***	Significant
H_{7F} ATI → PIN	0.194	0.224	0.048	4.067	***	Significant
H_{8F} SC → IQUA	0.964	0.811	0.104	9.232	***	Significant
H_{9F} SC → ICRE	1.070	0.806	0.120	8.896	***	Significant
H_{10F} SC → IUS	0.682	0.464	0.313	2.178	0.029	Not Significant
H_{11F} SC → NOI	1.007	0.554	0.161	6.266	***	Significant
H_{12F} SC → ATI	0.875	0.481	0.146	6.010	***	Significant

*Note: N=211 Estimate = Standardized Regression Weights (Path Estimate), S.E = Standard Error, C.R = Critical Ratio (t-value), P Value = Significance Value, *** = p < 0.001(two-tailed),* ^{ns} *not significant.*

Table 42. Regression weights and statistical significance (Males)

Hypotheses	Estimate	Standardized Coefficient	S. E	C.R	P Value	Finding
H_{1M} IAD → PIN	0.752	0.830	0.068	11.020	***	Significant
H_{2M} IUS→ IAD	0.994	0.815	0.093	10.681	***	Significant
H_{3M} IQUA → IUS	-0.827	-0.804	0.578	-1.432	0.152	Not Significant
H_{4M} ICRE → IUS	-0.116	-0.120	0.294	-0.394	0.694	Not Significant
H_{5M} NOI → IUS	0.411	0.512	0.078	5.272	***	Significant
H_{6M} ATI → IUS	0.388	0.480	0.063	6.166	***	Significant
H_{7M} ATI → PIN	0.133	0.148	0.060	2.223	0.026	Not Significant
H_{8M} SC → IQUA	1.044	0.969	0.083	12.516	***	Significant
H_{9M} SC → ICRE	1.091	0.945	0.094	11.567	***	Significant
H_{10M} SC → IUS	1.126	1.015	0.812	1.386	0.166	Not Significant
H_{11M} SC → NOI	0.735	0.533	0.142	5.164	***	Significant
H_{12M} SC → ATI	0.726	0.530	0.130	5.579	***	Significant

*Note: N=108 Estimate = Standardized Regression Weights (Path Estimate), S.E = Standard Error, C.R = Critical Ratio (t-value), P Value = Significance Value, *** = p < 0.001*, ^{ns} *not significant.*

The hypotheses were tested and then analysed the path estimates, critical ratios, and p values. From the Table 41 represented above, regarding females H_{1F} shows a significant effect of Information adoption on purchase intention (β = 0.705, t value = 11.558, p < 0.001). As well the perceived eWOM usefulness has a significant influence on the adoption of the information (β = 0.780, t value = 10.681, p < 0.001).

However, H_{3F} and $H4_F$ was shown to be not significant (β = - 0.184, t value = -1.529, p value = 0.135 for H_{3F} and β = -0.110, t value = - 0.932 p value = 0.351) for H_{4F} therefore there is no influence between the quality and credibility of information regarding the perceived eWOM usefulness. Moreover, as shown in the table, the results support H_{5F} and H_{6F} thus needs of information and attitude towards information both have a positive influence on information usefulness with (β =0.413, t value 5.036, p < 0.001 for H_{5F} and β = 0.335, t value 5.163, p < 0.001) for H_{6F}. Also, source credibility positively influence the quality, credibility usefulness and attitude towards eWOM information so we confirm that H_{8F}, H_{9F}, H_{11F} and H_{12F} are supported (β = 0.969, t value 9.232, p < 0.001 for $H8_F$, β = 0.945, t value 8.896, p < 0.001 for H_{9F}, β = 0.533, t value 6.266, p < 0.001 for H_{11F} and β = 0.530, t value 6.010, p < 0.001) for H_{12F} however there is a not significant relationship between source credibility and information usefulness so H_{10F} is not supported (β = 0.464, t value 2.178, p = 0.029).

Referring to the sample, from Table 42 regarding males, we can confirm that there are few distinctions regarding females except concerning hypothesis H_{7M} which was found a

not significant effect meaning that there is no relation between attitude towards information and purchase intention, it suggests the level of affectation for males is not significant compared to females.

Males also show a significant effect between information adoption and purchase intention $H1_M$ ($\beta = 0.830$, t value = 11.020, $p < 0.001$). As well the perceived eWOM usefulness has a significant influence on the adoption of the information $H2_M$ ($\beta = 0.815$, t value = 13.287, $p < 0.001$). Similarly to females also on males H_{3M} and H_{4M} was found to be not significant ($\beta = - 0.804$, t value = -1.529, p value = 0.152 for H_{3M}; $\beta = -0.120$, t value = - 0.394 p value = 0.694 for H_{4M} , therefore there is no influence between the quality and credibility of information regarding the perceived eWOM usefulness. Moreover, as shown from the table, the results support H_{5M} and H_{6M} therefore, needs information and attitude towards information both have a positive influence on information usefulness with ($\beta = 0.514$, t value 5.272, $p < 0.001$ for H_{5M} and $\beta = 0.480$, t value 6.166, $p < 0.001$) for H_{6M}. Also, source credibility positively influence the quality, credibility usefulness and attitude towards eWOM information so we confirm H_{8M}, H_{9M}, H_{11M} and H_{12M} ($\beta = 0.969$, t value 12.516, $p < 0.001$ for H_{8M}, $\beta = 0.945$, t value 11.567, $p < 0.001$ for H_{9M}, $\beta = 0.533$, t value 5.164, $p < 0.001$ for $H11_M$ and $\beta = 0.530$, t value 5.579, $p < 0.001$ for H_{12M}) and like females there is also a non-significant relationship between source credibility and information usefulness so we do not support H_{10m} ($\beta = 1.1015$, t value 1.386, $p = 0.166$) though this relationship is must stronger in males than females.

There are two substantial differences between the explanatory power of the model, as for the females, the determinants together explain 70 per cent ($R^2 = 0.705$) of the variance of the dependent variable information adoption while in males 83 per cent ($R^2 = 0.830$), so males' predictive power to adopt the information is superior to females. In addition, the female model explains 78 per cent ($R^2 = 0.780$) of the variance of purchase intention while males 81 per cent ($R^2 = 0.815$), also superior in males compared to females, which corroborates that the coefficient of determination is substantial for the effective relationship between information adoption and purchase intention on both groups. Such findings indicate that the proposed model connecting attitudes to behaviour is robust in both groups, theoretically as well as empirically.

Table 43. Standardized Regression Coefficients

	Female n= 211			Males n = 108			Z score	
Hypotheses	**Estimate**	**S. E**	**p- Value**	**Estimate**	**S. E**	**p-Value**	**Z Test**	**Comments**
H_1 IAD → PIN	0.705	0.056	***	0.830	0.068	***	1.394	no difference
H_2 IUS→ IAD	0.780	0.069	***	0.815	0.093	***	0.770	no difference
H_3 IQUA → IUS	-0.184	0.149	0.126 ^{ns}	-0.804	0.578	0.152^{ns}	-1.006	no difference
H_4 ICRE → IUS	-0.110	0.131	0.351^{ns}	-0.120	0.294	0.694^{ns}	0.018	no difference
H_5 NOI → IUS	0.413	0.066	***	0.512	0.078	***	0.792	no difference
H_6 ATI → IUS	0.335	0.052	***	0.480	0.063	***	1.490	no difference
H_7 ATI → PIN	0.224	0.048	***	0.148	0.060	0.026^{ns}	-0.803	no difference
H_8 SC → IQUA	0.811	0.104	***	0.969	0.083	***	0.648	no difference
H_9 SC → ICRE	0.806	0.120	***	0.945	0.094	***	0.148	no difference
H_{10} SC → IUS	0.464	0.313	0.029^{ns}	1.015	0.812	0.166^{ns}	0.511	no difference
H_{11} SC → NOI	0.554	0.161	***	0.533	0.142	***	-1.289	no difference
H_{12} SC → ATI	0.481	0.146	***	0.530	0.130	***	-0.783	no difference

*Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10*

When looking at the approach using the factor scores, gender group, Z-scores demonstrate that there are no statistically significant differences in standardized regression coefficients in terms of gender groups confirming the previous conclusion that gender has no moderation effect on the proposed relationships. (Table 43)

However, in the sample, the coefficient from the positive relationship between the source, needs of information and attitudes towards information for females) was much higher (1.007 and 0.875) than that for males (0.735 and 0.726) suggesting that females tend to rely on credible sources using more the peripheral route of processing information. On the other hand, males tend to use the peripheral route of processing information recurring to the credibility of the source when it comes to evaluating the quality and credibility of eWOM concerning and OTC products since they have higher coefficients compared to females (1.044 and 1.091 vs 0.964 and 1.070).

In conclusion, the hypothesis regarding gender moderation is not supported, e.g., there are no statistically significant differences between males and females on the paths of the model.

5.9 Summary of the chapter

The results of the data analysis and evaluation of the measurement model and the structural model were outlined in this chapter. First, the demographic and usage statistics were described to gain a better understanding of the sample population. This was followed by the

analysis of the measurement model; here relevant evaluation criteria are used to assess the reliability and validity of the indicators in respect of their associated constructs. Next, the structural model was analysed to determine whether the data support the hypotheses, and the results reported. A summary of the hypothesis test results is depicted in Table 44.

The next chapter will expand on the findings from this data analysis and discuss these about the prior research, and implications for practice.

Table 44. Summary of Hypothesis Test Results

	Hypotheses	Finding
H_1	Adoption of eWOM information is positively related to consumers' purchase intention of OTC medicines.	Supported
H_2	The usefulness of eWOM OTC information is positively related to the adoption of OTC eWOM information.	Supported
H_3	The quality of eWOM OTC information is positively related to the usefulness of eWOM information.	Not Supported
H_4	The credibility of eWOM OTC information is positively related to the usefulness of eWOM information.	Not Supported
H_5	The need for eWOM OTC information is positively related to the usefulness of eWOM information.	Supported
H_6	Attitude towards eWOM OTC information is positively related to the usefulness of eWOM information	Supported
H_7	Attitude towards eWOM OTC information is positively related to consumers' purchase intention of OTC medicines.	Supported
H_8	The credibility of the OTC eWOM source positively influences the quality of eWOM information.	Supported
H_9	The credibility of the OTC eWOM source positively influences the credibility of eWOM information.	Supported
H_{10}	The credibility of the OTC eWOM source positively influences the usefulness of eWOM information.	Supported
H_{11}	The credibility of the OTC eWOM source positively influences the needs of eWOM information.	Supported
H_{12}	The credibility of the OTC eWOM source positively influences the attitude towards eWOM information.	Supported
H_{13}	Gender has a moderating effect on all relationships proposed in the integrated model of eWOM information acceptance of OTC medicines consumers	Not Supported

CHAPTER 6. DISCUSSION

The results regarding each hypothesis about the theoretical framework and the main findings of the study conducted in this research are discussed in this chapter. The core discussion in this chapter is regarding the validation of the research hypotheses. The chapter is divided into two sections for this purpose. The next section describes the findings of this study, which seeks to investigate the determinants of eWOM information in social media that influence consumers' purchase intentions for OTC medicines. Finally, the chapter comes to a close with the final section.

6.1 Discussion

The results obtained in the empirical study with the validation process for the structural model over the total sample suggest that, in the context of social media, the characteristics of the source, the receiver and the behaviours of consumers towards eWOM information have a positive impact on the purchase intention of an OTC medicine in Portugal. Therefore, the users who adopt the information in eWOM via social media are likely to form a purchase intention.

More specifically, results indicate that all hypotheses between source credibility, information quality, information credibility, needs of information, attitude towards information, information usefulness, information adoption and purchase intention were supported except the ones between quality and the credibility of eWOM OTC information and information usefulness. Regarding the moderating effect of the variable gender, no significant differences were found between males and females in the acceptance of eWOM information and purchase behaviour towards an OTC medicine and therefore the moderating effect of gender was not supported. This section discusses the results in detail.

6.1.1 Respondents’ characteristics

Among the 346 Portuguese OTC consumers, 33.9% were men and 66.1% of women and the age group is very well balanced composed of 63.3% aged between 35 and 64 years; 14.7% are young adults aged between 18 and 24 years and only 6.9% of the individuals are over 65 years; 80.8% have high-level qualifications; 72.5% are employed; 13.8% are students and only 8.2% are retired. Regarding social media, the majority of the consumers select the use of WhatsApp (94.2%), Facebook (88.2%), Youtube (69.9%), Instagram (69.4%) and LinkedIn (56.4%) which are in line with the national average of main networks utilized according to Digital Report Portugal (2021) (Social, 2021b).

6.1.2 Information Adoption and Purchase Intention

The first hypothesis proposed in this study is that consumers' purchase intentions of an OTC will be positively affected by the adoption of eWOM OTC information on social media (H_1). Similar to the study by Erkan & Evans, (2016) the results of the quantitative analysis support this hypothesis. Subsequently, the results of the empirical test demonstrate a strong positive effect between the adoption of information ($\beta = 0.719$) and purchase intention which highlights the explanatory power of this model concerning the dependent variable and corroborates that the coefficient of determination is substantial for the effective relationship between information adoption and purchase intention. Such findings indicate that the proposed model connecting attitudes to behaviour is robust, theoretically as well as empirically. This study, therefore, has argued that consumers who adopt the eWOM OTC information they obtain on social media are more likely to have superior purchase intentions; and the result of model estimation confirmed this argument. Previously, the possibility of this effect had been suggested by researchers (Cheung & Thadani, 2012; Cheung et al. 2009) so, this study confirmed the mentioned relationship by empirically testing it on a specific product. That is, when consumers find eWOM information on social media and consider that it contributes to their knowledge, it facilitates the decision-making process regarding an OTC medicine, and most likely express a greater buy intention.

6.1.3 Information Usefulness

This study has also proposed that the usefulness of eWOM OTC information is positively related to the adoption of eWOM information on social media (H_2). The results of the empirical test demonstrate an extremely strong positive effect of the utility of information in the adoption of information ($\beta = 0.790$) and therefore H_2 is validated. This corroborates the previous studies that also considered information usefulness as one of the predictors of eWOM adoption are theoretically related and explained by the information adoption model (Cheung & Thadani, 2012; Davis et al. 1989; Erkan & Evans, 2016; Sussman & Siegal, 2003). The findings confirm that when consumers perceived that the eWOM information is useful, they will tend to engage in the eWOM OTC information.

6.1.4 Information Quality

This research has proposed that the quality of eWOM OTC information is positively related to the usefulness of eWOM information on social media (H_3). The empirical results of this study do not support the direct positive impact of information quality on information usefulness; therefore, H_3 was not supported. Even though the relationship is weak it is significant (p-values below 0.05) but the relationship's sign is negative rather than positive,

contrasting to the prediction. As so, contrary to the results obtained by Erkan & Evans (2016), no empirical evidence of the impact of quality of information on the perceived usefulness has been observed. These results are corroborated by previous studies (Gökerik et al. 2018; Mion, 2021; Torres et al. 2018; Teixeira & Martins, 2018) however previous researchers suggested this relationship in different research contexts (Cheung et al. 2008; Cheung & Thadani, 2012; Sussman & Siegal, 2003). According to the ELM, individuals following the peripheral route are not able or motivated to process the arguments in a message and thus are influenced primarily by peripheral cues. Importantly, perceptions of usefulness were differentially affected by elements of the received messages, depending on the elaboration likelihood of the situation. Sussman & Siegal (2003) found that the receivers' experience and knowledge moderates both the central influences (the nature of arguments in the message) and peripheral influences (the subject matter of the message). As so, the results detailed might be for the reason that our consumers prefer the use of peripheral cues since, in our study, the peripheral cue selected for investigation was the source credibility construct which we added to the IACM over the argument quality which represents the central route of processing information. If people believe the message source is credible, they may be persuaded by the message instantly without giving it much thought as they process the information (Choi, 2011).

6.1.5 Credibility of information

This study also proposed that the credibility of eWOM OTC information is positively related to the usefulness of eWOM information on social media (H_4). We found that the results do not support the direct positive impact of information credibility on information usefulness. Contrary to the results obtained by Erkan and Evans (2016), no empirical evidence of this relationship has been observed which also contradicts previous findings by several authors (Chang & Wu, 2014; Cheung et al. 2009a; Fan et al. 2013; Leong et al. 2021; Teng et al. 2014) who have proved the effect of information credibility on consumers' purchase intentions. The information in social media is easy to access and the users may be anonymous. This causes the quality and credibility of the information on social media to be lost (Leong et al. 2021). And therefore, we can infer from these results that OTC consumers prefer privileging the information emanating from credible sources instead of the characteristics of the message and so using peripheral cues when assessing the credibility of OTC messages in the social media context. The credibility of information is doubted less by a receiver when the source is trustworthy (Ismagilova et al. 2020b).

6.1.6 Needs of Information

In hypothesis 5 (H_5) it is proposed that needs of eWOM OTC information to positively influence the usefulness of the information. The empirical results of this study reveal that

information needs are significantly positively associated with the usefulness of eWOM OTC information supporting this hypothesis, being this result congruent with the study by Erkan and Evans (2016). The effects of the empirical test demonstrate a positive effect of the needs of eWOM OTC information on the information usefulness (β = 0.431) and therefore H_5 is supported. These findings indicate that consumers who need eWOM OTC information on social media are more likely to find it useful and adopt it and that it is one of the factors of eWOM OTC information on social media that influences customers' purchase intentions. This corroborates the previous findings in different research contexts. Chu and Kim (2011) designate this concept as "search for opinions", considering it as one of the aspects of eWOM behaviour on social media websites, as consumers who have OTC information needs will tend to seek information from others as support in the decision-making process. Also, Hennig-Thurau et al. (2004) designate this behaviour as “advice-seeking” thus, the individuals who need and look for eWOM OTC information on social media will have a greater willingness to process it, being more likely to find it useful.

6.1.7 Attitude towards Information

Two hypotheses were presented regarding the attitude towards the information on social media. It is positively related to the usefulness of the OTC information (H_6) and purchase intention of OTC medicines (H_7) (β = 0.393 and β = 0.217, respectively). This variable was adapted from Fishbein and Ajzen’s (1975) theory, TRA. Consumers who have positive attitudes towards eWOM information on social media are more likely to find them useful and adopt it. The empirical results of this study significantly support this relationship between the mentioned variables and therefore both H_6 and H_7 are validated. The results previously obtained by Erkan & Evans (2016), could not establish a significant relationship between attitude towards information and information usefulness and the authors pledged that people that usually receive the eWOM information from their friends and acquaintances in social media and they may already think that the information will be useful, nevertheless, our results in a different context confirm the postulated hypothesis based on the TRA theory. Therefore, the extent to which the consumers perceived the benefit in using the eWOM OTC information contributes to the perceived usefulness of eWOM information.

The empirical results of this study support the significant direct positive effect of attitudes towards information on purchase intention; therefore, H_7 is validated which corroborates Erkan and Evans (2016) findings that consumers are more likely to have higher purchase intentions when they have positive attitudes towards eWOM information on social media. According to TRA, attitude is a crucial predictor of behaviour intention, serving as the

basis for many investigations that examine this relationship in other contexts (Prendergast et al. 2010).

6.1.8 Dimensions of Source Credibility

In this study, source credibility is a multidimensional concept that can be decomposed into five variables: expertise, trustworthiness, homophily, tie-strength and reputation. Our findings are in line with Eisend (2006) conclusions that already established the credibility of the source as a multidimensional concept that is related to various communication sources. The findings regarding the relationships between the characteristics of source credibility and consumer's behaviour (Table 35) show that all the relationships are significant. These findings are following the proposed hypotheses of this study and therefore H8a, $H8_b$, $H8_c$, $H8_d$ and $H8_e$ are all supported. As so we confirm source credibility on social media is a second-order construct. The most influenced variable by source credibility was source reputation (β = 0.800), followed by source trustworthiness (β = 0.774) followed by source expertise (β = 0.725), while the least influenced was source homophily (β = 0.246). Thus, the two informational determinants expertise and trustworthiness are significant factors of influence for eWOM credibility. The results of the source theory models stated by Hovland and Weiss, (1951) can therefore be transferred to the eWOM environment and is in line with previous findings stated by Lis (2013).

There is a gap in the literature analysing the impacts of tie strength between two communicators, recommender experience, and their interactions on eWOM message credibility and purchase intentions for non-prescription medicines. Our findings fulfil this gap since tie-strength is significantly influenced by the source (β = 0.552). Our results show that message receivers are more likely to imitate friends of similar social groups, where herding behaviour is activated in the context of eWOM communication (Teng et al, .2014). As so OTC consumers tend to trust in familiar sources such as family and friends and this confirm previous findings in other contexts. Steffes & Burgee (2009) have shown that when consumers are actively seeking information from various sources (strong, weak and non-existent tie alike) and are placing a great deal of weight (relative to influence over decision marking) on information sources one would not expect to be particularly powerful influencers (non-existent or weak tie sources). Our research also proves that OTC consumers privilege recommendations from strong ties (family and friends) over anonymous.

Although homophily is positively influenced by the credibility of the source, the findings prove a weak relation. This can certainly be explained by the fact that the concept of homophily cannot be generated easily in the environment of social media and that OTC consumers rely on more credible sources basing their decisions on their expertise and trustworthiness. These

findings are in line with Ismagilova et al. (2020b) research. Our study also confirmed a greater dispersion of agreement on Homophily (SD = 1.122 and 1.070) these results reveal a higher variability among the opinions of the study respondents.

Our empirical findings show that the source credibility variance explains 64.0 per cent of the variance in reputation. From a global perspective, reputation may also be associated with organisational or corporate credibility (Casalo et al. 2007). Thus, reputation would show how honest the company is and how much they care for their customers. And so in the Pharmaceutical context, our findings confirm that corporate reputation is a key factor in building credibility and acceptance of eWOM in the social media context.

6.1.9 Source credibility and proposed relations

Five hypotheses were proposed regarding the credibility of the OTC eWOM source as having a positive effect on the quality, credibility, usefulness, needs of eWOM OTC information and attitude towards eWOM OTC information (H_8, H_9, H_{10}, H_{11} and H_{12}, respectively). The empirical results of this study reveal that the credibility of the OTC eWOM source is significantly positively associated with the mentioned variables. These hypotheses were formulated to extend the IACM model and introduce all the components of the communication process: characteristics of the source, the message and the receiver. Since eWOM represents a new form of social communication content (stimuli) involving both information-seeking consumers (receivers) and information sharing consumers or sources (communicators) (Cheung & Thadani, 2012). According to the ELM, individuals following the peripheral route are not able or motivated to process the arguments in a message and thus are influenced primarily by peripheral cues. Following Sussman and Siegal (2003) in our study, the peripheral cue selected for investigation was source credibility.

Based on the determinants examined in the model, the credibility of the source manifests itself as one of the most important determinants influential in the purchase intention of an OTC medicine (Table 37). Our findings confirm the source credibility theory which argues that the source of the information has a significant influence on the credibility of the information, and it stated that people or receivers are more likely to be persuaded when the source presents itself as credible (Hovland et al. 1953). Since of the five proposed hypotheses, H_8 and H_9 are manifested as the strongest positive effect regarding the quality of eWOM OTC information ($\beta = 0.874$) and the credibility of eWOM OTC information ($\beta = 0.867$). These findings confirm that in the context of the information displayed on social media, the factors of the source of the information, the quality of information will have important effects on the credibility of the information. In fact, according to Cheung et al. (2009), in the context of eWOM, receivers are believed to make judgments as to the credibility of the information based on the quality of the

information. Several authors have already demonstrated the influence exerted by the credibility of the source in the credibility of the information (Cheung et al. 2009; Chang & Wu, 2014; Fang, 2014; Teng et al. 2014) mention that a highly credible source could directly increase the perception of the credibility of the information by the recipients. As so OTC consumers rely on non-content shortcuts, best represented by source credibility.

The empirical results of this study support the significant direct positive effect of credibility of the OTC eWOM source on the usefulness of eWOM OTC information (β =0.525) and support H_{10}. Contrary to our findings Cheung et al. (2008) were unable to confirm this hypothesis in the context of anonymous comments in a restaurant blog because they believed source credibility might prove to be more helpful in determining information usefulness when there is more indication of who the poster is and whom they represent. In our social media context, it is possible to identify the source and therefore this construct becomes more relevant. Our findings confirm that source credibility influences perceived eWOM usefulness, information credibility and consequently intention to purchase, and information adoption as proposed by Ismagilova et al. (2020b).

The empirical results also support the significant direct positive effect of credibility of the OTC eWOM source on both needs of eWOM OTC information and attitude towards eWOM OTC information (β = 0.547 and β = 0.501) respectively and therefore both H_{11} and H_{12} were supported. These findings enhance the importance of peripheral influences (the subject matter of the message) in attitudinal behaviour and the willingness to search for opinions regarding OTC medicines provided from credible sources reinforcing this construct as a key factor in social communication.

Based on the empirical results it can be concluded that characteristics of source credibility play an important role in consumers' perception of information, quality, credibility, usefulness, needs of information and attitudes towards eWOM OTC information. These results advance our understanding of the links between characteristics of source credibility and consumers' attitudes and behaviour towards an OTC medicine.

6.1.10 Moderator effect of Gender

Contrary to what was expected our results regarding the effect of the variable gender, found no significant differences between males and females in the acceptance of eWOM information and purchase behaviour. So we conclude that gender has no moderator effected between the proposed relations and therefore H_{13} was not supported, hence, these relationships do not depend on sex-typing in regards to OTC medicines.

Our model only shows slight differences in the error variances/covariances which is considered too restricted and can not be generalized to the general population. These results might be explained because consumers perceive OTC medicines as a product with a high level of involvement (Gore et al. 1994). As a unique behaviour of purchasing OTC drugs, the cognition phase is an essential step for consumers, and it can be described as an extended problem-solving process (Gore et al. 1994; Hustad et al. 1979) as so consumers engaged in high-involvement decisions process were expected to tend to use the central route of online processing and would be likely expected to be involved in a high elaboration of information processing resorting in more rational thinking before making the final decision but instead, we can induce that they prefer to use the peripheral route (emotional) of processing information, therefore, this might explain no gender differences on the acceptance of eWOM information and purchase behaviour of an OTC medicine because they tend to rely upon expert sources. Further Liu, Sun, & Li (2018) postulate that male users are more interested in answering professional or technical posts, while female users are better at providing social and emotional support in the context of online health communities. Our research is focusing on the evaluation of eWOM concerning an OTC medicine so since medicines are complex concepts our findings might be related to both genders preferring the use of peripheral cues such as source credibility acting as mental shortcuts in the elaboration process.

CHAPTER 7. LIMITATIONS AND CONCLUSIONS

This chapter concludes the thesis by providing an overview of the research. For this purpose, revisits the research aim and objectives; and discusses the achievement of each objective within the thesis. The general research objective of this dissertation is to examine the determinants of the eWOM transmitted in social media that most influence the purchase intention of OTC medicine consumers. To achieve this goal, a review of the literature on a wide range of relevant and related issues, which included the analysis of models and theories commonly applied in this sort of research. This review served as the basis for knowledge to identify main gaps and the creation of empirical analysis, allowing to select the conceptual model to be the most suitable for the present study. The research model applied in this study was the IACM which was developed based on the integration of IAM and the related components of TRA and was validated through structural equation modelling (CB-SEM). Our research fulfils a major gap since so far limited studies have examined the role of eWOM in accessing the consumer behaviour intention to purchase an OTC medicine and to our knowledge none in Portugal. Also, it is important to refer that most populations involved in eWOM studies use a sample of students whilst ours is applied in actual OTC medicine consumers which will provide more accurate insights from a managerial perspective.

Section one makes a core regarding the sustainable development goals that we intended to reach with our research, section two summarizes the main achievements, section three presents the main research contributions at the theoretical level, section four presents the managerial contributions and final recommendations describe the research limitations and the possible directions for future research. We will end by summarizing the main conclusions.

7.1 Sustainable Development Goals

The United Nations' Sustainable Development Goals (SDG), adopted in September 2015, include 17 goals and 169 targets aimed at incorporating sustainable development issues into countries' entire economic, environmental, and social frameworks. While the SDGs have a worldwide scope, their implementation is dependent on the level of importance given to them by individual countries, as well as how sustainability issues compete with a country's core priorities. Throughout this work, we demonstrate the importance of the Pharmaceutical Industry cluster in Portugal by considering the value of medicines added from three perspectives: the human impact, the societal impact, and the economic impact. Also, it is important to highlight the strategic importance of this sector in terms of contributing to public health that is a critical factor, particularly when facing such serious problems with the COVID-19 outbreak. Therefore, the focus of this research was to contribute to the field of Digital Pharmaceutical Marketing, both theoretically and empirically, considering the increase in social

media use. This work intended to understand the impact of social media on consumer behaviour and purchase intentions helping Pharmaceutical marketers in the promotion of medicines that will aim to achieve active and healthy ageing, the SDG 3 - Good Health and Well-being. Furthermore, by assessing the different gender behavioural in social media this research also contributed to the SDG 5 to achieve gender equality and empower all women and girls, enhancing the use of enabling technology, in particular information and communications technology, to promote the empowerment of women by raising awareness for the promotion of gender equality and the empowerment of all women and girls at all levels.

By developing digital strategies this work also will contribute to SDG 8, promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all since remote digital work will be crucial to the future ahead as we are now experiencing with COVID-19 crisis hence this research will help the Pharmaceutical Industry to prepare for this new paradigm.

7.2 Meeting Research Problem and Objectives

During our research, we were able to answer all the research questions and also the general and specific objectives that we set out for. So, our initial research goals were met.

To corroborate the adequacy of the model used for the study under consideration, we elaborated a literature review on this study, which provides an overview and description of models and theories typically used in this domain. With such a large number of potential determinants of eWOM to investigate, the IACM model was chosen, as it is the most recent developed to investigate the determinants that influence eWOM in purchase intention, and it was designed specifically for social media websites. The IACM model includes as determinants of the eWOM the information and receiver characteristics. To complement this model due to the specific context of Pharmaceutical marketing we included in the study the role of the characteristics of the issuer, and so it was added to the model the construct credibility of the source as an important determinant. Hence this study is also innovative because includes all intervenients in the process of persuasive communication: the source, the message and the receiver.

The first question of this research was: *What are the determinants of eWOM information on social media which influence consumers' purchase intentions of OTC medicines?*

a) This study found that source credibility, needs of information, attitude towards information, information usefulness, and information adoption are the determinants of eWOM information on social media which influence consumers' purchase intentions of an OTC medicine. And on evaluating the quality and

credibility of the information OTC consumers prefer to use the peripheral route of elaboration acting as shortcuts in the elaboration process.

b) The determinants show that the influence of eWOM OTC information depends less on characteristics of eWOM information and more on the characteristics of the source and the consumers' behaviour towards eWOM information. They have an important role in the purchase intention of an OTC; therefore, should be evaluated together while considering the influence of eWOM information on consumers' purchase intentions. The results of this study reveal that all the variables studied, except for the quality and credibility of information (characteristics of the message), are determinants of eWOM on social media that influence consumers' purchase intentions. So when it refers to the information, OTC consumers use the peripheral cues to access the characteristics of the message preferring this route of elaboration as so the credibility of the issuer assumes an important role in this process; and as far as the receiver is concerned, needs and attitudes towards information also have an impact on the purchase intention; Thus, it can be said that the characteristics of the issuer (source), and the receiver because consumers need information (search for opinions in social media) and adopt positive attitudes concerning the eWOM information coming from other individuals finding the information useful and adopt it (consumer behaviour concerning eWOM information), have an impact on purchase intention of an OTC medicine. Summing up the source or issuer and receiver are the most influential determinants when it comes to the evaluation of the information concerning an OTC medicine.

c) We empirically assessed the relationships hypothesised in the theoretical models to answer research questions and therefore met our specific objectives.

The second question of this research was: *Which dimensions of source credibility is more correlated to consumer behaviour intention to purchase non-prescription medicines in the context of social media?*

d) We confirmed the source credibility has a high-order construct in which the main dimensions privileged by the OTC consumers are reputation, expertise, and trustworthiness and the less important homophily. At the same time, we answered an important research gap by verifying that when assessing the credibility of the source consumers, favoured more strong ties by preferring to evaluate information from family or friends than anonymous information.

As so we also answered the third question of this research: *Is eWOM between familiar people on social media or eWOM between anonymous people on other online platforms more influential on consumers' purchase intentions of non-prescription medicines?*

The fourth research question of this research was: *How do gender characteristics influence consumers' purchase intentions of OTC pharmaceuticals in social media?*

e) We confirmed that there are no significant differences between genders in terms of their behaviour when evaluation the information regarding an OTC medicine in social media. Hence gender has no moderation this is a useful insight into the understanding of the behaviour of males and females regarding eWOM OTC information.

Another objective was to evaluate how digital platforms are used by these consumers. When analysing the data provided by our survey, we can conclude that OTC consumers have similar habits regarding the of use social media networks compared to the general trends. And our main conclusion is concerning the evaluation of information regarding OTC medicines since we found that 38% of the respondents that engage in social media do not receive any information regarding OTC medicines and 30% of the respondents that receive information do not read the online reviews. Still, we were pleasantly surprised to confirm that 62% of our respondents that actively engage on social media receive information regarding OTC drugs.

7.3 Theoretical contribution

This research several contributions to theory, by providing a greater understanding of eWOM within social media and highlighting the determinants of eWOM information on social media influencing consumers' OTC purchase intentions. Validated determinants are important for both researchers in the same field, and researchers who are studying purchase intention within different research contexts as in our case Pharma healthcare.

The addition, of the source credibility, construct to IACM Erkan's work (2016), allowed the introduction in the analysis of the role of the eWOM issuer in influencing the purchase intention of consumers, having proved to be a relevant determinant statistically significant. Numerous studies of eWOM have been conducted to examine the effect of eWOM communication; however, few studies concentrated on measuring the development of source credibility on social media. The recent studies on eWOM and source credibility are fragmented and the results of the influence of characteristics of source credibility on consumers' behaviour have provided mixed conclusions (Cheung et al. 2008; Ismagilova et al. 2020b). However given the rising prominence of social media, researchers are starting to explore the effects of source credibility on social media users (Li et al. 2020; Weismueller et al. 2020) which highlights the importance of this variable in this context and there is still no empirical evidence

on the non-prescription segment of the market. Metzger, et al. (2003) stated the need to study more variables that may be particularly influential on credibility assessments of online information, as well as more channels and types of information available over the Internet. Based on the dispersed literature this study conceptualized and developed five dimensions for source credibility in social media. The new measures of source credibility in social media were based on the traditional measures and combined with the recent new findings in social media and source credibility research. There is still an ongoing debate on the precise factor structure of the multidimensional source credibility variable. Now, with the increased use of social media, digital platforms and computer-mediated communication, this debate has expanded and has been transferred online. The new measures of source credibility in social media suggested that in the new media environment, the dimensions of source credibility will expand with the new considerations and interventions.

This study also proves to be a contribution to the literature by overcoming specific limitations or gaps in the literature. Namely, two limitations pointed out in the study by Erkan (2016) are the population and the need to confirm the model in other contexts. Regarding the population, the limitations lie in the fact that the universe of respondents by this author was conducted with university students. Although the age group of university students constitutes the majority of social media users, they may not precisely reflect the whole population contrary to our research which was conducted in a large sample of potential OTC medicine consumers and therefore we rely upon the robustness of our findings. We also tested the IACM model in a new context the pharma healthcare.

Another important contribution to be mentioned has to do with the context where this study is inserted, the Portuguese Pharmaceutical context and in a specific category of products non-prescription medicines, where the lack of the investigation is felt not only in Portugal but also in general. To our knowledge, this is the first study evaluating the determinants of eWOM on social media that influence the purchase intention of an OTC medicine. By examining, in this cultural context, how the determinants of eWOM (namely characteristics of information, source, receiver and consumer behaviour concerning eWOM) influence the impact of eWOM in the decision-making process to purchase an OTC medicine, thus revealing itself as relevant contributions to the existing literature.

In addition, the results suggest that the IACM model provides an adequate theoretical framework to understand how different characteristics influence the usefulness of information, the adoption of information, and finally, the purchase intention of an OTC medicine. The explanatory power of the model is very high, as the determinants together explain 79 per cent (R^2 = 0.790) of the variance of the dependent variable information adoption which can be

interpreted as more than substantial according to previous research (Chin, 1998). In addition, by explaining more than 72 per cent (R^2 = 0.719) of the variance of purchase intention, the coefficient of determination is also substantial for the effective relationship between information adoption and purchase intention which reveals a compelling explanatory power of the theory.

7.4 Managerial contribution and final recommendations

Due to the COVID-19 pandemic, digital marketing strategies had a huge increase with pharmaceutical companies having to quickly adapt to this new reality. So, our research appears in a very opportune period where firms are facing the new challenges that originated from the paradigm shifts enhanced in section 1.3.2. and provides important managerial implications.

From a managerial perspective, this research provides marketers with a frame of reference to understand the influence of eWOM in social media on consumers' purchase intentions of an OTC medicine as so this research offers valuable insights for pharma marketers since it illustrates the factors that impact consumers' purchasing intentions through eWOM information on social media. Because of the vast number of users, social media websites are significant for marketers; also, these websites are considered to be excellent venues for eWOM, as recent research shows that 80% of consumers trust online recommendations (Chih, Wang, Hsu, & Huang, 2013; Kaplan & Haenlein, 2010). As a result of the determinants found in this study, marketers can better understand the dynamics of eWOM on social media and build better digital marketing strategies. As stated in section 2.9.4 Pharmaceutical industry needs to adapt its strategies to social media because they lack digital competencies and know-how and can introduce better practices benefiting from the insights provided with this study enhancing the effectiveness of their communication, segmentation strategies and increasing ROI whilst adding more value across the chain.

Our empirical findings contribute with a theoretical framework to better Direct Customer Interaction; Data-Driven Marketing; Digital and Social Marketing; Integrated sales and marketing strategy (Digital + Physical); and definitely to the improvement of Omnichannel touchpoints in health care providing a mechanism for marketers to deliver consistent messaging and engage consumers via the consumers' most desired platforms with the right messages and fine-tune the determinants that will influence the buying behaviour. Also, today pharma is looking at more consumer-centric approach strategies with empowered consumers' health decision-making being a core trend of today's healthcare ecosystem. It is delivering patient-centred care that engages and empowers consumers to be involved throughout a shared decision-making care process. Our research shows that consumers' involvement in health decision-making is associated with the need for information-seeking with a direct impact

on behaviour and so this is a piece of valuable information to be used across a variety of digital health touchpoints.

Managers can benefit from understanding the information adoption component of knowledge transfer as the dual-process informational influence that reflects complex trade-offs among central and peripheral processing routes. In this case one of the main contributes of our research is the fact that consumers seem to rely on the credibility of the source to act as shortcuts in the evaluation of the information and reviews and therefore marketers should use expert and credible sources on their marketing campaigns on the context of healthcare.

From a managerial standpoint, the study results guide advertisers and marketers in managing online product reviews. The study provides practical implications for review sites to develop effective mechanisms to enhance the credibility of online reviews and help web users to estimate adequate persuasive information to induce a purchase behaviour.

7.4.1 Limitations and Future Research Directions

This study like all others has some limitations that can be considered in future investigations. Firstly, it is necessary to consider that a technique of convenience sample (non-probabilistic) in obtaining the data, which despite encompassing a great diversity in terms of ages, and social media habits it is necessary to take into account limitations to the generalizability of the study results. This issue should be addressed further in future studies. Possible gender moderation effects should be further evaluated with different variables like specific products and combining other factors like age and economic status as well as the level of health literacy.

The construct “Needs of Information” was only measured on a 2 item scale which is also a limitation regarding its content validity assessment. Future research will consider more indicators to measure this construct.

We propose that the research on eWOM information acceptance and use in purchase behaviour be continued by including new factors in the analysis, such as precedents of users' attitudes toward information or determinants of perceived information quality and credibility. A study on the impact of external factors, such as internet marketing strategies, on information acceptance, could also be addressed. A study to investigate the effects of incentives for recommendations on the credibility of the information offered through social networking sites, for instance, could be considered. As a result, we believe it is worthwhile to build new models that incorporate more variables to better describe the process of information acceptance in the future. Also, would be interesting to evaluate this conceptual model on the market segment of prescription medicines (POM) and to evaluate it in the context of healthcare digital applications.

Regarding the conceptualization of the source of credibility, we propose to divide this construct into other dimensions following Cheung and Thadani (2012) like source credibility with the dimensions of expertise, trustworthiness and reputation and source type with the dimensions of tie strength and others. We believe the dimension of homophily is not relevant in the context of social media and pharma healthcare. Additionally, the researchers stand by previous researchers that studies around source credibility in eWOM reviews should be further researched especially in healthcare since these studies help to protect the source credibility of eWOM reviews which is important with the increasing phenomena of fake news and will contribute from a managerial perspective to the increase of corporate and brand reputation.

According to the theory of homophily, consumers are more likely to evaluate sources that are like themselves as more credible than those with lower similarities. However, this study shows a weak effect on evaluating the source credibility. It indicates that although the perceived similarity has a positive influence on credibility this effect is not so relevant from a managerial point of view in the context of social media. On the other hand, source credibility dimension reputation was found to have a very significant effect which confirms the importance of corporate marketing strategies in the pharmaceutical industry.

We evaluated the moderator role of gender, in the future, more variables may be needed to reach more valid conclusions about these issues like internet usage patterns and the examination of other demographic variables like age and occupation.

The influence of other control variables (e.g., brand and price) could also be tested to control the effects on consumers' decision-making.

The study respondents were social media users. The study represents one type of online consumer community. Care must be taken when extrapolating the findings to other types of online communities as so it would be interesting to evaluate the model in other contexts like corporate sites, digital events (webinars), paid media and email marketing.

Due to the COVID-19 pandemic hospitals and doctors have been trying to sort out ways to provide better access to treatment to their patients. Telemedicine is an emerging trend revolutionizing health care and changing rapidly. It uses an electronic route to communicate with patients with their physicians it would also be interesting to evaluate the model in this context.

We further examined the direct, indirect, and total effects of the determinants of behavioural intention in this study (Table 39), we can observe that source credibility has a significant indirect positive impact on the dependent variable purchase intention ($\beta = 0.465$) in the future further analysis should evaluate this cause-and-effect relationship expanding the framework by adding the mediation role of this variable.

Finally, the study's product setting was an abstract OTC product. Future research could choose a specific product category to evaluate the findings of this study, making the findings applicable to specific products. In future research, the source credibility measures created in this study can be tested in other marketing communication scenarios like for example, in a public digital event on social media, where one might assess the credibility of several sources. It would also be interesting to perform a longitudinal study to examine the credibility of a specific brand evolution through online reviews.

7.5 Main Conclusions

This research proposes furthering the literature using the Portuguese pharmaceutical non-prescription medicines segment of the market to understand the determinants of eWOM information on social media influencing consumers' buying behaviour. By integrating two theories, IAM and IACM, we have built a powerful explanatory model of the determinants of purchase intention of an OTC medicine and identified the major factors that contribute to the usefulness and adoption of the OTC information in social media.

Social media websites are important for marketers owing to the large number of users they have; moreover, these websites are considered very appropriate platforms for spreading eWOM and building trust. For this reason, the determinants provided by this study are valuable in terms of practicality. They allow pharma and healthcare marketers to understand the dynamics of OTC eWOM on social media, and thus to develop better and more effective marketing strategies.

REFERENCES

Abdullah, T., Deraman, S. N. S., Zainuddin, S. A., Azmi, N. F., Abdullah, S. S., Anuar, N. I. M., … Hasan, H. (2020). Impact of social media influencer on instagram user purchase intention towards the fashion products: The perspectives of students. *European Journal of Molecular and Clinical Medicine*, *7*(8), 2589–2598.

Abubakar, A. M., Ilkan, M., Meshall Al-Tal, R., & Eluwole, K. K. (2017). eWOM, revisit intention, destination trust and gender. *Journal of Hospitality and Tourism Management*, *31*, 220–227. https://doi.org/10.1016/j.jhtm.2016.12.005

ACEPI. (2020). Economia digital. In *Economia Digital em Portugal*. Retrieved from https://www.acepi.pt/media/cn4llu2a/acepi-estudo-economia-digital-2020-versão-resumida.pdf

Agarwal, R., Dugas, M., Gao, G. (Gordon), & Kannan, P. K. (2020). Emerging technologies and analytics for a new era of value-centered marketing in healthcare. *Journal of the Academy of Marketing Science*, *48*(1), 9–23. https://doi.org/10.1007/s11747-019-00692-4

Ahmad, S., Zulkurnain, N., & Khairushalimi, F. (2016). Assessing the Validity and Reliability of a Measurement Model in Structural Equation Modeling (SEM). *British Journal of Mathematics & Computer Science*, *15*(3), 1–8. https://doi.org/10.9734/BJMCS/2016/25183

Ahmad Tajuddin, U. N. R., Abu Hassan, L. F., Othman, A. K., & Razak, N. A. (2020). Electronic Word-of-Mouth (E-WOM), Brand Image and Consumer Purchase Intention on Healthcare Products. *Journal of Accounting Research, Organization and Economics*, *3*(1), 73–83. https://doi.org/10.24815/jaroe.v3i1.16823

Aitken, M. (2013). *Patient Apps for Improved Healthcare*.

Ajzen, I. (1992). Persuasive communication theory in social psychology: A historical perspective, in '"Influencing Human Behavior: Theory and Applications in Recreation, Tourism, and Natural Ž. Ž. Resource Management"'MJ Manfredo, Ed. *MJ Manfredo (1992), Champaign, IL: Sagamore Publishing*.

Ajzen, Icek. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, Icek. (2005). *Attitudes, personality and behaviour*. McGraw-Hill Education (UK).

Ajzen, Icek, & Fishbein, M. (1972). Attitudes and normative beliefs as factors influencing behavioral intentions. *Journal of Personality and Social Psychology*, *21*(1), 1.

Ajzen, Icek, & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, *82*(2), 261.

Akande-Sholabi, W., Ajamu, A. T., & Adisa, R. (2021). Prevalence, knowledge and perception of self-medication practice among undergraduate healthcare students. *Journal of Pharmaceutical Policy and Practice*, *14*(1), 1–11. https://doi.org/10.1186/s40545-021-00331-w

Akgül, Y., Yaman, B., Geçgil, G., & Yavuz, G. (2019). The Influencing Factors for Purchasing Intentions in Social Media by Utaut Perspective. In *Structural Equation Modeling Approaches to E-Service Adoption* (pp. 254–267). IGI Global.

Alhidari, A., Iyer, P., & Paswan, A. (2015). Personal level antecedents of eWOM and purchase intention, on social networking sites. *Journal of Customer Behaviour*, *14*(2), 107–125. https://doi.org/10.1362/147539215X14373846805707

Ali Jinnah, S. B., Haque, A., & Jamaludin, M. A. (2020). Consumer behavior towards over-the-counter medicine purchase: The extended theory of planned behaviour. *Pakistan Journal of Medical and Health Sciences*, *14*(3), 1131–1139.

Ali Murshid, M., & Mohaidin, Z. (2017). Models and theories of prescribing decisions: A review and suggested a new model. *Pharmacy Practice*, *15*(2), 1–12. https://doi.org/10.18549/PharmPract.2017.02.990

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. Retrieved from http://www.inderscience.com/link.php?id=114662

Ankita Gaur, & Rajiv Tonk. (2021). Covid-19 Pandemic and Digitalization of Healthcare Among Youth: a Marketing Perspective. *EPRA International Journal of Economics, Business and Management Studies*, (August), 52–60. https://doi.org/10.36713/epra8267

Apifarma. (2018). *Apifarma-holistic perspective on the value of medicines in Portugal*.

APIFARMA. (2019). *A Indústria Farmacêutica em Números*. Retrieved from https://www.apifarma.pt/wp-content/uploads/2021/06/IF_em_Numeros_2019.pdf

Aramendia-Muneta, M. E. (2017). 4.2 Spread the Word – The Effect of Word of Mouth in e-Marketing. In *Commercial Communication in the Digital Age* (pp. 227–246). https://doi.org/10.1515/9783110416794-013

Arekar, K., Somaiya, K. J., & Jain, R. (2021). Predictive Model To Study the Consumer Buying Behaviour Towards E-Pharmacy Through Social Media Influence: a Cross Country Study. *Academy of Marketing Studies Journal*, *25*(2), 1–22.

Arndt, J. (1967). Role of Product-Related Conversations in the Diffusion of a New Product. *Journal of Marketing Research*, *4*(3), 291. https://doi.org/10.2307/3149462

Association of the European Self-Medication Industry, A. (2012). *Self-care: a winning solution*.

Astrachan, C. B., Patel, V. K., & Wanzenried, G. (2014). A comparative study of CB-SEM and PLS-SEM for theory development in family firm research. *Journal of Family Business Strategy*, *5*(1), 116–128. https://doi.org/10.1016/j.jfbs.2013.12.002

Asyraf, W. M., & Afthanorhan, B. W. (2013). A comparison of partial least square structural equation modeling (PLS-SEM) and covariance based structural equation modeling (CB-SEM) for confirmatory factor analysis. *International Journal of Engineering Science and Innovative Technology (IJESIT)*, *2*(5), 198–205.

Aufegger, L., Yanar, C., Darzi, A., & Bicknell, C. (2021). The risk-value trade-off: price and brand information impact consumers' intentions to purchase OTC drugs. *Journal of Pharmaceutical Policy and Practice*, *14*(1), 11. https://doi.org/10.1186/s40545-020-00293-5

Awad, N. F., & Ragowsky, A. (2008). Establishing Trust in Electronic Commerce Through Online Word of Mouth: An Examination Across Genders. *Journal of Management Information Systems*, *24*(4), 101–121. https://doi.org/10.2753/MIS0742-1222240404

Awang, Z. (2012). *Research methodology and data analysis second edition*. UiTM Press.

Azoev, G., Sumarokova, E., & Butkovskaya, G. (2019). *Marketing communications integration in healthcare industry: digitalization and omnichannel technologies*. *105*(Iscde), 918–923. https://doi.org/10.2991/iscde-19.2019.182

Babić Rosario, A., de Valck, K., & Sotgiu, F. (2020). Conceptualizing the electronic word-of-mouth process: What we know and need to know about eWOM creation, exposure, and evaluation. *Journal of the Academy of Marketing Science*, *48*(3), 422–448. https://doi.org/10.1007/s11747-019-00706-1

Bae, S., & Lee, T. (2011). Gender differences in consumers' perception of online consumer reviews. *Electronic Commerce Research*, *11*(2), 201–214. https://doi.org/10.1007/s10660-010-9072-y

Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, *40*(1), 8–34. https://doi.org/10.1007/s11747-011-0278-x

Bailey, J. E., & Pearson, S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science*, *29*(5), 530–545.

Baker, M. J., & Hart, S. (2008). The Marketing Book. In *Elsevier Ltd* (6th ed.). Retrieved from https://www.sciencedirect.com/book/9780750685665/the-marketing-book#book-info

Bala, M., & Verma, D. (2018). A Critical Review of Digital Marketing . *International Journal of Management*, *8*(10), 321–339.

Ball, M. J., Smith, C., & Bakalar, R. S. (2007). Personal health records: empowering consumers. *Journal of Healthcare Information Management : JHIM*, *21*(1), 76–86.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191.

Baños Díez, J.-E., & Farré Albaladejo, M. (2002). *Principios de farmacología clínica: Bases científicas de la utilización de medicamentos*.

Barclay, D., Higgins, C., & Thompson, R. (1995). *The partial least squares (PLS) approach to casual modeling: personal computer adoption ans use as an Illustration*.

Barros, P. P. (2012). Pharmaceutical market reforms in Portugal under the memorandum of understanding. *Eurohealth*, *18*(1), 33–36.

Baruah, T. D. (2012). Influence of adolescents' peer relationships and social media on academic identity. *International Journal of Scientific and Research Publications*, *2*(5), 357–371. https://doi.org/10.1080/02188791.2019.1598848

Bataineh, A. Q. (2015). The Impact of Perceived e-WOM on Purchase Intention : The Mediating Role of Corporate Image. *International Journal of Marketing Studies*, *7*(1), 126–137. https://doi.org/10.5539/ijms.v7n1p126

Batra, R., & Keller, K. L. (2016). Integrating Marketing Communications: New Findings, New Lessons, and New Ideas. *Journal of Marketing*, *80*(6), 122–145. https://doi.org/10.1509/jm.15.0419

Bearden, W. O., & Etzel, M. J. (1982). Reference group influence on product and brand purchase decisions. *Journal of Consumer Research*, *9*(2), 183–194.

Bell, E., Bryman, A., & Harley, B. (2018). *Business research methods*. Oxford university press.

Belu, M. G., & Marinoiu, A. (2014). A New Distribution Strategy : The Omnichannel Strategy. *Romanian Economic Journal*, *17*(52), 117–133.

Bennadi, D. (2014). Self-medication: A current challenge. *Journal of Basic and Clinical Pharmacy*, *5*(1), 19. https://doi.org/10.4103/0976-0105.128253

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588. https://doi.org/10.1037/0033-

2909.88.3.588

BENTLER, P. M., & CHOU, C.-P. (1987). Practical Issues in Structural Modeling. *Sociological Methods \& Research*, *16*(1), 78–117. https://doi.org/10.1177/0049124187016001004

Berlo, D. K., Lemert, J. B., & Mertz, R. J. (1969). Dimensions for evaluating the acceptability of message sources. *Public Opinion Quarterly*, *33*(4), 563–576.

Berndt, A. E. (2020). Sampling Methods. *Journal of Human Lactation : Official Journal of International Lactation Consultant Association*, *36*(2), 224–226. https://doi.org/10.1177/0890334420906850

Bhargava, S., Buzzell, C., Charm, T., Das, R., Fradin, M., Grimmelt, A., … Seid, C. (2020). A global view of how consumer behavior is changing amid COVID-19. *McKinsey & Company*, 1–15. Retrieved from https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/a-global-view-of-how-consumer-behavior-is-changing-amid-covid-19

Bhattacherjee, A. (2012). Social science research: Principles, methods, and practices. In U. T. Library (Ed.), *Pure and Applied Chemistry* (Textbooks, Vol. 3). https://doi.org/10.1351/pac198961091657

Bhattacherjee, A., & Sanford, C. (2006). Influence processes for information technology acceptance: An elaboration likelihood model. *MIS Quarterly*, *40*(1), 805–825. https://doi.org/10.1016/S0008-6363(98)00174-6

Bickart, B., & Schindler, R. M. (2001). Internet forums as influential sources of consumer information. *Journal of Interactive Marketing*, *15*(3), 31–40. https://doi.org/10.1002/dir.1014

Black, T. R. (1998). *Doing quantitative research in the social sciences: An integrated approach to research design, measurement and statistics*. Sage.

Blackwell, R. D.; Miniard, P. W., & Engel, J. F., Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). *Consumer Behavior* (O. Mason, ed.). Ft. Worth, Texas: Thomson/South-Western.

Bolarinwa, O. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*, *22*(4), 195. https://doi.org/10.4103/1117-1936.173959

Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods & Research*, *17*(3), 303–316.

Boyce, C., & Neale, P. (2006). *Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input.* (P. INTERNATIONAL, ed.).

Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-mediated Communication*, *13*(1), 210–230. https://doi.org/10.1111/j.1083-6101.2007.00393.x

Bray, J. (2000). Consumer Behaviour Theory: Approaches and Models. *International Journal of Social Psychiatry*, *46*(1), 1–33. https://doi.org/10.1177/002076400004600104

Brown, J., Broderick, A. J., & Lee, N. (2007). Word of mouth communication within online communities: Conceptualizing the online social network. *Journal of Interactive Marketing*, *21*(3), 2–20. https://doi.org/10.1002/dir.20082

Brown, J. J., & Reingen, P. H. (1987). Social Ties and Word-of-Mouth Referral Behavior. *Journal of Consumer Research*, *14*(3), 350. https://doi.org/10.1086/209118

Bujnowska-Fedak, M., & W egierek, P. (2020). The Impact of Online Health Informationon Patient Health Behaviours and MakingDecisions Concerning Health. *International Journal of Environmental Research and Public Health*, *17*(880). https://doi.org/http://dx.doi.org/10.3390/ijerph17030880

Burton, D. (2000). *Research training for social scientists: a handbook for postgraduate researchers*. Sage.

Byrne, B. M. (2010). Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series). *New York: Taylor & Francis Group*, *396*(1), 7384.

Casalo, L. V., Flavián, C., & Guinalíu, M. (2007). The Influence of Satisfaction, Perceived Reputation and Trust on a Consumer's Commitment to a Website. *Journal of Marketing Communications*, *13*(1), 1–17. https://doi.org/10.1080/13527260600951633

Cerdá Suárez, L. M., Perán López, J., & Cambronero Saiz, B. (2020). The Influence of Heuristic judgments in Social Media on Corporate Reputation: A Study in Spanish Leader Companies. *Sustainability*, *12*(4), 1640. https://doi.org/10.3390/su12041640

Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing*. Pearson uk.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*(5), 752–766. https://doi.org/10.1037//0022-3514.39.5.752

Chan, T. K., Cheung, C. M., Shi, N., & Lee, M. K. (2015). Gender differences in satisfaction with Facebook users. In *Industrial Management & Data Systems.* (Vol. 51).

Chang, H. H., & Wu, L. H. (2014). An examination of negative e-WOM adoption: Brand commitment as a moderator. *Decision Support Systems*, *59*(1), 206–218.

https://doi.org/10.1016/j.dss.2013.11.008

Chang, L.-Y., Lee, Y.-J., & Huang, C.-L. (2010). The Influence of Electronic Word of Mouth of Mouth on the Consumer's Purchase Decision. *Journal of Global Business Management*, *6*(2).

Chang, Y.-T., Yu, H., & Lu, H.-P. (2015). Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *Journal of Business Research*, *68*(4), 777–782. https://doi.org/10.1016/j.jbusres.2014.11.027

Chen, C. C., Wu, J., & Crandall, R. E. (2007). Obstacles to the adoption of radio frequency identification technology in the emergency rooms of hospitals. *International Journal of Electronic Healthcare*, *3*(2), 193–207.

Chen, F. F. (2007). Sensitivity of Goodness of Fit Indexes to Lack of Measurement Invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(3), 464–504. https://doi.org/10.1080/10705510701301834

Chen, J., Hou, X., & Zhao, W. (2016). Research on the Model of Consumer Health Information Seeking Behavior via Social Media. *International Journal of Communications, Network and System Sciences*, *09*(08), 326–337. https://doi.org/10.4236/ijcns.2016.98029

Chen, Y., Fay, S., & Wang, Q. (2011). The Role of Marketing in Social Media: How Online Consumer Reviews Evolve. *Journal of Interactive Marketing*, *25*(2), 85–94. https://doi.org/10.1016/j.intmar.2011.01.003

Cheng, X., & Zhou, M. (2010a). Empirical Study on Credibility of Electronic Word of Mouth. *2010 International Conference on Management and Service Science*, 1–4. https://doi.org/10.1109/ICMSS.2010.5578458

Cheng, X., & Zhou, M. (2010b). Study on Effect of eWOM: A Literature Review and Suggestions for Future Research. *2010 International Conference on Management and Service Science*, 1–4. https://doi.org/10.1109/ICMSS.2010.5576663

Cheung, C. M. K., & Lee, M. K. O. (2012). What drives consumers to spread electronic word of mouth in online consumer-opinion platforms. *Decision Support Systems*, *53*(1), 218–225. https://doi.org/10.1016/j.dss.2012.01.015

Cheung, C. M. K., Lee, M. K. O., & Rabjohn, N. (2008). The impact of electronic word-of-mouth: The adoption of online opinions in online customer communities. *Internet Research*, *18*(3), 229–247. https://doi.org/10.1108/10662240810883290

Cheung, C. M. K., Lee, M. K. O., & Thadani, D. R. (2009). The impact of positive electronic word-of-mouth on consumer online purchasing decision. *Lecture Notes in Computer*

Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), *5736 LNAI*, 501–510. https://doi.org/10.1007/978-3-642-04754-1_51

Cheung, C. M. K., & Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision Support Systems*, *54*(1), 461–470. https://doi.org/10.1016/j.dss.2012.06.008

Cheung, C. M., & Thadani, D. R. (2010). The effectiveness of electronic word-of-mouth communication: A literature analysis. *Proceedings of the 23rd Bled EConference ETrust: Implications for the Individual, Enterprises and Society*, 329–345. Retrieved from https://domino.fov.uni-mb.si/proceedings.nsf/0/7d01f166eebae8e3c1257757003c5e98/$FILE/24_Cheung.pdf

Cheung, C., Sia, C.-L., & Kuan, K. (2012). Is This Review Believable? A Study of Factors Affecting the Credibility of Online Consumer Reviews from an ELM Perspective. *Journal of the Association for Information Systems*, *13*(8), 618–635. https://doi.org/10.17705/1jais.00305

Cheung, M. Y., Luo, C., Sia, C. L., & Chen, H. (2009a). Credibility of Electronic Word-of-Mouth: Informational and Normative Determinants of On-line Consumer Recommendations. *International Journal of Electronic Commerce*, *13*(4), 9–38. https://doi.org/10.2753/JEC1086-4415130402

Cheung, M. Y., Luo, C., Sia, C. L., & Chen, H. (2009b). Credibility of Electronic Word-of-Mouth: Informational and Normative Determinants of On-line Consumer Recommendations. *International Journal of Electronic Commerce*, *13*(4), 9–38. https://doi.org/10.2753/JEC1086-4415130402

Chih, W.-H., Wang, K.-Y., Hsu, L.-C., & Huang, S.-C. (2013). Investigating electronic word-of-mouth effects on online discussion forums: the role of perceived positive electronic word-of-mouth review credibility. *Cyberpsychology, Behavior and Social Networking*, *16*(9), 658–668. https://doi.org/10.1089/cyber.2012.0364

Childs, L. M., & Martin, C. Y. (2012). Social media profiles : Striking the right balance. *American Journal of Health-System Pharmacy*, *69*(23), 2044–2050. Retrieved from https://doi.org/10.2146/ajhp120115

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, *295*(2), 295–336.

Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares* (pp. 655–690). Springer.

Chin, W. W., Peterson, R. A., & Brown, S. P. (2008). Structural Equation Modeling in Marketing: Some Practical Reminders. *Journal of Marketing Theory and Practice*, *16*(4), 287–298. https://doi.org/10.2753/MTP1069-6679160402

Chivandi, A., Olorunjuwon Samuel, M., & Muchie, M. (2020). Social Media, Consumer Behavior, and Service Marketing. In *Consumer Behavior and Marketing* (Vol. 20, pp. 431–444). https://doi.org/10.5772/intechopen.85406

Choi, W., & Stvilia, B. (2015). Web Credibility Assessment: Conceptualization, Operationalization, Variability, and Models Wonchan. *Journal of the Association for Information Science and Technology*, *66*(12), 2399–2414. https://doi.org/10.1002/asi

Choi, Y. J. (2011). Do central processing and online processing always concur? Analysis of scene order and proportion effects in broadcast news. *Applied Cognitive Psychology*, *25*(4), 567–575. https://doi.org/10.1002/acp.1721

Choi, Y. K., Seo, Y., & Yoon, S. (2017). E-WOM messaging on social media. *Internet Research*, *27*(3), 495–505. https://doi.org/10.1108/IntR-07-2016-0198

Chou, C.-P., & Bentler, P. M. (1995). *Estimates and tests in structural equation modeling.*

Choudhury, N. (2014). World Wide Web and Its Journey from Web 1.0 to Web 4.0. *International Journal of Computer Science and Information Technologies*, *5*(6), 8096–8100. https://doi.org/10.1186/1471-2105-9-82

Christopher Westland, J. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, *9*(6), 476–487. https://doi.org/10.1016/j.elerap.2010.07.003

Chu, S.-C., & Kim, Y. (2011). Determinants of consumer engagement in electronic word-of-mouth (eWOM) in social networking sites. *International Journal of Advertising*, *30*(1), 47–75. https://doi.org/10.2501/IJA-30-1-047-075

Chu, S.-Y., Wu, C.-M., Wu, K. I.-F., & Chen, Y.-F. (2016). Does an established offline store drive online purchase intention? *International Journal of Business and Information*, *11*(4), 432.

Chu, Shu-chuan, & Kim, Y. (2011). Determinants of consumer engagement in electronic word - of - mouth (eWOM) in social networking sites. *International Journal of Advertising*, *30*(1), 47–75. https://doi.org/10.2501/IJA-30-1-047-075

Chu, Shu-Chuan, & Chen, H. (2019). Impact of consumers' corporate social responsibility-related activities in social media on brand attitude, electronic word-of-mouth intention, and purchase intention: A study of Chinese consumer behavior. *Journal of Consumer*

Behaviour, *18*(6), 453–462. https://doi.org/10.1002/cb.1784

Cîrstea, S. D., Moldovan-Teselios, C., & Iancu, A. I. (2017a). Analysis of Factors that Influence OTC Purchasing Behavior. In *IFMBE Proceedings* (Vol. 59, pp. 303–308). https://doi.org/10.1007/978-3-319-52875-5_63

Cîrstea, S. D., Moldovan-Teselios, C., & Iancu, A. I. (2017b). *Analysis of Factors that Influence OTC Purchasing Behavior BT - International Conference on Advancements of Medicine and Health Care through Technology; 12th - 15th October 2016, Cluj-Napoca, Romania* (S. Vlad & N. M. Roman, eds.). Cham: Springer International Publishing.

Collins, L. M., Schafer, J. L., & Kam, C.-M. (2001). A comparison of inclusive and restrictive strategies in modern missing data procedures. *Psychological Methods*, *6*(4), 330.

Collis, J., & Hussey, R. (2013). *Business research: A practical guide for undergraduate and postgraduate students*. Macmillan International Higher Education.

Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis*. Psychology press.

Cooper, D. R., Schindler, P. S., & Sun, J. (2006). *Business research methods* (Vol. 9). Mcgraw-hill New York.

Cordon, C., Garcia-Milà, P., Vilarino, T. F., & Caballero, P. (2016). Strategy is Digital. *How Companies Can Use Big Data in the Value Chain. Schweiz*.

Costa, T. F. T. (2014). *Pharmaceutical marketing and social media : a facebook, twitter and youtube analysis*.

Cruz, P. S., Caramona, M., & Guerreiro, M. P. (2015). Cruz, Pedro Soares Caramona, Margarida Guerreiro, Mara Pereira. *Revista Portuguesa de Farmacoterapia*, *7*(2), 83–90. Retrieved from http://farmacoterapia.pt/index.php/rpf/article/view/2

Cui, T. H., Ghose, A., Halaburda, H., Iyengar, R., Pauwels, K., Sriram, S., … Venkataraman, S. (2021). Informational Challenges in Omnichannel Marketing: Remedies and Future Research. *Journal of Marketing*, *85*(1), 103–120. https://doi.org/10.1177/0022242920968810

Dahl, A. J., Peltier, J. W., & Milne, G. R. (2018). Development of a Value Co-Creation Wellness Model: The Role of Physicians and Digital Information Seeking on Health Behaviors and Health Outcomes. *Journal of Consumer Affairs*, *52*(3), 562–594. https://doi.org/10.1111/joca.12176

Dakduk, S., González, Á., & Portalanza, A. (2019). Learn About Structural Equation Modeling in SmartPLS With Data From the Customer Behavior in Electronic Commerce Study in Ecuador (2017). In *Learn About Structural Equation Modeling in SmartPLS With Data*

From the Customer Behavior in Electronic Commerce Study in Ecuador (2017). https://doi.org/10.4135/9781526498205

Daowd, A., Hasan, R., Eldabi, T., Rafi-ul-Shan, P. M., Cao, D., & Kasemsarn, N. (2021). Factors affecting eWOM credibility, information adoption and purchase intention on Generation Y: a case from Thailand. *Journal of Enterprise Information Management*, *34*(3), 838–859. https://doi.org/10.1108/JEIM-04-2019-0118

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*(July), 121092. https://doi.org/10.1016/j.techfore.2021.121092

Daugherty, T., & Hoffman, E. (2014). eWOM and the importance of capturing consumer attention within social media. *Journal of Marketing Communications*, Vol. 20, pp. 82–102. https://doi.org/10.1080/13527266.2013.797764

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Dellarocas, C. (2003). The Digitization of Word of Mouth: Promise and Challenges of Online Feedback Mechanisms. *Management Science*, *49*(10), 1407–1424. https://doi.org/10.1287/mnsc.49.10.1407.17308

Delorme, D. E., Huh, J., Reid, L. N., & An, S. (2010). The state of public research on over-the-counter drug advertising. *International Journal of Pharmaceutical and Healthcare Marketing*, *4*(3), 208–231. https://doi.org/10.1108/17506121011076156

Dillman, F. R. (2016). Considering the future of pharmaceutical promotions in social media: Comment on “Trouble spots in online direct-to-consumer prescription drug promotion: A content analysis of FDA warning letters.” *International Journal of Health Policy and Management*, *5*(4), 283–285. https://doi.org/10.15171/ijhpm.2016.15

Doh, S.-J., & Hwang, J.-S. (2009). How consumers evaluate eWOM (electronic word-of-mouth) messages. *Cyberpsychology & Behavior : The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *12*(2), 193–197. https://doi.org/10.1089/cpb.2008.0109

Dwivedi, Y. K., Kapoor, K. K., & Chen, H. (2015). Social media marketing and advertising. *The Marketing Review*, *15*(3), 289–309. Retrieved from http://cronfa.swan.ac.uk/Record/cronfa39600

Dwivedi, Y. K., Mäntymäki, M., Janssen, M. N. R. M., Clement, M., Slade, E. L., Al-sharhan,

N. P. R. S., & Hutchison, D. (2016). *Social Media: The Good, the Bad, and the Ugly* (Y. K. Dwivedi, M. Mäntymäki, M. N. Ravishankar, M. Janssen, M. Clement, E. L. Slade, … A. C. Simintiras, Eds.). https://doi.org/10.1007/978-3-319-45234-0

Dwivedi, Y. K., Mustafee, N., Carter, L. D., & Williams, M. D. (2010). *A bibliometric comparision of the usage of two theories of IS/IT acceptance (TAM and UTAUT)*.

EEUU. (2014). *European citizens' digital health literacy. A report to the European Commission.*

Eisend, M. (2006). Source credibility dimensions in marketing communication - A generalized solution. *Journal of Empirical Generalisations in Marketing Science*, *10*(2), 1–33.

Elwalda, A., Lü, K., & Ali, M. (2016). Perceived derived attributes of online customer reviews. *Computers in Human Behavior*, *56*, 306–319. https://doi.org/10.1016/j.chb.2015.11.051

Enyinda, C. I., Ogbuehi, A. O., & Mbah, C. H. (2018). Building pharmaceutical relationship marketing and social media impact. *International Journal of Pharmaceutical and Healthcare Marketing*, *12*(2), 198–230. https://doi.org/10.1108/IJPHM-02-2017-0007

Erasmus, A. C., Boshoff, E., & Rousseau, G. G. (2001). Consumer decision-making models within the discipline of consumer science: a critical approach. *Journal of Consumer Sciences*, *29*, 82–90.

Erkan, I. (2016). *The Influence of Electronic Word of Mouth in Social Media on Consumers' Purchase Intentions* (Vol. 61).

Erkan, I., & Evans, C. (2016). The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior*, *61*, 47–55. https://doi.org/10.1016/j.chb.2016.03.003

Erkan, I., & Evans, C. (2018). Social media or shopping websites? The influence of eWOM on consumers' online purchase intentions. *Journal of Marketing Communications*, *24*(6), 617–632. https://doi.org/10.1080/13527266.2016.1184706

Esper, T. L., Castillo, V. E., Ren, K., Sodero, A., Wan, X., Croxton, K. L., … Goldsby, T. J. (2020). Everything Old is New Again: The Age of Consumer-Centric Supply Chain Management. *Journal of Business Logistics*, *41*(4), 286–293. https://doi.org/10.1111/jbl.12267

Ess, S. M., Schneeweiss, S., & Szucs, T. D. (2003). European healthcare policies for controlling drug expenditure. *PharmacoEconomics*, *21*(2), 89–103. https://doi.org/10.2165/00019053-200321020-00002

Eurostat. (2020a). Key figures on Europe. Retrieved September 14, 2021, from Eurostat website: https://ec.europa.eu/eurostat/documents/3217494/11432756/KS-EI-20-001-

EN-N.pdf/6b9097d9-ea05-a973-d931-c08334db979b?t=1602776043000

Eurostat. (2020b). Social media - statistics on the use by enterprises. Retrieved September 14, 2021, from Eurostat website: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Social_media_-_statistics_on_the_use_by_enterprises#Social_media.2C_a_business_paradigm_shift

Evans, C., & Erkan, I. (2014). *The impacts of electronic word of mouth in social media on consumerspurchase intentions*.

Fan, Y.-W., & Miao, Y.-F. (2012). Effect of Electronic Word-of-Mouth on Consumer Purchase Intention: the Perspective of Gender Differences. *International Journal of Electronic Business Management*, *10*(3), 175–181.

Fan, Y.-W., Miao, Y.-F., Fang, Y.-H., & Lin, R.-Y. (2013). Establishing the Adoption of Electronic Word-of-Mouth through Consumers' Perceived Credibility. *International Business Research*, *6*(3), 58–65. https://doi.org/10.5539/ibr.v6n3p58

Fang, Y.-H. (2014). Beyond the Credibility of Electronic Word of Mouth: Exploring eWOM Adoption on Social Networking Sites from Affective and Curiosity Perspectives. *International Journal of Electronic Commerce*, *18*(3), 67–102. https://doi.org/10.2753/JEC1086-4415180303

Filieri, R., Hofacker, C. F., & Alguezaui, S. (2018). What makes information in online consumer reviews diagnostic over time? The role of review relevancy, factuality, currency, source credibility and ranking score. *Computers in Human Behavior*, *80*, 122–131. https://doi.org/10.1016/j.chb.2017.10.039

Filieri, R., & McLeay, F. (2014). E-WOM and Accommodation. *Journal of Travel Research*, *53*(1), 44–57. https://doi.org/10.1177/0047287513481274

Fischer, M. (2014). Marketing spending models. In *Innovation and Marketing in the Pharmaceutical Industry* (pp. 557–589). Springer.

Fishbein, M., & Ajzen, I. (1975). pd. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley Publishing Company.*

Flaherty, J. A., Gaviria, F. M., Pathak, D., Mitchell, T., Wintrob, R., Richman, J. A., & Birz, S. (1988). Developing instruments for cross-cultural psychiatric research. *Journal of Nervous and Mental Disease*.

Fogg, B J, Kameda, T., Boyd, J., Marshall, J., Sethi, R., Sockol, M., & Trowbridge, T. (2002). Stanford-Makovsky web credibility study 2002: investigating what makes web sites credible today. *Retrieved February*, *8*, 2005.

Fogg, Brian J, Soohoo, C., Danielson, D. R., Marable, L., Stanford, J., & Tauber, E. R. (2003). How do users evaluate the credibility of Web sites? A study with over 2,500 participants. *Proceedings of the 2003 Conference on Designing for User Experiences*, 1–15.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Gefen, D., & Ridings, C. M. (2005). If you spoke as she does, sir, instead of the way you do. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*, *36*(2), 78–92. https://doi.org/10.1145/1066149.1066156

Ghosh, A., Varshney, S., & Venugopal, P. (2015). Social Media WOM: Definition, Consequences and Inter-relationships. *Management and Labour Studies*, *39*(3), 293–308. https://doi.org/10.1177/0258042x15577899

Gökerik, M., Gürbüz, A., Erkan, I., Mogaji, E., & Sap, S. (2018). Surprise me with your ads! The impacts of guerrilla marketing in social media on brand image. *Asia Pacific Journal of Marketing and Logistics*, *30*(5), 1222–1238. https://doi.org/10.1108/APJML-10-2017-0257

Goldsmith, R. E., Lafferty, B. A., & Newell, S. J. (2000). The Influence of Corporate Credibility on Consumer Attitudes and Purchase Intent. *Corporate Reputation Review*, *3*(4), 304–318. https://doi.org/10.1057/palgrave.crr.1540122

Gore, P, Madhavan, S., McClung, G., & Riley, D. (1994). Consumer involvement in nonprescription medicine purchase decisions. *Journal of Health Care Marketing*, *14*(2), 16–23. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/7186300

Gore, Prasanna, Madhavan, S., McClung, G., & Riley, D. (1994). Consumer involvement in nonprescription medicine purchase decisions. *Journal of Health Care Marketing*, *14*(2), 16. Retrieved from http://dx.doi.org/10.1016/j.jaci.2012.05.050

Gray, D. E. (2013). *Doing research in the real world*. Sage.

Greene, J. A. . K. A. S. (2011). Pharmaceutical Marketing and the New Social Media. *New England Journal of Medicine*, *363*(22), 2087–2089. Retrieved from https://ssrn.com/abstract=1974953

Grewal, D., Monroe, K. B., & Krishnan, R. (1998). The effects of price-comparison advertising on buyers ' perceptions of acquisi ... *Journal of Marketing*, *62*(2), 46–59.

Gupta, A., Tyagi, M., & Sharma, D. (2013). Use of Social Media Marketing in Healthcare. *Journal of Health Management*, *15*(2), 293–302. https://doi.org/10.1177/0972063413489058

Hair, Joseph F., et al. (2009). *Multivariate Data Analysis: A Global Perspective* (7th ed.; U. S. River, Ed.). Prentice Hall.

Hair, Joe F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*(August 2019), 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, Joe F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, Joe F, Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, *40*, 414–433. https://doi.org/10.1007/s11747-011-0261-6

Hair, Joseph F., Babin, B. J., & Krey, N. (2017). Covariance-Based Structural Equation Modeling in the Journal of Advertising : Review and Recommendations. *Journal of Advertising*, *46*(1), 163–177. https://doi.org/10.1080/00913367.2017.1281777

Hair, Joseph F, Celsi, M., Ortinau, D. J., & Bush, R. P. (2010). *Essentials of marketing research* (Vol. 2). McGraw-Hill/Irwin New York, NY.

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review ·*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hair Jr., Joe F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107. https://doi.org/10.1504/IJMDA.2017.10008574

Hair Jr., Joseph F., Harrison, D. E., & Risher, J. J. (2018). Marketing Research in the 21st Century: Opportunities and Challenges. *Revista Brasileira de Marketing*, *17*(5), 666–699. https://doi.org/10.5585/bjm.v17i5.4173

Hair Jr, Joseph F, Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

Heijden, H. Van Der, Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems*, *12*(1), 41–48. https://doi.org/10.1057/palgrave.ejis.3000445

Hennig-thurau, T., Eifler, V., Hennig-thurau, T., Gwinner, K. P., & Gremler, D. D. (2004).

ELECTRONIC WORD-OF-MOUTH VIA CONSUMER-OPINION PLATFORMS : WHAT MOTIVATES CONSUMERS TO ARTICULATE THEMSELVES ON THE INTERNET ? *JOURNAL OF INTERACTIVE MARKETING*, *18*(1). https://doi.org/10.1002/dir.10073

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, *18*(1), 38–52. https://doi.org/10.1002/dir.10073

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *Advances in International Marketing* (Vol. 20, pp. 277–319). https://doi.org/10.1108/S1474-7979(2009)0000020014

Highhouse, S., Broadfoot, A., Yugo, J. E., & Devendorf, S. A. (2009). Examining corporate reputation judgments with generalizability theory. *Journal of Applied Psychology*, *94*(3), 782.

Hinton, P., McMurray, I., & Brownlow, C. (2014). *SPSS explained*. Routledge.

HMR: Health market research. (2021). *Market Watch Portugal :Agosto 2021*. Retrieved from https://www.hmr.co.com/wp-content/uploads/2021/09/Market-Watch-Portugal_2021_Agosto.pdf

Holden, R. J., & Karsh, B. T. (2010). The Technology Acceptance Model: Its past and its future in health care. *Journal of Biomedical Informatics*, *43*(1), 159–172. https://doi.org/10.1016/j.jbi.2009.07.002

Holtgräfe, C., & Zentes, J. (2012). Multifaceted determinants of online non-prescription drug information seeking and the impact on consumers' use of purchase channels. *Health Informatics Journal*, *18*(2), 95–110. https://doi.org/10.1177/1460458212439487

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60. https://doi.org/10.21427/D79B73

Hovland, C. I., & Janis, I. L. (1959). *Personality and persuasibility.*

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion.*

Hovland, C. i., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, *15*(4), 635–650.

Howell, D. C. (2008). The analysis of missing data. *Handbook of Social Science Methodology*, 208–224.

Hsu, C. L., Chang, C. Y., & Yansritakul, C. (2017). Exploring purchase intention of green skincare products using the theory of planned behavior: Testing the moderating effects of country of origin and price sensitivity. *Journal of Retailing and Consumer Services*, *34*(October 2016), 145–152. https://doi.org/10.1016/j.jretconser.2016.10.006

Hsu, Y. I., & Ngamnate, N. (2018). Factors Affecting Electronic Word-of-Mouth (E-WOM) Usage on the Customer Purchase Intention : An Investigation on Beauty Market. *International Journal of Business and Social Science*, *9*(4), 81–87. https://doi.org/10.30845/ijbss.v9n4p12

Hu, Li-tze, & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424–453. https://doi.org/10.1037//1082-989x.3.4.424

Hu, Li-tze, & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hu, Y., & Shyam Sundar, S. (2010). Effects of Online Health Sources on Credibility and Behavioral Intentions. *Communication Research*, *37*(1), 105–132. https://doi.org/10.1177/0093650209351512

Huang, H. F., & Lee, C. C. (2021). Exploring Consumers' Purchase Intentions on Facebook: The Influence of Characteristics of eWOM. *Asian Journal of Research in Business and Management*, *3*(2), 59–68.

Hunter, A. (2018). Towards a framework for computational persuasion with applications in behaviour change. *Argument and Computation*, *9*(1), 15–40. https://doi.org/10.3233/AAC-170032

Hussain, S., Ahmed, W., Jafar, R. M. S., Rabnawaz, A., & Jianzhou, Y. (2017). eWOM source credibility, perceived risk and food product customer's information adoption. *Computers in Human Behavior*, *66*, 96–102. https://doi.org/10.1016/j.chb.2016.09.034

Hussain, S., Song, X., & Niu, B. (2020). Consumers' Motivational Involvement in eWOM for Information Adoption: The Mediating Role of Organizational Motives. *Frontiers in Psychology*, *10*(January). https://doi.org/10.3389/fpsyg.2019.03055

Hustad, T. P., Courtney, A. E., & Heeler, R. M. (1979). An Emerging Model for Purchase and Consumption of Non-Prescription Drugs. *The Journal of Consumer Affairs (Pre-1986)*,

13(1), 86. Retrieved from https://www.proquest.com/scholarly-journals/emerging-model-purchase-consumption-non/docview/222250679/se-2?accountid=38384

Icek, A. (1991). The Theory of Planned Behavior Organizational Behavior and Human Decision Processes. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

INFARMED. (2020). *Medicamentos não sujeitos a receita médica (MNSRM) - Monitorização das vendas fora das farmácias*. 9. Retrieved from http://www.infarmed.pt/documents/15786/2210525/janeiro+a+dezembro/53e03bcd-4530-42ed-9114-d00190d0c4dd?version=1.0

IQVIA. (2019). *OTC Growth in Europe : Market trends and evolution. How the market will develop October 2019*. Retrieved from https://www.bachi.be/docs/events/OTC growth in Europe (IQVIA).pdf

IQVIA Portugal. (2021). *Evolução mensal do mercado Farmacêutico em Farmácia*.

Ismagilova, E., Dwivedi, Y. K., Slade, E., & Williams, M. D. (2017). *Electronic word of mouth (eWOM) in the marketing context: A state of the art analysis and future directions*.

Ismagilova, E., Slade, E. L., Rana, N. P., & Dwivedi, Y. K. (2020a). The Effect of Electronic Word of Mouth Communications on Intention to Buy: A Meta-Analysis. *Information Systems Frontiers*, *22*(5), 1203–1226. https://doi.org/10.1007/s10796-019-09924-y

Ismagilova, E., Slade, E., Rana, N. P., & Dwivedi, Y. K. (2020b). The effect of characteristics of source credibility on consumer behaviour: A meta-analysis. *Journal of Retailing and Consumer Services*, *53*, 101736. https://doi.org/10.1016/j.jretconser.2019.01.005

Ismagilova, E., Slade, E., & Williams, M. (2016). Persuasiveness of eWOM Communications: Literature Review and Suggestions for Future Research. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*: *Vol. 9844 LNCS* (pp. 354–359). https://doi.org/10.1007/978-3-319-45234-0_32

Iyer, R., & Griffin, M. (2021). Modeling word-of-mouth usage: A replication. *Journal of Business Research*, *126*(December 2019), 512–523. https://doi.org/10.1016/j.jbusres.2019.12.027

Jackson, D. L. (2003). Revisiting Sample Size and Number of Parameter Estimates: Some Support for the N:q Hypothesis. *Structural Equation Modeling: A Multidisciplinary Journal*, *10*(1), 128–141. https://doi.org/10.1207/S15328007SEM1001_6

Jaini, A., Quoquab, F., Mohammad, J., & Hussin, N. (2020). “I buy green products, do you…?” *International Journal of Pharmaceutical and Healthcare Marketing*, *14*(1), 89–112. https://doi.org/10.1108/IJPHM-02-2019-0017

Jarvis, C. B., Mackenzie, S. B., & Podsakoff, P. M. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. *Journal of Consumer Research*, *30*(2), 199–208. https://doi.org/10.1086/376806

Jaya, I. G. M., Hermina, N., & Sunengsih, N. (2019). CB-SEM and VB-SEM: Evaluating Measurement model of Business Strategy of Internet Industry in Indonesia. *International Journal of Scientific & Engineering Research*, *10*(10), 878–883.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003

Kapoor, P. S., Jayasimha, K. R., & Sadh, A. (2013). Brand-related, Consumer to Consumer, Communication via Social Media. *IIM Kozhikode Society & Management Review*, *2*(1), 43–59. https://doi.org/10.1177/2277975213496514

Kautsar, A. P., Widianto, S., Abdulah, R., & Amalia, H. (2012). Relationship of Consumer Involvement, Credibility of the Source of Information and Consumer Satisfaction on Purchase Decision of Non-Prescription Drugs. *Procedia - Social and Behavioral Sciences*, *65*(ICIBSoS), 449–454. https://doi.org/10.1016/j.sbspro.2012.11.147

Khwaja, M. G., Mahmood, S., & Zaman, U. (2020). Examining the E ff ects of eWOM , Trust Inclination , and Information Adoption on Purchase Intentions in an Accelerated Digital Marketing Context. *Information*, *11*(10), 478.

Khwaja, M. G., & Zaman, U. (2020). Configuring the Evolving Role of eWOM on the Consumers Information Adoption. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 125. https://doi.org/10.3390/joitmc6040125

Kian, T. P., Boon, G. H., Fong, S. W. L., & Ai, Y. J. (2019). *Factors That Influence the Consumer Purchase Intention in Social Media Websites*. (March).

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, *54*(3), 241–251. https://doi.org/10.1016/j.bushor.2011.01.005

Kim, A. J., & Johnson, K. K. P. (2016). Power of consumers using social media: Examining the influences of brand-related user-generated content on Facebook. *Computers in Human Behavior*, *58*, 98–108. https://doi.org/10.1016/j.chb.2015.12.047

Kim, C., & Brown, J. W. (2015). Conceptualizing credibility in social media spaces of public relations. *The Public Relations Journal*, *9*(4), 1–17.

Kim, S. J., Maslowska, E., & Malthouse, E. C. (2018). Understanding the effects of different review features on purchase probability. *International Journal of Advertising*, *37*(1), 29–53. https://doi.org/10.1080/02650487.2017.1340928

Kim, S., Kandampully, J., & Bilgihan, A. (2018). The influence of eWOM communications: An application of online social network framework. *Computers in Human Behavior*, *80*, 243–254. https://doi.org/10.1016/j.chb.2017.11.015

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, *43*(6), 740–755.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Kline, T. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage.

Koo, D.-M. (2016). Impact of tie strength and experience on the effectiveness of online service recommendations. *Electronic Commerce Research and Applications*, *15*, 38–51. https://doi.org/10.1016/j.elerap.2015.12.002

Kotler, P., Armstrong, G., Harris, L. C., & Piercy, N. (2013). Principles of Marketing. 6th European edition. *Essex: Pearson Education Limited*.

Koumpouros, Y., Toulias, T. L., & Koumpouros, N. (2015). The importance of patient engagement and the use of Social Media marketing in healthcare. *Technology and Health Care*, *23*(4), 495–507. https://doi.org/10.3233/THC-150918

Kozinets, R. V, Valck, K. De, Wojnicki, A. C., & Wilner, S. J. S. (2010). Networked Narratives : Understanding Word-of-Mouth. *Journal of Marketing*, *74*(2), 71–89.

Kozlenkova, I. V, Palmatier, R. W., Fang, E. E., & Xiao, B. (2017). Online Relationship Formation. *Journal of Marketing*, *81*(May), 21–40. https://doi.org/10.1509/jm.15.0430

Krasila, H. (2021). *EXAMINING THE INFLUENCE OF CONSUMER-TO- CONSUMER EWOM SOURCE CREDIBILITY ON BRAND AWARENESS , PURCHASE INTENTION , EWOM INTENTION , AND EWOM BEHAVIOR IN*.

Krishnamoorthy, B. (2021). *Post-COVID Emergent Trends in Consumer Buying Behaviour for Pharma-OTC Sector Harsh Tomar MBA Marketing, SBM NMIMS Mumbai*. (March). Retrieved from https://www.researchgate.net/profile/Harsh_Tomar7/publication/350089798_Post-COVID_Emergent_Trends_in_Consumer_Buying_Behaviour_for_Pharma-OTC_Sector/links/605077dfa6fdccbfeae21a56/Post-COVID-Emergent-Trends-in-Consumer-Buying-Behaviour-for-Pharma-OTC-Sec

Krumm, J., Davies, N., & Narayanaswami, C. (2008). User-Generated Content. *Pervasive Computing*, *7*(4), 10–11.

Kudeshia, C., & Kumar, A. (2017). Social eWOM: does it affect the brand attitude and purchase intention of brands? *Management Research Review*, *40*(3), 310–330. https://doi.org/10.1108/MRR-07-2015-0161

Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., & Kannan, P. K. (2016). From social to sale: The effects of firm-generated content in social media on customer behavior. *Journal of Marketing*, *80*(1), 7–25. https://doi.org/10.1509/jm.14.0249

Kyriazos, T. A. (2018). Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. *Psychology*, *09*(08), 2207–2230. https://doi.org/10.4236/psych.2018.98126

LaCaille, L. (2013). *Theory of Reasoned Action BT - Encyclopedia of Behavioral Medicine* (M. D. Gellman & J. R. Turner, Eds.). https://doi.org/10.1007/978-1-4419-1005-9_1619

Ladhari, R., & Michaud, M. (2015). eWOM effects on hotel booking intentions, attitudes, trust, and website perceptions. *International Journal of Hospitality Management*, *46*, 36–45. https://doi.org/10.1016/j.ijhm.2015.01.010

Lam, A. Y. C., Lau, M. M., Cheng, C., & Wong, M. Y. (2019). The impact of electronic word-of-mouth on young consumers' purchase intention in Hong Kong. *In Proceedings of the 10th International Conference on E-Education, E-Business, E-Management and E-Learning*, 329–333. https://doi.org/10.1145/3306500.3306577

Lamberton, C., & Stephen, A. T. (2016). A Thematic Exploration of Digital, Social Media, and Mobile Marketing: Research Evolution from 2000 to 2015 and an Agenda for Future Inquiry. *Journal of Marketing*, *80*(6), 146–172. https://doi.org/10.1509/jm.15.0415

Law, K. S., Wong, C. S., & Mobley, W. H. (1998). Toward a taxonomy of multidimensional constructs. *Academy of Management Review*, *23*(4), 741–755. https://doi.org/10.5465/AMR.1998.1255636

Ledford, C. J. W. (2009). Content Analysis of Internet Marketing Strategies: How Pharmaceutical Companies Communicate about Contraceptives with Consumers Online. *Social Marketing Quarterly*, *15*(1_suppl), 55–71. https://doi.org/10.1080/15245000903038308

Lee, E.-J., & Shin, S. Y. (2014). When do consumers buy online product reviews? Effects of review quality, product type, and reviewer's photo. *Computers in Human Behavior*, *31*(1), 356–366. https://doi.org/10.1016/j.chb.2013.10.050

Lee, J., Kim, J., Hong, Y. J., Piao, M., Byun, A., Song, H., & Lee, H. S. (2019). Health Information Technology Trends in Social Media: Using Twitter Data. *Healthcare Informatics Research*, *25*(2), 99. https://doi.org/10.4258/hir.2019.25.2.99

Lee, K., Hoti, K., Hughes, J. D., & Emmerton, L. (2014). Dr Google and the consumer: a qualitative study exploring the navigational needs and online health information-seeking behaviors of consumers with chronic health conditions. *Journal of Medical Internet Research*, *16*(12), e262. https://doi.org/10.2196/jmir.3706

Lee, S. (2009). How do online reviews affect purchasing intention? *African Journal of Business Management*, *3*(10), 576–581. https://doi.org/10.5897/AJBM09.204

Lee, Y. W., Strong, D. M., Kahn, B. K., & Wang, R. Y. (2002). AIMQ: a methodology for information quality assessment. *Information & Management*, *40*(2), 133–146. https://doi.org/10.1016/S0378-7206(02)00043-5

Leong, C.-M., Loi, A. M.-W., & Woon, S. (2021). The influence of social media eWOM information on purchase intention. *Journal of Marketing Analytics*, (0123456789). https://doi.org/10.1057/s41270-021-00132-9

Li, F., Larimo, J., & Leonidou, L. C. (2021). Social media marketing strategy: definition, conceptualization, taxonomy, validation, and future agenda. *Journal of the Academy of Marketing Science*, *49*(1), 51–70. https://doi.org/10.1007/s11747-020-00733-3

Li, M., Huang, L., Tan, C.-H., & Wei, K.-K. (2013). Helpfulness of Online Product Reviews as Seen by Consumers: Source and Content Features. *International Journal of Electronic Commerce*, *17*(4), 101–136. https://doi.org/10.2753/JEC1086-4415170404

Li, R., Vafeiadis, M., Xiao, A., & Yang, G. (2020). The role of corporate credibility and bandwagon cues in sponsored social media advertising. *Corporate Communications*, *25*(3), 495–513. https://doi.org/10.1108/CCIJ-09-2019-0108

Lim, K. H., Sia, C. L., Lee, M. K. O., & Benbasat, I. (2006). Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies. *Journal of Management Information Systems*, *23*(2), 233–266. https://doi.org/10.2753/MIS0742-1222230210

Lingard, H. C., & Rowlinson, S. (2006). Sample size in factor analysis: why size matters. *Retrieved in Data*, *3*, 1–12.

Lis, B. (2013). In eWOM we trust. *Business & Information Systems Engineering*, *5*(3), 129–140. https://doi.org/10.1007/s12599-013-0261-9

Liu, X., Sun, M., & Li, J. (2018). Research on gender differences in online health communities. *International Journal of Medical Informatics*, *111*(June 2017), 172–181.

https://doi.org/10.1016/j.ijmedinf.2017.12.019

López, M., & Sicilia, M. (2013). Boca a boca tradicional vs. electrónico. La participación como factor explicativo de la influencia del boca a boca electrónico. *Revista Española de Investigación de Marketing ESIC*, *17*(1), 7–38. https://doi.org/10.1016/S1138-1442(14)60017-6

López, M., & Sicilia, M. (2014). Determinants of E-WOM Influence: The Role of Consumers' Internet Experience. *Journal of Theoretical and Applied Electronic Commerce Research*, *9*(1), 7–8. https://doi.org/10.4067/S0718-18762014000100004

Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, *56*, 225–237. https://doi.org/10.1016/j.chb.2015.11.057

Lu, Y., Zhao, L., & Wang, B. (2010). Electronic Commerce Research and Applications From virtual community members to C2C e-commerce buyers : Trust in virtual communities and its effect on consumers ' purchase intention. *Electronic Commerce Research and Applications*, *9*(4), 346–360. https://doi.org/10.1016/j.elerap.2009.07.003

Luca, M. (2015). User-generated content and social media. In *Handbook of media Economics* (Vol. 1, pp. 563–592). Elsevier.

Luo, C., Luo, X. (Robert), Schatzberg, L., & Sia, C. L. (2013). Impact of informational factors on online recommendation credibility: The moderating role of source credibility. *Decision Support Systems*, *56*(1), 92–102. https://doi.org/10.1016/j.dss.2013.05.005

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample Size in Factor Analysis. *Psychological Methods*, *4*(1), 84–99. https://doi.org/10.1037/1082-989X.4.1.84

MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, *51*(1), 201–226.

Mackie, D. M., & Asuncion, A. G. (1990). On-line and memory-based modification of attitudes: determinants of message recall-attitude change correspondence. *Journal of Personality and Social Psychology*, *59*(1), 5.

Malhotra, N. K., Nunan, D., & Birks, D. F. (2017). *Marketing research: An applied approach*. Pearson Education Limited.

Mandzy, A. (2017). *Capitalizing on health & welness trends*. Retrieved from https://www.nielsen.com/wp-content/uploads/sites/3/2019/04/health-wellness-report-feb-2017.pdf

Maney, R., Flink, C., & Lietz, C. (2008). *Consumer-centric marketing*. Retrieved from

http://www.oocities.org/infobetastudio/doc/ConsumerCentric.pdf

Mansour, O., & Farmanesh, P. (2020). Does gender matter? Acceptance and forwarding of electronic word of mouth: A moderated mediation analysis. *Management Science Letters*, *10*(7), 1481–1486. https://doi.org/10.5267/j.msl.2019.12.019

Marathe, P. A., Kamat, S. K., Tripathi, R. K., Raut, S. B., & Khatri, N. P. (2020). Over-the-counter medicines: Global perspective and Indian scenario. *Journal of Postgraduate Medicine*, *66*(1), 28–34. https://doi.org/10.4103/jpgm.JPGM_381_19

Margarida, A., & Francisquinho, N. (2013). *CONSUMER ATTITUDES AND PERCEPTIONS TOWARDS MEDICINE TYPES : BRAND MEDICINES VERSUS GENERIC MEDICINES*.

Marôco, J. (2014). Análise de Equações Estruturais: Fundamentos Teóricos, Software & Aplicações, 2nd Edn Pêro Pinheiro: ReportNumber.[Google Scholar]. *Lda.[Google Scholar]*.

Martin, S. (2017). Word-of-mouth in the health care sector: a literature analysis of the current state of research and future perspectives. *International Review on Public and Nonprofit Marketing*, *14*(1), 35–56. https://doi.org/10.1007/s12208-016-0154-y

Martínek, P. A. (2021). Mapping methods of research on consumer engagement with brands on social media : A literature review. *Sage*, 1–23. https://doi.org/10.1177/2059799120985384

Martínez-López, F. J., Anaya-Sánchez, R., Esteban-Millat, I., Torrez-Meruvia, H., D'Alessandro, S., & Miles, M. (2020). Influencer marketing: brand control, commercial orientation and post credibility. *Journal of Marketing Management*, *36*(17–18), 1805–1831. https://doi.org/10.1080/0267257X.2020.1806906

Martínez-López, F. J., Gázquez-Abad, J. C., & Sousa, C. M. P. (2013). Structural equation modelling in marketing and business research. *European Journal of Marketing*, *47*(1/2), 115–152. https://doi.org/10.1108/03090561311285484

Martins, J., Costa, C., Oliveira, T., Gonçalves, R., & Branco, F. (2019). How smartphone advertising influences consumers' purchase intention. *Journal of Business Research*, *94*(August 2017), 378–387. https://doi.org/10.1016/j.jbusres.2017.12.047

McGuire, W. J. (1985). Attitudes and attitude change. *The Handbook of Social Psychology*, 233–346.

McKinsey. (2019). *Omnichannel consumer inter- actions – a payer perspective Omnichannel consumer inter- actions – a payer perspective*. Retrieved from https://www.mckinsey.com/industries/healthcare-systems-and-services/our-

insights/omnichannel-consumer-interactions-a-payer-perspective

McKnight, D. H., & Kacmar, C. J. (2007). Factors and effects of information credibility. *ACM International Conference Proceeding Series*, *258*, 423–432. https://doi.org/10.1145/1282100.1282180

McKnight, H., & Kacmar, C. (2006). Factors of information credibility for an Internet advice site. *Proceedings of the Annual Hawaii International Conference on System Sciences*, *6*(C), 1–10. https://doi.org/10.1109/HICSS.2006.181

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, *27*(1), 415–444.

Mekawie, N., & Hany, A. (2019). Understanding The Factors Driving Consumers' Purchase Intention of Over The Counter Medications Using Social Media advertising In Egypt. *Procedia Computer Science*, *164*, 698–705. https://doi.org/10.1016/j.procs.2019.12.238

Mendes Moreira Aroso, I. (2013). *As estratégias de comunicação da indústria farmacêutica em Portugal*. 1–12. Retrieved from http://bocc.ubi.pt/pag/aroso-ines-2013-estrategias-comunicacao-industria-farmaceutica.pdf

Metzger, M. J. (2007). Making sense of credibility on the Web: Models for evaluating online information and recommendations for future research. *Journal of the American Society for Information Science and Technology*, *58*(13), 2078–2091. https://doi.org/10.1002/asi

Metzger, M. J., Flanagin, A. J., Eyal, K., Lemus, D. R., & Mccann, R. M. (2003). Credibility for the 21st Century: Integrating Perspectives on Source, Message, and Media Credibility in the Contemporary Media Environment. *Annals of the International Communication Association*, *27*(1), 293–335. https://doi.org/10.1080/23808985.2003.11679029

Mikalef, P., Giannakos, M. N., & Pappas, I. O. (2017). Designing social commerce platforms based on consumers' intentions. *Behaviour & Information Technology*, *36*(12), 1308–1327. https://doi.org/10.1080/0144929X.2017.1386713

Mikalef, P., Giannakos, M., & Pateli, A. (2013). Shopping and Word-of-Mouth Intentions on Social Media. *Journal of Theoretical and Applied Electronic Commerce Research*, *8*(1), 5–6. https://doi.org/10.4067/S0718-18762013000100003

Millar, A. (2020). Is self-medication the future of pharma? Retrieved July 5, 2021, from Pharmaceutical Technology website: https://www.pharmaceutical-technology.com/features/self-medication-future-of-pharma/

Min, H. (2021). Exploring Omni-Channels for Customer-Centric e-Tailing. *Logistics*, *5*(2), 31. https://doi.org/10.3390/logistics5020031

Mion, K. I. M. (2021). *The Influence of eWOM on Young Female Consumers ' Purchase Intention in the Cosmetic Industry in South Korea*.

Mishra, R., & Sanghvi, D. (2020). Promotional Strategies of Pharmaceutical Organizations through Online and Social Media. *Journal of Composition Theory*, *XIII*(I), 602–613.

Mittelstaedt, J. D., Riesz, P. C., & Burns, W. J. (2000). Why are Endorsements Effective? Sorting among Theories of Product and Endorser Effects. *Journal of Current Issues & Research in Advertising*, *22*(1), 55–65. https://doi.org/10.1080/10641734.2000.10505101

Moorhead, S. A., Hazlett, D. E., Harrison, L., Carroll, J. K., Irwin, A., & Hoving, C. (2013). A new dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. *Journal of Medical Internet Research*, *15*(4), e85. https://doi.org/10.2196/jmir.1933

Moran, G., & Muzellec, L. (2017). eWOM credibility on social networking sites: A framework. *Journal of Marketing Communications*, *23*(2), 149–161. https://doi.org/10.1080/13527266.2014.969756

Mortazavi, M., Esfidani, M. R., & Barzoki, A. S. (2014). Influencing VSN users' purchase intentions The roles of flow, trust and eWOM. *Journal of Research in Interactive Marketing*, *8*(2), 102–123. https://doi.org/10.1108/JRIM-08-2013-0057

Moryson, H., & Moeser, G. (2016). Consumer Adoption of Cloud Computing Services in Germany: Investigation of Moderating Effects by Applying an UTAUT Model. *International Journal of Marketing Studies*, *8*(1), 14. https://doi.org/10.5539/ijms.v8n1p14

Mou, J., & Benyoucef, M. (2021). Consumer behavior in social commerce: Results from a meta-analysis. *Technological Forecasting and Social Change*, *167*(March), 120734. https://doi.org/10.1016/j.techfore.2021.120734

Moura, A., & Barros, P. P. (2020). Entry and price competition in the over-the-counter drug market after deregulation: Evidence from Portugal. *Health Economics (United Kingdom)*, *29*(8), 865–877. https://doi.org/10.1002/hec.4109

Muda, M., & Hamzah, M. I. (2021). Should I suggest this YouTube clip? The impact of UGC source credibility on eWOM and purchase intention. *Journal of Research in Interactive Marketing*, *15*(3), 441–459. https://doi.org/10.1108/JRIM-04-2020-0072

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, *105*(3), 430–445. https://doi.org/10.1037/0033-2909.105.3.430

Muthén, L. K., & Muthén, B. O. (2002). How to Use a Monte Carlo Study to Decide on Sample

Size and Determine Power. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(4), 599–620. https://doi.org/10.1207/S15328007SEM0904_8

Myers, D. G. (2002). *Social psychology* (7th ed.; McGraw-Hil, Ed.). Boston.

Nandy, M., & Pal, D. B. (2016). Pharmaceutical Marketing & Product Promotion: A Paradigm Shift in Indian Pharmaceutical Industry (IPI). *Adhyayan: A Journal of Management Sciences*, *5*(2). https://doi.org/10.21567/adhyayan.v5i2.8817

Natarajan, N. T., & Kanagarathinam, K. P. V. (2020). A study on factors influencing purchase and analyzing satisfaction among indian consumers towards OTC analgesic drugs. *Journal of Critical Reviews*, *7*(17), 2073–2086. https://doi.org/10.31838/jcr.07.17.255

Naujoks, A., & Benkenstein, M. (2020). Who is behind the message? The power of expert reviews on eWOM platforms. *Electronic Commerce Research and Applications*, *44*(August), 101015. https://doi.org/10.1016/j.elerap.2020.101015

Navithasulthana, A., & Shanmugam, V. (2021). *USAGE OF SOCIAL MEDIA ON PURCHASE DURING COVID-19*. (January), 2–7.

Ngamvichaikit, A. (2021). Leveraging Design Thinking for Pharmaceutical Digital Marketing. *Asian Journal of Business Research*, *11*(1). https://doi.org/10.14707/ajbr.210102

Ngarmwongnoi, C., Oliveira, J. S., AbedRabbo, M., & Mousavi, S. (2020). The implications of eWOM adoption on the customer journey. *Journal of Consumer Marketing*, *37*(7), 749–759. https://doi.org/10.1108/JCM-10-2019-3450

Norman, D. A. (2004). *Emotional design: Why we love (or hate) everyday things*. Basic Civitas Books.

Ogilvy Health UK. (2020). The Social Chek-Up. In *Ogilvy Health*. https://doi.org/10.1002/9781119415480.ch23

Ohanian, R. (1990). Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness. *Journal of Advertising*, *19*(3), 39–52.

Ohanian, R. (1991). The impact of celebrity spokespersons' perceived image on consumers' intention to purchase. *Journal of Advertising Research*.

Olsen, C., & St George, D. M. M. (2006). Cross-sectional study design and data analysis. In *College entrance examination board*. https://doi.org/10.1201/9781420036633.ch2

Paddison, A., & Olsen, K. (2008). Painkiller purchasing in the UK: An exploratory study of information search and product evaluation. *International Journal of Pharmaceutical and*

Healthcare Marketing, *2*(4), 284–306. https://doi.org/10.1108/17506120810922330

Paper, A. P. (2021). *AESGP Position Paper Paving the way for the digitalisation of the self - care sector*. (February), 1–27.

Parekh, D., Kapupara, P., & Shah, K. (2016). Digital pharmaceutical marketing: A review. *Research Journal of Pharmacy and Technology*, *9*(1), 108–112. https://doi.org/10.5958/0974-360X.2016.00017.2

Park, D.-H., Lee, J., & Han, I. (2007). The Effect of On-Line Consumer Reviews on Consumer Purchasing Intention: The Moderating Role of Involvement. *International Journal of Electronic Commerce*, *11*(4), 125–148. https://doi.org/10.2753/JEC1086-4415110405

Park, D. H., & Kim, S. (2008). The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews. *Electronic Commerce Research and Applications*, *7*(4), 399–410. https://doi.org/10.1016/j.elerap.2007.12.001

Petty, R. E., Barden, J., & Wheeler, S. C. (2009). The Elaboration Likelihood Model of persuasion: Developing health promotions for sustained behavioral change. In *Emerging theories in health promotion practice and research, 2nd ed.* (pp. 185–214). Hoboken, NJ, US: Jossey-Bass/Wiley.

Petty, R. E., Briñol, P., & Priester, J. R. (2009). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In *Media effects* (pp. 141–180). Routledge.

Petty, R. E., & Cacioppo, J. T. (1986a). *Communication and persuasion : central and peripheral routes to attitude change*. New York: Springer-Verlag.

Petty, R. E., & Cacioppo, J. T. (1986b). THE ELABORATION LIKELIHOOD MODEL OF PERSUASION. In *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* (Vol. 19, pp. 22–37). https://doi.org/10.4324/9781315624365-2

Petty, R. E., & Cacioppo, J. T. (2018). *Attitudes and persuasion: Classic and contemporary approaches*. Routledge.

Pianese, T., & Belfiore, P. (2021). Exploring the Social Networks' Use in the Health-Care Industry: A Multi-Level Analysis. *International Journal of Environmental Research and Public Health*, *18*(14), 7295. https://doi.org/10.3390/ijerph18147295

Pieriegud, J. (2019). The Development of Digital Distribution Channels in Poland's Retail Pharmaceutical Market. In *Exploring Omnichannel Retailing* (pp. 139–167). https://doi.org/10.1007/978-3-319-98273-1_7

Piotrowicz, W., & Cuthbertson, R. (2014). Introduction to the Special Issue Information

Technology in Retail : Toward Omnichannel Retailing Introduction to the Special Issue Information Technology in Retail : Toward Omnichannel Retailing. *International Journal of Electronic Commerce*, *18*(4), 5–16. https://doi.org/10.2753/JEC1086-4415180400

Plummer, J., Hall, T., Barocci, R., & Rappaport, S. D. (2007). *The online advertising playbook: Proven strategies and tested tactics from the advertising research foundation*. John Wiley & Sons.

Pokrywka, J., & Gfrerer, A. (2012). Traditional versus Electronic Word-Of-Mouth: A study of WOM communication and its influence on young consumers within the automobile industry. https://doi.org/10.1044/leader.ppl.17062012.36

Popkov, I., & Nono, A. (2016). Ruled by technology: what effect does ewom have on purchase decisions when buying otc pharmaceutical products?

Prendergast, G., Ko, D., & Siu Yin, V. Y. (2010). Online word of mouth and consumer purchase intentions. *International Journal of Advertising*, *29*(5), 687–708. https://doi.org/10.2501/S0265048710201427

Prendergast, G., Paliwal, A., & Chan, K. K. F. (2018). Trust in online recommendations: an evolutionary psychology perspective. *International Journal of Advertising*, *37*(2), 199–216. https://doi.org/10.1080/02650487.2016.1239879

Purcarea, V. L., Gheorghe, I. R., & Petrescu, C. M. (2013). Credibility elements of eWOM messages in the context of health care services. A Romanian perspective. *Journal of Medicine and Life*, *6*(3), 254–259. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/24146683

Purnawirawan, N., De Pelsmacker, P., & Dens, N. (2012). Balance and Sequence in Online Reviews: How Perceived Usefulness Affects Attitudes and Intentions. *Journal of Interactive Marketing*, *26*(4), 244–255. https://doi.org/10.1016/j.intmar.2012.04.002

PwC. (2012). Social media “likes” healthcare. In *Health San Francisco*. Retrieved from www.pwc.com/mHealth

Qazzafi, S. (2019). Factor Affecting Consumer Buying Behavior: A Conceptual Study. *IJSRD-International Journal for Scientific Research & Development*|, *8*(May), 2321–0613. Retrieved from www.ijsrd.com

Rader, C. S., Subhan, Z., Lanier, C. D., Brooksbank, R., Yankah, S., & Spears, K. (2014). CyberRx: Emerging social media marketing strategy for pharmaceuticals. *International Journal of Pharmaceutical and Healthcare Marketing*, *8*(2), 193–225. https://doi.org/10.1108/IJPHM-05-2013-0027

Rahayu, A. U., Herawaty, I., Suci, A., Putri, A., Kautsar, P., Program, P., & Padjadjaran, U. (2017). MARKETING 4.0: A DIGITAL TRANSFORMATION IN PHARMACEUTICAL INDUSTRY TO REACH CUSTOMER BRAND EXPERIENCE Alsya. *Farmaka*, *16*(1), 80–85.

Rahim, R. A., Sulaiman, Z., Chin, T. A., Baharun, R., & Muharam, F. M. (2016). Measuring Electronic Word of Mouth Review Adoption on Green Purchase Intention Using Source Credibility Theory. *Advanced Science Letters*, *22*(12), 4283–4287. https://doi.org/10.1166/asl.2016.8129

Rajesh Singh Kumabam, Ch. Ibohal Meitei, Seram Sureshkumar Singh, & Thokchom Pratap Singh. (2017). Expanding the horizon of marketing: contemplating the synergy of both traditional word of mouth and e-word of mouth. *International Journal of Management*, *8*(3), 204–212. Retrieved from https://www.academia.edu/35656099/EXPANDING_THE_HORIZON_OF_MARKETING_CONTEMPLATING_THE_SYNERGY_OF_BOTH_TRADITIONAL_WORD_OF_MOUTH_AND_E-_WORD_OF_MOUTH?email_work_card=title

Rani, A., & Shivaprasad, D. H. (2018). Determinants of Electronic Word of Mouth Persuasiveness a Conceptual Model and Research Propositions. *Journal of Contemporary Management Research*, *12*(2), 1. https://doi.org/10.13140/RG.2.2.29002.82887

Reichelt, J., Sievert, J., & Jacob, F. (2014). How credibility affects eWOM reading: The influences of expertise, trustworthiness, and similarity on utilitarian and social functions. *Journal of Marketing Communications*, *20*(1–2), 65–81. https://doi.org/10.1080/13527266.2013.797758

Reis, R. A. (2018). Pesquisam opiniões, preços e informações na internet: o que fazem os portugueses antes de comprar online? *O Jornal Económico*. Retrieved from https://jornaleconomico.sapo.pt/noticias/pesquisam-opinioes-precos-e-informacoes-na-internet-o-que-fazem-os-portugueses-antes-de-comprar-online-354396

Richards, T., Coulter, A., & Wicks, P. (2015). Time to deliver patient centred care. *BMJ*, *350*, h530. https://doi.org/10.1136/bmj.h530

Riegner, C. (2007). Word of Mouth on the Web: The Impact of Web 2.0 on Consumer Purchase Decisions. *Journal of Advertising Research*, *47*(4), 436–447. https://doi.org/10.2501/S0021849907070456

Roberts, M., Callahan, L., & O'Leary, C. (2017). Social media: A path to health literacy. *Information Services and Use*, *37*(2), 177–187. https://doi.org/10.3233/ISU-170836

Roblek, V., Bach, M. P., Meško, M., & Bertoncelj, A. (2018). To click or to buy over the counter drugs: exploring the behaviour of Slovenian customers. *International Journal of Electronic Marketing and Retailing*, *9*(2), 145–166. https://doi.org/10.1504/IJEMR.2018.10010275

Roblek, V. (2015). Impact of internet and social media on organisational change of OTC medicines marketing management. *International Journal of Electronic Marketing and Retailing*. https://doi.org/10.1504/IJEMR.2015.070806

Roblek, V., & Bertoncelj, A. (2014). Impact of corporate social responsibility on otc medicines consumers. *Amfiteatru Economic*, *16*(35), 12–25.

Rodway, J. (1995). Marketing medicine–a consumer perspective. *Admap, November*.

Rogers, E. M., & Shoemaker, F. F. (1971). *Communication of Innovations; A Cross-Cultural Approach.*

Sadah, S. A., Shahbazi, M., Wiley, M. T., & Hristidis, V. (2015). A Study of the Demographics of Web-Based Health-Related Social Media Users. *Journal of Medical Internet Research*, *17*(8), e194. https://doi.org/10.2196/jmir.4308

Sánchez Torres, J. A., Arroyo-Cañada, F.-J., Solé-Moro, M.-L., & Argila-Irurita, A. (2018). Impact of gender on the acceptance of electronic word-of-mouth (eWOM) information in Spain. *Contaduría y Administración*, *63*(4), 61. https://doi.org/10.22201/fca.24488410e.2018.1428

Sánchez Torres, J. A., Cañada, F. J. A., Moro, M. L. S., & Irurita, A. A. (2018). Impact of gender on the acceptance of electronic word-of-mouth (eWOM) information in Spain. *Contaduria y Administracion*, *63*(4), 1–19. https://doi.org/10.22201/fca.24488410e.2018.1428

Sarma, A. D., & Choudhury, B. R. (2015). Analysing electronic word-of-mouth (ewom) in social media for consumer insights – a multidisciplinary approach. *International Journal of Science, Technology & Management*, *04*(01), 978–990. Retrieved from http://www.ijstm.com/images/short_pdf/1426964477_877.pdf

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students*. Pearson Education.

Schiffman, L. G., & Kanuk, L. . (2000). *Consumer Behavior* (7h Edition; P. Education, Ed.). New Jersey: Prentice -Hall. Inc.

Schommer, J. C., & Hansen, R. A. (2005). The study of direct-to-consumer advertising for prescription drugs{star, open}. *Research in Social and Administrative Pharmacy*, *1*(2), 348–368. https://doi.org/10.1016/j.sapharm.2005.03.006

Sekaran, U. (2003). Towards a guide for novice research on research methodology: Review

and proposed methods. *Journal of Cases of Information Technology*, *8*(4), 24–35.

Shan, Y. (2016). How credible are online product reviews? the effects of self-generated and system-generated cues on source credibility evaluation. *Computers in Human Behavior*, *55*, 633–641. https://doi.org/10.1016/j.chb.2015.10.013

Sharma, R., & Mishra, R. (2014). A Review of Evolution of Theories and Models of Technology Adoption. *Indore Management Journal*, *6*(2), 17–29.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research*, *15*(3), 325–343. https://doi.org/10.1086/209170

Shu, M. (Lavender), & Scott, N. (2014). Influence of Social Media on Chinese Students' Choice of an Overseas Study Destination: An Information Adoption Model Perspective. *Journal of Travel & Tourism Marketing*, *31*(2), 286–302. https://doi.org/10.1080/10548408.2014.873318

Shuang, Y. (2013). Effects of information quality and source credibility on EWOM adoption in context of virtual community. *2013 International Conference on Management Science and Engineering 20th Annual Conference Proceedings*, 194–200. https://doi.org/10.1109/ICMSE.2013.6586282

Sidharta, M. W., Syah, T. Y. R., & Saptaningsih, A. B. (2021). The Relationship Between Social Media Communication and Word of Mouth Inside Brand Image and Purchase Intention. *Journal of Multidisciplinary Academic*, *05*(01), 61–66.

Singh, R. P., & Banerjee, N. (2018). Exploring the Influence of Celebrity Credibility on Brand Attitude, Advertisement Attitude and Purchase Intention. *Global Business Review*, *19*(6), 1622–1639. https://doi.org/10.1177/0972150918794974

Sinha, S., & Singh, T. (2018). Travel from Traditional Marketing to Digital Marketing. *International Journal of Emerging Research in Management and Technology*, *6*(11), 173. https://doi.org/10.23956/ijermt.v6i11.60

Soares, A. M., Pinho, J. C., & Nobre, H. (2012). From Social to Marketing Interactions: The Role of Social Networks. *Journal of Transnational Management*, *17*(1), 45–62. https://doi.org/10.1080/15475778.2012.650085

Social, W. are. (2021a). Digital 2021: Overview report. In *We are Social : Global Digital Reports*. Retrieved from https://datareportal.com/reports/digital-2021-global-overview-report

Social, W. are. (2021b). Digital 2021. Retrieved September 14, 2021, from We Are Social website: https://wearesocial-net.s3.amazonaws.com/uk/wp-content/uploads/sites/2/2021/04/01-Slide-08-Digital-Around-The-World-DataReportal-20210420-Digital-2021-April-Global-Statshot-Report-Slide-8.png

Solanki, M. R., & Dongaonkar, A. (2016). A Journey of Human Comfort: Web 1.0 to Web 4.0. *International Journal of Research and Scientific Innovation*, *3*(9), 75–78. Retrieved from www.rsisinternational.org

Sousa, D. (n.d.). *How Informatics Can Improve Health and Healthcare in Portugal in the XXI century ?*

Sousa, V. D., & Rojjanasrirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice*, *17*(2), 268–274. https://doi.org/10.1111/j.1365-2753.2010.01434.x

Spasova, L., & Gundasheva, Z. (2019). Psychological Models for Attitudinal and Persuasion Changes in Consumer Behaviour. *Trakia Journal of Sciences*, *17*(Suppl.1), 838–846. https://doi.org/10.15547/tjs.2019.s.01.138

Squires, A., Bruyneel, L., Aiken, L. H., Van den Heede, K., Brzostek, T., Busse, R., … Sermeus, W. (2012). Cross-cultural evaluation of the relevance of the HCAHPS survey in five European countries. *International Journal for Quality in Health Care : Journal of the International Society for Quality in Health Care*, *24*(5), 470–475. https://doi.org/10.1093/intqhc/mzs040

Statista. (2021). Worldwide digital population as of January 2021. Retrieved September 14, 2021, from Statista website: https://www.statista.com/statistics/617136/digital-population-worldwide/#:~:text=Almost 4.57 billion people were,percent of the global population.

Steenkamp, J.-B. E. ., & Baumgartner, H. (2000). On the use of structural equation models for marketing modeling. *International Journal of Research in Marketing*, *17*(2–3), 195–202. https://doi.org/10.1016/S0167-8116(00)00016-1

Steffes, E. M., & Burgee, L. E. (2009). Social ties and online word of mouth. *Internet Research*, *19*(1), 42–59. https://doi.org/10.1108/10662240910927812

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, *42*(5), 893–898. https://doi.org/10.1016/j.paid.2006.09.017

Steinhart, Y., Mazursky, D., & Kamins, M. A. (2013). The process by which product availability

triggers purchase. *Marketing Letters*, *24*(3), 217–228. https://doi.org/10.1007/s11002-013-9227-4

Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current Opinion in Psychology*, *10*, 17–21. https://doi.org/10.1016/j.copsyc.2015.10.016

Stone, D. L., & Lukaszewski, K. M. (2009). An expanded model of the factors affecting the acceptance and effectiveness of electronic human resource management systems. *Human Resource Management Review*, *19*(2), 134–143. https://doi.org/10.1016/j.hrmr.2008.11.003

Straker, K., Wrigley, C., & Rosemann, M. (2015). Typologies and touchpoints: designing multi-channel digital strategies. *Journal of Research in Interactive Marketing*, *9*(2), 110–128. https://doi.org/10.1108/JRIM-06-2014-0039

Sulthana, A. N., & Vasantha, S. (2019). Influence of electronic word of mouth eWOM on purchase intention. *International Journal of Scientific and Technology Research*, *8*(10), 1–5.

Sun, J., Song, S., House, D., & Kwon, M. (2019). Role of gender differences on individuals' responses to electronic word-of-mouth in social interactions. *Applied Economics*, *51*(28), 3001–3014. https://doi.org/10.1080/00036846.2018.1564015

Surendran, P. (2012). Technology acceptance model: A survey of literature. *International Journal of Business and Social Research*, *2*(4), 175–178. https://doi.org/10.1016/j.biortech.2015.06.132

Sussman, S. W., & Siegal, W. S. (2003). Informational Influence in Organizations: An Integrated Approach to Knowledge Adoption. *Information Systems Research*, *14*(1), 47–65. https://doi.org/10.1287/isre.14.1.47.14767

Swan, E. L., Dahl, A. J., & Peltier, J. W. (2019). Health-care marketing in an omni-channel environment. *Journal of Research in Interactive Marketing*, *13*(4), 602–618. https://doi.org/10.1108/JRIM-03-2019-0039

Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics: International edition. *Pearson2012*.

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5). Pearson Boston, MA.

Tankovska, H. (2021, February 25). Social media - Statistics & Facts | Statista. Retrieved June 28, 2021, from https://www.statista.com/topics/1164/social-networks/ website: https://www.statista.com/topics/1164/social-networks/

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Teixeira, M., Andrade, A., & Martins, C. (2018). Electronic word-of-mouth e a sua influência na intenção de compra dos utilizadores do Facebook. *Gestão e Desenvolvimento*, *26*, 3–38.

Teixeira, A. (2020). COMO ESTÁ A EVOLUIR O E-COMMERCE EM PORTUGAL EM 2020. Retrieved June 28, 2021, from https://digitalks.pt/ website: https://digitalks.pt/artigos/a-evolucao-do-e-commerce-em-portugal/

Teixeira, M., & Martins, C. (2018). ELECTRONIC WORD-OF-MOUTH E A SUA INFLUÊNCIA NA INTENÇÃO DE COMPRA DOS UTILIZADORES DO Miguel Teixeira , António Andrade e Carla Martins U ma peça de informação tem " valor informacional " quando é capaz de influenciar a tomada de decisão (Brown , Broderi. *Gestão e Desenvolvimento*, *26*, 3–40.

Temechewu, M. W. (2020). Factors Affecting Consumers' Purchase Decision of Over-The-Counter (OTC) Medicines: Empirical Evidences from Community Pharmacies in Ethiopia. *Journal of Medicine, Physiology and Biophysics*, *65*. https://doi.org/10.7176/JMPB/65-02

Teng, S., Khong, K. W., & Goh, W. W. (2015). Persuasive Communication: A Study of Major Attitude-Behavior Theories in a Social Media Context. *Journal of Internet Commerce*, *14*(1), 42–64. https://doi.org/10.1080/15332861.2015.1006515

Teng, S., Wei Khong, K., Wei Goh, W., & Yee Loong Chong, A. (2014). Examining the antecedents of persuasive eWOM messages in social media. *Online Information Review*, *38*(6), 746–768. https://doi.org/10.1108/OIR-04-2014-0089

Thies, F., Wessel, M., & Benlian, A. (2016). Effects of Social Interaction Dynamics on Platforms. *Journal of Management Information Systems*, *33*(3), 843–873. https://doi.org/10.1080/07421222.2016.1243967

Tiago, M. T. P. M. B., & V. (2014). Digital marketing and social media : Why bother ? *Business Horizons*, 57(6), 703-708. https://doi.org/10.1016/j.bushor.2014.07.002

Tien, D. H., Amaya Rivas, A. A., & Liao, Y.-K. (2019). Examining the influence of customer-to-customer electronic word-of-mouth on purchase intention in social networking sites. *Asia Pacific Management Review*, *24*(3), 238–249. https://doi.org/10.1016/j.apmrv.2018.06.003

Trusov, M., Bucklin, R. E., & Pauwels, K. (2009). Effects of Word-of-Mouth versus Traditional Marketing: Findings from an Internet Social Networking Site. *Journal of Marketing*, *73*(5), 90–102. https://doi.org/10.1509/jmkg.73.5.90

Tsao, W.-C., & Hsieh, M.-T. (2015). eWOM persuasiveness: do eWOM platforms and product type matter? *Electronic Commerce Research*, *15*(4), 509–541. https://doi.org/10.1007/s10660-015-9198-z

Tyrawski, J., & De Andrea, D. C. (2015). Pharmaceutical companies and their drugs on social media: A content analysis of drug information on popular social media sites. *Journal of Medical Internet Research*, *17*(6), e130. https://doi.org/10.2196/jmir.4357

Umeogu, B. (2012). Source Credibility: A Philosophical Analysis. *Open Journal of Philosophy*, *02*(02), 112–115. https://doi.org/10.4236/ojpp.2012.22017

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425–478. https://doi.org/10.2307/30036540

Ventola, C. L. (2014). Social Media and Health Care Professionals: Benefits, Risks, and Best Practices. *Pharmacy and Therapeutics*, *39*(7), 491. https://doi.org/10.1088/0967-3334/28/3/R01

Ventola, C Lee. (2011). Direct-to-Consumer Pharmaceutical Advertising: Therapeutic or Toxic? *P & T : A Peer-Reviewed Journal for Formulary Management*, *36*(10), 669–684. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22346300

Walsh, G., Mitchell, V. W., Jackson, P. R., & Beatty, S. E. (2009). Examining the antecedents and consequences of corporate reputation: A customer perspective. *British Journal of Management*, *20*(2), 187–203. https://doi.org/10.1111/j.1467-8551.2007.00557.x

Wang, J.-J. J., Wang, L.-Y. Y., & Wang, M.-M. M. (2018). Understanding the effects of eWOM social ties on purchase intentions: A moderated mediation investigation. *Electronic Commerce Research and Applications*, *28*, 54–62. https://doi.org/10.1016/j.elerap.2018.01.011

Wang, M.-Y., Zhang, P.-Z., Zhou, C.-Y., & Lai, N.-Y. (2019). Effect of Emotion, Expectation, and Privacy on Purchase Intention in WeChat Health Product Consumption: The Mediating Role of Trust. *International Journal of Environmental Research and Public Health*, *16*(20), 3861. https://doi.org/10.3390/ijerph16203861

Wang, X., Yu, C., & Wei, Y. (2012). Social Media Peer Communication and Impacts on Purchase Intentions: A Consumer Socialization Framework. *Journal of Interactive Marketing*, *26*(4), 198–208. https://doi.org/10.1016/j.intmar.2011.11.004

Wang, Y. (2016). Information Adoption Model, a Review of the Literature. *Journal of Economics, Business and Management*, *4*(11), 618–622.

https://doi.org/10.18178/joebm.2016.4.11.462

Wathen, C. N., & Burkell, J. (2002). Believe it or not: Factors influencing credibility on the Web. *Journal of the American Society for Information Science and Technology*, *53*(2), 134–144. https://doi.org/10.1002/asi.10016

Weismueller, J., Harrigan, P., Wang, S., & Soutar, G. N. (2020). Influencer endorsements: How advertising disclosure and source credibility affect consumer purchase intention on social media. *Australasian Marketing Journal*, *28*(4), 160–170. https://doi.org/10.1016/j.ausmj.2020.03.002

Williams, M., Rana, N., Dwivedi, Y., & Lal, B. (2011). *Is UTAUT really used or just cited for the sake of it? A systematic review of citations of UTAUT's originating article*.

Wolf, C., Joye, D., Smith, T., & Fu, Y. (2016). *The SAGE Handbook of Survey Methodology*. https://doi.org/10.4135/9781473957893

Wolny, J., & Mueller, C. (2013). Analysis of fashion consumers' motives to engage in electronic word-of-mouth communication through social media platforms. *Journal of Marketing Management*, *29*(5–6), 562–583. https://doi.org/10.1080/0267257X.2013.778324

Wright, R. T., Campbell, D. E., Thatcher, J. B., & Roberts, N. (2012). Operationalizing Multidimensional Constructs in Structural Equation Modeling: Recommendations for IS Research. *Communications of the Association for Information Systems*, *30*(July). https://doi.org/10.17705/1CAIS.03023

Yan, Q., Wu, S., Wang, L., Wu, P., Chen, H., & Wei, G. (2016). E-WOM from e-commerce websites and social media: Which will consumers adopt? *Electronic Commerce Research and Applications*, *17*, 62–73. https://doi.org/10.1016/j.elerap.2016.03.004

Yan, Q., Wu, S., Zhou, Y., & Zhang, L. (2018). How differences in eWOM platforms impact consumers' perceptions and decision-making. *Journal of Organizational Computing and Electronic Commerce*, *28*(4), 315–333. https://doi.org/10.1080/10919392.2018.1517479

Yang, C., Huang, C., Student, M., & Yang, K. (2011). eWOM: The effects of online consumer information adoption on purchasing decision.

Yoon, S.-J. (2002). The antecedents and consequences of trust in online-purchase decisions. *Journal of Interactive Marketing*, *16*(2), 47–63. https://doi.org/10.1002/dir.10008

Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. (2007). Technology acceptance: a meta-analysis of the TAM: Part 1. *Journal of Modelling in Management*, *2*(3), 251–280. https://doi.org/10.1108/17465660710834453

Yusuf, A. S., Che Hussin, A. R., & Busalim, A. H. (2018). Influence of e-WOM engagement on

consumer purchase intention in social commerce. *Journal of Services Marketing*, *32*(4), 493–504. https://doi.org/10.1108/JSM-01-2017-0031

Zhang, K. Z. K., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. https://doi.org/10.1016/j.dss.2016.04.001

Zhang, K. Z. K., Zhao, S. J., Cheung, C. M. K., & Lee, M. K. O. (2014). Examining the influence of online reviews on consumers' decision-making: A heuristic-systematic model. *Decision Support Systems*, *67*, 78–89. https://doi.org/10.1016/j.dss.2014.08.005

Zhao, Y., & Zhang, J. (2017). Consumer health information seeking in social media: a literature review. *Health Information and Libraries Journal*, *34*(4), 268–283. https://doi.org/10.1111/hir.12192

Zhou, L., Zhang, D., Yang, C. C., & Wang, Y. (2018). Harnessing social media for health information management. *Electronic Commerce Research and Applications*, *27*, 139–151. https://doi.org/10.1016/j.elerap.2017.12.003

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, *26*(4), 760–767. https://doi.org/10.1016/j.chb.2010.01.013

Zhu, D. H., Chang, Y. P., & Luo, J. J. (2016). Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model. *Telematics and Informatics*, *33*(1), 8–16. https://doi.org/10.1016/j.tele.2015.06.001

Zhu, F., & Zhang, X. (Michael). (2010). Impact of Online Consumer Reviews on Sales: The Moderating Role of Product and Consumer Characteristics. *Journal of Marketing*, *74*(2), 133–148. https://doi.org/10.1509/jmkg.74.2.133

Ziyadin, S., Doszhan, R., Borodin, A., Omarova, A., & Ilyas, A. (2019). The role of social media marketing in consumer behaviour. *E3S Web of Conferences*, *135*, 04022. https://doi.org/10.1051/e3sconf/201913504022

https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20170713: [Accessed in 13 July 2019]

https://www.futurebehind.com/numero-utilizadores-facebook-portugal-2017 [Accessed in 17 July 2019]

APPENDIX 1. GLOSSARY OF KEY TERMS

Table 45. Definitions of Terms Used

Consumer-Centric Marketing	The discipline of capturing and deploying consumer insights to enhance marketing effectiveness and better serve those consumers that are the brand's best prospects. A basic philosophy that places value on serving consumers, an organizational culture that views consumer knowledge and insights as valuable assets and emphasizes employees as consumer advocates, performance metrics involving assessments of consumer satisfaction, and an organizational structure that delineates units responsible for developing and managing consumer experiences and relationships.	(Esper et al., 2020) (Maney, Flink, & Lietz, 2008)
eWOM	eWOM communication refers to any positive or negative statement made by potential, actual, and previous customers about the organization or its products via the Internet. It can also be considered a consumer-generated, consumption-related communication that employs digital tools and is directed primarily to other consumers	(Hennig-thurau, et al. 2004) (Rosario et al. 2020)
eWOM Credibility:	The eWOM credibility refers to the extent to which one perceives the recommendation from a certain source whether person/organization as believable.	(Bataineh, 2015) (Fogg et al. 2002)
eWOM Quality:	The eWOM quality can be described as the persuasive strength of arguments rooted in an informational message.	(Bhattacherjee & Sanford, 2006)
Omnichannel:	Integration of multichannel, which aims to deliver a seamless customer experience regardless of the channel. This concept is perceived as an evolution of the multichannel, allowing consumers to move freely between the online, mobile devices, and physical store, all within a single transaction process. Mobile and social media channels, and even gaming, are added to "traditional" online and physical channels.	(Piotrowicz & Cuthbertson, 2014) (Pieriegud, 2019)
Patient-centred Care:	The practise of caring for patients (and their families) in ways that are meaningful and valuable to the individual patient. It includes listening to, informing and involving patients in their care. Through systematically collecting information on patients concerns and priorities at the point of care and using outcome measures that they identify.	(Richards, Coulter, & Wicks, 2015)
Purchase Intention:	The earliest definition of purchasing intention is the subjective probability that users perform a certain behaviour. If the users are concerned to get a specific product or service, that means, there is a purchase intention in their mind; they wish to purchase that	(Ajzen & Fishbein, 1972)

	product or service, either in the long term or short term. When consumers have a positive reputation or expression toward brand products or services, purchase intentions mostly going to happen, as they are affected by their positive expression towards the product.	
Social media:	The online social networks from the perspective of the firm.	(Kozlenkova et al. 2017)
Social media marketing:	The marketing activities on social media and relationships and interactions occurring between consumers and a firm through the social networks.	(Kaplan & Haenlein, 2010)
Social Media Marketing Strategy (SMMS):	An organization's integrated pattern of activities that, based on a careful assessment of customers' motivations for brand-related social media use and the undertaking of deliberate engagement initiatives, transform social media connectedness (networks) and interactions (influences) into valuable strategic means to achieve desirable marketing outcomes.	(Li et al. 2021)
Social Networking Sites (SNS):	Social networking sites are web-based services that allow internet users to create profiles and personal networks via friends lists while also allowing them to communicate with one another.	(Boyd & Ellison, 2007)
Source Credibility	Credibility refers to a person's perception of the truth of a piece of information. It is a multi-dimensional concept that serves as a means for the receiver of the information to rate the source or transmitter of the communication concerning the information. This rating correlates with the willingness of the receiver to attribute truth and substance to the information.	(Eisend, 2006) (Hovland et al. 1953)
User-generated Content (UGC).	User-generated content is created by regular people who voluntarily contribute data, information, or media, which is then made available to others in a useful or entertaining manner, frequently on the Internet.	(Krumm et al. 2008) (Luca, 2015)
User experience:	The sensorial, emotional, and cognitive reactions of users while interacting with a digital interface, resulting from the interface's usability, usefulness, and enjoyability.	(Norman, 2004)
WOM:	Word of mouth can be defined as communication among people where the person receives some non-commercial messages regarding brands, products, or services. Likewise, sharing and exchanging information about consumption experience.	(Arndt, 1967)

APPENDIX 2. MAIN STUDIES USED IN LITERATURE REVIEW

Table 46. Main studies used in the literature review (eWOM and consumer behaviour)

Study	Title	Platform	Setting	Dependent Variable	Independent Variable
Riegner (2007)	Word of Mouth on the Web: The Impact of Web 2.0 on Consumer Purchase Decisions	Internet	Survey USA	Purchase decisions	
Park et al. (2007)	The Effect of On-Line Consumer Reviews on Consumer Purchasing Intention: The Moderating Role of Involvement	Ecommerce website Experimental product	Mixt Experimental and Survey ELM	Purchase Intention	Online Consumer Reviews; Involvement
Park & Kim (2008)	The effects of consumer knowledge on message processing of electronic word-of-mouth via online consumer reviews	Students Online reviews	Experimental ELM	Check the effects of the types of review information and the levels of expertise on the three dependent variables. Purchase Intention	Informativeness, Usefulness, and Helpfulness
Awad & Ragowsky (2008)	Establishing Trust in Electronic Commerce Through Online Word of Mouth: An Examination Across Genders	e-commerce websites (Amazon.com) books, music, and movies	Survey TAM	Intention to shop online Moderator effect of Gender	WOM Quality; Online Trust; Perceived usefulness; Perceived ease of use; Online participation to share opinion; Responsive participation of others; Subjective norms
Cheung et al. (2008)	The impact of electronic word-of-mouth The adoption of online opinions in online customer communities	Online customer community: Blog Openrice.com Food and restaurants	Survey Hong-Kong and Macau Dual-process theories and IAM	Information Usefulness Information Adoption	Argument Quality Source Credibility
Cheung et al. (2009)	The Impact of Positive Electronic Word-of-Mouth on Consumer Online Purchasing Decision	Students Website Reviews	Experimental Hong-Kong	Emotional Trust Intention to Purchase online Moderator effect of positive eWOM	Cognitive Trust (Competence; Integrity)
Doh & Hwang (2009)	How Consumers Evaluate eWOM (Electronic Word-of-Mouth) Messages	Students Experimental Website Movies and digital cameras	Experimental Questionnaire South Korea	Adoption of eWOM: Attitude Towards Product; Purchase Intention; Attitude towards Website; Credibility of eWOM messages Moderating roles of involvement and prior knowledge.	The Ratio of Messages (Positive–Negative)
Lee, & Huang (2010)	The Influence of E-Word-Of-Mouth on the Consumer's Purchase	Internet Body Care product Users	Questionnaire Source Credibility Model Taiwan	e-WOM effect	Sender Expertise; Search extent; Own experience; Trustworthiness;

	Decision: a Case of Body Care Products				
Prendergast et al. (2010)	Online word of mouth and consumer purchase intentions	Online Forums	Survey Hong- Kong; TRA	Purchase Intention Mediating effect of persuasiveness	Source similarity; Attitude
Zhu & Zhang (2010)	Impact of Online Consumer Reviews on Sales: The Moderating Role of Product and Consumer Characteristics	Online review sites: Blog Video Game Industry	Discrete choice models: Regression USA	Consumers' reliance on online reviews Consumers' purchase decisions	Product characteristics (e.g., product popularity); Consumer characteristics (e.g., Internet experience); Other factors (e.g., competition, business models, design of online review systems
Cheung & Lee (2012)	What drives consumers to spread electronic word of mouth in online consumer opinion platforms	Review community: OpenRice.com Dining experiences in	Survey Hong Kong	Consumers eWOM intention	Knowledge self-efficacy; Enjoyment of helping; Moral obligation; Reputation; Sense of belonging; Reciprocity
Fan & Miao (2012)	Effect of electronic word-of-mouth on consumer purchase intention: the perspective of gender differences	e-commerce virtual communities iPhone and 20 different electronic products	Survey ELM	Cultural effects of gender Perceived eWOM Credibility eWOM Acceptance Purchase decision	Customer Expertise; Customer Involvement; Rapport
Yu, & Wei (2012)	Social Media Peer Communication and Impacts on Purchase Intentions: A Consumer Socialization Framework	Social media websites	Survey	Product Attitude Purchase Intention Moderating Role of Need for Uniqueness	Tie-strength; Identification with peer group; Peer communication; Product involvement
Purnawirawan, et al. (2012)	Balance and Sequence in Online Reviews: How Perceived Usefulness Affects Attitudes and Intentions	Online reviews Hotels consumers	Experimental Online questionnaire Belgian	Recall (positive or negative) Balanced set of reviews (positive or negative) Moderating Role of Perceived Usefulness Mediator Role of Review impression	Attitude and Behavioural Intention
Fan, Miao, Fang, & Lin (2013)	Establishing the Adoption of Electronic Word-of-Mouth through Consumers' Perceived Credibility	Graduate Students and Online users Cosmetic-related forums	Experimental Survey	Perceived eWOM Credibility eWOM adoption	Source Credibility eWOM; eWOM Quantity;eWOM Quality; Consumer Expertise; Consumer Involvement
Giannakos & Pateli (2013)	Shopping and Word-of-Mouth Intentions on Social Media	Social Media and Online Forums Students and potential consumers Fashion, computers, hobbies etc	Survey Chile; Utilitarian and Hedonic motivation theory; TPB	Social media Product Browsing Purchase Intention WOM intention	Convenience; Information Availability;Product Selection; Customized Advertisements; Trend;Discovery; Socializing;Adventure ;Authority & Status; Utilitarian Motivation; Hedonic Motivation

Purcarea et al. (2013)	Credibility Elements of eWOM Messages in the Context of Health Care Services. A Romanian Perspective	Online forums	Health care services in Romania (only women). IAM. Survey	Purchase Intention	Source Credibility, Argument Strength
Chang & Wu (2014)	An examination of negative e-WOM adoption: Brand commitment as a moderator	Blog Starbucks	Experimental Yale Model and Attribution Theory	Negative e-WOM Adoption Moderating effect of brand commitment	External Attributions about Writer; Source Credibility; Information Credibility
Fang (2014)	Beyond the Credibility of Electronic Word of Mouth: Exploring eWOM Adoption on Social Networking Sites from Affective and Curiosity Perspectives	Social Media Networks Facebook Users	Survey Taiwan Stimulus-organism-response model and affect-as-information theory	eWOM Adoption	Source expertise; Task attraction; Argument strength; recommendation rating; source attraction; Electronic window dressing
Lee & Shin (2014)	When do consumers buy online product reviews? Effects of review quality, product type, and reviewer's photo	e-commerce Website Students Computer game	Web-based experiment South Korea	Purchase Intention Reviewer Evaluation Website Evaluation Moderator role of product type and Reviewer Photo	Review Quality; Product Evaluation
Shu & Scott (2014)	Influence of Social Media on Chinese Students' Choice of an Overseas Study Destination: An Information Adoption Model Perspective	Social Media Students Overseas study destination	Experimental China; ELM and IAM	Perceived destination attractiveness	Argument Quality (strong and weak); Source Credibility (strong and weak)
Zhang, Zhao, Cheung, & Lee (2014)	Examining the influence of online reviews on consumers' decision-making: A heuristic–systematic model	Online review sites: Dianping.com. Restaurants Potential review site users	Online survey questionnaire China; IAM and dual-process theories	Behavioural Intention	Source Credibility; Argument quality; Perceived quantity of reviews Perceived informativeness; Perceived persuasiveness
Iyer & Paswan (2015)	Personal level antecedents of eWOM and purchase intention, on social networking sites	Social networking sites Students	Survey USA	Purchase Intention Mediating effect of eWOM on SNS	Belief in self-reliance; SNS involvement; SNS risk-taking
Ladhari & Michaud (2015)	eWOM effects on hotel booking intentions, attitudes, trust, and website perceptions	Social Media: Facebook Students Tourism	Experimental Canada	Booking intentions Moderator role of trust	Attitudes toward the hotel; Trust toward the hotel; Hotel website quality
Tsao & Hsieh (2015)	eWOM persuasiveness: do eWOM platforms and product types matter?	Focus Groups: Fictitious consumer reviews Search goods Credence goods	Experimental Taiwan	Purchase Intention Moderator effect of type of platform and product type Mediating effect of credibility of eWOM	eWOM quality; eWOM credibility
Chen, Hou, & Zhao (2016)	Research on the Model of	Social media	Survey China; TPB	Behaviour intentions	Health literacy; Health status;

	Consumer Health Information Seeking Behavior via Social Media	Potential Consumers			Attitudes Toward the Behavior; Subjective Norms; Perceived Behavioural Control
Zhu, Chang, & Luo (2016)	Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model	Online Communities Students 3G smart mobile phones	Survey and Experimental China; IAM	Product usefulness Purchase decision	Argument quality; Source credibility; Tie strength
Erkan & Evans (2016)	The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption	Social media websites University Students (aged 18 -29)	Survey UK; IACM	Information Usefulness Information Adoption Purchase Intention	Information quality; Information Credibility; Needs Information; Attitude towards information
Kim & Johnson (2016)	Power of consumers using social media: Examining the influences of brand-related user-generated content on Facebook	Social Media: Facebook	Survey USA; SOR consumer response model	Behavioural response: formation pass-along, impulse buying, future-purchase intention, and brand engagement	UGC Message; Pleasure; Arousal; Information Quality
Lü, & Ali (2016)	Perceived derived attributes of online customer reviews	Ecommerce website: Amazon.com	Mixed methods: Survey and Focus Group UK; TBPand TAM	Trust in e-vendor Purchase Intention	Perceived Usefulness; Perceived ease of use; Perceived Enjoyment; Perceived Control
Yan et al., (2016)	E-WOM from e-commerce websites and social media: Which will consumers adopt?	Social media and e-commerce websites Students	Survey China; ELM	eWOM credibility eWOM usefulness eWOM adoption moderating effects of consumers' cognitive level and degree of involvement	eWOM Volume; eWOM Rate Extremism; eWOM Integrity; eWOM Source Credibility
Abubakar, Ilkan, Meshall Al-Tal, & Eluwole, (2017)	eWOM, revisit intention, destination trust and gender	Medical tourism industry	Convenient sampling technique Questionnaire Turkey	Moderator role of Gender Intention to revisit and destination trust	Online eWOM
Kudeshia & Kumar (2017)	Social eWOM: does it affect the brand attitude and purchase intention of brands?	Facebook Electronics Smartphones Adults	Survey India	Positive eWOM The mediating role of brand attitude on	Purchase Intention
Mikalef, Giannakos, & Pappas (2017)	Designing social commerce platforms based on consumers' intentions	Social Media Students Fashion, computers, hobbies etc.	Survey Norway	Purchase Intention WOM	Socializing; Personal recommendation; Product Selection; Information availability
Erkan & Evans (2018)	Social media or shopping websites? The influence of eWOM on consumers' online purchase intentions	Shopping websites vs Social media Students	Survey and in-depth interviews UK; IAM	Online Purchase Intention	Information Quality Information; Information Usefulness; Information adoption

Hsu & Ngamnate (2018)	Factors Affecting Electronic Word-of-Mouth (E-WOM) Usage on the Customer Purchase Intention: An Investigation on Beauty Market	Twitter and other online websites Taiwan business Students Beauty product	Online Questionnaire Thailand and Taiwan.	Source Trustworthiness Source Expertise Source Experience Source Attractiveness Source Similarity Source Familiarity	E-WOM usage Purchase Intention
Yan, Wu, Zhou, & Zhang (2018)	How differences in eWOM platforms impact consumers' perceptions and decision-making	Social Media and e-commerce websites Chinese students	Experiment and a survey method (S–O–R) theory	EWOM Type Tie Strength Volume of Social Cues Moderator effect of Product-related Risk	Perceived Credibility Purchase Intention
Roblek, Bach, Meško & Bertoncelj (2018)	To click or to buy over the counter drugs: exploring the behaviour of Slovenian customers	Internet and social media users OTC consumers online behaviour regarding OTC drugs	e-mail survey Slovenia	Buying, searching or browsing OTC drugs online Moderator effect of age (<40 or > 40)	The intensity of internet usage; Trust in buying OTC drugs online; Satisfaction with physicians and pharmacists online; Demographic variables
Teixeira & Martins (2018)	Electronic word-of-mouth and its influence on Facebook users 'purchase intention	Facebook personal contacts	Portugal. IACM Survey	Information Usefulness; Information adoption; Purchase Intention	Information Quality; Information Credibility; Source Credibility; Needs Information; Attitude Towards Information
Sánchez Torres, Cañada, Moro, & Irurita, (2018)	Impact of gender on the acceptance of electronic word-of-mouth (eWOM) information in Spain	Social networking sites	Online Questionnaire Spain; IACM	Purchase Intention Moderator effect of Gender	Information Quality; Information Credibility Needs Information; Attitude Towards Information
Singh & Banerjee, (2018)	Exploring the Influence of Celebrity Credibility on Brand Attitude, Advertisement Attitude and Purchase Intention	Celebrity endorsement Urban Adults Potential consumers Motorbike or a scooter	Survey India	Purchase Intention Control Variables Age and Gender	Celebrity credibility; Attitude Towards Brand; Attitude Towards Advertisement
Wang, Zhang, Zhou, & Lai (2019)	Effect of Emotion, Expectation, and Privacy on Purchase Intention in WeChat Health Product Consumption: The Mediating Role of Trust.	Social Networks: Wechat Health Products	Survey China; TRA and theory of expectancy confirmation	Purchase intention Mediating Role of Trust	Emotional Support; Privacy Concern; Expectation Confirmation Trust: intermediary variable
Lam, Lau, Cheng, & Wong (2019)	The impact of electronic word-of-mouth on young consumers' purchase intention in Hong Kong	Social media websites Students (Young Adults) Skincare and cosmetic products	Survey: Judgment sampling Hong-Kong	Information Credibility Purchase intention	Utilitarian orientation; Hedonic orientation; Social media browsing; intention; eWOM
Haque & Jamaludin, (2020)	Consumer Behavior Towards Over-The-Counter Medicine Purchase: The Extended Theory Of Planned Behavior	Walk-in customers in pharmacies	Questionnaire Malaysia; TPB	Purchase Intention Purchase Behaviour	Attitude Subjective Norm; Perceived Behavioural Control; Perceived Risk

Abdullah et al. (2020)	Impact of social media influencer on Instagram user purchase intention towards the fashion products: The perspectives of students	Students Fashion Industry	Survey Malaysia	Purchase Intention	Trustworthiness; Expertise; Likability; Similarity; Familiarity
Ahmad Tajuddin, Abu Hassan, Othman, & Razak (2020)	Electronic Word-of-Mouth (E-WOM), Brand Image and Consumer Purchase Intention on Healthcare Products	Online reviews Dietary supplement products Consumers	Questionnaire Malaysia	Purchase Intention The moderating role of brand image	e-WOM (quality, quantity, and sender expertise)
Jaini, Quoquab, Mohammad, & Hussin (2020)	I buy green products, do you...?" The moderating effect of eWOM on green purchase behavior in Malaysian cosmetics industry	Social Media Green cosmetics products. Individuals who had experience in purchasing cosmetics	Online-Survey Malaysia; Value-belief-norm (VBN) and ELM	Green Purchase behaviour The mediating role of pro-environmental belief The mediating role of personal norm The moderating role of eWOM	Altruistic value Hedonic value
Weismueller, Harrigan, Wang, & Soutar (2020)	Influencer Endorsements: How Advertising Disclosure and Source Credibility Affect Consumer Purchase Intention on Social Media	Instagram Students	Web-questionnaire Germany	Purchase Intention Control variable number of followers	Advertising disclosure: Source Credibility: Source attractiveness; Source expertise; Source trustworthiness
Naujoks & Benkenstein, (2020)	Who is behind the message? The power of expert reviews on eWOM platforms	Fictional online review platform Restaurant Students	Mixt Experimental Online survey Germany	Aggregated rating Moderating influence of source expertise	Attitude Toward online reviews Purchase Intention
Somaiya & Jain (2021)	Predictive Model To Study the Consumer Buying Behaviour Towards E-Pharmacy Through Social Media Influence: a Cross Country Study	Social Media Students: Millenials e-Pharmacies	Survey The UK, USA and India; TAM	Purchase Intention	Trust; Social Influence; Perceived Usefulness
Huang & Lee (2021)	Exploring Consumers' Purchase Intentions on Facebook: The Influence of Characteristics of eWOM.	Social Media Facebook Tourism Product	Survey TAM	Attitude toward eWOM Purchase Intention	Homophily; Novelty, Perceived Usefulness, Perceived ease of use;
Loi & Woon, (2021)	The influence of social media eWOM information on purchase intention	Social Media New flavoured bubble tea	self-administrated questionnaire Malaysia; IACM	Information Usefulness; Information adoption; Purchase Intention	information quality, information credibility, information task-fit attitudes towards information explain
Syah, & Saptaningsih (2021)	The Relationship Between Social Media Communication	Social Media Clinic Patients	Survey Indonesia	Purchase Intention The indirect effect of Brand Image	User-Generated Content; Firm Generated Content; WOM

	and Word of Mouth Inside Brand Image and Purchase Intention				

APPENDIX 3. INDIVIDUAL INTERVIEW SCRIPT

GUIÃO DE ENTREVISTA

O objetivo da nossa reunião é que me possa dar feedback sobre o questionário que lhe enviei antecipadamente. Quaisquer dúvidas ou sugestões são muito bem-vindas.

P1: O que achou?

P2: Foi claro para si?

P3: Houve alguma parte que tivesse dúvidas?

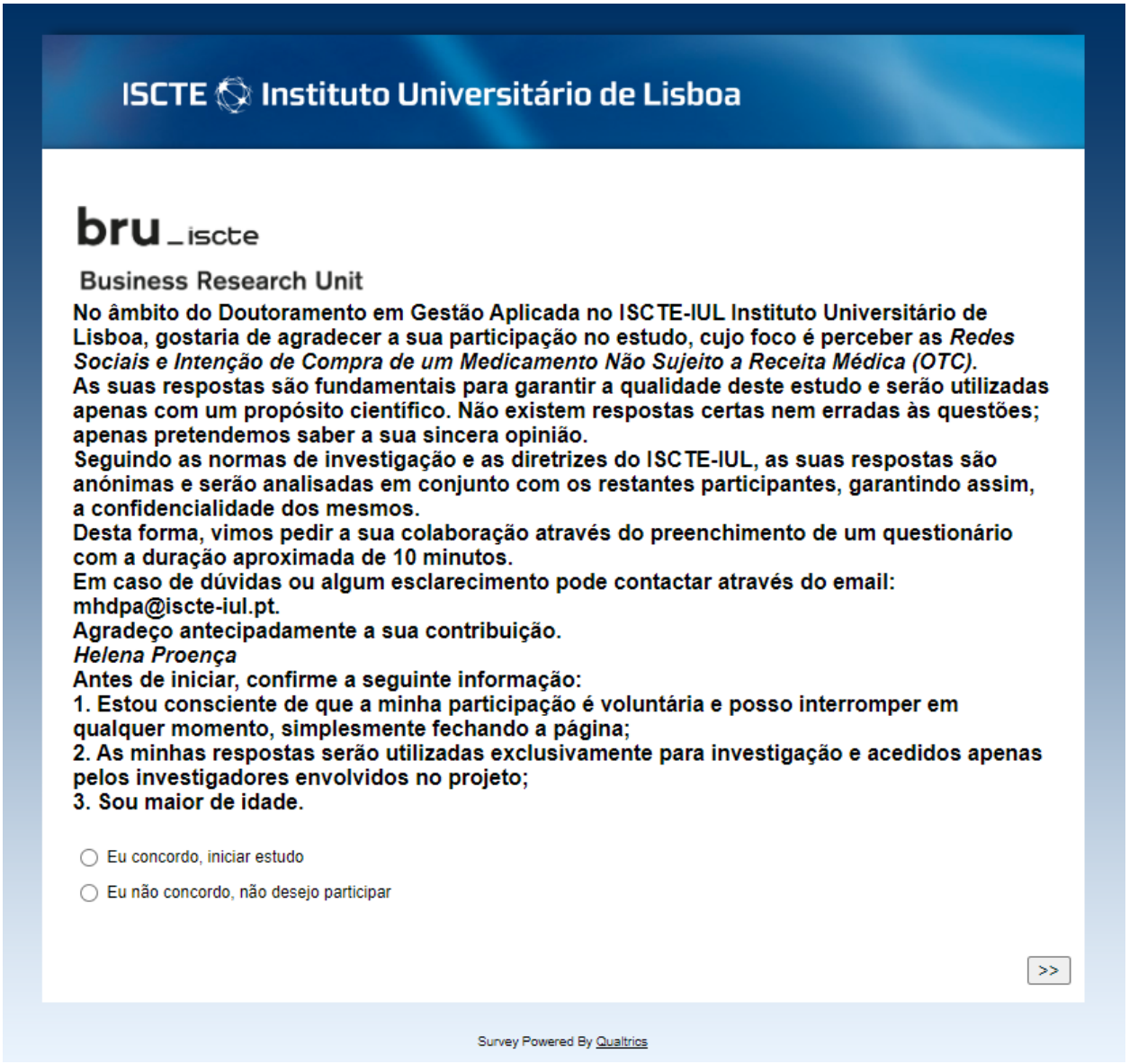
P4: Haveria alguma parte ou expressão que colocaria de maneira diferente?

P5: Tendo em conta a sua experiência nesta área, falta alguma variável ou tópico que seja relevante para este tema?

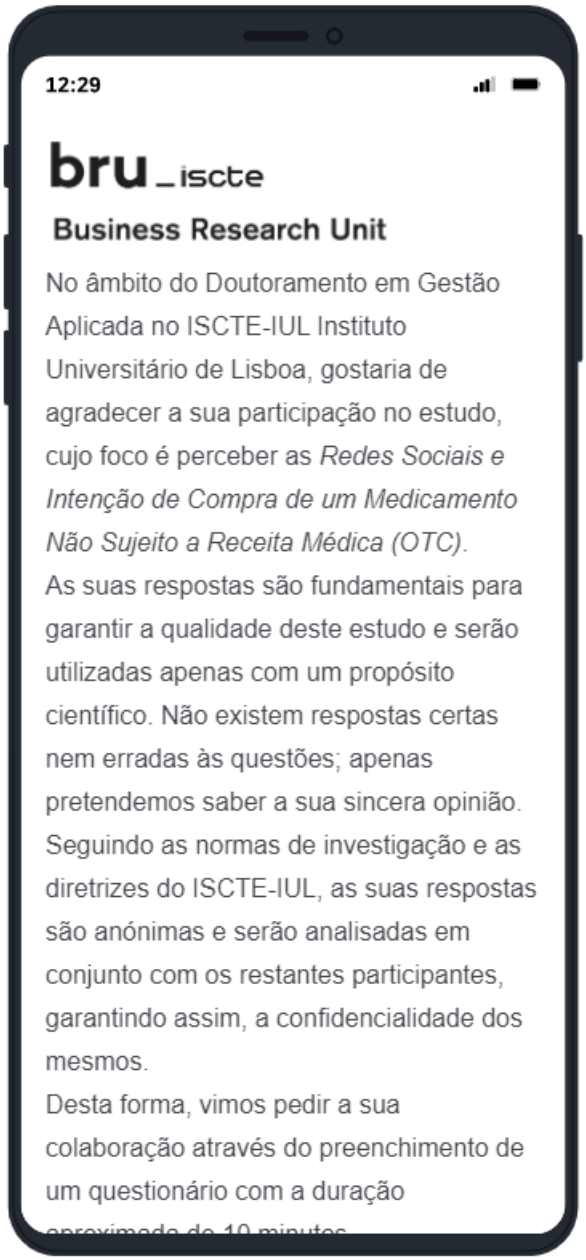
P6: Na sua opinião que aplicação prática pode vir a ter o resultado deste questionário?

Nota: Há um contacto prévio antes do agendamento da reunião para explicar o projeto enviando-se de seguida o questionário

APPENDIX 4. QUESTIONNAIRE



Note: Online display



Note: Online Mobile display

Informed Consent

bru _iscte

Business Research Unit

No âmbito do Doutoramento em Gestão Aplicada no ISCTE-IUL Instituto Universitário de Lisboa, gostaria de agradecer a sua participação no estudo, cujo foco é perceber as *Redes Sociais e Intenção de Compra de um Medicamento Não Sujeito a Receita Médica (OTC)*.
As suas respostas são fundamentais para garantir a qualidade deste estudo e serão utilizadas apenas com um propósito científico. Não existem respostas certas nem erradas às questões; apenas pretendemos saber a sua sincera opinião.
Seguindo as normas de investigação e as diretrizes do ISCTE-IUL, as suas respostas são anónimas e serão analisadas em conjunto com os restantes participantes, garantindo assim, a confidencialidade dos mesmos.
Desta forma, vimos pedir a sua colaboração através do preenchimento de um questionário com a duração aproximada de 10 minutos.
Em caso de dúvidas ou algum esclarecimento pode contactar através do email: mhdpa@iscte-iul.pt.
Agradeço antecipadamente a sua contribuição.
Helena Proença
Antes de iniciar, confirme a seguinte informação:
1. Estou consciente de que a minha participação é voluntária e posso interromper em qualquer momento, simplesmente fechando a página;
2. As minhas respostas serão utilizadas exclusivamente para investigação e acedidos apenas pelos investigadores envolvidos no projeto;
3. Sou maior de idade.

- ◯ Eu concordo, iniciar estudo
- ◯ Eu não concordo, não desejo participar

Qualtrics Surveys Question Demo

Indique por favor:

	Muito Frequentemente	Frequentemente	Ocasionalmente	Raramente	Nunca
Com que frequência utiliza a internet?	◯	◯	◯	◯	◯

Tem conta numa Rede Social?

- ◯ Sim
- ◯ Não

Começou a utilizar as redes sociais com mais frequência devido à pandemia provocada pela COVID-19? Por favor, selecione apenas uma das seguintes opções.

- ◯ Sim
- ◯

Não

Preferencialmente, qual o aparelho que geralmente utiliza para aceder às suas redes sociais?

- [ ] Computador
- [ ] Tablet / Ipad
- [ ] Telemóvel / Smartphone
- [ ] Outro qual?

Das seguintes redes Sociais, indique as que utiliza atualmente.
Selecione todas as que se apliquem:

- [ ] Facebook
- [ ] Instagram
- [ ] Linkedin
- [ ] Youtube
- [ ] Pinterest
- [ ] Twitter
- [ ] TikTok
- [ ] WhatsApp
- [ ] Outra qual?

Das seguintes redes sociais, indique qual a que utiliza com mais frequência hoje em dia?

Assinale apenas uma opção.

- ◯ Facebook
- ◯ Instagram
- ◯ Linkedin
- ◯ Youtube
- ◯ Pinterest
- ◯ Twitter
- ◯ TikTok
- ◯ WhatsApp
- ◯ Outra qual?

Indique, por favor, quando começou a utilizar a rede social que atualmente utiliza com maior frequência?

- ◯ Há menos de 6 meses
- ◯ Entre 6 meses e 1 ano

- ◯ Entre 1 ano e 2 anos
- ◯ Entre 2 a 5 anos
- ◯ Há mais de 5 anos

Num dia normal, em média quanto tempo passa nas redes sociais?

- ◯ Menos de 30 min
- ◯ 30 a 60 min
- ◯ 1-2h
- ◯ 2-3h
- ◯ 4-6h
- ◯ 6-8h
- ◯ Mais de 8h

Num dia normal, quantas vezes acede às suas redes sociais?

- ◯ Nem todos os dias
- ◯ Uma vez por dia
- ◯ Duas vezes por dia
- ◯ 2-5 vezes por dia
- ◯ 5 a 10 vezes por dia
- ◯ Mais de 10 vezes por dia

Com que frequência publica na rede social que mais frequenta?

- ◯ Nunca
- ◯ Menos de uma vez por mês
- ◯ Uma vez por mês
- ◯ Semanalmente
- ◯ Diariamente
- ◯ 5 a 10 vezes por dia
- ◯ Mais de 10 vezes por dia

Costuma receber informação ou comentários sobre medicamentos de venda livre ou (OTC) (medicamentos que são vendidos sem necessidade de receita médica como por ex.: medicamentos para dores de cabeça, dores musculares, gripe, constipações, insónia, alergias, etc.) nas redes sociais que utiliza?

Frequentemente	Muitas vezes	Às vezes	Raramente	Nunca
◯	◯	◯	◯	◯

Relativamente à informação ou comentários sobre medicamentos de venda livre (OTC), já considerou a experiência de outras pessoas sobre a qual leu nos comentários nas suas redes sociais, seja em postagens / comentários de amigos, grupos de discussão ou na página oficial de uma marca / farmácia:

Frequentemente	Muitas vezes	Às vezes	Raramente	Nunca
○	○	○	○	○

Indique, por favor, qual o seu grau de concordância ou discordância em relação às afirmações seguintes:
Na minha opinião, para eu considerar as informações ou comentários sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais:
É importante que o autor...

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Seja parecido comigo	○	○	○	○	○
Seja do mesmo género que eu	○	○	○	○	○
Pense como eu	○	○	○	○	○
Pertença à mesma faixa etária que eu	○	○	○	○	○
Tenha um "estilo de vida" similar ao meu	○	○	○	○	○
Seja especialista no assunto	○	○	○	○	○
	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Seja experiente	○	○	○	○	○
Revele conhecimento sobre o assunto	○	○	○	○	○
Seja qualificado	○	○	○	○	○
Seja competente	○	○	○	○	○
Seja independente	○	○	○	○	○
Seja honesto	○	○	○	○	○
	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Seja confiável	○	○	○	○	○
Seja sincero	○	○	○	○	○
Seja autêntico	○	○	○	○	○
Seja credível	○	○	○	○	○
Não seja anónimo	○	○	○	○	○
Seja alguém que eu conheço	○	○	○	○	○

Relativamente às informações ou comentários sobre medicamentos de venda livre (OTC) <u>partilhada pelos meus contactos ou outros</u> nas redes sociais...

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Valorizo mais as recomendações de amigos do que de anónimos	○	○	○	○	○
Valorizo mais as recomendações de familiares do que de anónimos	○	○	○	○	○
As recomendações dos meus amigos mais facilmente influenciam as minhas escolhas	○	○	○	○	○

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
As recomendações dos meus familiares mais facilmente influenciam as minhas escolhas	○	○	○	○	○

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Os comentários positivos dos meus amigos são muito relevantes para mim	○	○	○	○	○
Os comentários positivos dos meus familiares são muito relevantes para mim	○	○	○	○	○
Considero sempre se o autor tem uma boa reputação na área	○	○	○	○	○
Considero sempre se o autor tem uma boa reputação corporativa	○	○	○	○	○

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Considero sempre se o autor é bem conhecido	○	○	○	○	○
Considero sempre se o autor tem uma boa integridade	○	○	○	○	○
Considero sempre a minha experiência passada com o autor	○	○	○	○	○

Na minha opinião, <u>para eu considerar as informações ou comentários</u> sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais:

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Avalio se são compreensíveis	○	○	○	○	○
Avalio se são claras	○	○	○	○	○
No geral, avalio se a qualidade é alta	○	○	○	○	○
Avalio se são objetivas	○	○	○	○	○
Avalio se são completas	○	○	○	○	○

Bloco 1

<u>Para eu considerar as informações ou comentários</u> sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais:

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Penso se o conteúdo das mensagens é convincente	○	○	○	○	○
Penso se o conteúdo das mensagens é sólido	○	○	○	○	○
Penso se o conteúdo das mensagens é credível	○	○	○	○	○

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Penso se o conteúdo das mensagens é rigoroso	○	○	○	○	○

Indique, por favor, qual o seu grau de concordância ou discordância em relação às afirmações seguintes

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Gosto de utilizar as opiniões sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais quando considero novos produtos	○	○	○	○	○
Recorro frequentemente às opiniões sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais se tenho pouca experiência com o produto	○	○	○	○	○

Relativamente às informações ou comentários sobre medicamentos de venda livre (OTC) partilhadas pelos meus contactos ou outros nas redes sociais...

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Leio-as sempre que compro um medicamento de venda livre	○	○	○	○	○
Ajudam-me no processo de tomada de decisão de compra de um medicamento de venda livre (OTC)	○	○	○	○	○
Fazem-me sentir confiante para adquirir o medicamento de venda livre (OTC)	○	○	○	○	○
Tornam mais fácil o meu processo de decisão para adquirir o medicamento de venda livre (OTC)	○	○	○	○	○

As informações ou comentários sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais...

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
...são geralmente úteis	○	○	○	○	○
...são geralmente informativas	○	○	○	○	○
...são geralmente práticas	○	○	○	○	○
...são geralmente válidas	○	○	○	○	○
... são geralmente relevantes	○	○	○	○	○

Na minha opinião, as informações ou comentários sobre medicamentos de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais:

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
Facilitam-me a decisão de compra	○	○	○	○	○
Melhoram a minha eficiência na tomada de decisão de compra	○	○	○	○	○
Tornam a minha tomada de decisão de compra mais rápida	○	○	○	○	○
Ajudam-me a confirmar a minha decisão de compra	○	○	○	○	○

Após considerar as informações ou comentários positivos sobre um medicamento de venda livre (OTC) partilhada pelos meus contactos ou outros nas redes sociais:

	Discordo Totalmente	Discordo	Não Concordo nem Discordo	Concordo	Concordo Totalmente
É muito provável que eu adquira o produto	○	○	○	○	○
Eu vou adquirir o produto da próxima vez que necessitar	○	○	○	○	○
Eu vou de certeza comprar o produto	○	○	○	○	○
Eu vou recomendar o produto aos meus amigos e contactos	○	○	○	○	○

Indique, por favor, o seu género.
Por favor, selecione apenas uma das seguintes opções.

- ○ Feminino
- ○ Masculino
- ○ Outro

Indique, por favor, a sua idade.
Escolha uma das seguintes respostas

- ○ Entre os 18 e os 24 anos
- ○ Entre os 25 e os 34 anos
- ○ Entre os 35 e os 44 anos
- ○ Entre os 45 e os 54 anos
- ○ Entre os 55 e os 64 anos
- ○ 65 anos ou mais

Por favor indique a sua ocupação:
Escolha uma das seguintes respostas

- ○ Estudante
- ○ Empregado por conta de outrem
- ○ Empregado por conta própria / Profissional liberal
- ○ Desempregado

- ◯ Trabalhador-Estudante
- ◯ Reformado
- ◯ Outro

Indique, por favor, em qual dos seguintes intervalos se encontra o seu rendimento bruto mensal. Escolha uma das seguintes respostas

- ◯ Até 1000 €
- ◯ 1001 € - 2000 €
- ◯ 2001 € - 3000 €
- ◯ 3001 € - 4000 €
- ◯ Superior a 4000 €
- ◯ Não quero responder.

Indique, por favor quais as suas habilitações académicas

- ◯ Ensino Primário
- ◯ Ensino Secundário
- ◯ Licenciatura
- ◯ Pós-Graduação
- ◯ Mestrado
- ◯ Doutoramento
- ◯ Outra

Indique, por favor o seu distrito de residência: