UNIVERSIDADE FEDERAL DE SÃO CARLOS

CENTRO DE CIÊNCIAS EXATAS E DE TECNOLOGIA

PROGRAMA DE PÓS-GRADUAÇÃO EM ENGENHARIA DE PRODUÇÃO

ANALYSIS OF THE FACTORS THAT INFLUENCE THE ADOPTION AND USE OF COMMUNICATION TECHNOLOGIES FOR SECOND HAND P2P CONSUMPTION

CLAUDIA LORENA CARDENAS BLAZ

DISSERTAÇAÕ DE MESTRADO

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Dissertation presented to the post Graduation Program in Production Engineering at the Federal University of São Carlos, as parto f the requirements for obtaining the Master degree inProduction Engineering

Supervisor: Prof. Dr. Gilberto Miller Devós Ganga

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RESUMO

A reutilização de qualquer produto "tal qual" está intimamente ligada ao conceito de prevenção de resíduos sólidos, consumo sustentável e consequente redução do impacto ambiental, alinhado com os princípios da economia circular. O consumo de produtos de segunda mão é uma prática social alternativa que incentiva a reutilização. Atualmente, está a ser impulsionado e facilitado pelo desenvolvimento de modelos de negócios baseados em plataformas, mediados pelo acesso à Internet e pela proliferação de dispositivos eletrónicos.

Considerando a crescente popularidade do consumo de bens usados através de plataformas digitais, académicos de diferentes contextos têm abordado o comportamento do consumidor neste novo contexto, dado o seu impacto na sociedade e no ambiente. Dada a falta de evidências acadêmicas de cenários emergentes representativos como o Brasil, o objetivo deste estudo é avaliar a adoção e uso da Plataforma de Mensagens Instantâneas (PMI) WhatsApp para compra ou venda de produtos de segunda mão (PSM), entre pares (P2P).

Para atingir o objetivo declarado, foi realizada primeiro uma revisão sistemática da literatura, com o objetivo de abordar questões-chave sobre motivações, barreiras e tendências neste fenómeno emergente. Concluímos que os consumidores são motivados por fatores económicos, de conveniência, ideológicos e sustentáveis quando decidem comprar bens em segunda mão. São identificadas barreiras ao consumo de segunda mão em plataformas virtuais, incluindo incerteza sobre o produto, incerteza sobre o vendedor, desejo de novos produtos e contágio físico negativo. As estratégias para superar essas barreiras envolvem transações presenciais, enfatizando a embalagem dos produtos, destacando a qualidade do produto e promovendo a consciência ambiental.

Na segunda parte desta pesquisa, foi realizada uma avaliação abrangente da adoção e utilização do PMI Whatsapp para compra e venda de PSM. Foram investigados os fatores que influenciam o comportamento do consumidor utilizando a Teoria Unificada Expandida de Aceitação e Uso de Tecnologia (UTAUT2) como base teórica. Nossas descobertas revelam que a expectativa de esforço, as motivações hedônicas, a confiança inicial e o uso habitual afetam positiva e significativamente a intenção de usar o IMP para transações de segunda mão. Pelo contrário, o risco percebido afeta negativamente esta intenção comportamental, realçando a necessidade de mitigar as preocupações dos utilizadores para incentivar a participação em transações de segunda mão através destas plataformas. As contribuições teóricas do estudo destacam a importância de adaptar as teorias existentes para compreender o comportamento do consumidor no cenário digital, fornecendo informações valiosas para pesquisadores, profissionais e formuladores de políticas. Do ponto de vista prático, as descobertas podem orientar as empresas e os desenvolvedores de plataformas de mensagens instantâneas no desenvolvimento de recursos centrados no usuário e estratégias de marketing adaptadas ao mercado de segunda mão.

Palavras-chave: Economia circular. Produtos de segunda mão. Plataformas on-line. UTAUT2

ABSTRACT

The reuse of any product “as is” is closely linked to the concept of solid waste prevention, sustainable consumption and consequent reduction of environmental impact, aligned with the principles of the circular economy. The consumption of second-hand products is an alternative social practice that encourages reuse. It is currently being energized and facilitated by the development of business models based on platforms, mediated by Internet access and the proliferation of electronic devices.

Considering the growing popularity of the consumption of used goods through digital platforms, academics from different contexts have addressed consumer behavior in this new context, given its impact on society and the environment. Given the lack of academic evidence from representative emerging scenarios such as Brazil, the objective of this study is to evaluate the adoption and use of the WhatsApp Instant Messaging Platform (IMP) for the purchase or sale of second-hand products (SHP) peer-to-peer (P2P).

To achieve the stated objective, a systematic review of the literature was first carried out, with the aim of addressing key questions about motivations, barriers and trends in this emerging phenomenon. We find that consumers are motivated by economic, convenience, ideological and sustainable factors when they decide to purchase second-hand goods. Barriers to secondhand consumption on virtual platforms are identified, including product uncertainty, seller uncertainty, desire for new products, and negative physical contagion. Strategies to overcome these barriers involve face-to-face transactions, emphasizing product packaging, highlighting product quality, and promoting environmental awareness.

In the second part of this research, a comprehensive assessment of the adoption and use of IMP Whatsapp for the purchase and sale of SHP was conducted. The factors that influence consumer behavior were investigated using the Expanded Unified Theory of Acceptance and Use of Technology (UTAUT2) as a theoretical basis. Our findings reveal that effort expectancy, hedonic motivations, initial trust, and habitual use positively and significantly affect the intention to use IMP for secondhand transactions. On the contrary, perceived risk negatively affects this behavioral intention, highlighting the need to mitigate users' concerns to encourage participation in second-hand transactions through these platforms. The theoretical contributions of the study highlight the importance of adapting existing theories to understand consumer behavior in the digital landscape, providing valuable information for researchers, practitioners and policymakers. From a practical point of view, the findings can guide companies and instant messaging platform developers to develop user-centric features and marketing strategies tailored to the second-hand market.

Key-words: Circular economy. Second Hand Products. Online Platforms. UTAUT2

RESUMEN

La reutilización de cualquier producto “tal cual” está estrechamente ligada al concepto de prevención de residuos sólidos, consumo sostenible y consecuente reducción del impacto ambiental, alineado con los principios de la economía circular. El consumo de productos de segunda mano es una práctica social alternativa que fomenta la reutilización. Actualmente está siendo dinamizado y facilitado por el desarrollo de modelos de negocio basados en plataformas, mediados por el acceso a Internet y la proliferación de dispositivos electrónicos.

Considerando la creciente popularidad del consumo de bienes usados a través de plataformas digitales, académicos de diferentes contextos han abordado el comportamiento del consumidor en este nuevo contexto, dado su impacto en la sociedad y el medio ambiente. Ante la falta de evidencia académica proveniente de escenarios emergentes representativos como Brasil, el objetivo del presente estudio es evaluar la adopción y uso de la Plataforma de Mensajería Instantánea (PMI) WhatsApp para la compra o venta de productos de segunda mano (PSM) entre pares (P2P).

Para lograr el objetivo planteado, primero se llevó a cabo una revisión sistemática de la literatura, con el objetivo de abordar preguntas clave sobre motivaciones, barreras y tendencias en este fenómeno emergente. Encontramos que los consumidores están motivados por factores económicos, de conveniencia, ideológicos y sustentables cuando deciden comprar bienes de segunda mano. Se identifican barreras al consumo de segunda mano en plataformas virtuales, incluida la incertidumbre sobre el producto, la incertidumbre del vendedor, el deseo de nuevos productos y el contagio físico negativo. Las estrategias para superar estas barreras implican transacciones cara a cara, enfatizando el empaque del producto, resaltando la calidad del producto y promoviendo la conciencia ambiental.

En la segunda parte de esta investigación, se realizó una evaluación integral de la adopción y uso de PMI Whatsapp para la compra y venta de PSM. Se investigaron los factores que influyen en el comportamiento del consumidor utilizando como base teórica la Teoría Unificada Ampliada de Aceptación y Uso de la Tecnología (UTAUT2). Nuestros hallazgos revelan que la expectativa de esfuerzo, las motivaciones hedónicas, la confianza inicial y el uso habitual afectan positiva y significativamente la intención de utilizar IMP para transacciones de segunda mano. Por el contrario, el riesgo percibido afecta negativamente a esta intención de comportamiento, destacando la necesidad de mitigar las preocupaciones de los usuarios para fomentar la participación en transacciones de segunda mano a través de estas plataformas. Las contribuciones teóricas del estudio resaltan la importancia de adaptar las teorías existentes para comprender el comportamiento del consumidor en el panorama digital, proporcionando información valiosa para investigadores, profesionales y formuladores de políticas. Desde un punto de vista práctico, los hallazgos pueden guiar a las empresas y a los desarrolladores de plataformas de mensajería instantánea a desarrollar funciones centradas en el usuario y estrategias de marketing adaptadas al mercado de segunda mano.

Palabras clave: Economía circular. Productos de Segunda Mano. Plataformas en línea. UTAUT2

FIGURES

TABLES

ABREVIATIONS AND ACRONYMS LIST

BI– Behavioral Intention

B2B– Business to Business

B2C– Business to Consumer

CMV– Common Method Variation

C2C– Consumer to Consumer

CE– Circular Economy

EE– Effort Expectancy

FC– Facilitated Conditions

FC– Hedonic Motivations

HT– Habit

IBGE– Instituto Brasileiro de Geografía e Estatistica

IMP– Instant Messaging Platforms

IT– Initial Trust

LM– Linear Regression model

MAE– Mean Absolute Error

MGA– Multigroup Analysis

OLX– OnLine eXchange

PE– Performance Expectancy

PLS-SEM Partial Least Squares Method Structural Equation Modeling

PR– Perceived Risk

PS– Price Sensitive

P2P– Peer to Peer

SHP– Second-Hand Products

SI– Social Influence

SMEs– Small and Medium Enterprises

USA– United States of America

UTAUT– Unified Model of Acceptance and Use of Technology

UTAUT2– Expanded Unified Model of Acceptance and Use of Technology

SUMMARY

1 INTRODUCTION

1.1 Subject characterization

Since the first industrial revolution, consumption has been linked to the linear economy, based on “extract, produce and dispose”. This has resulted in the excessive extraction of the planet's finite resources, the generation of solid waste and global pollution. The Ellen MacArthur Foundation proposes the “Circular Economy” as an alternative and viable economic development model, which generates economic growth, employment and also reduces environmental impacts.

The transition towards the circular economic development model is a complex process that depends on several factors, including technological and social ones. To guide the transition from a linear economy to a circular economy, three basic principles have been formulated: (a) Eliminate waste and pollution; (b) Distribute the products "as is", to the extent possible, repairing, restoring, remanufacturing, recycling; and (c) Regenerate natural systems. In addition, the circular model distinguishes two fundamental cycles: the technical and the biological. In the technical cycle, products are reused, repaired, remanufactured, and recycled. In the biological cycle, biodegradable materials return to the earth (ELLEN MACARTHUR FOUNDATION, 2015). The above principles have given rise to formulating circular strategies to operationalize the transition to the circular economy.

- The first strategy: REGENERATE energy sources and resources, combining economic factors and opportunities.
- The second strategy: SHARE, extending the cycle of use of physical assets, to maximize their technical useful life.
- The third strategy: OPTIMIZE, supply chains to increase the yield of what is produced, eliminating waste from the product's conception.
- Fourth strategy: LOOP, keep the loops closed, avoid the generation of residues. Prioritize the remanufacturing and recycling of products or components that contain finite materials.
- Fifth strategy; VIRTUALIZE, consume differently, reduce or eliminate the use of unnecessary elements.

The "SHARE" strategic solution consists of sharing assets, reusing, keeping products in use, circulating existing products, preserving their essential value, to reduce the environmental impact generated in their production (ELLEN MACARTHUR FOUNDATION, 2015). Reusing makes common sense, it implies using products with economic value,

efficiently, as many times as possible (KORHONEN; HONKASALO; SEPPÄLÄ, 2018). By extending the useful life of products “as is”, we naturally maximize technical utility and reduce environmental impact, while generating a positive social impact (DHANORKAR, 2019; ELLEN MACARTHUR FOUNDATION, 2015).

The consumption of second-hand goods offers a sustainable alternative in which products can circulate and remain in full use (DHANORKAR, 2019), allowing more people to use the products over time and thus take advantage of what has already been produced (PARAS et al., 2018), also generate social benefits by alleviating the financial burden of consumers who opt for this type of consumption (GULLSTRAND EDBRING; LEHNER; MONT, 2016; SCHALLEHN et al., 2019).

The diffusion of information technologies has had a multiplier effect, worldwide, expanding the flow of data and information among users, through the Internet. Digitization is a phenomenon that drives innovation, new ways of thinking and creating value. The platforms are business models based on disruptive technologies, which facilitate the connection and interaction between the parties on a large scale through the Internet, to achieve mutual benefit and generate profits (BERG MARIANNE FURRER ELLIE HARMON UMA RANI SIX SILBERMAN et al., 2019).

The transition approach towards the circular economy and disruptive technologies complement each other, developing new business models based on platforms, which seek to generate a positive social and environmental impact in consumption chains, through scalar solutions. Access to goods and services through platforms makes it possible to exchange, buy, sell, rent, exchange and even donate efficiently, mainly due to the scale effect (EK STYVÉN; MARIANI, 2020; HAMARI; SJÖKLINT; UKKONEN, 2016). The platforms allow suppliers to be efficiently connected with other suppliers, giving rise to the Business to business (B2B) business model; suppliers with consumers, giving rise to the Business to consumer (B2C) business model and finally consumers connecting with other consumers, giving rise to the peer-to-peer C2C or P2P platform model.

However, digital platforms by themselves are not vectors of change (PARGUEL; LUNARDO; BENOIT-MOREAU, 2017), the social component is strategically important for the success of any business model, in addition to having an impact on society and the environment.

Due to the growing popularity of online consumption of second-hand goods and the success of digital platforms, scholars have been interested in understanding what motivates consumers to choose platforms to exchange second-hand goods. For example, Padmavathy et

al. (2019), reported that Indian consumers did not report hedonic motivations in virtual purchases, so the most important motivation is economic and the main factor is price. Likewise, they identified that there is a positive attitude towards the repurchase intention. Ashfaq et al. (2019), found that Chinese consumers enjoy buying used products online and that the perception of the ease of use of the platforms does not influence repurchase intention. Gullstrand et al. (2016) examined the consumer behaviour of used decoration products in Sweden and concluded that consumer attitude is subjective, varies from person to person, depends on the product category and significantly impacts decision making. Ek Styvén and Mariani (2020), identified three antecedents that positively stimulate UK consumers to adopt P2P platforms to buy second-hand clothes: perceived sustainability, economic motivations and distancing from the consumption system.

Among the most popular traditional platforms in the market we can mention EBay, Amazon, OLX, Mercado Libre, Letgo, Offerup, Gumtree. These platforms have a mediating function, facilitating connections and transactions between the parties until the end of the process. The emerging platform OLX operates in 87 countries, controls 85% of the market in India and receives an average of three million monthly visits in Brazil.

There are also platforms that function as a kind of online classifieds, such as Craigslist, Leboncoin, Facebook, and Bukalapak. These platforms facilitate the connection and interaction between the parties, the transaction is concluded in a face-to-face meeting, so these platforms act locally.

The global phenomenon of the coronavirus pandemic in 2019 forced people into social confinement. Tasks that were once face-to-face have become virtual, such as working from home, distance education, online shopping, applying for public and private services, socializing, and entertainment.

Communication technologies helped mitigate the impact of social confinement and the economic crisis. According to the Economic Commission for Latin America ECLAC 2019 report, there was an increase of 9.8% in contracting broadband (Internet at home) and mobile broadband in Latin American contexts. In Brazil, the increase was 10% in both residential and mobile broadband, since this is considered the most populated economic context in Latin America. There was an intensive use of social networks. Among the most used in Latin America is WhatsApp, followed by Facebook. In Brazil, 73.58% of the population declared that they use the WhatsApp platform for messaging and communication, and 21.5% prefer Mercado Libre for electronic consumption (J. JUNG & R. KATZ, 2022).

The WhatsApp messaging platform was developed as a free option to SMS, the service

of which has a cost. This platform is currently available for iOS and Android devices, is present in more than 180 countries and has more than 2 million users. It makes it easy to send and receive content such as text messages, audio, photos, videos, GIFs, documents, contacts, location, calls, and video calls, regardless of distance, anytime, anywhere. Being a simple technology with a wide variety of resources, users have increasingly chosen to use it for other interaction activities. This trend is evident and real, as is the case of Brazilian mothers and fathers, who are increasingly part of WhatsApp groups to buy or sell uniforms, books, materials, among other underused and in good condition items. Several moms declare that the economy ranges between 50% and 80%, compared to equivalent new products, according to the publication of the virtual newspaper R7 of January 19, 2020 as shown in Figure 1.1.

Figura 1.1 – Report from the digital newspaper R7

https://renda-extra.r7.com/pais-usam-grupo-de-whatsapp-para-troca-ou-compra-de-uniforme-e-livro-14082022

As described above, firstly, there is academic evidence of emerging digital platforms based on the consumption of second-hand products. However, not all of them are focused on the guidelines of a more circular economy. Secondly, the WhatsApp platform was developed to improve communication between users P2P for free. However, there is evidence that this technology is being used for other purposes. Given the lack of empirical academic evidence, this research contributes to fill this gap. It aims to answer the following research question: Why do people use WhatsApp to buy or sell second-hand products P2P?

1.2 Research objetives

To answer the aforementioned research question, this research used the extension lens of the Unified Theory of Use and Acceptance of Technology UTAUT2 by Venkatesh et al. 2012. This theory was projected based on the review of 8 dominant theoretical models of technology adoption, the Theory of Rationalized Action (Fishbein and Ajzen, 1975), the Technology Acceptance Model (Davis, 1989), the Motivational Model (Davis , et al. 1992), the Theory of Planned Behavior (Ajzen, 1991), TAM and TPB combined (Taylor & Todd, 1995), the MPCU PC Utilization Model (Thompson, et al., 1991), the Theory of the Diffusion of Innovation (Moore & Benbasat, 2001) and Social Cognitive Theory (Compeau, et al. 1999).

The UTAUT2 theoretical model, projected for the consumption context, maintains that the adoption of a certain technology by users is affected by the following constructs: Performance expectation, Effort expectation, Social influence, Facilitating conditions, Hedonic motivations and Habit. The response variable is the behavioral intention to use, which is moderated by variables such as gender, age, income, etc.

Besides, the present research aims to analyze the behavioural factors that lead people to consume second-hand products through the WhatsApp messaging platform in the Brazilian context.

To achieve the main objective, stated above, this research formulates the following hypotheses:

H1: Performance expectancy has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H2: Effort Expectancy has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H3: Social Influence has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H4: Facilitating Conditions has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H5: Hedonic Motivations has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H6: Price Sentitivity has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H7: Perceived Risk has a negative effect on individuals' behavioural intention to use IMP for consume second-hand products.

H8: Initial trust has a negative effect on individuals' behavioural intention to use IMP for consume second-hand products.

H9: Habit has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

H10: Moderaiting variables (gender, income, and age) moderate the relationship between the listed behavioural factors and the intention to use IMP to buy or sell used products.

The theoretical basis for the formulation of these hypotheses is described in Chapter 3.

1.3 Research method summary

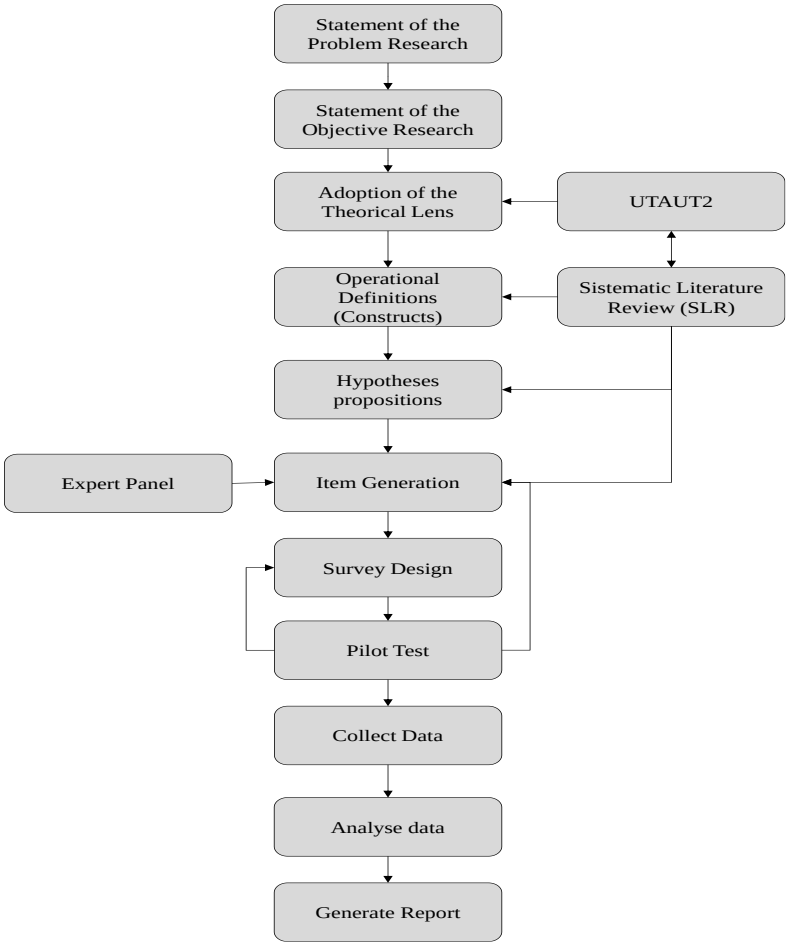
To achieve the research objective, a mixed research approach was adopted, as can be seen in Figure 2.

As illustrated above, after formulating the research problem and objective, as well as adopting a theoretical perspective guided by UTAUT2, it was necessary to carry out a systematic review of the literature (Chapter 2). Although the literature on UTAUT2 is consolidated and clear on the constructs that make up the conceptual model and the respective hypotheses to be tested, it was necessary to understand the specifics of consumer behavior when buying second-hand products when it is done through digital platforms.

Based on the results obtained with the Systematic Literature Review[1] and with the support of specialists in the elaboration of scales and surveys, items were generated for the constructs foreseen in the conceptual theoretical model, illustrated in Figure 1. The measurement items of each construct in Chapter 3. After generating the items, the scale in its first version was subjected to a pre-test with master's and doctoral students in operations management in order to identify small anomalies in relation to the wording and clarity of the statements. the statements, filling time, among other aspects.

[1] The methodological procedures used in the RSL, as well as the results, are detailed in Chapter 2.

Figura 1.2 – Researh process



Source: Proposed by Authors.

After testing the scale and validating it, the research project started. The unit of analysis defined for the research was adults, who use WhatsApp on a daily basis, regardless of whether they buy or sell second-hand products through this platform. The sampling technique used was non-probabilistic, since there is no control and access to the population that uses WhatsApp. As a data collection method, a structured questionnaire was used, composed exclusively of closed questions, which constitutes a facilitator for obtaining higher rates of return. The questionnaire was hosted on Survey Monkey's WebSurvey platform. A consent form was prepared, based on the ethical and moral aspects defined by the UFSCar Ethics Committee. The informed consent form to participate in the research is found in Appendix.

Data collection started on 06/02/2023 and was completed on 07/30/2023. Mechanisms of intense dissemination of the research on Facebook and Instagram were adopted to obtain a broad and significant sample. After the end of the data collection period, statistical analyzes will be performed to identify missing data, duplicate responses, and multivariate outliers. It is important to emphasize that the items were placed randomly to avoid common method bias. A

7-point scale was used to cover a broader range of responses. The reliability and anonymity of the participants was guaranteed. A pilot test was carried out to evaluate the measurement instrument.

Finally, the conceptual model and the respective hypotheses will be tested through structural equation models , SEM-PLS. This statistical technique was chosen because it has proven to be efficient in predicting structural relationships in research with empirical data relative to a theory (HAIR; RINGLE; SARSTEDT, 2011). SEM-PLS allows to simultaneously analyze the relationships between observed and latent variables in a complex model (MEMON et al., 2021). In addition, this technique also tends to provide more robust estimates of the structural model (HAIR; RINGLE; SARSTEDT, 2011), since it allows multiple robustness tests to be performed. The results of the investigation will be presented in Chapter 3.

1.4 Dissertation structure

This dissertation is organized in 4 chapters, chapter 1 details the introduction, characterization of the topic, the research objectives, the hypotheses and finally the research method. Chapter 2 and Chapter 3 are developed in academic article format. In Chapter 2, the bibliographic review of the literature is carried out, which allows us to identify the constructs related to the theme of this dissertation. Chapter 3 presents the evaluation of the use of the WhatsApp platform to purchase or sale second-hand products online. Finally, chapter 4 presents general conclusions.

2 BEHAVIOR OF CONSUMERS OF SECOND-HAND PRODUCTS IN SOCIAL COMMERCE: A SYSTEMATIC LITERATURE REVIEW

2.1 Introduction

The second-hand trade, once a thriving industry in the 19th century explored by collectors and enthusiasts, underwent a significant transformation during the 20th century. With the economic boom and industrialization, it was relegated to a marginal activity primarily associated with the most disadvantaged social classes (ERTZ; DURIF; ARCAND, 2018; FERRARO; SANDS; BRACE-GOVAN, 2016; GUIOT; ROUX, 2010; PADMAVATHY; SWAPANA; PAUL, 2019). However, the dawn of the 21st century brought a remarkable resurgence of interest in second-hand items, propelled by the widespread availability of the Internet within households. This digital revolution enabled users to engage in the buying and selling of second-hand goods through Internet-enabled platforms (ASHFAQ et al., 2019; GULLSTRAND EDBRING; LEHNER; MONT, 2016; PADMAVATHY; SWAPANA; PAUL, 2019).

Global events like the 2008 world financial crisis and the 2019 coronavirus pandemic have left enduring marks on consumer purchasing power and environmental concerns. These events prompted consumers to explore alternative consumption patterns (CROSNO; CUI, 2018; GUIOT; ROUX, 2010; GULLSTRAND EDBRING; LEHNER; MONT, 2016). The emergence of virtual second-hand markets has become a prominent phenomenon within the realm of electronic commerce (BUSALIM; HUSSIN, 2016; ZHANG; BENYOUCEF, 2016). The Internet's ubiquity has democratized property access, offering an extensive array of used products and antiques not typically found in new product markets (CERVELLON; CAREY; HARMS, 2012; KEIM; WAGNER, 2018).

Moreover, online redistribution markets have provided a promising avenue to extend the lifespan of durable products through reuse, aligning with the principles of the circular economy (KORHONEN; HONKASALO; SEPPÄLÄ, 2018). Leveraging technology, these markets foster shifts in consumption habits while generating value and employment through the exchange of used products, all while enhancing resource management and benefiting society (ELLEN MACARTHUR FOUNDATION, 2015; KORHONEN; HONKASALO; SEPPÄLÄ, 2018). Reusing durable products diverts them from the waste stream, contributing directly to reduced environmental pollution, in line with the environmental tenets of the circular economy (ELLEN MACARTHUR FOUNDATION, 2015).

This phenomenon has exhibited unconventional and continuous growth, largely fueled by advancements in information technologies, making it a global trend that has captured the attention of academic researchers across diverse contexts. In France, for instance, online second-hand consumption has surged to double the rate of new product consumption (BEZANÇON; GUIOT; LE NAGARD, 2019). Similarly, in India, the United States, Germany, and various other regions, the younger population's rapid adoption of new technologies has driven the burgeoning popularity of second-hand product consumption (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; CLAUSEN et al., 2010; DHANORKARA, 2019; PADMAVATHY; SWAPANA; PAUL, 2019).

Notwithstanding the growing body of publications that touch upon this emerging phenomenon, the literature remains fragmented. Critical issues such as motivators, barriers, and others have been examined in isolation, warranting a comprehensive and integrated investigation. Therefore, the primary objective of this research is to conduct a Systematic Review of the literature, shedding light on the behavior of consumers engaged in second-hand product transactions within the realm of social commerce.

Within this context, this study aims to address the following research questions:

Q1: What are the primary motivations and factors that drive consumers to purchase second-hand items online?

Q2: What barriers are highlighted in the literature concerning this activity?

Q3: How are these barriers being effectively overcome?

Q4: Which social media channels are most commonly utilized for purchasing second-hand goods?

Q5: What are the prevalent categories of second-hand products being commercialized online?

To fulfill these objectives and provide comprehensive answers to these research questions, this paper is structured as follows: Section 2 outlines the research methodology employed, Section 3 presents the findings of the Systematic Literature Review (SLR), Section 4 delves into a discussion of the outcomes, and finally, Section 5 offers conclusive insights derived from the research.

2.2 Research method

The Systematic Review of Literature (SRL) as a research method contributes to

advancing knowledge in various approaches from an impartial and systematized perspective (DENYER; TRANFIELD, 2009). Furthermore, it allows applying scientific rigor and minimizing biases in the collection, analysis, evaluation and interpretation of the set of relevant studies regarding the phenomenon investigated (TRANFIELD; DENYER; SMART, 2003). Therefore, this research follows SRL's bibliographic research strategic agenda to adjust the evidence-based approach, detailing three main stages.

Initially, exploratory research was carried out to identify the most relevant keywords related to consumer behavior, second-hand products and virtual environments. The primary chains formed for the exploratory search of documents related to our study are described in Table 2.1.

Table 2.1 – Strings used in search

Construct	Strings
Product	"used goods" OR "second-hand goods"
	AND
Behaviour	consume* OR behavi* OR "consume* motivation*" OR "consume* attitud*"
	AND
Virtual environment	"C2C platform" OR "P2P platform" OR "online flea market"

Source: Prepared by the authors

Keywords were combined using Boolean operator OR between each concept and Boolean operator AND to relate the concepts. The strategy seeks to connect each construct with second-hand goods to obtain a cohesive selection of academic sources for data extraction and reduce bias information (TRANFIELD; DENYER; SMART, 2003).

We used three databases online (Web of Science, Scopus, and Compendex (Engineering Village). The word combination chain identified a total of 5440 academic articles; 2598 duplicate articles were detected and eliminated, resulting in a total of 2842 articles for the first phase. The first phase consisted of reading the title and abstract applying the inclusion and exclusion criteria to scrutinize the essential primary academic studies related to our research. Table 2.2 shows the requirements for this review. As a result of this filtering process, 374 papers were obtained.

Table 2.2 Inclusion and exclusion Criteria

Criteria	Inclusion	Exclusion
Access	The manuscript study was written in English, Spanish, or Portuguese	Manuscript study non written in English, Spanish or Portuguese.

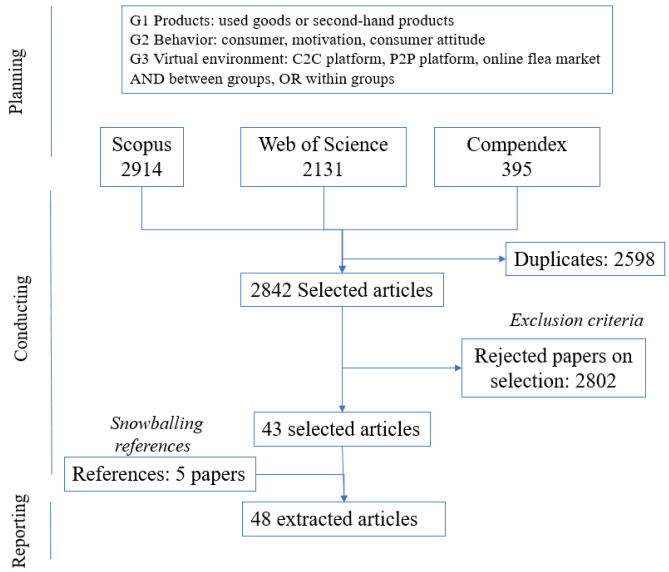
Journal Quality	Peer-reviewed scientific journal	Magazines, conferences, books and notes
SRL unit of analysis	academic studies dealing with consumer behaviour, attitude, motivation towards second-hand goods	academic studies not dealing with consumer behaviour attitude, motivation towards second-hand goods
Focus	in the domain of online exchange or P2P or C2C	In the domain offline commerce
Clarity	That addresses second-hand online consumer behaviour, such as motivations and factors	This does not address the consumer behaviour of second-hand products online and/or their components.

Source: Prepared by the authors

In the second stage, we inspected the bodies of scholarly articles to identify their relevance, resulting in 43 articles for extensive reading. Five articles were added due to frequent citation references. Figure 2.1 summarizes the process of selecting the most relevant articles for this research.

In the third stage, we conduct content analysis, synthesis and data extraction after extensive reading of the selected texts. The systematic review method is based on Denyer and Trandfield et al. (2003), as shown in figure 2.

Figure 2.1 Review method



Source: Adapted by the authors from Trandfield et al. (2003)

2.3. Results

2.3.1 The main motivations leading consumers to purchase second-hand items online

Motivation is a complex construct that includes interests, feelings, needs, desires,

aspirations and stimuli, which drive and guide the actions of an individual towards gratification and self-satisfaction (GUIOT; ROUX, 2010; PADMAVATHY; SWAPANA; PAUL, 2019). To better understand the set of motivations that govern the behaviour of consumers in the mode of consumption of second-hand products online, we present a classification which divides the motivations into Economic, Convenient, Ideological and Sustainable dimensions, based on the seminal study by Guiot and Roux (2010) and the research by Padmavathy et al. (2019).

Concerning economic, we found 3 three different motivators related to the price of second-hand products: “fair price”, “bargaining power” and “bargaining hunting” (table 2.3).

Table 2.3 Economic Dimension

Motivator	References
Fair price	Ashfaq et al. (2019); Cervellon et al. (2012); Chun and Messinger (2013); Clausen et al. (2010); Dhanorkar (2019); Ertz et al. (2018); Fernando et al. (2018); Ferraro et al. (2016); Guiot and Roux (2010); Gullstrand et al. (2015); Kim and Jin (2019); Padmavathy et al. (2019); Paras et al. (2018); Parguel et al. (2017); Sihvonen and Turunen (2016); Singh et al. (2014); Schallehn et al. (2019)
Bargaining power	Crosno and Cui (2019); Ertz et al. (2018); Ferraro et al (2016); Fortuna et al. (2017); Keim and Wagner (2018); Kwarteng et al. (2018); Padmavathy et al. (2019); Schallehn et al. (2019); Simpson et al. (2019)
Bargaining Hunting	Ashfaq et al. (2019); Cervellon et al. (2012); Dhanorkara (2019); Ertz et al. (2018); Fernando et al. (2018); Guiot and Roux (2010); Mayasari and Chrisharyanto (2018); Padmavahy et al. (2019); Parguel et al. (2017) Sihvonen and Turunen (2016)

Source: Prepared by the authors

Previous literature indicates that economic motivation is a pivotal driver of second-hand goods consumption in virtual spaces, offering financial advantages for consumers who prioritize monetary value. Fernando, Sivakumar, and Suganthi (2018), alongside Kwarteng, Pilík, and Juřičková (2018), have noted that this is particularly beneficial for price-sensitive shoppers who aim to stretch their dollars by acquiring quality used products at affordable rates. The concept of a "fair price," as expounded by Bezançon, Guiot, and Le Nagard (2019) and Guiot and Roux (2010), correlates to what cost-conscious buyers consider a reasonable and appropriate value for used items. Such attractive pricing is a magnet for those wishing to maximize their purchasing power, and for consumers with limited finances, online secondary markets offer a lifeline to necessities that would be otherwise unattainable, as detailed by Paras et al. (2018). Sihvonen and Turunen (2016) provide evidence that sellers, typically the previous owners, set prices that result in significant savings for buyers—up to 50% less for clothing and 40% less for laptops, which Crosno and Cui (2018) confirm.

The attractive low "fair price" incentivizes the reuse of products, fostering a preference for second-hand options that not only offer economic benefits but also environmental ones by prolonging product lifecycles, a point Dhanorkar (2019) emphasizes. The way economic motivation shapes attitudes towards online second-hand purchases and bolsters the perception of sustainability post-purchase has been explored by Ek Styvén and Mariani (2020). Paras et al. (2018) also highlight that tax exemptions on second-hand trades positively impact sales prices, benefiting both buyers and sellers and promoting environmental sustainability. Crosno and Cui (2018) further discuss how consumers employ a loss decision framework when buying second-hand, where "fair price" compensates for perceived quality loss, leading to a preference for all-inclusive pricing formats.

In the realm of C2C/P2P platforms, "bargaining power" is defined by the autonomous and mutually advantageous interactions between buyers and sellers, a subject delved into by Gullstrand Edbring, Lehner, and Mont (2016), Padmavathy, Swapana, and Paul (2019), and Sihvonen and Turunen (2016). Here, buyers enjoy better prices and discounts, while sellers benefit from the recovery of residual value from no-longer-needed goods, as Ertz, Durif, and Arcand (2018) have found. The greater bargaining power that buyers wield in virtual settings allows them to choose from a broad range of options and make informed comparisons, an aspect that Padmavathy, Swapana, and Paul (2019) emphasize.

The lure of "bargain hunting" is another vital motivator for consumers, as they seek to find good value for their money, reveling in the discovery of sought-after items at prices below market value. Cervellon, Carey, and Harms (2012), as well as Clausen et al. (2010), suggest that consumers gauge the perceived value of second-hand goods through both price and quality. Crosno and Cui (2018) illuminate that while a loss decision framework typically guides buyers on online platforms to prefer all-in prices, a high-quality used product can shift this to a gain decision framework. This underscores the profound influence of quality and price on consumer decision-making in markets with robust C2C online platforms, as young consumers particularly find joy in purchasing second-hand furniture at bargain prices, an experience documented by Gullstrand et al. (2016).

Hamari et al. (2016) and Mayasari; Haryanto (2018) identified that earning extra money has a significant effect on the behavioral intentions of environmentally conscious consumers to engage in shared consumption. Ertz et al. (2018), identified three types of users of web channels. “Casual experimenters” have low propensity to participate in the purchase or sale of second-hand products. “Pragmatic” users tend to be more involved in the rummage trade due to the convenience and speed of Internet-based virtual channels. “Hobbyist” users are more

frequently engaged in the used goods trade, prefer to sell, earn more from sales, and tend to become professional sellers.

The convenience dimension refers to the flexibility, practicality, and ease that virtual environments offer users. The perceived convenience of browsing, in their own time and performing various activities, drives users to access and participate in Internet-based virtual contexts (MIKALEF; GIANNAKOS; PATELI, 2013). The technological tools integrated into online platforms enhance the combination between consumers, objects and material life, making consumption a differentiated and efficient experience that would otherwise have been difficult in traditional supply chains of smaller scale and scope (DHANORKAR, 2019; HAMARI; SJÖKLINT; UKKONEN, 2016; MAYASARI; HARYANTO, 2018).

Concerning convenience dimension, we found 2 motivators: “easy of use” and “saving time” as shown below, in Table 2.4

Table 2.4 - Convenience Dimension

Motivators	References
Easy of use (Minimal effort)	Ashfaq et al. (2019); Cassidy and Benett (2012); Clausen et al. (2010); Gullstrand et al. (2016); Padmavathy et al. (2019); Kwarteng et al. (2018); Mayasari and Chrisharyanto (2018); Schallehn et al. (2019); Sihvonen and Turunen (2016); Simpson et al. (2019)
Saving time (Usefulness)	Ashfaq et al. (2019); Chu and Liao (2010); Clausen et al. (2010); Gullstrand et al. (2016); Kwarteng et al. (2018); Mayasari and Chrisharyanto (2018); Padmavathy et al. (2019); Sihvonen and Turunen (2016); Singh et al. (2014); Simpson et al. (2019)

Source: Prepared by the authors

“Ease of use” is a utilitarian factor that drives user participation in reuse-based consumer platforms. It relates to design and functionality, enabling users to access platforms anytime and anywhere with minimal physical effort, fostering a sense of enjoyment and social connection among users (Dhanorkar, 2019; Mikalef, Giannakos, & Pateli, 2013; Padmavathy, Swapana, & Paul, 2019; Zhang & Benyoucef, 2016; Mayasary & Harianto, 2018). Despite the need for an internet-enabled device and potential prerequisites like registration, platforms like Facebook, OLX, or eBay have become more popular locally due to their user-friendly nature (Clausen et al., 2010; Fernando, Sivakumar, & Suganthi, 2018; Sihvonen & Turunen, 2016). Their inclusive nature has democratized access to goods and services, aligning with the environmental benefit of diverting goods from waste streams (Ashfaq et al., 2019; Dhanorkar, 2019; Schallehn et al., 2019; Fortuna & Diymamandoglu, 2017). However, the perceived complexity of systems like eBay can deter older, less tech-savvy users and diminish the perceived value of financial returns for younger users (Clausen et al., 2010; Singh, Ratchorf, &

Prasad, 2014).

The “time-saving” aspect is reflected in the platforms' ability to streamline the search and purchase process. Users can efficiently find specific or unique second-hand items using filters to compare products based on various attributes, reducing the need for physical store visits (Ghose, 2009; Kwarteng, Pilík, & Juřičková, 2018; Fernando, Sivakumar, & Suganthi, 2018; Paras et al., 2018; Sihvonen & Turunen, 2016; Amatulli et al., 2018; Cervellon, Carey, & Harms, 2012; Vila-Brunet & Llach, 2020; Crosno & Cui, 2018). The direct buyer-seller interaction enhances communication efficiency and simplifies negotiation and transactions from the comfort of home (Bezançon, Guiot, & Le Nagard, 2019; Ek Styvén & Mariani, 2020). Platforms like eBay facilitate payments and shipping, adding speed to the purchase process, while local platforms like OLX promote face-to-face transactions (Clausen et al., 2010; Kricheli-Katz & Regev, 2016; Fernando, Sivakumar, & Suganthi, 2018; Padmavathy, Swapana, & Paul, 2019).

The convenience of saving time is a significant motivator for environmentally conscious consumers, who value the practicality and efficiency of achieving their objectives through these platforms. This is especially true for those with financial constraints seeking to earn "extra money" (Hamari et al., 2016; Mayasary & Haryanto, 2018; Dhanorkar, 2019; Chu & Liao, 2010). The combination of convenience and economic factors positively influences local and regional reuse (Dhanorkar, 2019). Furthermore, the practicality and interactivity of these virtual environments encourage repeat participation and engagement in shared consumption, with consumers using second-hand web channels as a quick and convenient option (Mikalef, Giannakos, & Pateli, 2013; Ertz et al., 2018; Fortuna & Diymamandoglu, 2017; Kwarteng, Pilík, & Juřičková, 2018). However, Chu and Liao (2010) argue that the ease of selling unwanted products could inadvertently fuel new product consumerism. Parguel et al. (2017) found that second-hand P2P platforms stimulate indulgent consumption among environmentally conscious consumers due to their dynamic nature and unlimited access.

Despite the time-efficiency of online second-hand platforms, they do not pose a threat to physical stores. Singh et al. (2014) found that consumers complement online information with offline verification, particularly for high-value items like cars. Consumption behavior, however, varies with the product type, with consumers preferring to travel short distances, especially in urban areas, to purchase certain second-hand items (Gullstrand et al., 2016; Mayasari & Haryanto, 2018). The transaction's smooth coordination and the consideration of transportation and logistics costs are also crucial (Fortuna & Diymamandoglu, 2017; Schallehn et al., 2019; Padmavathy, Swapana, & Paul, 2019).

Previous literature has identified a combination of 5 motivators that drive the ideological dimension for the consumption of second-hand products through virtual platforms: “Self-expression” (need to be unique), “Status”, “Nostalgia”, “Trust”, and “Assurances”, as shown below, in Table 2.5

Table 2.5 - Ideological Dimension

Motivator	References
Self-expression	Ashfaq et al. (2019); Cervellon et al. (2012); Clausen et al. (2010); Crosno and Cui (2018); Guiot and Roux (2010); Ferraro et al. (2016); Gullstrand et al. (2015); Keim and Wagner (2018); Padmavathy et al. (2019); Schallehn et al. (2019); Sihvonen and Turunen (2016); Ferraro et. al. (2016); Crosno and Cui (2018)
Status	Schallehn. et al. (2019); (Ferraro et al. (2016); Amatulli et al. (2018); Cervellon et al. (2012); Sihvonen and Turunen (2016)
Nostalgia	Fernando et al. (2018); Guiot and Roux (2010); Ghose (2009); Lu and Shang (2019); Padmavathy et al. (2019); Sihvonen and Turunen (2016); Fernando et al. (2018); Padmavathy et al. (2019)
Trust	Clausen et al., (2010); Crosno and Cui (2019); Ghose (2009); Gullstrand et al., (2016); Schallehn et al. (2019); Kwarteng et al. (2018); Lee and Lee (2005); Lee and Soberman (2010); Padmavathy et al. (2019); Sihvonen and Turunen (2016)
Assurances	Fernando et al. (2018); Ghose (2009); Lu and Shang (2019); Padmavathy et al. (2019); Schallehn et al. (2019); Sihvonen and Turunen (2016)

Source: Prepared by the authors

“Self-expression” emerges as a key motivator, with consumers seeking unique and authentic items to express their individuality and cultural identity. Platforms offer a space for consumers to move from the common to the particular, finding vintage products that resonate with their personal tastes and values (Keim & Wagner, 2018; Ek Styvén & Mariani, 2020; Guiot & Roux, 2010). The allure of vintage goods, appreciated for their authenticity, scarcity, and lower availability, satisfies the desire for self-expression (Cervellon, Carey, & Harms, 2012; Sihvonen & Turunen, 2016).

“Status” is closely linked with self-expression, driving consumers towards rare and exotic used products that enhance their self-image. Such items, often found on platforms like eBay, underscore a consumer's social standing and are increasingly associated with sustainable and reuse concepts, overcoming cultural barriers and skepticism (Cervellon, Carey, & Harms, 2012; Ferraro, Sands, & Brace-Govan, 2016; Sihvonen & Turunen, 2016; Cassidy, 2017; Hamari, Sjöklint, & Ukkonen, 2016).

“Nostalgia” compels consumers to purchase objects from past eras that evoke memories and positive emotions. Second-hand products act as cultural touchstones, and their value often increases over time (Cassidy & Bennett, 2012; Keim & Wagner, 2018). This motivator is particularly evident in the consumption of fashion, luxury accessories, and furniture, appealing

to sophisticated consumers with the means to indulge in such purchases (Amatulli et al., 2018; Gullstrand Edbring, Lehner, & Mont, 2016).

"Trust" in the online second-hand market hinges on the integrity and reliability of the seller and the quality of the product. Initial trust is critical for transaction intentions and is built through consistent, positive experiences and the verification of detailed product information. Trust is fostered over time as users become more familiar with the platforms and accumulate positive interactions (Lee & Lee, 2005; Schallehn et al., 2019; Vila-Brunet & Llach, 2020).

"Guarantees" are fundamental for a secure exchange of used products online. Consumers prioritize platforms that offer safeguards against financial fraud and provide comfort in sharing personal information. Social features on these platforms also encourage consumption by highlighting sustainability and offering quality products at competitive prices (Vila-Brunet & Llach, 2020; Ghose, 2009; Ertz, Durif, & Arcand, 2018; Gullstrand Edbring, Lehner, & Mont, 2016; Padmavathy et al., 2019; Sihvonen & Turunen, 2016). However, a barrier to trading on these platforms is the absence of guarantees or warranties for used items. In the case of electronics, consumers often face a dilemma between purchasing used or refurbished products with short-term warranties, with preferences varying based on product category and individual consumer behavior (Clausen et al., 2010; Guiot & Roux, 2010; Lu & Shang, 2019; Frota Neto et al., 2016; Fernando, Sivakumar, & Suganthi, 2018; Gullstrand Edbring, Lehner, & Mont, 2016).

Regarding the sustainable dimension, we have 3 motivators: Environmental awareness, Saving resources and Donating, as shown below in Table 2.6.

Table 2.6 Sustainable Dimension

Motivator	References
Environmental awareness	Cassidy and Benett (2015); Cervellon et al. (2012); Guiot and Roux (2010); Padmavathy et al. (2019); Parguel et al. (2017); Simpson et al. (2019)
Saving resources	Amatulli et al. (2018); Cassidy and Benett, (2012); Cervellon et al. (2012); Dhanorkar (2019); Clausen et al. (2010); Fortuna et al. (2017); Guiot and Roux (2010); Kin and Jin (2019); Mayasari and Chrisharyanto (2018); Paras et al. (2018)
Donating	Cervellon et al. (2012); Mayasari and Chrisharyanto (2018); Keim and Wagner (2018); Paras et al. (2018); Parguel et al. (2017); Schallehn et al. (2019)

Source: Prepared by the authors

Online second-hand markets are increasingly being recognized for their role in

supporting sustainable consumption patterns. The integration of technology with these platforms has created an avenue for expressing “environmental awareness”, where ethical and ecological considerations are becoming a staple in consumer discussions (Dhanorkar, 2019; Parguel, Lunardo, & Benoit-Moreau, 2017; Ek Styvén & Mariani, 2020; Sihvonen & Turunen, 2016). This awareness transcends generational divides, with various age groups embracing second-hand purchasing as a way to align with their values and contribute positively to health and environmental outcomes (Keim & Wagner, 2018).

The commitment to “saving resources” is intrinsically linked to the sustainable dimension, where the reuse of durable goods is seen as a method of conserving resources and mitigating the environmental impacts typically associated with the production of new items. The collective mindset focused on waste prevention extends to the embrace of second-hand platforms as a means of exposing a multitude of products to a new cycle of use, thereby promoting a broader scale of resource conservation (Cassidy, 2017; Clausen et al., 2010; Fortuna & Diyamandoglu, 2017; Keim & Wagner, 2018; Paras et al., 2018). This concept of resourcefulness is not only applicable to general consumer goods but is also making headway in luxury and vintage markets where the longevity and high quality of products are highly valued (Cassidy, 2017; Cassidy & Bennett, 2012; Cervellon, Carey, & Harms, 2012).

Parallel to the ethos of resource saving is the practice of “donating second-hand items”. The act of donation is seen as an extension of sustainability, where altruistic motivations lead to the circulation of goods for the benefit of others and the environment. Such behavior is underpinned by the principles of the circular economy, which emphasize the reduction of waste and the maximization of product lifespans (Fortuna & Diyamandoglu, 2017; Dhanorkar, 2019). Interestingly, education seems to play a role in how individuals choose to participate in the second-hand economy, with those holding college degrees showing a preference for donation over disposal, suggesting that educational background may influence the methods chosen for parting with used items (Fortuna & Diyamandoglu, 2017).

2.3.2 The obstacles to the online consumption of second-hand products

In dynamic online markets, a key challenge is the "uncertainty for buyers" identified by Fernando, Sivakumar, and Suganthi (2018) and Ghose (2009). This uncertainty arises from the nature of technology-mediated transactions, where buyers and sellers are physically separated. Five barriers have been identified that contribute to this uncertainty: product and seller uncertainty, a preference for new products, hygiene concerns, and other limiting factors, as shown in Table 2.7

Table 2.7 Barriers to the online consumption of second-hand products

Barriers	References
Product Uncertainty	Bezançon et al. (2019); Clausen et al. (2010); Crosno and Cui (2018; Fernando et al. (2018); Frota Neto et al. (2016); Ghose (2009); Lu and Shang (2019); Sihvonen and Turunen (2016); Vila-Brunet and Llach (2020)
Seller uncertainty	Bezançon et al. (2019); Clausen et al. (2010); Fernando et al. (2018); Frota neto et al. (2016); Ghose (2009); Schallehn et al. (2019); Vila-Brunet and Llach (2020)
Desire for new products	Clausen et al. (2010); Crosno and Cui (2018); Fernando et al. (2018); Fortuna et al. (2017); ; Frota Neto et al. (2016); Ghose (2009); Gullstrand et al. (2016); Singh et al. (2014)
Negative physical contagion (Hygiene)	Fernando et al. (2018); Gullstrand et al. (2016); Bezançon et al. (2019); Costa Junior et al. (2019); Schallehn et al. (2019);
Others	Ashfaq et al. (2019); Clausen et al. (2010); Ertz et al. (2018); Fernando et al. (2018); Sihvonen and Turunen (2016); Simpson et al. (2019)

Source: Prepared by the authors

"Product uncertainty" is multi-faceted, involving the risk of not being able to verify the physical condition, performance, and potential hidden costs for repairs or replacements. Fernando et al. (2018) found that this uncertainty can erode electronic loyalty, while Crosno and Cui (2018) noted that online shoppers' tendency to avoid loss leads them to steer clear of low-quality, low-cost items. Vila-Brunet and Llach (2020) developed a scale to assess the buyer's perception of used products, determining that product uncertainty heavily influences consumer quality expectations.

"Seller uncertainty" arises from relying on information usually provided by the previous owner, as discussed by Fernando, Sivakumar, and Suganthi (2018), Lu and Shang (2019), and Sihvonen and Turunen (2016). Ghose (2009) provided empirical evidence that information asymmetry persists in online markets, impacting transactions negatively, particularly in the used electronics segment. Frota Neto et al. (2016) observed that this asymmetry leads consumers to favor new or remanufactured products with warranties, as indicated by warranties being a decisive factor for consumers, according to Simpson et al. (2019). Bezançon et al. (2019) noted that some sellers reduce perceived physical risk by presenting their used products in a manner similar to new products, which can have mixed effects on consumers depending on their online shopping experience.

The "desire for new products" is another significant barrier, with digital consumers often preferring the latest items due to life changes, enhanced services, and loyalty-building policies of retailers, as Clausen et al. (2010) and Padmavathy et al. (2019) have highlighted.

Xue et al. (2018) pointed out that brand loyalty encourages consumers to pay premiums for new product versions. Crosno and Cui (2018) found that consumers' aversion to quality loss makes them more likely to purchase new products, focusing on the quality gain. Fernando et al. (2018) observed that the perceived higher value and security of new products increase e-loyalty. Gullstand et al. (2016) highlighted that younger consumers' purchasing behaviors are influenced by the availability of new market entrants, while older consumers are more inclined to replace items only when necessary.

Hygiene concerns, or "Negative physical contagion," pose a significant barrier, with Schallehn et al. (2019) noting that customers express hygiene concerns across all used product categories. Gullstrand et al. (2016) found that the hesitation to purchase second-hand items often stems from fears of contamination and health risks. Fernando et al. (2018) reported that such concerns are especially acute in cultures where the stigma associated with second-hand items is prevalent, affecting perceptions of quality and value.

Further barriers include the difficulty in appraising the fair price for older items, the cognitive effort involved in online transactions, and the privacy and security concerns associated with participating in online platforms. Sihvonen and Turunen (2016) discuss the challenges of pricing used goods without new equivalents. Clausen et al. (2010) and Ertz, Durif, and Arcand (2018) emphasize the need for the perceived value to exceed the effort for consumers to engage repeatedly in the online second-hand market. Privacy and security concerns, as well as the social stigma discussed by Ashfaq et al. (2019), Fernando et al. (2018), and Sihvonen and Turunen (2016), further complicate consumer willingness to participate in the second-hand economy.

2.3.3 Overcoming the barriers for the consumption of second-hand goods online

The second-hand market, energized by communication technologies, is overcoming inherent barriers and reshaping consumer experiences in dynamic ways. In the Indian context, as Fernando et al. (2018) observed, the high levels of uncertainty towards used products and sellers don't significantly deter consumers from purchasing, largely due to the nature of transactions on online classified platforms. These platforms typically lead to in-person transactions, allowing for direct product evaluation and seller interaction, thereby diminishing uncertainties.

The detailed description of product quality by sellers, as noted by Frota Neto et al. (2016), plays a crucial role in enhancing buyer confidence, especially in used electronics. This

approach is further supported by the reputational feedback systems on established platforms like eBay and Amazon, as discussed by Kricheli-Katz and Regev (2016), which helps in building trust in sellers and product quality.

There's also a growing trend towards purchasing high-quality second-hand items that are perceived to be on par with new ones. Clausen et al. (2010) and Crosno and Cui (2018) highlighted a consumer preference for high-quality branded second-hand products over cheaper, new alternatives. This preference is supported by the perception that higher-quality technology products offer more extended usability and lower repair costs, as pointed out by Lu and Shang (2019). Paras et al. (2018) and Bezançon et al. (2019) have also found that consumers are willing to pay more for used products that maintain a 'like-new' appearance.

Addressing hygiene concerns, particularly the issue of negative physical contagion, is crucial in the virtual context. Bezançon et al. (2019) suggest strategies such as presenting products in neutral environments or in original packaging to mitigate these concerns. Costa Junior et al. (2019) argue that the effect of physical contamination can vary, potentially being positive for items with unique attributes previously owned by admired individuals or carrying a vintage status.

Environmental consciousness also motivates the preference for used products in virtual contexts. As highlighted by Dhanorkar (2019) and Mayasari and Haryanto (2018), in European contexts, acquiring second-hand goods is viewed as a form of ethical consumption that contributes to sustainable living.

Finally, the trend of consumers who purchase new, high-quality items engaging in online second-hand markets to sell their used goods not only serves as a disposal method but also allows them to recoup a portion of their investment, fostering a circular economy. This behavior, discussed by Clausen et al. (2010) and Ertz, Durif, and Arcand (2018), contributes to the vibrancy and sustainability of the second-hand market.

In essence, the second-hand market is evolving through strategic approaches to reduce uncertainties, promote high-quality used items, creatively address hygiene concerns, leverage environmental awareness, and encourage the sale of used goods. These strategies collectively enhance the market's appeal and trustworthiness, attracting a diverse consumer base.

2.3.4 Channels used to buy second-hand products

In the evolving landscape of second-hand product purchases, several platforms have emerged as key players, each offering unique features to facilitate transactions between buyers and sellers:

- Facebook Flea Market Forums: Facebook, with over 2.2 billion users, extends beyond a social network to a platform for buying and selling new and used products. Users can join specific interest groups and forums, managed by volunteers who ensure adherence to group rules. This platform allows for content sharing and direct interaction, making it a popular choice for transactions.
- Craigslist: Known for its simple business model, Craigslist is a search platform offering online classifieds services. It focuses on regional-level transactions, with about 90% of its 15 million yearly posts being for used products. Users cannot complete transactions on the platform, necessitating physical meetings for finalizing deals, which allows buyers to personally verify product conditions and negotiate prices (Dhanorkar 2019; Padmavathy, Swapana, & Paul, 2019).
- Bukalapak: This Indonesian trading platform, based on the sharing economy, facilitates the buying and selling of a wide range of new and used products and services. It operates as a free online classified space but also offers various payment methods for completing transactions online.
- Leboncoin: A popular P2P platform in France, Leboncoin follows a traditional online classifieds model. It offers free transaction listings for new and used items or services, with premium features available for a fee. The platform averages 28 million visits per month and extends its services to other European countries.
- eBay: A pioneer in online second-hand commerce, eBay is known for its direct selling and auction options. It enables international buying and selling, offering various payment methods and covering a wide range of product categories. The platform, which facilitates transactions and retains a commission, allows users to rate sellers and offers two main modes of sale: auction and 'Buy it Now' (Kricheli-Katz & Regev, 2016; Clausen et al., 2010).
- OLX (OnLine eXchange): Established in 2006, OLX operates in over 80 countries, offering a platform for buying and selling a variety of products and services. It connects sellers and buyers (P2P) without intermediating transactions and has gained prominence

in Asian emerging markets, especially in India, where it has democratized the consumption of second-hand brand products (Fernando, Sivakumar, and Suganthi, 2018; Padmavathy, Swapana, & Paul, 2019).

- Amazon Inc.: As a multinational company, Amazon has a section dedicated to used or reconditioned items, providing direct communication channels between buyers and sellers. The platform features a rating system for sellers and makes money through listing fees and commissions on used products (Ghose, 2009).

Each of these platforms plays a significant role in the second-hand market, offering various services and features tailored to the needs of different consumer segments. From local classifieds to international auctions, these platforms cater to a wide range of buying and selling preferences, contributing to the growth and diversity of the second-hand market.

2.3.5 Second-hand products commercialized online

Second-hand products, characterized by their previous use and ownership, vary in their durability and degree of wear but retain functionality and usability, as noted by Sihvonen and Turunen (2016) and Vila-Brunet and Llach (2020). The consumer decision-making process in this market is complex and influenced by the product's attributes and category, as highlighted by Padmavathy, Swapana, and Paul (2019) and Gullstrand Edbring, Lehner, and Mont (2016). Different product types dictate the acquisition and disposal routes, as observed by Fortuna and Diyamandoglu (2017). In examining online second-hand product consumption, several product categories stand out:

- Clothing and Accessories: This category, representing 31 percent of academic studies in this research, is significant in the second-hand market. The textile industry's wide variety of products, coupled with factors like affordability, quality, design, brand, and availability, make it attractive for consumers. The value of a garment, for instance, decreases by an average of 50% in online secondary markets (Sihvonen & Turunen, 2016; Paras et al., 2018; Bezançon, Guiot, & Le Nagard, 2019; Amatulli et al., 2018; Cassidy & Bennett, 2012; Keim & Wagner, 2018).
- Technological/Electronic Products: These products are appealing in the second-hand online market due to their standardization and frequent updates. Key characteristics include cost savings, effective use time, brand quality, and country of origin. Simpson et al. (2019) note that a 29.6% discount is acceptable for underused personal computers,

and Crosno and Cui (2018) found that young American consumers are attracted to value differences of 40% or more when evaluating product and brand value. Lu and Shang (2019) emphasize that high-quality technological items generally have fewer defects and lower repair costs.

- Furniture: Cost savings and environmental concerns drive the consumption of used furniture, with a preference for hard materials that can be reused or renovated. Brand and quality are also valued attributes in this category. However, furniture containing padding and textiles is often rejected due to hygiene reasons (Gullstrand Edbring, Lehner, & Mont, 2016). Fortuna and Diyamandoglu (2017) found that consumers prefer to reuse furniture locally, but disposal in landfills remains common due to transportation and recycling costs.
- Books: Second-hand books, which typically show less wear and have uniform shape and size, are chosen for their content and affordable prices. This category adapts well to online second-hand exchanges, with the low cost of shipping facilitating both local and regional consumption (Ashfaq et al., 2019; Fortuna & Diyamandoglu, 2017). While books are frequently acquired, resold, and donated through digital platforms, they are also commonly discarded, partly due to established recycling practices in urban areas.

Overall, the second-hand market for these products online is vibrant and diverse, driven by factors like affordability, brand quality, environmental concerns, and the ease of transaction through digital platforms.

Table 2.8 – Descriptive analysis of second-hand products for consumption in online redistribution markets

Product cahegory	Product	Author
Second hand goods in general	antiques, Books, toys (Rubik, cube, Lego), watches, sunglasses, bike, Televisions, audio players, appliances Sofa, Furniture (eg, floor coverings, curtains, glassware, bedding, mattresses), building materials (eg, wood, glass, hardware, lawn and garden supplies, equipment), automobile tires, DVDs, movies, pet supplies; sporting goods; sports memorabilia, crafts laptops, children's clothing	Clausen et al. (2010); Lu and Shang (2019); Fernando et al. (2018); Guiot and Roux (2010); Padmavathy et al. (2019); Parguel et al. (2017), Mayasari and Chrisharyanto (2018); Schallen et al. (2019); Katz and Regev (2016)

Clothes and accessories	Vintage Clothes, Luxury fashion, children's clothing, apparel	Amatulli et al. (2019); Ashfaq et al. (2019); Bezançon et al (2019); Keim and Wagner (2018); Cassidy and Bennett (2012); Cassidy (2017); Sihvonen and Turunen (2016); Cervellon (2012); Ferraro et al. (2016)
Electronics	Smartphone, cell phones and accessories; laptops, tablets, Computers, PC, Videogame, Personal digital assistant, consoles, headphones, audio players, televisions, appliances desktop computers	Ghose (2009); Kwarteng et al. (2018); Crosno and Cui (2018); Simpson et al. (2019); Chu and Liao (2010); Bezançon et al. (2019); Dhanorkara (2019)
Furniture	sofa, home products in general, kitchen furniture, table, chairs, mattresses, bed sheets, towels, wardrobes, soft toys and white goods, floor coverings, curtains, glassware	Fortuna and Diyamandoglu (2017); Gullstrand et al. (2015)
Used cars		Chen et al. (2013); Singh et al. (2014);
Used Books		Ashqaf et al. (2019); Fortuna Diyamandoglu (2017)
Musical Instruments	musical instruments, sports equipment and photographic equipment), electric guitar	Hunter and Soberman (2010); Qiua and Messinger (2013)

Source: Prepared by the authors

2.4. Discussion

Our research presents the various motivations that drive consumers to purchase second-hand items online. We categorized these motivations into four primary dimensions: Economic, Convenient, Ideological, and Sustainable.

In the economic dimension, we found three major motivators: fair price, bargaining power, and bargain hunting. Studies such as those by Fernando et al. (2018) and Kwarteng et al. (2018) have demonstrated that economic motivation is a crucial driver for consumers in this market. The "fair price" motivator, supported by a multitude of references like Ashfaq et al. (2019) and Ertz et al. (2018), is particularly resonant for financially constrained consumers. Bargaining power, as detailed in works by Crosno and Cui (2019) and Padmavathy et al. (2019), describes the flexible negotiation between buyers and sellers that benefits both parties. This power dynamic is especially pronounced in a virtual context, where buyers have an array of choices and can easily compare prices and product features. Bargain hunting, explored by authors such as Cervellon et al. (2012) and Clausen et al. (2010), signifies the consumer's quest for products priced below market value. This hunt is not just for essential items but extends to non-essential goods as well, offering an avenue for indulgent consumption behaviors that are

nonetheless environmentally conscious. Furthermore, our results demonstrate that consumer behavior can have individual and societal implications, such as contributing to sustainability goals. Works like those of Hamari et al. (2016) and Mayasari; Haryanto (2018) identify economic incentives like "earning extra money" as significant motivators for environmentally conscious consumers to engage in shared consumption.

The convenience dimension in online consumer platforms found two main motivators: ease of use and saving time. These platforms' intuitive design and functionality have been identified as significant contributors to user engagement, as demonstrated by studies from Dhanorkar (2019) and Mikalef et al. (2013). Such user-friendly platforms enable participation from individuals with varying technical skills, thus furthering social equality, as Ashfaq et al. (2019) and Mayasari and Haryanto (2018) noted. Additionally, time-saving features are highly valued by users. Real-time interaction between buyers and sellers has significantly facilitated more efficient communication, as referenced in works by Bezançon et al. (2019) and Ek Styvén and Mariani (2020). The implications of these convenience factors are multi-faceted. For instance, they can catalyze environmentally conscious behaviors like reuse and recycling, as indicated by Hamari et al. (2016) and Mayasary and Haryanto (2018). Moreover, platforms are increasingly being used either as a complementary resource or a standalone option depending on the value and type of the product, as discussed by Singh et al. (2014) and Gullstrand et al. (2016). However, there are limitations to consider. A dependency on internet-enabled devices and, in some instances, a requirement for pre-registration were identified as potential barriers, as outlined in studies by Clausen et al. (2010) and Fernando et al. (2018). Moreover, the ease of use might also inadvertently encourage consumerism, as Parguel et al. (2017) and Chu and Liao (2010) highlighted.

Five key motivators shape the ideological dimension: Self-expression, Status, Nostalgia, Trust, and Guarantees. These motivators, as identified by researchers such as Ashfaq et al. (2019), Cervellon et al. (2012), Guiot and Roux (2010), Fernando et al. (2018), and others, drive consumers to seek uniqueness, social status, nostalgic feelings, trustworthiness, and information accuracy. This trend extends across various product categories, including clothing, furniture, and technology, as evidenced in studies conducted by Gullstrand et al. (2016) and Crosno and Cui (2018). The move towards second-hand consumption reflects society's desire for individuality, social recognition, and sustainability. Online platforms, exemplified by well-established entities like eBay and Amazon, contribute to trust-building among users and promote the adoption of reuse and sustainable practices.

The sustainable dimension of second-hand product consumption on virtual platforms is

driven by three key motivators: Environmental awareness, Saving resources, and Donating. Environmental awareness is a central motivator, as it aligns with ethical and ecological concerns. Consumers, irrespective of age, are increasingly opting for second-hand local P2P platforms due to their environmental consciousness, as demonstrated by Dhanorkar (2019) and Parguel et al. (2017). Women, in particular, tend to favour sustainable and environmentally friendly options in their consumption choices (Cervellon et al., 2012). Savings resources is closely tied to the concept of waste prevention and sustainable consumption. The reuse of durable goods not only contributes to saving resources but also reduces environmental impact. This aligns with the circular economy principles, diverting underused resources from direct disposal, as Fortuna et al. (2017) and Paras et al. (2018) highlighted. The high quality and durability of products entering the second-hand market, especially in luxury and vintage segments, make them valuable and sustainable choices (Cassidy, 2017; Keim and Wagner, 2018). Donating used items for the benefit of society is a philanthropic act that supports the circular economy and waste prevention. High-income individuals and those well-informed about environmental concerns tend to be more inclined to donate their items (Paras et al., 2018). The choice of donation or disposal route is influenced by factors such as education and gender (Fortuna and Diyamandoglu, 2017). Perceived sustainability positively influences individuals' attitudes toward second-hand product consumption. It plays a significant role in shaping consumer behavior and future participation in sharing economy practices, as observed by Hamari et al. (2016) and Paras et al. (2018). Environmental awareness, resource savings, and donation collectively drive sustainable consumption in the second-hand marketplace, aligning with ecological and ethical values.

These markets, characterized by the convergence of buyers, sellers, and items through technology, generate "uncertainty for buyers" (Fernando; Sivakumaran; Suganthi, 2018; Ghose, 2009). This uncertainty manifests as barriers that hinder adoption. One key barrier is Product Uncertainty. Buyers cannot physically inspect items before purchase, leading to concerns about their condition, performance, and potential unforeseen costs (Lu; Shang, 2019; Ghose, 2009). Some opt for new products for quality assurance (Crosno and Cui, 2018). Seller Uncertainty is another challenge. Buyers rely on seller-generated descriptions, creating uncertainty about their accuracy. Evidence shows information asymmetry and adverse selection persist, particularly affecting trust in the used electronics category (Frota Neto et al., 2016). Consumer preference for New Products also hinders second-hand adoption. Lifestyle changes and brand loyalty often drive consumers toward new products, reinforcing challenges faced by second-hand markets. Negative Physical Contagion related to hygiene deters

consumers from second-hand items, especially those with high bodily intimacy (Gullstrand et al., 2016). Concerns extend to disease transmission (Fernando et al., 2018; Costa Junior et al., 2019). Additional considerations include difficulties in pricing older products, cognitive effort in online transactions, privacy concerns tied to profile creation, and social stigma (Ashfaq et al., 2019; Fernando et al., 2018; Sihvonen; Turunen, 2016).

The online consumption of second-hand products within dynamic markets presents several challenges, leading to barriers that impede adoption. One of the pivotal obstacles is Product Uncertainty, stemming from the inability to physically inspect items before purchase (Lu; Shang, 2019; Ghose, 2009). This uncertainty gives rise to concerns about the product's condition, performance, and unforeseen costs (Ghose, 2009). Consequently, some consumers opt for new products as a guarantee of quality (Crosno and Cui, 2018). Another impediment is Seller Uncertainty, where buyers must rely on seller-generated descriptions, creating doubts about their accuracy (Frota Neto et al., 2016). This issue is exacerbated by information asymmetry and adverse selection, particularly impacting trust in the used electronics category (Frota Neto et al., 2016). Additionally, the innate Desire for New Products frequently leads consumers away from second-hand options, driven by lifestyle changes and brand loyalty (Crosno and Cui, 2018; Clausen et al., 2010). Negative Physical Contagion, particularly hygiene-related concerns, deters consumers from second-hand items, especially those with high bodily intimacy (Gullstrand et al., 2016). Worries extend to the potential transmission of diseases (Fernando et al., 2018; Costa Junior et al., 2019). Other considerations include challenges in pricing older products, the cognitive effort required in online transactions, privacy concerns associated with profile creation, and the enduring social stigma (Ashfaq et al., 2019; Fernando et al., 2018; Sihvonen; Turunen, 2016).

To tackle Product Uncertainty, it is beneficial to negotiate online but finalize the transaction face-to-face, allowing buyers to personally inspect items (Fernando et al., 2018; Kwarteng et al., 2018). Choosing local platforms further aids in reducing uncertainty (Kwarteng et al., 2018). Addressing Negative Physical Contagion (Hygiene) concerns involves sellers packaging used items to resemble their original state, leveraging the "law of similarity" (Bezançon et al., 2019). Additionally, purchasing from nearby sellers minimizes the perceived risk of contamination (Gullstrand et al., 2016). To mitigate the Desire for New Products, consumers are encouraged to consider underused second-hand items, particularly those with limited prior use (Kwarteng et al., 2018; Padmavathy et al., 2019). Building trust is crucial in addressing the Lack of Confidence in the Seller. Employing third-party warranty providers and evaluation mechanisms like seller reviews can help alleviate concerns about seller reliability

(Clausen et al., 2010; Vila-Brunet and Llach, 2020). Consideration of Cultural Factors is essential, as acceptance of second-hand products varies based on cultural norms and product categories.

In addition to these strategies, consumer preferences, perceptions of product quality, and environmental concerns play pivotal roles in overcoming these barriers. Consumers are increasingly open to second-hand options when they perceive high-quality used products, sometimes even willing to pay more for such items (Crosno and Cui, 2018; Paras et al., 2018; Bezançon et al., 2019). Strategies like presenting used items in their original packaging can blur the line between new and used products, reducing the impact of physical contagion (Bezançon et al., 2019). Furthermore, the growing awareness of environmental issues and the desire to contribute to sustainability motivate individuals to embrace second-hand consumption, particularly in European contexts (Dhanorkar, 2019; Mayasari and Haryanto, 2018).

Concerning channels used to buy second-hand products, Facebook's Flea Market Forums, for instance, enable users to engage in transactions within specific interest groups. Craigslist simplifies regional buying and selling, emphasizing in-person meet-ups for verifying items. Bukalapak in Indonesia facilitates online transactions for a wide array of products and services. France's Leboncoin connects local buyers and sellers with occasional free listings. eBay, a global giant, offers international transactions with diverse payment methods and seller ratings. OLX operates in over 80 countries, encouraging local market interactions through its platform. Amazon Inc. provides a section for used items, complete with seller ratings and direct communication. These platforms cater to different market dynamics, offering opportunities for second-hand product exchange (Ghose, 2009; Fernando; Sivakumaran; Suganthi, 2018; Padmavathy; Swapan; Paul, 2019).

Regarding products commercialized, Second-hand products, characterized by prior ownership and a certain degree of wear, are diverse durable goods with the potential for continued functionality (Sihvonen; Turunen, 2016; Vila-Brunet; Llach, 2020). The decision-making process for consumers involves intricate evaluations influenced by product categories and their attributes (Padmavathy; Swapan; Paul, 2019). Our study reveals that 42 percent of research examines second-hand product consumption online, across various categories. Notably, clothing and accessories garner significant attention, constituting 31 percent of the academic studies. These items offer affordability, significant depreciation compared to new prices (Sihvonen; Turunen, 2016), and considerations such as quality, design, brand, and availability factor into consumer choices (Paras et al., 2018; Bezançon et al., 2019; Amatulli et

al., 2018; Cassidy; Bennett, 2012). Technological and electronic products are also attractive for reuse, driven by cost savings, effective use time, and brand reputation (Kwarteng et al., 2018; Lu; Shang, 2019). Furniture, while less studied, emphasizes cost savings, status, and environmental concerns. Hard materials are preferred, while soft furnishings may face hygiene-related rejection (Gullstrand Edbbring; Lehner; Mont, 2016). Books, due to their consistent condition, are sought after for content and affordability, facilitated by low shipping costs (Ashfaq et al., 2019; Fortuna; Diyamandoglu, 2017). Musical instruments, sports equipment, and photographic gear are also subject to reuse (Hunter and Soberman, 2010; Qiua and Messinger, 2013).

2.5. Conclusions

The present research conducted in this systematic review to show the dynamic and evolving nature of second-hand product consumption in social commerce. The findings reveal that consumers are motivated by a complex interplay of economic, convenient, ideological, and sustainable factors. These motivations encompass the desire for fair prices, the thrill of bargain hunting, ease of use, time-saving features, self-expression, social status, nostalgia, trust, guarantees, environmental awareness, resource savings, and philanthropy.

However, consumers also face several barriers, including uncertainty about product quality, seller trustworthiness, the allure of new products, and concerns about hygiene. To address these barriers, strategies such as facilitating face-to-face transactions, enhancing product packaging, emphasizing quality, and promoting environmental consciousness are suggested.

The study also underscores the diversity of product categories available in the second-hand market, with clothing and accessories, technological items, furniture, books, and more being prominent choices. These categories offer consumers a wide range of options, influenced by factors like affordability, quality, design, brand, and sustainability.

This research makes significant contributions in both practical and academic areas. On a practical level, it offers valuable insights into consumer behavior in the second-hand product market. Businesses operating in this sector can leverage this knowledge to tailor their marketing strategies, user experience, and product offerings to better align with consumer preferences. The identification of different motivations and barriers can guide businesses in devising strategies to overcome these obstacles. For example, emphasizing product quality, facilitating face-to-face inspections, and promoting sustainability can help businesses attract more consumers to the second-hand market. Moreover, online marketplace platforms can use these

findings to enhance their user interfaces, making them more user-friendly and efficient. Features that simplify product inspection, build trust between buyers and sellers, and highlight environmental benefits could be incorporated.

This research also has academic significance. It presents a comprehensive framework for understanding consumer behavior in the second-hand product market, categorizing motivations and barriers into distinct dimensions. This provides a structured foundation for future studies in this field. Additionally, the study synthesizes empirical evidence from a wide range of sources, contributing to the consolidation of knowledge in this emerging area. It offers a holistic view of the factors influencing consumer behavior in social commerce related to second-hand products and provides cross-cultural insights by including studies from various countries.

However, it's essential to acknowledge certain limitations. The research relies on existing literature, which may contain inherent biases. The study does not account for potential changes in consumer behavior over time, such as evolving technology, economic conditions, and societal trends, which could impact consumer motivations and barriers. Additionally, while the research includes studies from various countries, it may not capture region-specific nuances in consumer behavior.

For future research directions, several avenues are suggested. Conducting longitudinal studies to track changes in consumer behavior over time can provide insights into the evolution of motivations and barriers in the second-hand product market. Exploring how cultural differences impact consumer behavior in the second-hand market can be an intriguing avenue for future research. Comparative studies could reveal unique patterns and preferences. Complementing existing research with primary data collection, such as surveys and interviews, can offer a more granular understanding of consumer behavior and preferences. Given the rapid advancement of technology, investigating how emerging technologies (e.g., virtual reality, blockchain) influence consumer behavior in second-hand commerce could be a valuable research area. Furthermore, research that delves into the regulatory and policy aspects of second-hand markets can shed light on how governments can encourage sustainable consumption and reduce waste.

Chapter 3 Circular Economy via Chat: Evaluation of Adoption and Use of a Popular Instant Messaging Platform for Trading Second-Hand Products

3.1 Introduction

Since the onset of the first industrial revolution, the prevailing model of consumption has been the linear economy, characterized by a straightforward "extract, produce, and dispose" approach. This model has led to the over-extraction of the planet's finite resources, resulting in significant environmental challenges, including the accumulation of solid waste and widespread pollution. In response to these challenges, the Ellen MacArthur Foundation has proposed the Circular Economy (CE) as an alternative economic model. The CE is built on three foundational principles: eliminating waste and pollution, keeping products and materials in use, and regenerating natural systems. It distinguishes between technical and biological cycles, where the former focuses on reusing, repairing, remanufacturing, and recycling products, and the latter on returning biodegradable materials to the earth (ELLEN MACARTHUR FOUNDATION, 2015).

The transition to a CE is complex, involving various technological and social factors. To operationalize this transition, several circular strategies have been formulated: Regenerate, which combines economic factors with opportunities to renew energy sources and resources; Share, which extends the use cycle of physical assets to maximize their technical life; Optimize, which aims to increase the efficiency of supply chains and eliminate waste from the outset; Loop, which focuses on keeping resource loops closed and prioritizing remanufacturing and recycling; and Virtualize, which advocates for a shift in consumption patterns to reduce or eliminate the use of unnecessary elements. The Share strategy emphasizes asset sharing, reuse, and keeping products in use to preserve their value and reduce environmental impact (ELLEN MACARTHUR FOUNDATION, 2015; VENKATESAN et al., 2023).

Reusing products is a common-sense approach that involves efficiently using economically valuable products as many times as possible. This practice maximizes technical utility and minimizes environmental impact while generating positive social outcomes (DHANORKAR, 2019; ELLEN MACARTHUR FOUNDATION, 2015) Murali, Kayal, & Maiti, 2023). The consumption of second-hand goods offers a sustainable alternative to the traditional buy-and-discard cycle. It allows products to remain in use for extended periods, enabling more people to benefit from what has already been produced, thus leveraging existing resources (PARAS et al., 2018) (Priatmojo, 2023). This mode of consumption can also alleviate the financial burden on consumers, contributing to social benefits (GULLSTRAND

EDBRING; LEHNER; MONT, 2016; SCHALLEHN et al., 2019).

The proliferation of information technologies and digitization has significantly expanded the flow of data and information among users globally. This digital revolution has spurred innovation and new value creation methods. Digital platforms, as business models based on disruptive technologies, facilitate large-scale connections and interactions via the Internet, aiming for mutual benefit and profit generation (BERG MARIANNE FURRER ELLIE HARMON UMA RANI SIX SILBERMAN et al., 2019). The synergy between the circular economy transition and disruptive technologies has given rise to new platform-based business models that seek to generate positive social and environmental impacts in consumption chains through scalable solutions. These platforms efficiently connect suppliers with other suppliers (B2B), suppliers with consumers (B2C), and consumers with other consumers (C2C or P2P), facilitating various transactions such as exchanges, purchases, sales, rentals, and donations (EK STYVÉN; MARIANI, 2020; HAMARI; SJÖKLINT; UKKONEN, 2016; VITOLLA et al., 2023).

Within this context, Instant Messaging Internet-based platforms (IMP), commonly known as Mobile Communication Apps or Mobile Chat Applications, have become essential in modern communication. These platforms facilitate real-time, efficient communication and have evolved to be integral in business interactions and operations (TO et al., 2008). Recent studies have expanded our understanding of these platforms in modern communication, emphasizing their impact on organizational efficiency, customer engagement, power dynamics, and educational applications. Some examples of such research are Bameyi et al. (2020); Safieddine and Nakhoul (2021); Hurbean et al. (2022); and Bere and Rambe (2019).

The integration of IMP in the commercial sector has significantly transformed how businesses interact with consumers. Lee and Gan (2020) explored the impact of IMP on impulse buying among Malaysian consumers. Marino and Lo Presti (2019) examined the effectiveness of IMP in customer engagement. Their findings suggest that IMP are not only useful tools for customer care but also play a crucial role in enhancing the customer-brand relationship. In small and medium enterprises (SMEs) context, Safieddine and Nakhoul (2021) demonstrated how IMP can streamline operational processes, particularly in product ordering. However, using instant messaging in commerce is not without its challenges. Chatterjee, Chaudhuri, and Vrontis (2021) highlighted the darker aspects of IMP, such as their role in spreading unverified information, which can have serious societal implications. This study serves as a reminder of the need for effective regulation and responsible use of these platforms.

While there is a wealth of research on instant messaging platforms and their use in

buying and selling products, a specific focus on the behavioral factors influencing the consumption of SHP through these platforms is notably scarce. Existing studies have explored various aspects of online second-hand markets, consumer behavior, and the use of digital platforms for commerce. Still, they have not specifically addressed the unique dynamics of instant messaging platforms in the context of second-hand product transactions within the circular economy. For instance, research by Ashfaq et al. (2019) and Ek Styven and Mariani (2020) has delved into consumer behavior in online second-hand markets, emphasizing aspects like performance expectancy and consumer expectations. These studies highlight the importance of price affordability and the shopping experience in driving consumers towards secondary markets. However, they do not specifically dissect the use of instant messaging platforms as a medium for these transactions. Similarly, Vila-Brunet and Lhach (2020) provides valuable insights into consumer expectations in online markets, but it does not isolate the use of instant messaging platforms as a distinct channel for buying and selling second-hand products. Studies like those by Padmavathy, Swapana, and Paul (2019) have shown that the process of accessing and browsing second-hand digital platforms is perceived as simpler and less time-consuming. However, these insights are not specifically tailored to understanding user interactions on instant messaging platforms. The gap in research becomes more evident when considering the unique features of IMP, such as their widespread accessibility, ease of use, and the personal nature of transactions. These platforms' role in facilitating peer-to-peer transactions in a more informal and direct manner, compared to traditional online marketplaces, presents a unique context for studying consumer behavior. Therefore, while existing research provides a foundation, there is a clear need for a focused investigation into the specific behavioral factors that drive individuals to use instant messaging platforms for consuming second-hand products, particularly within the framework of the Circular Economy.

The primary objective of this research is to thoroughly investigate the factors influencing consumer behavior in the use of instant messaging platforms for the purchase and sale of second-hand products, firmly rooted in the framework of the Expanded Unified Theory of Acceptance and Use of Technology (UTAUT2). This study meticulously examines a range of key aspects, including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price sensitivity, perceived risk, initial trust, and habitual use. By delving into these dimensions, our research aims to provide a comprehensive and nuanced understanding of how consumers interact with and utilize IMP in the context of the second-hand market.

Our research is structured in 7 sections: Section 2 shows the theoretical background;

Section 3 presents the hypothesis development; Section 4 presents the research methodology; Section 5 presents the results; Section 6 shows the discussion and Section 7 draws our conclusions.

3.2 Theoretical Background

3.2.1 The role of Internet-based Platforms for Buying and Selling Second-Hand Products

Despite being a beneficial trend and reporting constant growth, the consumption of second-hand products through platforms depends on consumer decision-making. Academics who have addressed the behavior of second-hand product consumers on platforms agree that the economic dimension predominates as the main motivator in different contexts (GULLSTRAND EDBRING; LEHNER; MONT, 2016; HAMARI; SJÖKLINT; UKKONEN, 2016; PADMAVATHY; SWAPANA; PAUL, 2019). In second place is the dimension of convenience, related to the shopping experience, mediated by technology, highlighting ease of use, connectivity, time management, cost reduction and minimal effort. In third place is the ideological dimension, which relates a set of social aspects to the virtual context. The initial confidence to participate in this type of consumption is essential. Individuals express the need for differentiation, status and nostalgia, through the consumption of used products (KEIM; WAGNER, 2018). In turn, the great variety of offers, the asymmetry of information, the distance between buyer and seller and the impossibility of verifying the conditions of the used product, generate a perception of risk towards the product and towards the seller (GHOSE, 2009). In response, intermediary platforms, established in the market, develop mechanisms to reduce uncertainty among users. However, it has been recorded that consumers from countries with emerging economies have eliminated at least in part, uncertainty towards sellers and used products, choosing platforms that operate locally and function as online classifieds. In this way, the negotiations are private and a face-to-face meeting is promoted to inspect the product and carry out the exchange (DHANORKAR, 2019; PADMAVATHY; SWAPANA; PAUL, 2019; PARGUEL; LUNARDO; BENOIT-MOREAU, 2017). The sustainable dimension is implicit in second-hand consumption activities online, the platforms offer a favorable context to express environmental awareness through consumption, however, this motivation is declared last in order of importance.

In the evolving landscape of second-hand product purchases, various platforms, including instant messaging services, have emerged as key players, each offering unique features to facilitate transactions between buyers and sellers.

- Instant Messaging Platforms: These platforms leverage real-time communication to connect buyers and sellers for both new and used product transactions. Users can engage in direct interactions and share content, making them a preferred choice for second-hand transactions.
- Craigslist: Known for its straightforward business model, Craigslist operates as a search platform providing online classifieds services, primarily focusing on regional-level transactions. It requires physical meetings for finalizing deals, allowing buyers to personally inspect product conditions and negotiate prices.
- Bukalapak: This platform simplifies the buying and selling of a wide range of new and used products and services, operating as a free online classified space with various online payment methods.
- Leboncoin: Popular in France, Leboncoin follows a traditional peer-to-peer (P2P) online classifieds model, offering free listings for new and used items or services.
- eBay: A pioneer in online second-hand commerce, eBay facilitates international buying and selling, offering various payment methods and covering a wide spectrum of product categories.
- OLX (OnLine eXchange): Operating in over 80 countries, OLX connects sellers and buyers in a peer-to-peer (P2P) manner without intermediaries, democratizing the consumption of second-hand products.
- Amazon Inc.: Amazon features a section dedicated to used or reconditioned items, offering direct communication channels between buyers and sellers with a seller rating system.

Within this context of this diverse landscape of platforms, our research aims to investigate the factors influencing consumer behavior in the use of instant messaging platforms for the purchase and sale of second-hand products.

3.2.2 The Expanded Unified Theory of Acceptance and Use of Technology (UTAUT2)

Based on theories from psychology and sociology, several theoretical models have been developed to explain the acceptance and use of technology. Venkatesh et al. (2003) conducted a review and synthesis of 8 theories related to the use of technology, the Theory of Reasoned Action (Fishbein and Ajzen, 1975); Technology Acceptance Model (Davis, 1989); Motivational Model (Davis, et al. al. 1992); Theory of planned behavior (Ajzen, 1991); TAM and TPB combined (Taylor and Todd, 1995); MPCU PC utilization model (Thompson, et al., 1991); Innovation Diffusion Theory (Moore and Benbasat, 2001) and Social Cognitive Theory

(Compeau, et al., 1999), and as a result they proposed “The Unified Theory of Acceptance and Use of Technology - UTAUT”, with the objective of address the limitations of the aforementioned models and provide a more comprehensive view of the factors that influence the acceptance and use of technology (VENKATESH et al., 2003).

The unified model of UTAUT is composed of four key constructs: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC), which impact the intention to use and accept technology by users, in organizational contexts. This theoretical model has been widely accepted and has proven to be very useful for addressing a wide variety of new technologies, related to various contexts, such as the academic environment itself, health systems, information systems, collaborative technology, among others (ANDREAS, 2012; VENKATESH; THONG; XINXU, 2012). Scholars have identified that the constructs of the UTAUT model significantly impact user perception. Likewise, they have incorporated endogenous and exogenous extensions to improve the scope of this model (VENKATESH; THONG; XINXU, 2012).

Based on the extensions collected from the literature, Venkatesh et al. (2012), propose an extension and improvement of the original model, a theoretical framework developed to analyze and predict the acceptance and use of technology by individuals in a consumer environment “UTAUT2”. The ideators incorporated new relationships, through the constructs Hedonic Motivation (important in the use of consumer products and/or technology), Value/Price (costs can dominate consumer adoption decisions) and Habit (behavioral intention as determining predictor of technology use). They also suggested that age, gender and experience factors can influence how people adopt and continue to use technologies.

Since its publication in 2012, studies based on the Expanded Unified Theory of Acceptance and Use of Technology (UTAUT2) have increased significantly in different areas, highlighting its predictive capacity, also driven by the rise of information technologies, the popularization of Internet access and at the same time a wide variety of devices with access to the internet such as smartphones, tablets, computers, etc. (TAMILMANI et al., 2021).

Researchers have aimed to understand the factors related to users' adoption and use of technologies in a wide variety of settings. Such as Kapser and Abdelraham (2020), who investigated the acceptance of autonomous delivery vehicles in last-mile deliveries by German citizens, resulting in the prevalence of high price sensitivity. Moura et al. (2017) studied the behavioral interests and use of the Internet for tourism purposes by older people in Brazil, they identified that the higher the performance expectancy, the more intense the favorable attitude towards the use of the Internet for tourism purposes. Shaw and Sergueeva (2019) used the

UTAUT2 model as a theoretical lens and included the privacy construct to address Canadian mobile commerce, and confirmed that users' privacy concerns influence perceived value and usage intention. De Blades Sebastián and Sarmiento (2023) investigated the factors driving the adoption of online mobile payment system platforms by young Spanish users, identifying that the strongest underlying predictor is habit followed by social influence.

Empirical evidence also points to global phenomena such as the Covid 19 pandemic that has forced the population to adopt technologies, without which it would not have been possible to continue with activities such as work, studies, communication and consumption, among others. According to the study by Jung and Katz (2022), in Latin America fixed broadband adoption grew 9.8% (double the previous annual growth rate), the most used messaging and social media platforms were WhatsApp and Facebook respectively. Habes et al. 2022, investigated the acceptance factors of mobile learning through the WhatsApp platform during the pandemic, in the context of Jordan. They found that behavioral intention is significant and positive and is influenced by external factors such as Internet access. In Ghana, Yeboah and Nyagorme (2022) investigated the factors of using WhatsApp for learning purposes in distance learning. They used the UTAUT theoretical model and confirmed that effort expectancy, social influence, and facilitating conditions are important predictors of intentions to use WhatsApp for remote learning. Randons and Lobler (2021) used UTAUT2 as a basis to investigate the influence of people's participation in WhatsApp groups, and the intention to use WhatsApp, they found that participation in groups positively influences performance expectations, social influence, hedonic motivation and habit.

Previous literature provides relevant evidence of the robustness of the UTAUT2 theoretical model in different contexts, used to understand the factors related to the use and adoption of technology and its impact on society. Instant Messaging Platforms is a potential tool to be used for the commerce of second-hand consumption, once it contributes to extending the useful life of everything already produced, as well as to the management of solid waste and the reduction of pollution on the planet. Following these three premises, this study aims to evaluate the use of the IMP for the purchase or sale of second-hand products among peers, adapting the UTAUT2 theoretical model.

3.3 Hypotheses development

The main objective of this research is to investigate the factors that influence consumer behavior when using instant messaging platforms for the purchase and sale of second-hand products, adapting the framework of the Expanded Unified Theory of Acceptance and Use of

Technology (UTAUT2) to this context. To adjust the UTAUT2 theoretical model to the context of second-hand consumption, two constructs were added: perceived risk and initial trust. Therefore, this study delves into nine critical aspects, including:

- Performance Expectancy: Analyzing how consumers perceive the benefits of using these platforms, such as cost savings and product quality in the second-hand market, and how this perception affects their behavior.
- Effort Expectancy: Investigating the ease of use of instant messaging platforms and how user-friendliness impacts consumers' willingness to engage in transactions.
- Social Influence: Exploring the influence of social norms, peer, and family opinions on consumers' decisions to use these platforms for second-hand purchases.
- Facilitating Conditions: Examining consumers' beliefs about the availability of necessary infrastructure and resources for effective platform usage.
- Hedonic Motivation: Studying the role of enjoyment and pleasure derived from using these platforms in influencing consumer behavior.
- Price Sensitivity: Exploring how consumers' sensitivity to price affects their intention to use these platforms, considering affordability and cost-effectiveness.
- Perceived Risk: Assessing the perceived risks associated with buying and selling second-hand products through these platforms and their impact on consumer behavior.
- Initial Trust: Examining the initial trust consumers place in sellers and products on these platforms and how it affects their willingness to transact.
- Habitual Use: Investigating how past experiences and regular usage of these platforms influence current and future consumer behavior.
- Control Variables: These include demographic factors such as gender, age, and income, which might moderate the relationship between the behavioral factors listed above and the intention to use instant messaging platforms for buying or selling used products.

Each of the hypothesis concerning these topics are shown in the sections below.

3.3.1 Performance Expectancy (PE)

Performance expectancy, as defined by Venkatesh et al. (2012), refers to the extent to which the use of a technology provides benefits to consumers when engaging in specific activities using that technology. It is grounded in customers' prior beliefs about a product or service (ASHFAQ et al., 2019). Previous research on the behavior of online second-hand consumers has consistently identified the expectation of cost savings through price affordability as a primary driver of consumers towards secondary markets. Notably, Ashfaq et al. (2019) empirically validated that in emerging economies, such as China, the expectations of financially constrained consumers have a substantial impact on perceived enjoyment, satisfaction, and ease of use. Ek Styven and Mariani (2020) have further emphasized the significance of consumer expectations, highlighting that they are closely intertwined with the shopping experience of UK citizens, often surpassing the importance of ease of use and perceived usefulness. Moreover, they found that sustainable aspects gain prominence once consumers accumulate a certain level of purchasing experience.

In the study conducted by Vila-Brunet and Lhach (2020), a scale was developed to evaluate customer perceptions of website service quality. Interestingly, they discovered that product quality was the dimension that best explained the fulfillment of customer expectations. The literature has also drawn attention to various product attributes that pique consumer interest, including underused items (KWARTENG; PILÍK; JUŘIČKOVÁ, 2018), unique products (KEIM; WAGNER, 2018), products from brands with established traditions (SIHVONEN; TURUNEN, 2016), material quality (PARAS et al., 2018), origin (AMATULLI et al., 2018), design (CASSIDY; BENNETT, 2012), and products from reliable suppliers (CASSIDY, 2017). Furthermore, instant messaging platforms play a crucial role in enhancing consumer expectations. They offer rating and review mechanisms that are accessible to the public, with the primary objective of fostering trust, as an integral part of customer service (GHOSE, 2009). Vila-Brunet and Llach (2020) suggest that having access to supplier ratings and reviews serves as a strong motivator for customers to make purchases. When customers trust the seller, they are more likely to trust the product as well. A dependable supplier typically provides a clear and honest product description.

In summary, the discussion above highlights the significance of consumer expectations, particularly performance expectancy, in influencing behavior in various contexts. While previous research has corroborated the role of performance expectancy in shaping consumer behavior (ASHFAQ et al., 2019; EK STYVÉN; MARIANI, 2020; VENKATESH; THONG; XINXU, 2012; VILA-BRUNET; LLACH, 2020), it is noteworthy that this specific context,

focusing on IMP for second-hand product consumption, has not been extensively explored. Therefore, we have our first hypothesis:

H1: Performance expectancy has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.2 The effort expectancy (EE)

Effort expectancy is defined as the perceived degree of ease or difficulty that influences an individual's behavioral intention when using a specific technology. From a consumer's perspective, it reflects the ease associated with using technology (VENKATESH; THONG; XINXU, 2012). The Internet has transformed connectivity and interactivity among vast audiences, rendering web channels as efficient, appealing, and practical spaces, with virtually infinite shelves and sophisticated filtering capabilities (MIKALEF; GIANNAKOS; PATELI, 2013; PADMAVATHY; SWAPANA; PAUL, 2019). Accessing and browsing second-hand digital platforms is often perceived as "much simpler," requiring less effort and time, and offering constant updates, thus accommodating a wide range of buying and selling options (PADMAVATHY; SWAPANA; PAUL, 2019).

Ashfaq et al. (2019), drawing upon the expectancy confirmation model (ECM), found that effort expectations significantly influence the perception of enjoyment and satisfaction among Chinese citizens when purchasing second-hand products online. Similarly, the study by Ek Styven and Mariani (2020) highlighted the high perception of ease of use in the context of P2P platforms. Indonesian consumers particularly appreciate the convenience of browsing web channels featuring straightforward processes for buying and selling used products, facilitating quick, easy, and profitable transactions (MAYASARI; HARYANTO, 2018). Ertz et al. (2018) discovered a significant link between the ease of use dimension and repurchase intention. Consumers recognize that second-hand online platforms offer a rapid, uncomplicated, and convenient way to dispose of unwanted goods (FORTUNA; DIYAMANDOGLU, 2017) or purchase items for resale online. However, research findings by Singh et al. (2014) indicate that older consumers are less likely to search online due to their limited Internet experience and the absence of websites tailored specifically for their age group.

Bezaçon et al. (2019) suggest that the online purchasing process for second-hand products may require greater cognitive effort. Turunen and Shivonen (2016) confirm that online sellers often need to exert extra effort compared to offline sellers, such as taking detailed photographs and providing comprehensive product descriptions. Clausen et al. (2010)

documented that some consumers found it challenging to comprehend online systems, and the perceived financial compensation did not always justify the effort involved, thus acting as potential barriers. For the electronics category, Simpson et al. (2017) noted that selling used products could entail more effort compared to directly exchanging the used product for a new one with the manufacturer, along with variations in discounts based on usage time and frequency. In light of these observations, we built our hypothesis 2. It is important to emphasize that this specific context, focusing on IMP for second-hand product consumption, has not been extensively studied.

H2: Effort Expectancy has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.3 Social influence (SI)

Social influence is defined as the extent to which perceived social norms and expectations shape an individual's decisions regarding the adoption and use of technology within a given environment (VENKATESH et al., 2003). It refers to how an individual's behavior is influenced by their belief in how their social group, including family and friends, will perceive them as a result of their use of a specific technology (VENKATESH; THONG; XINXU, 2012). Researchers studying second-hand consumption behavior through digital platforms have identified that social dynamics play a significant role in framing second-hand consumption in different contexts.

In Western contexts with a rich tradition of second-hand product consumption, consumers in developed markets do not solely focus on low prices. Instead, they perceive value in used products from recognized brands and assess criteria such as quality, durability, authenticity, and style (SIHVONEN; TURUNEN, 2016). Amatulli et al. (2018), through a means-end chain (MEC) approach and graded interview technique, demonstrated that postmodern individuals engage in the consumption of authentic, rare, and unique second-hand products, often considered luxury items. This is driven by the desire to enhance their self-perception and express their individuality to gain social acceptance with their personal style (KEIM; WAGNER, 2018). Research by Gullstrand et al. (2016) revealed that the desire to showcase uniqueness through unique, high-quality vintage products ranks as the second most cited motivation among used furniture consumers. The findings of Turunen and Shivonen (2016) indicate that social status is linked to the consumption of authentic items, with brand and quality as key differentiating factors in informal second-hand fashion markets on social

platforms like Facebook. The literature generally identifies women as the consumers with the greatest affinity and involvement in fashion-related issues (CERVELLON; CAREY; HARMS, 2012). Young women, according to Paras et al. (2017), particularly enjoy sporting authentic vintage styles. Cassidy and Bennett (2016) note that the mature market possesses more purchasing power and time to dedicate to trends like vintage, while some young teenagers prefer novelties, and others may lack the economic capacity to embrace the Vintage trend (CASSIDY, 2017; CERVELLON; CAREY; HARMS, 2012).

In studies focusing on collaborative consumption, it has been identified that virtual consumers of second-hand products derive enjoyment from recycling and reuse, as these activities have the potential to enhance the well-being of both individuals and the broader system. People build social bonds by connecting online, forming relationships as close as those in their real lives, and also establishing trust (MAYASARI; HARYANTO, 2018). According to Clausen et al. (2010), sustainability-oriented consumers are the most active users of second-hand platforms, both for buying and selling. This recreational aspect may influence individuals' future choices, leading them to prefer donation or resale over direct disposal in landfills.

The discussion above underscores the significant impact of social influence on consumer behavior in various contexts. While previous research has corroborated the role of social influence in shaping consumer choices (CASSIDY, 2017; CERVELLON; CAREY; HARMS, 2012; CLAUSEN et al., 2010; GULLSTRAND EDBRING; LEHNER; MONT, 2016; HAMARI; SJÖKLINT; UKKONEN, 2016; KEIM; WAGNER, 2018; PARAS et al., 2018; SIHVONEN; TURUNEN, 2016; VENKATESH et al., 2003); it is important to note that this specific context, focusing on IMP for second-hand product consumption, has not been extensively examined. Therefore, we have our third hypothesis:

H3: Social Influence has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.4 Facilitated conditions (FC)

Facilitating conditions pertain to users' perceptions of the available resources and support for utilizing a specific technology (VENKATESH et al., 2003). In the context of digital consumption, it encompasses the extent to which an individual believes that there exists an organizational and technical infrastructure to support the use of the system (VENKATESH; THONG; XINXU, 2012). Therefore, it directly influences a consumer's behavioral intention

and positively impacts the adoption of Information and Communication Technologies (ICTs) (ANDREAS, 2012).

Platforms such as Amazon, eBay, OLX, and others were designed to reintegrate used items into the commercial flow and allow individuals to recover a portion of their initial investment. These platforms facilitate online auctions or resale, where primary consumers can buy and sell products without the need for in-person meetings (ERTZ; DURIF; ARCAND, 2018). They offer international reach, mediate negotiations between users, charge commissions, provide various payment options, and streamline the entire exchange process (CLAUSEN et al., 2010; KRICHELI-KATZ; REGEV, 2016). Additionally, regional-level free classified ad platforms, such as Craigslist, Leboncoin, OLX, Bukalapak, enable buyers and sellers to connect and communicate with each other but require in-person meetings to conclude transactions (DHANORKAR, 2019; FERNANDO; SIVAKUMARAN; SUGANTHI, 2018). These platforms do not mediate negotiations or offer payment mechanisms. Lastly, social media platforms allow the formation of interest groups dedicated to specific categories of second-hand products. Each group typically has one or more administrators responsible for enforcing group rules. Administrators do not receive compensation and can also buy or sell products within the group, just like other members (SIHVONEN; TURUNEN, 2016).

It is important to note that the reach and effectiveness of these platforms are contingent on the demographics and internet penetration within each context. A typical post for a used item typically includes an open textual description, contact information, and images posted by the user (DHANORKAR, 2019). These platforms often stimulate affective reactions, such as enjoyment, surprise, and the thrill of finding a bargain. Technology has made an enormous variety of product categories readily available to people, increasing price transparency, and reducing search costs. This, in turn, facilitates the delivery of purchases to the buyer's doorstep. The constant updating of offers further accelerates consumption. Parguel et al. (2017) found that collaborative consumption platforms create an ideal environment to trigger indulgent consumption behaviors in materialistic and environmentally conscious consumers simultaneously. These websites provide control mechanisms, reputation systems, and security features to instill trust among users. Users themselves can leave comments and rate each other (FROTA NETO; BLOEMHOF; CORBETT, 2016), with most comments tending to be positive. Given the wide variety of devices with internet access, these platforms often offer mobile applications to facilitate product access and transactions via smartphones (MAYASARI; HARYANTO, 2018).

From a societal perspective, these digital environments democratize access to products

that may have been otherwise unattainable in conventional markets, resulting in cost savings for consumers. As per Ashfaq et al. (2019), this alleviates financial burdens, particularly for economically disadvantaged individuals, making it a beneficial and smart consumer choice.

From the standpoint of the circular economy, collaborative consumption and the sharing economy have a virtuous and benevolent role. They promote interactions between individuals inclined to buy and sell used items, enhance access to purchase and reuse opportunities, and contribute to environmental benefits by efficiently reducing the acquisition of new goods and consumption of non-renewable resources. Dhanorkar (2019) empirically found that the presence of Craigslist led to a 2% to 6% annual reduction in municipal solid waste generated in a region of the United States. These platforms create opportunities to divert used products with remaining useful life from direct disposal streams. Despite the apparent ease of use and cost-effectiveness, past experiences with these websites appear to influence preferences (BEZANÇON; GUIOT; LE NAGARD, 2019; EK STYVÉN; MARIANI, 2020). It is also necessary to further investigate the impact of reusing specific product categories, such as batteries and electronics, among others (XUE et al., 2018).

In summary, the discussion above emphasizes the crucial role of facilitating conditions in shaping consumer behavior within various contexts. While previous research has confirmed the significance of facilitating conditions in influencing consumer choices (CLAUSEN et al., 2010; DHANORKAR, 2019; ERTZ; DURIF; ARCAND, 2018; FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; FROTA NETO; BLOEMHOF; CORBETT, 2016; KRICHELI-KATZ; REGEV, 2016; MAYASARI; HARYANTO, 2018; PARGUEL; LUNARDO; BENOIT-MOREAU, 2017; SIHVONEN; TURUNEN, 2016; VENKATESH et al., 2003), it is important to highlight that this specific context, focusing on IMP for second-hand product consumption, has not been extensively explored. Therefore, we hypothesized:

H4: Facilitating Conditions has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.5 Hedonic motivation (HM)

Hedonic motivation is conceptualized as the satisfaction or enjoyment that an individual experiences when using a particular technology. This construct is inherently subjective and depends on positive user experiences that encourage interaction with and acceptance of the technology. It has been identified as one of the most significant drivers of technology use and

adoption (VENKATESH; THONG; XINXU, 2012).

In the realm of research on consumer behavior related to second-hand products, especially through Internet-enabled platforms, hedonic motivation has emerged as a key predictor. Enjoyment is an intrinsic aspect of hedonic motivation, closely tied to the idea of fun and pleasant emotional experiences that enhance and facilitate individuals' participation in consumption activities. Bezançon et al. (2019) highlight its crucial role in shaping consumer attitudes and intentions. Studies by Mayasary; Haryanto (2018) and Hamari et al. (2016) concur that enjoyment is an integral part of the consumption experience, adding an element of fun and serving as a means of interaction within the community of users. The findings of Ashfaq et al. (2019) indicate that perceived enjoyment has a positive influence on satisfaction and repurchase intention. Additionally, Mayasary and Haryanto (2018) found that enjoyment significantly predicts the intention to continue using online second-hand buying and selling platforms, aligning with a social orientation. Hamari et al. (2016) further conclude that participation in sharing economy platforms is driven by the enjoyment of the overall experience, complemented by economic gains and sustainability considerations.

This discussion underscores the essential role of hedonic motivation in influencing consumer behavior, particularly in the context of second-hand product consumption through Internet-enabled platforms. While previous research has highlighted the significance of hedonic motivation in shaping technology adoption and consumer behavior (ASHFAQ et al., 2019; BEZANÇON; GUIOT; LE NAGARD, 2019; HAMARI; SJÖKLINT; UKKONEN, 2016; MAYASARI; HARYANTO, 2018; VENKATESH; THONG; XINXU, 2012), it is essential to acknowledge that this specific context, focused on IMP for second-hand product consumption, has not been extensively explored. Therefore, Hypothesis 5 (H5) posits:

H5: Hedonic Motivations has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.6 Price sensitivity (PS)

In a work environment, direct users typically do not bear the monetary costs associated with accessing and using a particular technology (VENKATESH et al., 2003). However, in a consumption scenario, the cost of using a specific technology can significantly influence a user's choice (VENKATESH; THONG; XINXU, 2012). Although the consumption of second-hand products online relies on internet connectivity, the cost of this service is not exclusively attributed to consumption alone but is shared among various activities like work, study, and

entertainment. Digital platforms operate on business models designed to create value through complex network effects, encompassing both supply and demand interactions among participants. Consequently, users often have the option to use these platforms for free (J. JUNG & R. KATZ, 2022). Furthermore, accessing free internet networks in public places such as shops, restaurants, and institutions is a common practice. Hence, this research does not consider the monetary cost of the service itself but instead focuses on exploring price sensitivity concerning second-hand products.

Consumers frequently turn to second-hand digital platforms primarily in pursuit of utilitarian benefits, seeking products that are affordable, underused, and still of residual quality (KWARTENG; PILÍK; JUŘIČKOVÁ, 2018). Often, the high price of a new product makes it suitable for sale on the second-hand market (BEZANÇON; GUIOT; LE NAGARD, 2019). Research by Turunen and Shivonen (2016) suggests that price and quality emerge as pivotal factors when assessing used items of specific brands. In more mature secondary markets, quality tends to take precedence over price, with consumers willing to pay more for high-quality used products. According to the findings of Ashfaq et al. (2019), the digital second-hand business model is particularly advantageous for consumers facing financial constraints, as their price sensitivity fluctuates significantly. Consequently, they aim to maximize the value of their monetary resources by seeking affordable options (CROSNO; CUI, 2018) for previously used items. However, the results of Parguel et al. (2017) indicate that the combination of affordable prices, a wide product variety on these platforms, and the allure of bargain hunting can lead to impulsive and less deliberative buying behaviors, particularly among environmentally conscious consumers.

In summary, the discussion emphasizes the significance of price sensitivity in influencing consumer behavior within the context of second-hand product consumption through digital platforms. While previous research has touched upon the importance of price sensitivity in this domain (ASHFAQ et al., 2019; BEZANÇON; GUIOT; LE NAGARD, 2019; KWARTENG; PILÍK; JUŘIČKOVÁ, 2018; PARGUEL; LUNARDO; BENOIT-MOREAU, 2017; SIHVONEN; TURUNEN, 2016), it is worth noting that the specific focus of this research on WIMP for second-hand product consumption adds a unique perspective. Therefore, Hypothesis 6(H6) posits:

H6: Price Sentitivity has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.7 Perceived risk (PR)

The influence of perceived risk on the intention to purchase SHP in online contexts has been a subject of study in the literature, with a focus on various dimensions of risk including financial risk, performance risk, and physical risk. Financial risk, as highlighted in previous research (CROSNO; CUI, 2018; GHOSE, 2009), stems from the apprehension of paying for a product without the opportunity to physically assess its condition. This uncertainty often leads to concerns about potential repair or replacement costs, creating a sense of aversion among consumers who anticipate a series of potential losses (CROSNO; CUI, 2018). However, the presence of high-quality used products can alter this perception, encouraging consumers to opt for such products while avoiding low-quality used items or new ones with a limited lifespan (CLAUSEN et al., 2010; SIHVONEN; TURUNEN, 2016). Notably, on peer-to-peer platforms like OLX, Craigslist, Facebook, or Leboncoin, transactions are typically concluded through face-to-face meetings, allowing buyers to inspect the product before making a payment, thereby mitigating financial risk (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; PADMAVATHY; SWAPANA; PAUL, 2019).

Performance risk revolves around uncertainty regarding a product's ability to meet expected performance standards and its suitability for reuse (ERTZ; DURIF; ARCAND, 2018). This risk is particularly relevant in the case of technologically complex products with hidden quality issues (FROTA NETO; BLOEMHOF; CORBETT, 2016; LU; SHANG, 2019). However, Kwarteng et al. (2018) have found that Czech consumers exhibit a preference for electronic/technological products characterized by a short usage time, high quality, and well-known brands. Additionally, accurate product information, including detailed usage descriptions, can help alleviate performance risk and foster trust in both the product and the seller (FROTA NETO; BLOEMHOF; CORBETT, 2016).

Physical risk pertains to concerns about contact with used products that may transmit diseases or allergies, particularly in items with a high degree of physical intimacy, such as clothing, shoes, and bedding (BEZANÇON; GUIOT; LE NAGARD, 2019; FERNANDO; SIVAKUMARAN; SUGANTHI, 2018). Gullstrand et al. (2016) have also identified the risk of contamination by pests in furniture composed predominantly of fabric. However, Bezançon et al. (2019) have suggested that the perceived physical risk is reduced when the used product closely resembles a new equivalent. Nevertheless, this reduction in risk perception may vary based on the consumer's level of experience with digital shopping. Importantly, peer-to-peer platforms often allow customers to inspect the extrinsic characteristics of used products before purchasing, further minimizing physical risk (GULLSTRAND EDBRING; LEHNER; MONT,

2016; PADMAVATHY; SWAPANA; PAUL, 2019).

In conclusion, this discussion underscores the significance of perceived risk in shaping consumer behavior when it comes to second-hand product consumption through digital platforms. While existing literature has explored various dimensions of perceived risk (BEZANÇON; GUIOT; LE NAGARD, 2019; CROSNO; CUI, 2018; GHOSE, 2009; GULLSTRAND EDBRING; LEHNER; MONT, 2016), it is important to note that this research specifically focuses on IMP as a platform for second-hand product consumption, offering a unique perspective. Therefore, we hypothesize the following:

H7: Perceived Risk has a negative effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.8 Initial Trust (IT)

Trust, defined by Lee and Lee (2005) as a relationship where one party willingly exposes themselves to the actions of another based on a positive expectation of intentions and behaviors, plays a pivotal role in digital environments where buyers, sellers, and intermediary organizations interact. This holds particularly true when considering the consumption of second-hand products online, given the absence of prior interactions between parties and the variable condition of the products in question (LEE; LEE, 2005; SCHALLEHN et al., 2019).

Lee and Lee's (2005) empirical study revealed that when customers engage in online purchases of used products, initial trust assumes paramount importance, split into two components: trust in the seller and trust in the product itself. Initial trust in the used product implies that customers expect the product to align with the description provided by the seller on the website. Detailed descriptions of used products tend to instill greater trust in consumers, potentially influencing them to opt for used products over refurbished ones (FROTA NETO; BLOEMHOF; CORBETT, 2016). As the majority of used products on digital secondary markets lack warranties (CLAUSEN et al., 2010; GUIOT; ROUX, 2010), consumers rely on various product characteristics such as quality, brand, origin, material, values, and additional information to foster trust (SCHALLEHN et al., 2019; SIHVONEN; TURUNEN, 2016). It's worth noting that trust assumes heightened importance in the online second-hand market for electronic and technological products due to the complexity of this product category (GUIOT; ROUX, 2010; SCHALLEHN et al., 2019).

In the virtual realm, the seller's image becomes synonymous with trust (GHOSE, 2009; SCHALLEHN et al., 2019). This image is cultivated through reputation, based on a history of

ratings and comments provided by users who have interacted with the seller in the past. Platforms that mediate transactions between parties, such as eBay, OLX, Amazon, and others, rely on these mechanisms to guide buyers, continually refining them (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; GHOSE, 2009; HUNTER; SOBERMAN, 2010). Conversely, P2P/C2C platforms like online classified ads operate on mutual trust, with users building trust through familiarity with the website's usage. Decision-making is informed by information provided by the seller, who is typically the previous owner (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; PADMAVATHY; SWAPANA; PAUL, 2019). Trust on these platforms is further solidified through interactions between users (MAYASARI; HARYANTO, 2018). Transactions conclude with face-to-face meetings, affording buyers the opportunity to inspect the condition of the used item prior to payment, thus minimizing uncertainties regarding both the product and the seller, and enhancing trust (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; PADMAVATHY; SWAPANA; PAUL, 2019; PARGUEL; LUNARDO; BENOIT-MOREAU, 2017).

This discussion shows the role of initial trust in shaping consumer behavior when considering second-hand product consumption through digital platforms. While various dimensions of trust have been explored in existing literature (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; LEE; LEE, 2005; SCHALLEHN et al., 2019), it's essential to emphasize that this research focuses specifically on IMP as a platform for second-hand product consumption, providing a unique perspective. Therefore, we hypothesize:

H8: Initial trust has a negative effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.9 Habit (HT)

Habit, as defined by Venkatesh et al. (2012), is a perceptual construction reflecting the outcome of a chronological sequence of prior experiences. Within the context of scholars investigating online second-hand consumption, the concept of experience emerges as a multifaceted construct with profound implications for shaping future habits (GUIOT; ROUX, 2010; PADMAVATHY; SWAPANA; PAUL, 2019; SCHALLEHN et al., 2019). Experience is conceptualized as both a consequence of the characteristics of the offering and an antecedent of customer value (SCHALLEHN et al., 2019). The iterative process of accumulating positive experiences, spanning the phases before, during, and after a purchase, lays the foundation for habit formation. Feedback gleaned from prior encounters within online secondary markets

exerts significant influence over consumer decisions and future behaviors (BEZANÇON; GUIOT; LE NAGARD, 2019; FERNANDO; SIVAKUMARAN; SUGANTHI, 2018).

Schallehn et al. (2019) conducted a study on the customer experience related to product and service systems associated with used products and identified the primary driver as the economic factor, with information technologies playing a pivotal role in shaping the customer experience. Vila-Brunet and Llach (2020) highlighted the critical role of access to reliable supplier ratings and reviews, as well as trustworthy opinions from other customers, in shaping the perception of a high-quality second-hand shopping experience. Hamari et al. (2016) and Mayasari and Chrisharyanto (2018) both concluded that, in addition to providing additional income, enjoyment plays a crucial role in shaping attitudes toward continued usage of platforms for second-hand product consumption.

European consumers have a well-established tradition of second-hand consumption, a tradition that extends into the digital realm, thereby influencing consumer habits (AMATULLI et al., 2018). In certain Western contexts, government incentives, such as tax exemptions, promote the habit of consuming second-hand products (PARAS et al., 2018). Researchers who study technology-mediated consumption behavior point out that the rapid adoption of information technologies, particularly by younger users, drives the habit of digital consumption (PADMAVATHY; SWAPANA; PAUL, 2019). Empirical studies, such as Dhanorkar's (2019), reveal that Internet access and the simplicity of traditional classified ads on platforms for used goods, such as Craigslist, have expanded opportunities for reuse, with low transaction costs, further perpetuating the practice of second-hand consumption. Moreover, Ek-Styven and Mariani (2020) observed high levels of perceived ease of use and perceived usefulness, suggesting that past experience using a platform effectively can make a difference.

This discussion underscores the profound influence of habit in shaping consumer intentions and behaviors regarding second-hand product consumption through digital platforms. While the literature has delved into various dimensions of experience and its impact on habit formation (GUIOT; ROUX, 2010; SCHALLEHN et al., 2019), this research focuses specifically on IMP as a platform for second-hand product consumption, providing a unique perspective. Therefore, Hypothesis 9 is the following:

H9: Habit has a positive effect on individuals' behavioural intention to use IMP for consume second-hand products.

3.3.10 Moderating variables

According to Kricheli-Katz and Regev (2016), the gender aspect plays a significant role in consumer behavior. Their findings suggest that women, regardless of their employment status, tend to engage more in housework compared to men. Moreover, individuals tend to adapt and seek ways to simplify tasks as they age (VENKATESH; THONG; XINXU, 2012). This adaptability with age may lead to a higher likelihood of women participating in peer-to-peer second-hand platforms.

Additionally, women are more likely to live with children, making them potential buyers of products not only for themselves but also for their children. This drives them to explore secondary markets, seeking savings and convenience, especially considering that women tend to make more frequent purchases (EK STYVÉN; MARIANI, 2020; SIHVONEN; TURUNEN, 2016). For example, Kwarteng et al. (2018) point out that underused products like children's clothing and sports equipment are smart choices for women shoppers.

While women typically earn less than men, they demonstrate a stronger affinity and involvement in fashion-related matters (CERVELLON; CAREY; HARMS, 2012). Consequently, they are more likely to engage in second-hand fashion consumption, which could be facilitated by platforms like WhatsApp. However, empirical studies have shown that the proportion of men engaging in buying and selling used goods is somewhat higher than that of women in specific product categories such as automobiles (SINGH; RATCHFORD; PRASAD, 2014), electronics, and video games (CROSNO; CUI, 2018). Men are often more task-oriented (VENKATESH; THONG; XINXU, 2012) and may prefer second-hand purchases for utilitarian purposes.

Younger individuals are generally more inclined to participate in exchanges through digital platforms. Nevertheless, studies by Bezançon et al. (2019) and Ertz et al. (2018) have indicated that buying and selling second-hand products online can require greater cognitive effort, energy expenditure, and physical effort. The average age of consumers participating in online second-hand product consumption tends to be around 36 years old. These consumers often replace their products when they become worn or broken, reflecting a sustainable attitude that deviates from the linear consumption model toward a more circular system (GULLSTRAND EDBRING; LEHNER; MONT, 2016).

The level of education is another demographic factor that could influence the social trade of second-hand goods. Clausen et al. (2010), identify that online activity increases with educational level. According to the findings of Fortuna and Dyamandoglu (2017), highly educated consumers choose second-hand online channels to sell or donate their products, with

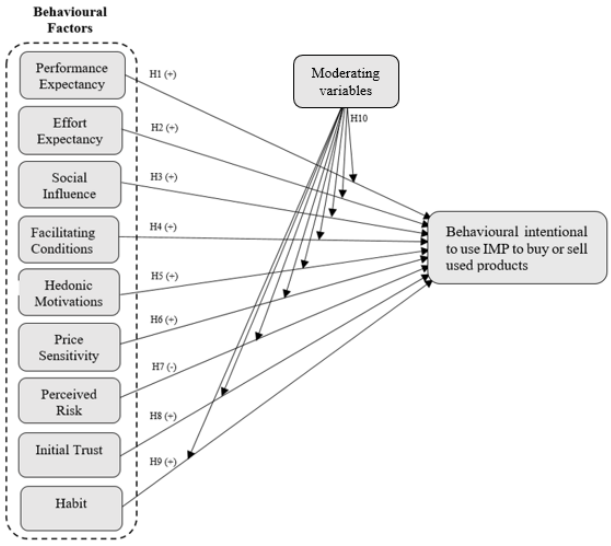
the second option being understood as a type of convenient disposal that requires little effort; but also respectful of the environment since it allows the useful life of used products to be extended as well as their redistribution. Shivonen and Tururnen (2016), affirm that the consumption of used or vintage antique products requires prior knowledge and experience, to be able to identify the distinctive characteristics of high-quality pieces due to their rarity. However, Ek Styvén and Mariani; and Kin and Jin (2020), conclude that the level of education is not a relevant moderator in the consumption of used products online.

Given all of this discussion, we hypothesize:

H10: Moderating variables (gender, income, and age) moderate the relationship between the listed behavioural factors and the intention to use IMP to buy or sell used products.

Figure 1 shows our conceptual model.

Figure 3.1– Theoretical-Conceptual Model (Venkatesh et al. (2012)



Source: prepared by the authors

3.4 Research method

To carry out this research, a quantitative approach was adopted. The method applied to obtain responses from the general public was survey research using an online questionnaire. The survey research process covered the link with the theoretical level (constructs, hypotheses and unit of analysis); design of the measurement instrument, data collection method and objective of the sample; pilot test; data collection and quality measurement and data analysis (FORZA, 2002; HAIR; BRUNSVELD, 2019). All steps are presented in the following topics.

3.4.1 Measures and questionnaire development

The data collection instrument was developed using an initial set of constructs and elements identified through a systematic review of the literature, in addition to the operationalization of the constructs of the UTAUT2 theoretical model. Although the UTAUT2 measurement scales were based on existing literature, adaptations were necessary to the context studied. To ensure content validity of the survey, it was reviewed by a panel of academic experts. Based on their comments, the questionnaire underwent changes in its wording, in the presentation of ambiguous statements and in the respondent profile section (MALHOTRA; GROVER, 1998). Once the changes and adjustments were made, the survey was administered to a group of 29 master's and doctoral students in industrial engineering, to verify the wording and understanding of the questions. Adjustments were subsequently considered in accordance with the suggestions received. The constructs, variables and references are presented in Appendix I.

Once the survey has been validated, we use the Survey Monkey platform to configure the items and subsequently make them available to the general public. The questionnaire was structured in 3 sections: the first section related to the experience of buying or selling second-hand products. The second section was composed of 63 items to evaluate the use of the digital messaging platform WhatsApp to buy and sell second-hand products, this section used a seven-point Likert scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”) (HAIR et al., 2017). The third section corresponds to the characterization of the respondent.

3.4.2 Sampling and Data Collection

The survey was carried out in Brazil, a country with more than 203 million inhabitants, where 90% of households have access to the Internet according to the Brazilian Institute of Geography and Statistics 2021 (IBGE). The cell phone is the most used device to access the Internet at home, representing 99.5%. All age groups between 14 and 49 years old that access the Internet have usage percentages greater than 90%. But the group between 25 and 29 years old has the highest percentage of use: 94.5% and the group of people over 60 years old has an Internet use rate of 57.5% (IBGE 2021).

We focus our research on WhatsApp platform, once this is very well know and used in Brazil. In the world, WhatsApp attracts approximately 2 billion active users per day, according to Digital Report 2023.

People were invited to participate in the survey through social networks, due to the ease of finding potential respondents in this medium. The target population of the study was people

who use the WhatsApp digital platform to buy or sell second-hand items. 610 responses were obtained, which were examined for problems such as incomplete questionnaires or suspicious response patterns (direct or inconsistent responses), reducing the number of respondents to 300, to ensure data quality (HAIR; BABIN; KREY, 2017; HAIR; BRUNSVELD, 2019). The responses were also examined about outliers, using the Mahalanobis distance (52 questionnaires excluded), one of the most used tests for outlier detection in multivariate data ((DAI et al., 2020). Respondents who participated in this research allowed their data to be used anonymously and confidentially. Table 3.1 shows the detailed socio-demographic information.

Table 3.1 – Demographic composition of the study participants (n = 248)

Demographic Variables	Categories	Percentage
Gender	Female	66%
	Male	34%
Age	13 to 19 years	3%
	20 to 26 years	14%
	27 to 33 years	15%
	34 to 40 years	17%
	41 to 47 years	22%
	48 to 54 years	14%
	55 to 61 years	7%
	62 to 68 years	6%
	69 to 76 years	2%
Marital Status	Single	34%
	Married	52%
	Divorced	9%
	Widower	2%
	I do not wish declare	2%
Occupation	Retired.	7%
	Self-employed or freelance professional	13%
	Unemployed	2%
	Employed in a private company	22%
	Entrepreneur	6%
	Student	17%
	Government employee at the federal, state, or municipal level	23%
	I work informally from my home (sewing, private lessons, cooking, crafts, carpentry, etc.)	4%
	At home (without remuneration)	4%
	Others	2%
	I do not wish declare	less than 1%
Level os schooling	Complete Elementary School	1%
	Incomplete Middle School	less than 1%
	Complete Middle School	1%

Incomplete High School	2%
Complete High School	6%
Incomplete Higher Education	13%
Complete Higher Education	26%
Specialization	23%
Master’s or Doctorate	27%
I do not wish declare	1%

Source: prepared by the authors

It is worth highlighting that table 1 shows a predominance of female participants of 76%, in line with research that addresses the consumption behaviour of second-hand products in most Western contexts. Regarding age, it can be seen that the population has an active participation in the exchange of second-hand products between peers from the age of 20. We can also observe that participants between 41 and 47 years old are the most actively involved in second-hand exchange through WhatsApp. Likewise, we highlight the performance of 22% of those surveyed in private companies and 23% of the participants are part of the public administration system. The educational level of the participants is in line with the previous data, 27% of the participants have a master's degree or doctorate, followed by 26% graduates and 23% professionals with specialization.

When administering the questionnaire, some recommendations were made to avoid Common Method Variation (CMV): respondents were anonymous, questions followed a random order, there were explanations about each section, and there was a clear indication that there were no right or wrong answers. The measurement scale was based on multi-item constructs to ensure conceptual theoretical dominance of each construct (PODSAKOFF et al., 2003). Harman's Single Factor Test was performed to verify the existence of CMV in the analyzed data, and the test showed that less than 50% of all the variance (threshold value) was explained by a single factor (18.2%), ensuring that the CMV does not present.

3.4.3 Data Analysis

Since 2014, there has been increasing application of the partial least squares method structural equation modeling (PLS-SEM), in business, engineering, and natural sciences research (HAIR; HOWARD; NITZL, 2020; SARSTEDT et al., 2019). The choice of this method is due to several factors, among them are: it is suitable for complex measurement models (many constructs and/or items), constructs measured formatively, the sample size is small, the data are not normal and the scale of the responses is ordinal or nominal (BECKER;

RINGLE; SARSTEDT, 2018; HAIR; BABIN; KREY, 2017; HAIR; HOWARD; NITZL, 2020). PLS-SEM easily adapts to formatively specified constructs, which does not occur with other SEM methods, this being the case of the model analyzed (HAIR; HOWARD; NITZL, 2020). The obtained sample of 248 respondents is adequate from the point of view of the general rules for sample size in PLS-SEM. One of the suggested rules is the tenth rule, which in this case would indicate a sample size of 90 respondents (HAIR; BABIN; KREY, 2017) and according to the rule of the minimum R square method with power of 0.95, the Minimum sample would be 166 (HAIR; BABIN; KREY, 2017; KOCK; HADAYA, 2018).

3.5 Results

3.5.1 Testing the hypothesis

The present model is composed of formative constructs; this causes the formative measurement model, which has specific evaluation criteria based on the measurement theory (Hair et al. 2017; Sarstedt et al. 2019). The evaluation of formative measurement models involves testing the construct collinearity (VIF<5) and the significance of the item outer weight (OW) (p-value<0.05) or relevance (outer loading > 0.5). Hair et al. (2017; 2018) indicates that if the outer weights of formative items are not significant, outer loadings (OL) should be observed, if greater than 0.5, the items should be kept, due to their importance to the model. Table 3.2 presents the item significance (OW p-value) and relative (OW) and absolute contribution (OL) of the items for the formative constructs. When the OW p-value was not significant, the OL was observed and when >0.5, the item was kept in the model.

Table 3.2. Item reliability, relevance and significance

Construct	Code Item	VIF	OW	OW p-value	OL	OL p-value	R2
Performance Expectancy (PE)	PE3	1.498	0.039	0.600	0.526	0.000	
	PE4	1.643	0.086	0.318	0.574	0.000	
	PE5	1.522	0.565	0.000	0.867	0.000	
	PE6	1.707	0.013	0.871	0.576	0.000	
	PE8	1.340	0.267	0.001	0.674	0.000	
	PE9	1.375	0.198	0.009	0.535	0.000	
	PE10	1.472	0.217	0.006	0.672	0.000	
Effort Expectancy (EE)	EE1	1.432	0.140	0.000	0.582	0.000	
	EE2	1.847	0.267	0.000	0.762	0.000	
	EE3	1.435	0.222	0.000	0.636	0.000	
	EE4	1.257	0.169	0.000	0.537	0.000	
	EE5	1.541	0.247	0.000	0.713	0.000	
	EE9	1.274	0.205	0.000	0.584	0.000	
	EE10	1.546	0.181	0.000	0.647	0.000	

	EE11	1.360	0.130	0.000	0.545	0.000	
Social Influence (SI)	SI1	1.824	0.316	0.000	0.827	0.000	
	SI2	2.294	0.436	0.000	0.908	0.000	
	SI3	2.259	0.385	0.000	0.891	0.000	
Facilitated Conditions (FC)	FC1	1.127	0.603	0.000	0.806	0.000	
	FC2	1.416	0.509	0.000	0.782	0.000	
	FC3	1.417	0.186	0.055	0.628	0.000	
Hedonic Motivation (HM)	HM1	2.561	0.213	0.009	0.850	0.000	
	HM2	2.524	0.264	0.001	0.859	0.000	
	HM3	1.515	0.179	0.002	0.639	0.000	
	HM4	3.001	0.429	0.000	0.904	0.000	
	HM5	1.989	0.053	0.429	0.681	0.000	
	HM6	1.589	0.085	0.238	0.633	0.000	
Price Sensitive (PS)	PS1	1.000	1.000		1.000		
Perceived Risk (PR)	PR6	1.370	0.326	0.203	0.704	0.000	
	PR7	1.350	0.277	0.228	0.686	0.000	
	PR8	1.530	0.365	0.145	0.786	0.000	
	PR9	1.496	0.301	0.256	0.701	0.000	
	PR13	1.336	0.143	0.565	0.575	0.002	
Initial Trust (IT)	IT1	1.870	0.099	0.244	0.705	0.000	
	IT2	1.034	0.161	0.012	0.247	0.004	
	IT4	1.397	0.088	0.237	0.547	0.000	
	IT5	2.339	0.823	0.000	0.976	0.000	
	IT6	2.042	0.053	0.606	0.724	0.000	
Habit (HT)	HT1	2.591	0.685	0.000	0.973	0.000	
	HT2	2.469	0.257	0.004	0.865	0.000	
	HT3	1.669	0.155	0.019	0.718	0.000	
Behavioural Intention (BI)	BI1	3.966	0.387	0.000	0.939	0.000	0.790
	BI2	4.046	0.085	0.292	0.888	0.000	
	BI3	4.156	0.397	0.000	0.945	0.000	
	BI4	2.259	0.224	0.001	0.830	0.000	

Source: Prepared by the authors

The structural model assessment starts with analyzing the relationships between the constructs (Sarstedt et al. 2019; Hair et al. 2018). The assessment of the stage two results addresses the structural model considering the latent variable scores of the lower-order constructs (Sarstedt et al. 2019; Hair et al. 2018). The structural assessment encompasses the collinearity between constructs (via the inner VIF values, that should be less than 5.0), significance and relevance of the path coefficients, explanatory (R2) and predictive power (Hair et al. 2018; Hair Jr, Howard, and Nitzl 2020; Sarstedt et al. 2019). Other criteria can be

observed, such as the effect size ($f2$). The path coefficient significance and relevance was verified by the bootstrapping procedure (Table 3.3) (Hair et al. 2018; Hair et al., 2020).

Table 3.3. Hypothesis testing (bootstrapping method - 5000 sub-samples)

Hypothesis	VIF	f2	Path (β)	Stdev	P Values
H1:Performance Expectancy -> Behavioural Intention	3.889	0.001	-0.026	0.073	0.722
H2:Effort Expectancy -> Behavioural Intention	3.806	0.031	0.154	0.069	0.026
H3: Social Influence -> Behavioural Intention	2.481	0.009	0.067	0.048	0.168
H4: Facilitated Conditions -> Behavioural Intention	2.238	0.004	0.041	0.049	0.400
H5: Hedonic Motivations -> Behavioural Intention	4.600	0.059	0.235	0.075	0.002
H6: Price Sensitive -> Behavioural Intention	1.397	0.000	-0.005	0.033	0.891
H7: Perceived Risk -> Behavioural Intention	1.214	0.018	-0.066	0.031	0.031
H8: Initial Trust -> Behavioural Intention	3.072	0.071	0.210	0.055	0.000
H9: Habit -> Behavioural Intention	2.391	0.248	0.347	0.059	0.000

Source: Prepared by the authors

The results in Table 3.3 show that five hypotheses (H2, H5, H8, H9, H7) proposed in the research model are statistically supported. The Effort Expectancy (β = 0.154; p-value = 0.026), Hedonic Motivations (β = 0.235; p-value = 0.002), Initial Trust (β = 0.210; p-value = <0.001) and Habit (β = 0.347; p-value = <0.001) have a positive and statistically significant impact on Behavioural Intention. While Perceived Risk (β = -0.066; p-value = 0.031) has a negative and significant impact on Behavioural Intention.

In addition, there is no statistical evidence to support that Facilitated Conditions, Performance Expectancy, Price Sensitive and Social Influence directly positively impacts Behavioural Intention. The path coefficients and f2 effect size allow comparing the intensities of the relationships between the constructs and the importance (f2) of a specific construct to explain other endogenous latent variables (Hair et al. 2017a; 2018). Observing the magnitude of the path coefficient and $f2$, the results show that the impact of Habit has the bigger effect on Behavioural Intention, followed by Initial Trust.

Another important assessment for the structural model is the predictive power and generalizable findings, which require assessing whether the results apply to in-sample and out-of-sample data sets (Shmueli et al. 2019; Hair Jr, Howard, and Nitzl 2020). The coefficient of determination (R2) measures the in-sample predictive power (Hair et al. 2017; Shmueli et al. 2019), presented in Table 3.1. To assess the statistical model's out-of-sample predictive power, we used the PLS predict procedure, in which Q2 predict values (Table 3.4) are higher than 0

for all items; and the mean absolute error (MAE) values from the PLS-SEM analysis was smaller than the linear regression model (LM) results for almost all items (Shmueli et al. 2019; Hair Jr, Howard, and Nitzl 2020). This suggests that the model has medium predictive power (Shmueli et al. 2019).

Table 3.4 Q2 predict

Q2 predict	Q^2_predict	MAE PLS	MAE LM
BI1	0.678	0.923	0.914
BI2	0.610	0.996	1.073
BI3	0.688	0.901	0.953
BI4	0.527	0.940	0.986

Source: Prepared by the authors

3.5.2 Multigroup and Moderation analysis

Gender, age and education were considered as variables that could imply heterogeneity and differences in the model. For gender, female and male groups were considered to observe differences in the model and a multigroup analysis was performed. The same occurred with education, observing a group of respondents with incomplete higher education and another group with higher education complete or more. The multigroup test was applied to verify the differences between groups in the relationships of the model (Hair et al. 2018). Multigroup test was applied via permutation, after confirmed the configural and compositional invariance based on the MICOM test (Henseler, Ringle, and Sarstedt 2016; Hair et al. 2018), was verified the differences in the path coefficients in the permutation test when the groups had similar sizes (gender), when one of the groups was more than twice the size of the other (education), Multigroup Analysis (MGA) was applied (Hair et al. 2018). No differences were found in the hypotheses tested (Table 3.5).

Table 3.5. Multigroup analysis

	Education				Gender			
Hypothesis	Path Coefficients Group 1	Path Coefficients Group 2	Path coefficients difference	p-Value difference	Path Coefficients Group 1	Path Coefficients Group 2	Path coefficients difference	p-Value difference
Performance Expectancy -> Behavioural Intention	-0.018	-0.012	-0.006	0.936	0.087	-0.215	0.302	0.065
Effort Expectancy -> Behavioural Intention	0.118	0.163	-0.044	0.786	0.126	0.316	-0.190	0.235

Social Influence -> Behavioural Intention	0.241	0.024	0.217	0.057	0.072	0.069	0.002	0.987
Facilitated Conditions -> Behavioural Intention	-0.070	0.050	-0.120	0.260	0.029	0.153	-0.123	0.255
Hedonic Motivations -> Behavioural Intention	-0.055	0.321	-0.376	0.096	0.283	0.151	0.132	0.411
Price Sensitive -> Behavioural Intention	-0.043	0.032	-0.075	0.375	0.023	-0.072	0.095	0.235
Perceived Risk -> Behavioural Intention	0.048	-0.120	0.168	0.070	-0.033	-0.148	0.115	0.065
Initial Trust -> Behavioural Intention	0.345	0.133	0.212	0.095	0.144	0.357	-0.214	0.084
Habit -> Behavioural Intention	0.517	0.316	0.200	0.233	0.275	0.252	0.023	0.861

Education: Group 1 (n=58; less than complete higher education); Group 2: (n=190; higher education complete or more); Gender: Group 1 (n=163; Femal); Group 2 (n=84; male)
Source: Prepared by the authors

For age analysis, the years of birth of the respondents were made. For this, a formative and quantitative moderation variable was used (Hair et al., 2018) with the respondent's year of birth. However, no significant moderation was found (table 3.6).

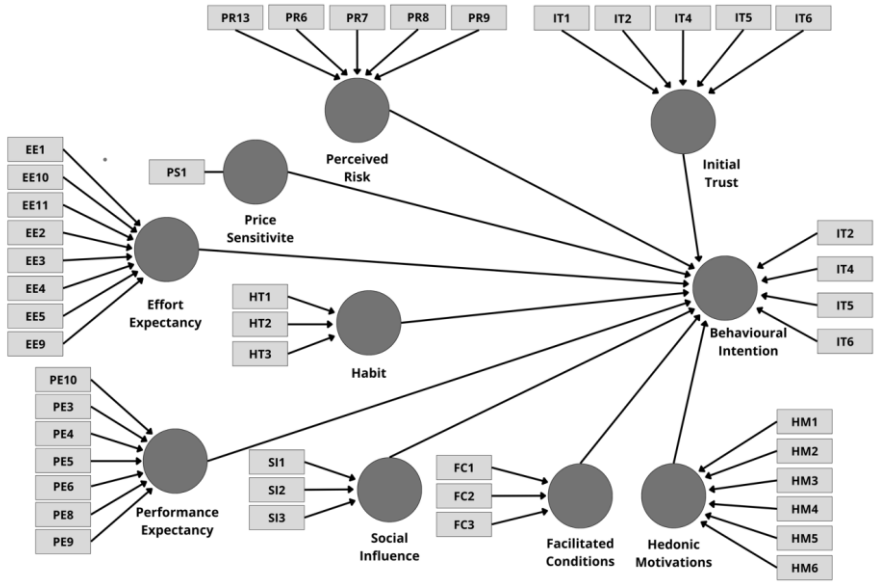
Table 3.6. Moderation analysis (5000 subsamples)

Moderation	Path (β)	Stdev	P Values
Performance Expectancy*Year of birth -> Behavioural Intention	-0.041	0.080	0.611
Effort Expectancy*Year of birth -> Behavioural Intention	0.032	0.070	0.648
Social influence*Year of birth -> Behavioural Intention	-0.003	0.055	0.959
Facilitated Conditions*Year of birth -> Behavioural Intention	-0.018	0.042	0.676
Hedonic Motivations*Year of birth -> Behavioural Intention	-0.100	0.070	0.150
Price Sensitive*Year of birth -> Behavioural Intention	-0.064	0.038	0.091
Perceived Risk*Year of birth -> Behavioural Intention	0.005	0.033	0.888
Initial Trust*Year of birth -> Behavioural Intention	0.074	0.060	0.217
Habit*Year of birth -> Behavioural Intention	0.169	0.052	0.001

Source: Prepared by the authors

Figure 3.2 presents the research model with the formative constructs and the variables that make up each construct, called the measurement model. The figure also presents the relationships between the constructs (hypotheses), called the structural model.

Figure 3.2–Measurement Model



Source: Prepared by the authors

3.6 Discussion

This manuscript aims to contribute to the understanding of important phenomena that drive individuals to adopt and use technology. In this case we investigate the use of Whatsapp IMP to consume previously used products, promoting reuse as a practical and economic activity favorable to society. Reuse promotes circularity by extending the life cycle of products already manufactured, avoiding their direct disposal and generating a positive impact on the environment.

The construct “effort expectancy” (H2) has been statistically supported in our model. So we can infer that respondents have adopted and use WhatsApp to buy or sell second-hand products because they perceive the convenience, practicality, ease of use and efficiency of this platform. Our findings are in line with Singh et al (2014), who highlight the importance of easy access to information for decision making. Whatsapp is a platform, therefore it is possible to find the offer of almost any product, the buyer can contact the seller directly in real time to request additional information, images, videos, PDF documents. The negotiation process can be carried out through instant text messages as well as by call or video call, without leaving home.

People who choose to join used buying and selling groups can buy, sell, or be administrators of these groups, and they are willing to invest energy and effort in this activity. Therefore, our finding suggests that Brazilian citizens, as well as Canadians (ERTZ; DURIF; ARCAND, 2018), Indonesians (MAYASARI; HARYANTO, 2018) and Americans (FORTUNA; DIYAMANDOGLU, 2017), among others, also perceive P2P platforms as

practical resale channels, so that in addition to getting rid of objects they no longer want or need, they can also generate value. It should be noted that, unlike other emerging contexts such as China (ASHFAQ et al., 2019) and India (FERNANDO; SIVAKUMARAN; SUGANTHI, 2018; PADMAVATHY; SWAPANA; PAUL, 2019), the control variables such as age, education and gender of the users does not exert a significant moderation in our investigated Brazilian context.

Our empirical evidence indicates that the “Initial Trust” (H8) construct has a notable positive impact on the behavioral intention of Brazilian citizens to adopt the WhatsApp platform to buy or sell second-hand products. This result also supports the users' familiarity with the investigated technology. Our results suggest that Brazilian buyers have high positive expectations towards the seller and towards the product when they decide to spontaneously and actively participate in communities of buying and selling second-hand products. Therefore, we can also infer that mutual trust is strengthened through interactions since this platform does not have a seller rating system, due to its digital nature as an instant messaging platform. It becomes evident that the expectations of Brazilian buyers regarding the used product offered would be the same as the description published by the seller, which is also accompanied by images, videos and/or documents in PDF format. It should be noted that the products used are not in their packaging, the vast majority do not have a guarantee. Since the moderation of age, education and gender was not confirmed, we can also say that this mutual trust may have its origin in the culture of the investigated context.

Our results indicate that the "habit" construct (H9) has a determining impact on the behavioral intention of individuals who adopt and use the WhatsApp platform to consume second-hand products. This evidence is in line with research on consumer IT adoption, which states that this voluntary user behavior is the result of learning and repetition over time (VENKATESH; THONG; XINXU, 2012). From the consumer's perspective, the intention to continue using a certain technology is correlated with the previous use and practical effect of that technology (Ghose 2009; mikalef et al. 2013; Singh et al.2014), a sequence of successful experiences (Bezançon et al. 2019; parguel et al. 2017) and enjoyment (ashfaq et al. 2019; Turunen and Shivonen 2016). It is also worth mentioning that the voluntary use of mobile devices with Internet access also drives the habit of using technology. However, we did not identify the moderating influence of age, gender, and education for this construct.

According to our results, the construct “hedonic motivations” (H5) has a positive and statistically significant impact on the intention to consume second-hand products through the WhatsApp platform. This result is in line with the research of Ashfaq et al. (2019), who also

confirmed that this factor directly influences the satisfaction and repurchase intention of Chinese consumers. The driver “hedonistic motivations,” has also been operationalized as “perceived enjoyment” (VENKATESH; THONG; XINXU, 2012). According to Hamari and his colleagues' findings (2016), some people may engage in collaborative consumption simply because it is fun. For Mikalef et al. (2013), the pursuit of enjoyment of the process has become an extension of utilitarian motivation.

Our results also suggest that hedonic motivation is a predictor directly related to consumer acceptance of technology and adoption of used products, in our case the instant messaging platform WhatsApp, such as Venkatesh et al. (2012). Therefore, we can affirm that the trend of buying second-hand products is accelerating due to customers' interest in online shopping, in line with previous studies. However, characteristics such as the category of the used product (GULLSTRAND EDBRING; LEHNER; MONT, 2016; MIKALEF; GIANNAKOS; PATELI, 2013), the material (GULLSTRAND EDBRING; LEHNER; MONT, 2016; PARAS et al., 2018), the brand (AMATULLI et al., 2018; CASSIDY, 2017; CERVELLON; CAREY; HARMS, 2012; SIHVONEN; TURUNEN, 2016), the origin (CLAUSEN et al., 2010; SIHVONEN; TURUNEN, 2016), the design (PARAS et al., 2018), the time of previous effective use (KWARTENG; PILÍK; JUŘIČKOVÁ, 2018; LU; SHANG, 2019) and even the culture (ASHFAQ et al., 2019; KEIM; WAGNER, 2018) influence the effect of this predictor.

Our results show that the construct "Perceived Risk (H7) has a negative impact on the behavioral intention of Brazilian consumers to adopt the WhatsApp platform to consume used products. This result is in line with research on second-hand consumption, as indicated by Lăzăroiu et al. (2020), who highlight the role of online perceived risk in consumer decision-making on social commerce platforms. Additionally, Kamalul Ariffin et al. (2018) reinforce that various factors of perceived risk by consumers negatively influence online purchase intention. However, local platforms like WhatsApp mitigate the different risks identified by previous literature. Financial risk is minimized since consumers do not make payments through the platform. Furthermore, the uncertainty stemming from the risk of used product performance is also reduced because buyers have the opportunity to inspect and test the product in person, as discussed by Pappas (2016), who explores the relationship between online perceived risks and consumer trust. Finally, the physical risk resulting from close contact and the transmission of diseases or pests is limited by the product exposure method, but it also depends on the product category and is minimized since the client can inspect the characteristics of the used product before purchasing it.

Our results also show that the “initial trust” (H8) construct has a larger effect than the “Perceived Risk” construct, suggesting that Brazilian consumers, like consumers in other emerging contexts such as India (Padmavathy et al. 2019), have a preference for local platforms that allow pairing between consumer and seller. These types of platforms do not interfere with the negotiation and have no commissions. Consumers trust the sellers' description and are guided by the intrinsic characteristics of the product used, such as brand, material, origin, time of use, among the most mentioned in previous literature. Transportation and handling costs are minimized as the buyer must travel a short distance to meet the seller face-to-face, allowing the buyer to inspect the product before finalizing the transaction. Consumers must travel a short distance to meet the seller face-to-face, allowing them to inspect the product before finalizing the transaction.

Concerning the non-validated hypothesis, we found no statistical evidence to support that Facilitated Conditions, Performance Expectancy, Price Sensitive and Social Influence directly positively impacts Behavioral Intention. Despite the established significance of facilitating conditions in technology adoption, as noted by Venkatesh et al. (2003) and others, our research suggests that these conditions may not be as influential in the specific context of second-hand product consumption through an instant messaging platform. This could be attributed to the users' pre-existing familiarity with such technologies, which might make the role of facilitating conditions less pivotal, as also indicated in studies by Clausen et al. (2010) and Padmavathy et al. (2019). The scenario suggests that users might be prioritizing other aspects such as trust and hedonic motivation, as highlighted by Fernando; Sivakumaran; Suganthi (2018).

Similarly, performance expectancy, which generally refers to the perceived benefits of using a technology and is a key factor in its adoption, did not emerge as a significant factor in our research. This finding is somewhat surprising given the emphasis on performance expectancy in previous research, such as by Venkatesh et al. (2003) and Ashfaq et al. (2019). It hints at a possibility that users of this platform for second-hand products are more inclined towards practicality, ease of use, or even the thrill of finding bargains, rather than the platform's performance per se. This aligns with insights from Ek Styven and Mariani (2020) and Vila-Brunet and Llach (2020), where consumer expectations in online second-hand markets may differ from those in other technology adoption contexts.

Furthermore, the aspect of price sensitivity, typically a crucial factor in consumer decision-making, especially in the context of second-hand products, did not show a significant impact on the behavioral intention to use the platform. While price sensitivity is a known factor

in technology adoption and consumer behavior, as discussed by Bezançon; Guiot; Le Nagard (2019) and Kwarteng; Pilík; Juřičková (2018), the second-hand market dynamics might shift focus towards the uniqueness and quality of products over their price. This suggests that in digital second-hand markets, aspects like convenience, product variety, and quality might be more valued by consumers.

Lastly, the lack of a significant impact of social influence is a fascinating aspect of our findings. This challenges the conventional understanding, as per Venkatesh et al. (2003) and Sihvonen; Turunen (2016), that social norms and expectations play a crucial role in technology adoption and use. In the context of our research, this could imply that decisions to use the platform for buying and selling second-hand items are more personally driven, reflecting a trend where consumers in this market are potentially more independent and less influenced by their immediate social circles, as seen in studies by Clausen et al. (2010) and Mayasari; Haryanto (2018).

3.7 CONCLUSIONS

3.7.1 Final remarks

This manuscript contributes to the understanding of phenomena driving individuals to adopt and use technology, focusing on the use of WhatsApp IMP for consuming used products and promoting reuse as a practical and economically favorable activity for society. The research reveals that the effort expectancy factor is statistically supported, indicating that people adopt WhatsApp to buy and sell used products because they perceive the platform as convenient, practical, and efficient. Initial trust also plays a significant role in the behavioral intention of Brazilians to use WhatsApp for second-hand transactions. Additionally, the habit of using technology and hedonic motivations also positively influence this intention.

Another important finding is that hedonic motivation is related to technology acceptance and the adoption of used products, while perceived risk has a negative impact on the intention to consume used products through WhatsApp. However, the research shows that WhatsApp, as a local platform, mitigates many of the perceived risks. Regarding the non-validated hypotheses, there is no statistical evidence to support the direct positive impact of Facilitated Conditions, Performance Expectancy, Price Sensitivity, and Social Influence on Behavioral Intention. It highlights that while certain factors like effort expectancy, hedonic motivations, initial trust, and habit strongly influence user behavior, traditional aspects like facilitating conditions, performance expectancy, price sensitivity, and social influence might play a different role in this unique context. These insights are not only intriguing from an

academic perspective but also valuable for strategizing in digital marketplaces.

3.7.3 Limitations and future research

Our In our research, we primarily focused on studying the adoption and usage of technology in the context of second-hand consumption via WhatsApp instant messaging platforms (IMPs). However, it's crucial to acknowledge certain limitations and explore potential avenues for future research.

Firstly, our study centered on a single technology, WhatsApp IMP, as the primary platform for second-hand transactions. To broaden the applicability of our findings, it would be valuable to delve into other communication technologies, such as Instagram or similar platforms, which also play a significant role in second-hand consumption. By understanding how different technologies impact consumer behavior in this context, we can gain a more comprehensive view of the digital marketplace.

Additionally, despite having a higher proportion of women in our survey, we did not observe a significant moderating effect of gender on our study's outcomes. Future investigations could delve deeper into gender-specific patterns, particularly in the context of second-hand clothing, where previous research suggests a higher female participation rate. This gender-focused exploration could reveal nuanced insights into technology adoption and usage.

Looking ahead, there are several promising directions for future research. Firstly, researchers could explore how various communication technologies influence second-hand consumption behaviors to gain a more holistic understanding of consumer preferences and motivations. Platforms like Instagram, Facebook Marketplace, or specialized resale apps could be examined to identify key drivers and barriers unique to each platform.

Furthermore, to gain a deeper understanding of how demographics influence technology adoption in the second-hand market, future research should comprehensively analyze the moderating effects of age, education, and gender. By scrutinizing these factors in more detail, researchers can uncover subtle nuances in consumer behavior and tailor strategies accordingly.

Lastly, our findings suggest that habit plays a significant role in driving technology adoption for sustainable consumption practices. Extending this research to explore disposal practices of used objects, not only in the Brazilian context but also in other global contexts, can provide valuable insights into the broader implications of habit formation in promoting sustainability.

Chapter 4 Conclusions

4.1 Final Summary of Our Research Findings

In our comprehensive dissertation, which encompasses two detailed studies, we have extensively explored consumer behavior within the second-hand product market, particularly through digital platforms. Our first study conducted a systematic literature review focusing on the social commerce aspect of second-hand product trading. It highlighted that consumers are primarily motivated by factors such as economic benefits, convenience, ideological beliefs, and sustainability when opting for second-hand goods. Key barriers identified include concerns about product and seller reliability, a preference for new products, and apprehensions about negative physical contagion. The research also provides strategies for overcoming these barriers, emphasizing the importance of direct transactions, enhanced product packaging, quality assurances, and promoting environmental consciousness. It further explores the utilization of various online platforms, like Facebook, Craigslist, and eBay, for trading diverse categories of second-hand items ranging from clothing to electronics.

Our second study shifts the focus to the use of Instant Messaging Platforms (IMPs) for second-hand transactions. This investigation reveals critical insights into the behavioral intentions of consumers, underscoring that factors such as the perceived ease of use (effort expectancy), pleasure derived (hedonic motivations), initial trust, and habitual usage positively influence consumers' willingness to engage in these transactions. In contrast, perceived risks associated with these platforms negatively impact consumer intentions. Our research also shows that facilitating conditions, performance expectancy, price sensitivity, and social influence do not have a direct positive impact on behavioral intention. This study is particularly groundbreaking in its application of the UTAUT2 framework to understand consumer behavior in using IMPs for second-hand product exchanges.

4.2 Academic and Practical Contributions of Our Research

The academic contributions of our research are manifold. Firstly, the systematic review in the first study fills a significant gap in the literature by integrating various aspects of consumer behavior in the context of social commerce. It provides a consolidated view of the motivations, barriers, and current second-hand product consumption trends, laying the groundwork for future research in this area. The second study expands the application of the

UTAUT2 framework to the emerging field of IMPs in second-hand markets, offering a novel perspective on consumer adoption and usage in this digital context.

From a practical standpoint, our findings offer substantial benefits to various stakeholders. Businesses in the second-hand market can leverage these insights to tailor their marketing strategies and platform design to align more closely with consumer preferences and concerns. For developers of IMPs and other digital platforms, understanding the key factors that drive consumer behavior can guide the creation of more engaging, user-friendly, and secure online environments for second-hand transactions.

4.3 Limitations and Directions for Future Research in Our Studies

While our research offers significant insights, it acknowledges certain limitations. The specificity of the platforms and consumer behaviors studied might limit the generalizability of our findings across different digital environments. Future research could broaden this scope by examining a diverse range of digital platforms and technologies, understanding their varied impacts on consumer behavior in the second-hand market. An in-depth analysis of demographic-specific consumption patterns, particularly focusing on gender differences in second-hand product consumption, could enrich our understanding of this market.

Looking forward, there is a vast landscape for future research. Investigating the evolving role of new technologies and emerging digital platforms in shaping consumer behavior in second-hand markets remains a fertile ground for exploration. An increased focus on the role of sustainability and environmental consciousness in consumer decision-making, especially in the circular economy context, would be particularly relevant. Finally, expanding this research to include disposal practices of used objects across different global contexts could provide a more holistic understanding of sustainable consumption behaviors, contributing significantly to the field of environmental sustainability and consumer behavior.

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Appendix

Olá! Me chamo Cláudia Blaz, e sou estudante de Mestrado em Engenharia de Produção (PPGEP) da Universidade Federal de São Carlos (UFSCar). Convido você para participar da minha pesquisa sobre operações de compra ou venda de produtos de segunda mão. Esses produtos podem ser novos, seminovos ou usados, e as transações são realizadas por meio de plataformas digitais como Mercado Livre, Estante Virtual, OLX, Shopee Brasil, entre outras.

Observamos um aumento no uso do WhatsApp para efetuar compras e vendas de produtos de segunda mão entre as pessoas, e essa pesquisa busca compreender os fatores que influenciam essa utilização. Os resultados serão usados para aprimorar o processo, tornando o uso do aplicativo mais seguro e confiável tanto para vendedores quanto para compradores.

O questionário possui 3 blocos. O primeiro busca entender se você realiza operações de compra ou venda de produtos de segunda mão em aplicativos ou plataformas digitais. O segundo contém perguntas sobre a possibilidade de usar o WhatsApp para esse fim. Por fim, o último bloco aborda seu perfil como participante da pesquisa.

Gostaríamos de solicitar que preencha o questionário até o final, pois respostas incompletas podem comprometer a confiabilidade dos resultados. Essa pesquisa não apresenta riscos diretos à sua saúde, e o máximo que pode ocorrer é cansaço durante o preenchimento. Para evitar fadiga, a maioria das perguntas é de escolha múltipla, não exigindo digitação, apenas um clique.

Não é necessário se identificar, pois as respostas serão tratadas de forma agregada. Não há respostas certas ou erradas, e entendemos que algumas perguntas podem parecer semelhantes. Nosso objetivo é registrar sua opinião sobre o uso do WhatsApp para operações de compra e venda de produtos de segunda mão. O questionário levará no máximo 10 minutos para ser concluído.

Em caso de dúvidas sobre o questionário, entre em contato pelo e-mail claudiac.blaz@gmail.com Agradeço antecipadamente pela sua colaboração!

Atenciosamente,

Cláudia

Em função do que foi declarado acima:

( ) Aceito participar desta pesquisa [link para o Bloco 1]

( ) Não aceito participar da pesquisa [link para uma página de agradecimento]

Parte 1 – Experiência com compra e venda de produtos de segunda mão

1.1 Que plataforma(s) ou aplicativo(s) de compra ou venda de produtos de segunda mão você conhece? Assinale quantas alternativas for necessário.

[ ] Não conheço nenhuma plataforma ou aplicativo para compra ou venda de produtos de segunda mão

[ ] Mercado Livre

[ ] OLX

[ ] Facebook

[ ] Desapego

[ ] WhatsApp

[ ] Shopee Brasil

[ ] Enjoei

[ ] Repassa

[ ] Já vendeu

[ ] Estante Virtual

[ ] Peguei bode

[ ] Elo7

[ ] Ficou pequeno

[ ] Outras. Especifique.

As questões a seguir refere-se à possibilidade de você ter tido alguma experiência de compra ou venda de produtos de segunda mão nos últimos 6 meses.

1.2 Que papel você desempenhou nesse período?

( ) Eu não realizei compra ou venda de produtos de segunda mão nesse período

( ) Eu comprei produtos de segunda mão nesse período

( ) Eu vendi produtos de segunda mão nesse período

( ) Eu tanto comprei quanto vendi produtos de segunda mão nesse período

( ) Eu mais comprei do que vendi produtos de segunda mão nesse período

( ) Eu mais vendi do que comprei produtos de segunda mão nesse período

( ) Além de comprar ou vender produtos de segunda mão eu também atuei como Administrador do Grupo nesse período

Qual (is) plataforma(s) digital ou aplicativo(s) você utilizou para comprar ou vender de produtos de segunda mão? Assinale quantas alternativas for necessário.

[ ] Não usei nenhuma plataforma ou aplicativo para comprar ou vender de produtos de segunda mão

[ ] Mercado Livre

[ ] OLX

[ ] Facebook

[ ] Desapega

[ ] WhatsApp

[ ] Shopee Brasil

[ ] Enjoei

[ ] Repassa

[ ] Já vendeu

[ ] Estante virtual

[ ] Peguei bode

[ ] Elo7

[ ] Ficou pequeno

[ ] Outras. Especifique.

Quantas operações de compra ou venda de produtos de segunda mão você realizou nesses 6 meses? Note que uma operação de compra ou venda pode envolver mais de um item adquirido ou vendido.

( ) Não realizei operações de compra ou venda de produtos de segunda mão nesse período

( ) de 1 a 3 operações de compra ou venda nesse período

( ) de 4 a 6 operações de compra ou venda nesse período

( ) de 7 a 9 operações de compra ou venda nesse período

( ) superior a 10 operações de compra ou venda nesse período

Que produtos de segunda mão você vendeu ou comprou nos últimos 6 (seis) meses? Assinale quantas alternativas for necessário.

[ ] Não realizei operações de compra ou venda de produtos de segunda mão nesse período

[ ] Vestuário e acessórios de maneira geral (roupas, calçados, etc.)

[ ] Produtos eletrônicos em geral (celular, tablet, notebook, máquina fotográfica, smartwatch, etc.)

[ ] Mobiliário e decoração em geral

[ ] Veículos Automotores

[ ] Peças de Veículos Automotores

[ ] Livros e mídias em geral

[ ] Instrumentos musicais

[ ] Brinquedos e jogos

[ ] Ferramentas e equipamentos

[ ] Outros, especifique:_____

Para quem você comprou produtos de segunda mão nos últimos 6 (seis) meses? Assinale quantas alternativas for necessário.

[ ] Não comprei produtos de segunda mão nesse período

[ ] Para mim mesmo

[ ] Para pessoas da minha família

[ ] Para amigos ou conhecidos

[ ] Outros, especifique:_____

Para quem você vendeu produtos de segunda mão nos últimos 6 (seis) meses? Assinale quantas alternativas for necessário.

[ ] Não vendi produtos de segunda mão nesse período

[ ] Para pessoas da minha comunidade (pode ser no condomínio ou bairro, na academia, no seu trabalho, etc.)

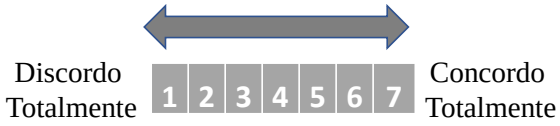
[ ] Para pessoas da minha família

[ ] Para pessoas desconhecidas

[ ] Outros, especifique:_____

Parte 2 – Avaliação do uso do WhatsApp para realizar compras e vendas de produtos de segunda mão

Em relação ao potencial uso do WhatsApp para realizar compras ou vendas de produtos de segunda mão, indique o seu nível de concordância, de acordo com a escala a seguir:



Item
Tenho me dedicado muito aos Grupos de Compra e Venda de Produtos de Segunda mão no WhatsApp
É mais fácil usar o WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão em comparação com outras plataformas, como Mercado Livre, Shopee, OLX, etc.
Eu temo que a quantidade de mensagens e notificações geradas pelos Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp possa sobrecarregar meu *Smartphone*
Para mim o WhatsApp é um aplicativo confiável para comprar ou vender de Produtos de Segunda Mão
Tenho receio de que as pessoas que participam de Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp compartilhem minhas informações pessoais (como por exemplo, meu número de telefone, PIX, conta do banco, etc.) sem a devida autorização
Seria fácil criar um Grupo no WhatsApp para que as pessoas possam realizar compra e venda de Produtos de Segunda Mão
O uso do WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão contribui para a experiência de se comprar ou vender produtos de segunda mão
Seria tranquilo usar o WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão
O uso do WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão possibilita encontrar ofertas de produtos de qualidade com preços mais baixos e justos
O uso de Grupos de Compra e Venda de Produtos de Segunda mão no WhatsApp tornou-se natural para mim
O WhatsApp permite realizar postagens de ofertas de compra e venda de produtos de segunda mão usando mídias variadas, como áudio, vídeo, fotos, pdf, etc.
Os Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp em comunidades específicas (bairro, condomínio, clube, escola, academia, trabalho, etc.) são um fator de sucesso para as transações, pois as pessoas se conhecem e confiam mais umas nas outras
O uso de Grupos do WhatsApp permite comprar e vender Produtos de Segunda Mão com o menor tempo e deslocamento possível
Seria agradável usar o WhatsApp em Grupos de Compra e Venda de Produtos de Segunda Mão
O uso do WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão permite negociar preços melhores e mais justos
Eu temo que as imagens usadas pelos vendedores possam ser falsas ou enganosas, o que pode levar a adquirir um produto que não corresponda às minhas expectativas
O WhatsApp possui recursos limitados para controlar desvios de conduta moral dos usuários em Grupos de compra e venda de Produtos de Segunda Mão
Minha confiança no WhatsApp é baseada na reputação e confiança em empresas como o Google, Facebook, Twitter e Telegram, entre outras
O uso do WhatsApp em Grupos de compra e venda de produtos de segunda mão torna possível encontrar produtos específicos que procuro
Pessoas que influenciam meu comportamento pensam que eu deveria usar o WhatsApp para comprar ou vender Produtos de Segunda Mão
Seria uma boa ideia usar o WhatsApp em Grupos de Compra e Venda de Produtos de Segunda Mão
Eu tenho conhecimento suficiente sobre como usar o WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão
Para usar o WhatsApp de forma eficiente para a compra e venda de Produtos de Segunda Mão, é necessário um *Smartphone* atualizado, com memória suficiente e uma boa câmera para tirar e compartilhar fotos, áudios e vídeos dos produtos
O uso do WhatsApp permite comprar e vender Produtos de Segunda Mão de forma segura, uma vez que a transação possivelmente seja finalizada após a inspeção do produto na entrega física (presencial), face a face com o vendedor, evitando que a pessoa adquira um item avariado ou danificado

Tenho receio de que o pagamento seja feito antes de receber o produto, o que pode resultar em fraude ou golpe
Eu tenho os recursos necessários para usar Grupos de WhatsApp para comprar ou vender Produtos de Segunda Mão
Seria divertido para mim usar o WhatsApp em Grupos de Compra e Venda de Produtos de Segunda Mão
O WhatsApp pode ser usado tanto no *Smartphone* como no meu Computador ou Notebook
O WhatsApp oferece um serviço de mensagens rápido e confiável em qualquer lugar do mundo
Eu tenho a intenção de usar Grupos do WhatsApp para vender ou comprar Produtos de Segunda Mão
O WhatsApp é compatível tanto para o sistema operacional IOS (*Apple*) quanto para o *Android*
Pessoas cuja opinião valorizo apreciariam que eu utilizasse o WhatsApp para comprar ou vender Produtos de Segunda Mão
Eu posso acessar os Grupos do WhatsApp em redes públicas de internet
A possibilidade do WhatsApp permitir o envio da localização da pessoa que estou negociando é um aspecto importante de agilidade na entrega do produto
O uso de Grupos do WhatsApp para a compra e venda de Produtos de Segunda Mão seria uma iniciativa importante para promover o convívio entre as pessoas
Eu tenho amigos que poderiam me ajudar a usar o WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão
O WhatsApp é uma plataforma de comunicação acessível e gratuita
O uso do WhatsApp em Grupos de compra e venda torna possível para mim ofertar ou vender os meus produtos de segunda mão
De maneira geral, considero o WhatsApp uma plataforma confiável para que as pessoas façam compra e venda de Produtos de Segunda Mão
Eu temo que problemas técnicos no WhatsApp possam afetar a dinâmica das negociações nos Grupos de compra e venda de Produtos de Segunda Mão
A falta de conhecimento sobre as configurações de segurança do WhatsApp pode deixar os Grupos de compra e venda de Produtos de Segunda Mão vulneráveis a ataques de hackers ou pessoas mal-intencionadas
Eu tenho receio de que os assuntos discutidos nos Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp se desviem para temas não relacionados aos objetivos do grupo, como política, sexualidade, racismo, gênero, diversidade, etc.
O uso de Grupos do WhatsApp para a Compra e Venda de Produtos de Segunda Mão seria uma forma de entretenimento para mim
Eu fico receoso com a possibilidade de ter que encontrar pessoalmente o vendedor ou comprador para entregar o produto de segunda mão depois que a negociação foi concluída
No WhatsApp, as formas de pagamento nas transações de compra e venda de Produtos de Segunda Mão são determinadas pelas pessoas e não pela plataforma
Em um futuro próximo, eu planejo usar Grupos do WhatsApp para comprar ou vender Produtos de Segunda Mão
O uso de Grupos do WhatsApp para a Compra e Venda de Produtos de Segunda Mão seria uma ação favorável para o desenvolvimento sustentável
O WhatsApp é uma plataforma que permite que as pessoas realizem a negociação final da compra e venda do Produto de Segunda Mão por meio de uma chamada ou conversa privada
A possibilidade do WhatsApp permitir o envio da localização da pessoa, no momento da entrega do produto, é um aspecto importante de segurança para mim, pois posso verificar se não se trata de um local perigoso
Se eu for comprar ou vender Produtos de Segunda Mão em um futuro próximo, consideraria fazê-lo por meio de Grupos do WhatsApp
O uso do WhatsApp em Grupos de compra e venda de Produtos de Segunda Mão permite ter acesso a uma variedade maior de oferta de produtos do que em lojas físicas
Participar de Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp NÃO exigiria muito tempo e esforço para mim
O WhatsApp é um aplicativo seguro para conectar pessoas em grupos de compra e venda de Produtos de Segunda Mão
Minha intenção de usar Grupos do WhatsApp para vender ou comprar Produtos Segunda Mão é alta
Fico meio perdido no Grupo do WhatsApp quando as pessoas postam muitas mensagens e notificações de compra e venda de Produtos de Segunda Mão
Pessoas que são importantes para mim pensam que eu deveria usar o WhatsApp para comprar ou vender Produtos de Segunda Mão
Tenho receio de conflitos que possam ocorrer entre mim e os usuários dos Grupos de compra e venda de Produtos de Segunda Mão no WhatsApp

É importante que o Administrador de um Grupo do WhatsApp para compra e venda de Produtos de Segunda Mão atue como moderador de conflitos
Um Grupo de Compra e Venda de Produtos de Segunda Mão pelo WhatsApp funciona como uma espécie de "Classificados" dos tradicionais jornais impressos
O uso de Grupos de Compra e Venda de Produtos de Segunda mão no WhatsApp tornou-se um hábito para mim
Como já estou acostumado a usar o WhatsApp no meu dia a dia, não seria difícil usar este aplicativo em Grupos de compra e venda de Produtos de Segunda Mão
Eu tenho acesso a um plano de internet de banda larga
Eu tenho receio de que pessoas desconhecidas façam parte dos Grupos de compra e venda de Produtos de Segunda Mão que eu participo no WhatsApp

3 – Perfil do Respondente

Qual o gênero que você mais se identifica?

( ) Feminino

( ) Masculino

( ) Outro. Especifique_____

( ) Não desejo declarar

Em que ano você nasceu?

( ) Não desejo declarar

Qual é o seu estado Civil?

( ) Solteiro

( ) Casado

( ) Divorciado

( ) Viúvo

( ) Não desejo declarar

Qual o seu nível de instrução?

( ) Não tive a oportunidade de estudar

( ) Ensino Fundamental (antigo primário) incompleto

( ) Ensino Fundamental (antigo primário) completo

( ) Ensino Fundamental (antigo ginásio) incompleto

( ) Ensino Fundamental (antigo ginásio) completo

( ) Ensino Médio (antigo 2º grau) incompleto

( ) Ensino Médio (antigo 2º grau) completo

( ) Ensino Superior incompleto

( ) Ensino Superior completo

( ) Especialização

( ) Mestrado ou Doutorado

( ) Não desejo declarar

Quantas pessoas moram com você? (incluindo filhos, irmãos, parentes e amigos (Marque apenas uma resposta)

( ) Moro sozinho

( ) Uma a Duas pessoas

( ) De Três a Quatro pessoas

( ) De Cinco a Seis pessoas

( ) De Sete a Oito pessoas

( ) Acima de Oito pessoas

Qual o seu nível de ocupação atual? (Marque apenas uma resposta)

( ) Aposentado

( ) Autônomo ou profissional liberal

( ) Desempregado

( ) Empregado em empresa privada

( ) Empresário

( ) Estudante

( ) Funcionário público do governo federal, estadual ou municipal

( ) Trabalho em minha casa informalmente (costura, aulas particulares, cozinha, artesanato, carpintaria etc.)

( ) Faço trabalho doméstico em casa de outras pessoas (jardineiro, babá, faxineiro/a, acompanhante de idosos/as etc.)

( ) No lar (sem remuneração)

( ) Não me ocupo com nada

( ) Prefiro não responder

( ) Outro. Especifique:_____

Somando a sua renda com a renda das pessoas que moram com você, quanto é, aproximadamente, a renda familiar mensal? (Marque apenas uma resposta)

( ) Até 1 salário mínimo (até R$ 1.320,00)

( ) De 1 a 3 salários mínimos (de R$ 1320,01 até R$ 3.960,00)

( ) De 3 a 6 salários mínimos (de R$ 3.960,01 até R$ 7.920,00).
( ) De 6 a 9 salários mínimos (de R$ 7.920,01 até R$ 11.880,00).
( ) De 9 a 12 salários mínimos (de R$ 11.880,01 até R$ 15.840,00).
( ) Acima de 12 salários mínimos (Acima de R$ 15.840,01)
( ) Não sei avaliar precisamente a renda total de minha família
( ) Não desejo declarar

Considerando a soma da sua renda com a renda das pessoas que moram com você, você considera que essa renda total diminuiu nos últimos 6 (seis) meses?

( ) Sim
( ) Não
( ) Não sei avaliar

Você ou algum membro de sua Família participa do "Bolsa Família" (Antigo "Auxílio Brasil"), benefício governamental em prol de famílias mais vulneráveis?

( ) Sim
( ) Não
( ) Não desejo responder
( ) Confio Totalmente

Qual o tempo que você acessa Redes Sociais no seu dia a dia? Considere todos os instantes que acessa as redes sociais por dia e tente estimar o tempo total desses acessos.

( ) Eu não utilizo redes sociais
( ) Menos de 30 minutos por dia
( ) De 31 minutos a 1 hora por dia
( ) De uma a duas horas por dia
( ) De duas a quatro horas por dia
( ) Mais de quatro horas por dia

Especificamente em relação ao WhatsApp, qual o tempo que você acessa esse aplicativo no seu dia a dia? Considere todos os instantes que acessa o WhatsApp e tente estimar o tempo total desses acessos.

( ) Eu não utilizo o WhatsApp no meu dia a dia
( ) Menos de 15 minutos por dia

( ) De 16 minutos a 30 minutos por dia

( ) De 31 minutos a UMA hora por dia

( ) De UMA a DUAS horas por dia

( ) Mais de DUAS horas por dia

Para que você usa o WhatsApp no seu dia a dia? Assinale mais de uma alternativa se for o caso.

[ ] Comunicação pessoal

[ ] Comunicação profissional

[ ] Compartilhamento de informações

[ ] Negociações e vendas

[ ] Entretenimento e lazer

[ ] Comunicação internacional

[ ] Outro Especifique:_____

Especificamente em relação ao uso do WhatsApp em Grupos de Compra ou Venda de Produtos de segunda mão, qual o tempo que você acessa esse aplicativo no seu dia a dia para esse fim?

( ) Eu não utilizo o WhatsApp para comprar ou vender produtos de segunda mão

( ) Menos de 10 minutos por dia

( ) De 11 minutos a 20 minutos por dia

( ) De 21 minutos a 30 minutos por dia

( ) De 31 minutos a 40 minutos por dia

( ) De 41 minutos a 50 minutos por dia

( ) De 51 minutos a UMA hora por dia

( ) Mais de UMA hora por dia