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Article

Accepted Version

Ek Styven, M. and Mariani, M. M. ORCID:  
<https://orcid.org/0000-0002-7916-2576> (2020) Understanding  
the intention to buy secondhand clothing on sharing economy  
platforms: The influence of sustainability, distance from the  
consumption system, and economic motivations. *Psychology &  
Marketing*, 37 (5). pp. 724-739. ISSN 1520-6793 doi:  
10.1002/mar.21334 Available at  
<https://centaur.reading.ac.uk/88617/>

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To link to this article DOI: <http://dx.doi.org/10.1002/mar.21334>

Publisher: Wiley

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# Understanding the intention to buy secondhand clothing on sharing economy platforms: The influence of sustainability, distance from the consumption system, and economic motivations

## Abstract

Sharing economy platforms are increasingly providing an effective means of connecting providers and users of secondhand goods. While media seem to emphasize that the trend of selling/buying secondhand has been growing due to the consolidation and development of P2P sharing platforms, a comprehensive identification of the antecedents of buying secondhand on sharing economy platforms is virtually missing. This study addresses this gap by 1) identifying different sets of motivations and attitudes leading consumers to adopt sharing economy platforms for secondhand buying; 2) testing a model on a sample of UK consumers in the context of P2P sharing platforms for secondhand clothing. The study reveals that there are three major antecedents of consumers' attitude towards buying secondhand clothes on P2P sharing economy platforms: perceived sustainability, economic motivations, and taking a distance from the consumption system. Perceived sustainability and economic motivations influence positively attitude toward buying secondhand, as well as motivations in the form of distance from the consumption system. Attitude toward buying secondhand is positively influenced also by distance from the system and, in turn, has a strong positive influence on behavioral intention to buy secondhand clothes. Moreover, past experience of buying secondhand online has a positive moderating effect on the relationship between perceived sustainability and distance from the consumption system.

## Keywords

Sharing economy; perceived sustainability; economic motivations; distance from consumption system; secondhand buying; P2P sharing platforms; clothing

## 1. Introduction

*“Sharing is a phenomenon as old as humankind, while collaborative consumption and the ‘sharing economy’ are phenomena born of the Internet age” (Belk, 2014, p. 1595).*

The main idea of the sharing economy is to realize value from underutilized resources (Lee, Chan, Balaji, & Chong, 2018). This emerging trend is powered by advanced digital technologies and innovative business models, which connect providers and users of goods and services (Lee et al., 2018), thus making collaborative consumption possible. Collaborative consumption involves people who coordinate the acquisition and distribution of a resource for a monetary or non-monetary compensation (Belk, 2014). In an online setting, the term could be defined as “the peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services” (Hamari, Sjöklint, & Ukkonen, 2016, p. 2049). Two main categories can be discerned: access over ownership (through lending or renting) and transfer of ownership (through swapping, donating, or purchasing used goods) (Hamari et al., 2016).

Despite the growth of collaborative consumption and the platforms facilitating it, there is still a lack of knowledge about why users engage in these activities and what the implications of the sharing economy are (Barnes & Mattsson, 2016; Möhlmann, 2015). Previous research has suggested a number of possible drivers of participation in online collaborative consumption, such as hedonic value, social motives, nostalgia, economic incentives, reputation, need for uniqueness, and self-fulfillment (Benoit, Baker, Bolton, Gruber, & Kandampully, 2017; Guiot & Roux, 2010; Gullstrand Edbring, Lehner, & Mont, 2016; Hamari et al., 2016; Xu, Chen, Burman, & Zhao, 2014). In addition, ideological aspects such as ethics, distance from the consumption system, and attitudes to sustainability are considered to have an impact (Guiot & Roux, 2010; Hamari et al., 2016). Many consumers are increasingly involved in environmental issues related to consumption (Thøgersen, Jørgensen, & Sandager, 2012).

Achieving environmental sustainability is a crucial issue for companies in general; even more so in some industries that are in urgent need of development. Globally, the fashion industry is one of the industries that has the most negative impact on the environment (Pal & Gander, 2018; Vehmas, Raudaskoski, Heikkilä, Harlin, & Mensonen, 2018). While clothing and footwear is the eighth largest category in terms of household expenditure in the EU (Eurostat, 2018a), it is the ranked fourth in terms of its impact on the environment (WRAP, 2017). This is in part due to pollution from chemical treatments, but largely because of the high water usage during textile production. In addition, huge amounts of fashion products are not reused or recycled, but end up as waste in landfills or are incinerated (Pal & Gander, 2018). While global clothing production doubled between 2000 and 2015, the number of times each item was worn decreased by 36% during the same period (EMAF, 2017).

There are some signs of positive change, however. In the UK, both water and carbon footprints of clothing decreased by around 7–8 percent per ton between 2012 and 2016 (WRAP, 2017). Besides changes in garment production, WRAP (2017) highlights growing secondhand sales and growth in online exchange as part of the reason, and argues that an increase of ten percent in in secondhand sales could save four percent water and three percent carbon per ton of clothing. Some international reports actually project that the secondhand market for clothes could outgrow fast fashion within the next ten years (McKinsey, 2019).

Collaborative consumption of clothing items via sharing economy platforms thus has the potential to play an important role in achieving sustainability goals (Lang & Joyner Armstrong, 2018). Academic research on CC is just emerging, and relatively little is yet understood about consumers’ motivations for participating in collaborative consumption (Benoit et al., 2017). More empirical research regarding the effect of environmental attitudes on the purchasing of clothing and textiles has also been called for (Bianchi & Birtwistle, 2012). Furthermore, it is not clear if and to what extent the interplay between

different types of motivations and attitudes might affect behavioral intentions in sharing economy platforms dealing with clothing. For instance, in this study, we also analyze to what extent economic motivations and perceived sustainability can influence consumers' tendency to distance themselves from the consumption system. This paper therefore aims to provide empirical insights into how consumers' perceptions and motivations with regard to environmental issues affect their attitude and intention towards buying secondhand in an online sharing economy context. In doing so, the researchers conduct a quantitative study addressing perceived sustainability, motivations in terms of distance from the consumption system, and economic motivations to buy secondhand clothes. Moreover, the study assesses the possible moderating influences of the consumer's past experience of buying secondhand clothes as well as of demographic variables (age and education).

The following sections outlines the theoretical background to the study and formulates hypotheses, which are combined into a research model. Then, the method of the empirical study is described, followed by a presentation of the model results and hypothesis tests. The paper ends with a discussion of the study's implications, limitations, and suggestions for further research.

## 2. Theoretical background and hypotheses

There is wide consensus among marketing and psychology scholars dealing with sharing economy (SE) and collaborative consumption (CC) that both of the phenomena are highly intertwined if not largely overlapping (Belk, 2014; Lee et al., 2018). Arguably, the use of either circumlocution is driven by the research perspective and the focus of the analysis. Studies focusing on marketing issues from a supply-side perspective have defined the sharing economy as peer-to-peer (P2P) platforms enabling people to "collaboratively make use of underutilized inventory through fee-based sharing" (Zervas, Proserpio, & Byers, 2017, p. 687). Those studies have dug in depth about the supply side of P2P platforms and how these are increasingly becoming substitutes or complementors vis-a-vis incumbent firms in a number of sectors (e.g., Boudreau & Jeppesen, 2015). Thus, they are complementing extant economic theories of multi-sided and two-sided platforms (Casadesus-Masanell & Halaburda, 2014; Eisenmann, Parker, & Van Alstyne, 2011; Parker & Alstyne, 2005; Parker, Van Alstyne, & Choudary, 2016; Rochet & Tirole, 2003, 2006).

Studies dealing with marketing issues from a demand-side and consumption perspective, have focused more on "the peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services" (Hamari et al., 2016, p. 2049). Those studies have analyzed consumer behavior in P2P platforms mainly looking at the antecedents of online collaborative consumption from a consumer perspective (Benoit et al., 2017; Hamari, 2013; Hamari et al., 2016; Hofmann, Hartl, & Penz, 2017; Lang & Joyner Armstrong, 2018; Lee et al., 2018; Möhlmann, 2015; Perren & Kozinets, 2018; Piscicelli, Cooper, & Fisher, 2015). While some definitions of collaborative consumption exclude permanent transfer of ownership (e.g., Belk, 2014), others include trading or swapping as a way to redistribute unwanted or underused products (e.g., Lang & Joyner Armstrong, 2018). This study adopts the definition by Hamari et al. (2016) cited above, which is based on previous literature as well as mapping of 254 CC websites. Within this framework, the activity of CC can involve renting, lending, swapping, donating, or purchasing used goods. CC is thus viewed as "an activity where both the contribution and use of resources are intertwined through peer-to-peer networks" (Hamari et al., 2016, p. 2049).

Interestingly, both supply-side and demand-side perspectives on the sharing economy converge in identifying three sets of drivers of the emergence, development, and consolidation of P2P sharing platforms. The first and paramount set of drivers consists of technological advancement in the form of development of digital technologies, the Internet, online services, and digital platforms (Belk, 2014; Zervas et al., 2017) that allow to rent, lend, swap, donate or purchase used goods (Hamari et al., 2016).

The second set of drivers revolves around industry and markets structures and competition and relates mainly to supply-side flexibility (Zervas et al., 2017) and network effects (Boudreau & Jeppesen, 2015; Parker et al., 2016). The third set of drivers is related to social and psychological factors bringing people to interact on P2P platforms and underpinning lending and renting mechanisms as well as transfer of ownership through swapping, donating or purchased used goods (Hamari, 2013; Hamari et al., 2016; Hofmann et al., 2017; Piscicelli et al., 2015).

This study contributes to the sharing economy and collaborative consumption literature by focusing on the third set of drivers, namely *psychological factors* underlying the transfer of ownership through purchasing used goods (Hamari et al., 2016). Indeed, academic research on collaborative consumption is just emerging, and relatively little is yet understood about consumers' motivations for participating in collaborative consumption (Benoit et al., 2017). Furthermore, there is a dearth of studies providing theoretical and empirical insights into how consumers' attitudes to environmental issues affect their attitude and intention towards buying in an online collaborative consumption context.

This work is particularly timely as it explores secondhand buying on P2P sharing platforms by adopting a comprehensive approach, which recognizes the interplay of different consumers' motivations and attitudes, including economic motivations, distance from the consumption system, as well as perceived sustainability. Given this overarching goal, this study aims at making several contributions. First, it contributes to the sharing economy and collaborative consumption lines of research (Belk, 2014; Hamari et al., 2016; Lee et al., 2018; Zervas et al., 2017) by adopting an integrative and comprehensive framework, to identify the drivers (including, monetary and non-monetary ones) of buying secondhand on sharing economy platforms. Second, the study contributes to the literature on buying secondhand (Cervellon, Carey, & Harms, 2012; Crosno & Cui, 2018; Guiot & Roux, 2010; Gullstrand Edbring et al., 2016; Roux & Guiot, 2008; Turunen & Leipämaa-Leskinen, 2015) in online settings by studying the role played by different types of motivations in triggering the use of sharing economy P2P platforms to purchase secondhand items. Third, the manuscript explores the influence of economic motivations on distance from the consumption system and the consumer society. Thereby, it confirms the external validity (Lynch, Bradlow, Huber, & Lehmann, 2015) of a few previous studies conducted in the secondhand buying literature, by focusing on an under-researched context such as the UK where secondhand buying of clothes is becoming increasingly relevant and is clearly under-explored.

This work is therefore distinctive and novel as it provides a holistic and comprehensive view of multiple motivations that are conducive to secondhand goods purchase. Furthermore, the study addresses a sector (fashion) whereby the use of P2P sharing platforms is becoming paramount, thus generating important practical implications for fashion industry producers/managers, sharing economy platform managers and marketers, and P2P consumers and suppliers of fashion products on sharing economy platforms.

The next subsections present relevant literature functional to develop the study's research hypotheses.

## 2.1 Buying secondhand

Despite anecdotal evidence and historical accounts of an established tradition of buying secondhand in a number of European countries (e.g., Hansen, 2000; Marshall, 1925; Stobart & Van Damme, 2010), marketing research on buying secondhand is scant and has been developed mostly over the last decade (Cervellon et al., 2012; Crosno & Cui, 2018; Guiot & Roux, 2010; Gullstrand Edbring et al., 2016; Roux & Guiot, 2008; Turunen & Leipämaa-Leskinen, 2015).

Building on their definition of secondhand buying as “the acquisition of used objects through often specific modes and places of exchange” (Roux & Guiot, 2008, p. 66), Guiot and Roux (2010) maintain that psychological motivations play a crucial role for secondhand shopping. Their study resulted in three major clusters of reasons for secondhand shopping including economic motivations (i.e., fair price, gratification role of price), critical motivations (i.e., distance from the system, ethics and ecology), and recreational motivations (i.e., treasure hunting, originality, social contact and nostalgic pleasure). Other studies have also identified environmental/ecological and responsible concerns, as well as economic reasons, as important motivations for buying secondhand products (Ferraro, Sands, & Brace-Govan, 2016; Gullstrand Edbring et al., 2016; Turunen & Leipämaa-Leskinen, 2015).

Overall the literature reviewed in both offline and online settings seems to identify different types of motivations for consumers to engage with secondhand shopping defined as “the psychological and material motives that orient consumers toward secondhand products and/or channels” (Guiot & Roux, 2010, p. 357). As indicated in the introduction, this paper focuses on environmental and economic reasons as factors potentially influencing consumers’ attitude and intention to buy secondhand clothes from online P2P sharing economy platforms. Thus, the study does not take into account emotional and self-related constructs. In the following subsections, the focal concepts – i.e., perceived sustainability, distance from the consumption system, and economic motivations – are discussed.

#### 2.1.1 Perceived sustainability

Research taking into account consumers’ views on environmental and ecological issues has been conducted in the wider social sciences (de Ferran & Grunert, 2007; Parguel, Lunardo, & Benoit-Moreau, 2017; Vining & Ebreo, 1990), marketing (Chan, 2001; Pagiaslis & Krontalis, 2014; Prothero et al., 2011; Tarkiainen & Sundqvist, 2009; Thøgersen, Haugaard, & Olesen, 2010; Thøgersen et al., 2012), psychology (Dahlstrand & Biel, 1997; Stern, Kalof, Dietz, & Guagnano, 1995), consumer behavior (Gullstrand Edbring et al., 2016; Luchs et al., 2011; Phipps et al., 2013; Stanley, Lasonde, & Weiss, 1996; Tanner & Wölfling Kast, 2003), as well as in the area of collaborative consumption (Hamari et al., 2016). Empirical evidence from these studies suggest that among the factors influencing consumers to buy secondhand there might be reasons related to environmental sensitivity, such as beliefs or attitudes toward sustainability issues.

Research focusing on the impact of consumers’ perceptions of sustainability on their behavior can be grouped in two clusters: studies conducted in offline settings and those conducted in online settings. Regarding the former group, Chan (2001) found that Chinese consumers’ nature orientation, ecological affect and ecological knowledge – in addition to degree of collectivism – affected their attitudes towards green purchases. Building on a case study of Danish milk consumers in two different points of sales, Thøgersen et al. (2012) found that buyers of organic milk displayed different choice heuristics if compared to buyers of conventional milk. More specifically, a “green” attribute appears to enhance consumers’ involvement in decision making and signals more deliberation in their decision-making process. These results seem in line with literature on “green” shopping behavior (Tanner & Wölfling Kast, 2003; Vermeir & Verbeke, 2006). A more recent study of Indian consumers showed that concerns about the environment were related to a more positive attitude toward buying green products (Paul, Modi, & Patel, 2016). Environmental reasons also emerged as the third most relevant motivation for buying secondhand products in a study focusing on IKEA consumers in Sweden (Gullstrand Edbring et al., 2016).

Fewer studies have been conducted in online settings. In their study of buyers active on the French P2P platform Leboncoin, Parguel et al. (2017) found that environmentally conscious consumers are more likely to adopt P2P platforms for secondhand transactions. Similarly, in the context of a Finnish sharing platform (Sharetribe), Hamari et al. (2016) found that the perceived sustainability of collaborative consumption had a positive and significant impact on attitudes toward CC.



Overall, while most of the studies focusing on perceptions of sustainability in buying behavior have been conducted in offline settings, with only very few in online contexts, it appears that there is consensus suggesting that consumers' perceptions related to environmental sustainability actually could play a crucial role in affecting consumer attitudes. The attitude toward performing a behavior refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). Therefore, it can be argued that this would apply also to sharing economy online environments where collaborative consumption might be driven by environmental sustainability concerns, which can be reflected in a more positive view of buying secondhand. Thus, it is proposed that:

**H1:** Perceived sustainability of buying secondhand positively influences attitude towards buying secondhand on P2P sharing economy platforms.

### 2.1.2 Distance from the consumption system

The reviewed literature (e.g., Crosno & Cui, 2018; Guiot & Roux, 2010; Roux & Guiot, 2008) reveals that critical motivations play a paramount role in triggering secondhand buying. More specifically, by conducting a mixed-methods study with French secondhand buyers, Guiot and Roux (2010) identify a "critical" feature of motivations that relates to how secondhand buyers engage critically with the wider market system, the issues of consumerism, consumer society and consumption, and the features and offering of traditional channels.

There are two dimensions of these critical motivations to buy secondhand: (1) taking a distance from the consumption system; (2) having ethical and ecological concerns (Guiot & Roux, 2010). As far as (1) is concerned, buying or consuming new goods is perceived as a waste of resources typical in consumer societies, while buying secondhand equates with escaping from a classical consumer market system, intentionally rejecting mass consumption and reestablishing a sense of sovereignty of the consumer, as well as adopting alternative channels to avoid conventional market channels (e.g. Mano & Elliott, 1997). With regard to (2), consumers shared issues related to the reduction of the exhaustion of natural resources, the avoidance of an unnecessary proliferation of products and the reuse of functional products by finding value in what others disparage (Dobscha & Ozanne, 2001; Schor, 1998). This second dimension is thus similar in character to perceived sustainability as discussed in the previous section; i.e., having a general perception of secondhand buying as a more sustainable way of consuming clothes. Therefore, this study proposes that perceptions of environmental sustainability might influence the consumer's tendency to distance him-/herself from the consumption system, also in an online sharing economy context. Hence:

**H2a:** Perceived sustainability of buying secondhand positively influences distance from the consumption system as a motivation to buy secondhand.

The "distance from the consumption system" is interesting as a motivational factor, for a number of reasons related to the way P2P sharing economy platforms actually function and the drivers of adopting such platforms. First, adopting P2P sharing economy platforms equates to opting for unconventional and alternative market channels: this way consumers distance themselves from the consumer society (Guiot & Roux, 2010). Second, using P2P sharing economy platforms enables consumers to embrace social contact with peer consumers sharing the same willingness to escape the traditional consumption system. Third, P2P sharing economy consumers take distance from traditional marketing incitements to consume or buy new goods, which are perceived as a depletion and rejection of resources that take place in the consumer society. Fourth, participating in P2P sharing economy platforms allows to replace exclusive ownership of goods with lower-cost options from within the platform system (Hamari et al., 2016).



In sum, P2P sharing economy platforms represent unconventional market channels and build on the economic principles of using underused assets (Eckhardt & Bardhi, 2012) and collaborative consumption (Hamari et al., 2016). Therefore, this study proposes that motivations in terms of taking a distance from the consumption system might be a relevant psychological antecedent of attitudes towards buying secondhand. Consequently:

**H2b:** Distance from the consumption system as a motivation to buy secondhand positively influences attitude towards buying secondhand on P2P sharing economy platforms.

### 2.1.3 Economic motivations

The reviewed literature on secondhand consumption suggests that economic motivations play a significant role in influencing attitudes towards buying secondhand (e.g., Williams & Paddock, 2003). More specifically, Guiot and Roux (2010) found that economic motivations are relevant potential antecedents of secondhand buying, while Cervellon et al. (2012) found that secondhand fashion purchase is positively influenced by frugality and bargain hunting. Turunen and Leipämaa-Leskinen (2015) unveil that price attractiveness positively influences secondhand luxury purchase attitudes. Similarly, in a sample of college students, Yan, Bae, and Xu (2015) showed that price sensitivity had a positive relationship with frequency of buying in second-hand clothing stores. Gullstrand Edbring et al. (2016) indicate that the main motivations for buying secondhand products for IKEA customers are economic in essence.

As such, and in line with studies on collaborative consumption (Barnes & Mattsson, 2016; Belk, 2009; Hamari et al., 2016; Lamberton & Rose, 2012), it is hypothesized that economic motivations might represent critical drivers of secondhand purchasing also in P2P platforms. This is based on the ground that consumers active on online P2P sharing platforms will seek convenience, bargains and lower prices very much like in offline settings. Therefore:

**H3a:** Economic motivations to buy secondhand positively influence attitude toward buying secondhand on P2P sharing economy platforms.

Furthermore, economic motivations (such as looking for a fair and lower price) might be associated with taking a distance from the consumption system and the consumer society. As Guiot and Roux (2010) point out, economic motivations evolve from an underlying refusal to pay a premium for acquiring new items. Motivations for buying secondhand in the form of distance from the consumption system emphasize anti-waste ideals, which also involves a desire to use goods for longer time. In their study, consumers who had strong economic motivations to buy secondhand also tended to score high on the “distance from the system” dimension (Guiot & Roux, 2010). In an earlier study, Williams and Paddock (2003) found that alternative consumption, such as secondhand buying, sometimes stems from economic necessity, which in turn seems to cause a feeling of distance from traditional consumption and market systems. Transferring these notions to the context of online secondhand buying, it should be noted that P2P sharing platforms build on the economic principles of use of underused assets (Eckhardt & Bardhi, 2012) and replace exclusive ownership of goods with lower-cost options from the platform system (Hamari et al., 2016). In this way, they allow consumers to engage in online social contact and conversation and avoid conventional market channels (e.g., Mano & Elliott, 1997) that ultimately translates into triggering a new and different online conversation among peers that can persuade each other of the need to take distance from the consumption system. Based on this background, it is hypothesized that:

**H3b:** Economic motivations to buy secondhand positively influence distance from the consumption system as a motivation to buy secondhand.

### 2.1.4 Attitude and intention to buy secondhand

Buying attitudes and intentions have been examined by adopting a number of models and frameworks rooted in (social) psychology. Among these theoretical frameworks, the Theory of Reasoned Action

(TRA) (Ajzen & Fishbein, 1980) and the Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991) have gained significant scientific recognition over time. Both of these theories stipulate that a positive attitude to performing a certain behavior precedes the intention to actually performing the behavior. For example, in the context of green product consumption, Paul et al. (2016) showed that a positive attitude toward buying green products led to a stronger intention to purchase.

As such, and in line with the TRA and TPB, this study hypothesizes that the motivations and perceptions identified in the previous subsections (perceived sustainability, distance from the consumption system, and economic motivations) influence attitude to buying secondhand, which in its turn positively affects behavioral intentions towards buying secondhand. Thus, attitude works a mediator between the antecedents and the intention. Therefore:

**H4:** Attitude toward buying secondhand positively influences behavioral intention to buy secondhand on P2P sharing economy platforms.

#### 2.1.5 Moderating effects of experience of buying secondhand

An additional factor that might potentially influence secondhand shopping is experience of buying secondhand. In their study of collaborative consumption among female consumers interested in renting and swapping clothing, Lang and Joyner Armstrong (2018) find that consumers with past experience of participating in sustainable consumption practices are more likely to rent and swap. This study proposes that a similar relationship might hold also in P2P sharing economy platforms, as experience of using those platforms could be beneficial for secondhand buying. Hence:

**H5a:** Past experience of buying secondhand online positively moderates the positive influence of perceived sustainability on attitude toward buying secondhand on P2P sharing economy platforms.

**H5b:** Past experience of buying secondhand online positively moderates the positive influence of perceived sustainability on distance from the consumption system as a motivation to buy secondhand.

**H5c:** Past experience of buying secondhand online positively moderates the positive influence of distance from consumption system on attitude toward buying secondhand on P2P sharing economy platforms.

#### 2.1.6 Moderating effects of age

Demographics are typically used as controls to explain behavioral intentions buying. Apparently, age differences in particular might make a relevant difference, as online P2P platforms are more likely to be used by younger people.

Furthermore, environmental motives seem to be increasingly more popular for young generations than for older ones as young people appear to be more concerned about the environment and more inclined to pro-environmental behaviors. The most emblematic recent case is represented by the Swedish teenager Greta Thunberg who has been campaigning to push the worldwide political class to take action and address climate change issues. While the specific case might seem anecdotal per se, market research companies have identified an ongoing trend whereby sustainability and more conscious shopping is for younger generations a relevant priority when shopping (McKinsey, 2019; Nielsen, 2015; Roberts, 2019).

This seems to have an influence on secondhand buying for a number of product categories including secondhand clothes. As emphasized in their cross-cultural comparison of American and Chinese young consumers of secondhand clothes, “young consumers are a major driver behind the growth of the secondhand clothing industry in the US” (Xu et al., 2014, p. 670), as they have environmental concerns that translate into more relevant sustainability perceptions driving secondhand consumption. As such, it is expected that:

**H6a:** Age negatively moderates the positive influence of perceived sustainability on attitude towards buying secondhand on P2P sharing economy platforms.

**H6b:** Age negatively moderates the positive influence of perceived sustainability on distance from the consumption system as a motivation to buy secondhand.

**H6c:** Age negatively moderates the positive influence of distance from the consumption system on attitude toward buying secondhand on P2P sharing economy platforms.

#### 2.1.7 Moderating effects of education

Another demographic factor that might influence secondhand buying is education (that in many cases has been found to be a proxy for income). Extant research in secondhand buying seems to suggest that highly educated consumers display typically more sustainability, ecological, and ethical concerns than less educated consumers do. For instance, in their study of female clothes consumers, Cervellon et al. (2012) find that the purchase intention of secondhand clothing items is stronger the higher the education level. This study hypothesizes that a similar relationship might hold in P2P sharing platforms as educated people might be more concerned about sustainability and ecology and more interested in using unconventional market channels (e.g., Guiot & Roux, 2010). Thus:

**H7a:** Education level positively moderates the positive influence of perceived sustainability on attitude towards buying secondhand on P2P sharing economy platforms.

**H7b:** Education level positively moderates the positive influence of perceived sustainability on distance from the consumption system as a motivation to buy secondhand.

**H7c:** Education level positively moderates the positive influence of distance from the consumption system on attitude toward buying secondhand on P2P sharing economy platforms.

Figure 1 depicts the study's research model and summarizes all hypothesized relationships.

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## 3. Method

### 3.1 Measurement design

A quantitative approach was applied to measure the constructs and assess the relationships between them. To this end, the researchers conducted an online survey using the web-based tool Qualtrics. Measures used in the questionnaire were taken from previous research and slightly adapted to fit the specific context of the study. First, the domain of each construct was specified, and a sample of items was generated for each construct. These were then carefully assessed by the researchers in order to find those that were most suitable to the study context (cf. Churchill Jr., 1979). Scales capturing the model constructs included general attitude to buying secondhand clothes online (Hazen, Mollenkopf, & Wang, 2017), intention to use an online platform for buying secondhand clothes (Möhlmann, 2015), perceived sustainability of buying secondhand clothes (Hamari et al., 2016), economic motivations to buy secondhand clothes (Guiot & Roux, 2010), and distance from the consumption system as a motivation to buy secondhand clothes (Guiot & Roux, 2010). Five-point Likert-type strength of agreement scales were used for all these constructs. All items are found in the Appendix. For the moderation tests, subjects were asked about their experience of buying secondhand clothes online in the last three years, which they answered on a scale from 0 (Never) to 5 (Often). Demographic questions covered age and education, which were also used as moderating variables, as well as gender and occupation for descriptive purposes.

The study followed general recommendations for online survey research methodology (Evans & Mathur, 2018). Procedural remedies suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) were considered in the questionnaire design. The start page of the questionnaire informed respondents of the purpose and the estimated response time, and assured the anonymity of their

answers. Scale items were adapted to make them as comprehensible as possible, and no negatively worded items were used. Moreover, the conceptual framework was not disclosed to the respondents, which according to Glanfield, Ackfeldt, and Melewar (2018) further reduces the risk of common method bias.

Finally, before launching the survey, a pre-test of the questionnaire was conducted on a sample of business school students in the UK, resulting in 44 complete responses. No misunderstandings or other issues concerning the questions were reported. Cronbach alphas of the scales ranged between .882 and .944, suggesting high levels of internal consistency. For a preliminary indication of construct validity, we conducted a principal components analysis of the data. KMO and Bartlett's test was significant and  $>.80$ , and all factor loadings and communalities were well over .50. All items loaded on the intended factor, with the exception of item 4 and 5 in the Economic motivations construct, which instead loaded on the Distance from the system factor. Considering the relatively small sample of the pre-test, we decided to retain all items to be tested in the main study.

### 3.2 Sample and data collection

Data were collected via the market insights company Cint, which provides access to samples from online consumer panels in the UK. While participants in such panels likely are more Internet-savvy than the average population, they constitute a relevant target audience considering the topic of the study. Industry reports and market research indicate that the secondhand clothing market is growing fast in the UK, driven by ethical and environmental concerns as well as economic motives (Hughes, 2019; Reuters, 2019; Roberts, 2019). Much of the increase is taking place in online P2P sharing economy platforms. Between June 2018 and June 2019, UK shoppers spent £187 million (approx. €220 million) on 20 million pre-owned fashion items on eBay only (Wightman-Stone, 2019).

The survey targeted men and women between 16 and 65 years all over the UK and the setup of the project ensured that the sample would be census representative on gender, age, and region. Data collection closed after one week when a sufficient amount of responses (over 400) had been gathered. There were no missing values in the data set, as respondents had to provide answers to all questions in order to proceed through the questionnaire. However, six respondents were removed due to speeding (i.e., very short response times), as the quality of these answers can be questioned (Zhang & Conrad, 2014). The remaining 412 responses were used in the analysis.

The sample was evenly distributed in terms of age and gender. About half (52%) of the respondents were female, and then median age category was 35-44 years. The education level of the sample was comparable, or slightly above, the UK population (Eurostat, 2018b), with 41.5 percent indicating that they had a university education. Sixty-four (64) percent of the respondents were working, and ten percent were students, while the remaining sample fell into the categories, unemployed, retired, or other. Slightly more than half (52%) indicated that they had purchased secondhand clothes online at least some time during the last three years. These respondents were also asked to list the online platform(s) they had used to buy secondhand clothes. In total, 16 different services/platforms were mentioned. The most common ones were eBay (167), Facebook (29), Gumtree (25), Depop (16), Amazon (15), and Shpock (15).

### 3.3 Data analysis

Structural equation modeling (SEM) with maximum likelihood (ML) estimation, using IBM SPSS Amos 25, was employed to test the research model and the related hypotheses. According to Iacobucci (2010), ML is considered to be relatively robust and is recommended for most uses. As this study relied on cross-sectional survey data, it does not aspire to prove strictly causal relationships. Rather, the overall aim of the structural equation model is to assess functional relations and influences among constructs (cf. Bagozzi & Yi, 2012). The model tested in this study meets the criteria put forth by Hair,

Black, Babin, and Anderson (2010) and Iacobucci (2010): it does not have more than five constructs, data are normally distributed, item communalities are high, and measures are reliable. Thus, the sample size of 412 is considered sufficient to test the full model as well as to run the moderation tests in groups.

## 4. Results

### 4.1 Measurement validation and reliability

Assessment of univariate and multivariate normality showed that the distribution was fairly normal for all variables, with skewness and kurtosis values within recommended levels (Hair, Money, Samouel, & Page, 2007). A confirmatory factor analysis (CFA) was conducted in Amos to evaluate and refine the scales (Gerbing & Anderson, 1988). As a result, two items were dropped due to high modification indices and standardized residuals (one from the Distance from the system construct and one from Intention; see Appendix). Fit indices of the final measurement model suggested adequate fit between the model and the data:  $\chi^2=300.87$  (108 df),  $\chi^2/df=2.79$ , CFI=.973, NFI=.958, and RMSEA=.066.

Based on CFA results, discriminant and convergent validity among constructs were assessed. Following recommendations by Fornell and Larcker (1981) and Hair et al. (2010), this procedure involved examining that: (1) all standardized factor loadings were significant and higher than .50; (2) the correlations between each pair of constructs were less than the square root of the average variance extracted (AVE) for each construct; and (3) the AVE for each construct was higher than .50. These criteria were met for all constructs. In addition, the internal consistency of the constructs was assessed by calculating the Cronbach's alpha, which in all cases was well above the common threshold of .70. Table 1 shows the alphas, composite reliabilities (CR), and AVEs of all constructs, together with the correlations between constructs. Factor loadings for all items are provided in the Appendix.

INSERT TABLE 1 ABOUT HERE

### 4.2 Model results and main hypothesis tests

After validating the measurement model, the structural model was run in Amos 25. Structural model specification requires that exogenous variables are allowed to correlate freely, unless it can be reasonably assumed that they are completely uncorrelated (Arbuckle, 2013). Therefore, considering that CFA results showed that Perceived sustainability and Economic motivations were strongly correlated, we included a (non-directional) correlation between these two constructs in the path model. Measures of fit indicate sufficient fit between the model and sample data ( $\chi^2/df=2.996$ , CFI=.969, NFI=.954, and RMSEA=.070). The squared multiple correlations (analogous to  $R^2$ ) of the three dependent variables show that the model explains 33 percent of the variance in distance from the consumption system, 59 percent of attitude towards buying secondhand online, and 84 percent of the intention to buy secondhand clothes on P2P sharing economy platforms. Thus, in line with the theories of reasoned action and planned behavior (TRA/TPB), the model provides significant explanatory power for behavioral intention, via attitude.

Standardized path estimates of the model indicate support for all hypotheses. Perceived sustainability has a direct positive influence on attitude towards buying secondhand ( $\beta=.18$ ,  $t=3.96$ ,  $p<.001$ ), supporting H1. Moreover, motivations in the form of taking distance from the consumption system increase somewhat with higher perceived sustainability ( $\beta=.12$ ,  $t=2.10$ ,  $p<.01$ ), as proposed in H2a. Distance from the consumption system also seems to significantly influence the attitude toward buying secondhand online ( $\beta=.16$ ,  $t=3.51$ ,  $p<.001$ ), as hypothesized in H2b. These results suggest that the perceived sustainability of buying secondhand has a direct as well as an indirect effect on attitude. Findings also point to economic motivations as the most important predictor of attitude toward buying

( $\beta=.54$ ,  $t=9.54$ ,  $p<.001$ ), as well as of distance from the consumption system ( $\beta=.49$ ,  $t=7.21$ ,  $p<.001$ ), which is in line with H3a and H3b. Finally, in support of H4 and TRA/TPB, attitude toward buying secondhand has a very strong positive relationship with behavioral intention to buy secondhand on P2P sharing economy platforms ( $\beta=.92$ ,  $t=26.02$ ,  $p<.001$ ). An overview of the structural model results is provided in Figure 2. In addition to the hypothesized relationships, results also show a strong correlation between perceived sustainability and economic motivations ( $\beta=.61$ ,  $t=9.37$ ,  $p<.001$ ).

INSERT FIGURE 2 ABOUT HERE

To assess the mediating role of distance from the consumption system and attitude toward buying secondhand on behavioral intention, we performed bias-corrected (BC) bootstrapping in AMOS 25, with 2000 bootstrap samples and 95 percent BC confidence intervals (Hayes, 2009; Preacher & Hayes, 2008). The results, which are summarized in Table 2, show that all the three independent variables have significant indirect effects on the intention to buy secondhand clothes online. Moreover, in addition to the direct effects of perceived sustainability and economic motivations on the attitude towards buying secondhand, these constructs also exert some indirect influence on attitude.

INSERT TABLE 2 ABOUT HERE

Overall, the results suggest that consumers' attitudes related to sustainability aspects of buying secondhand clothes (such as saving natural resources and energy) lead to a more positive attitude toward buying secondhand clothes online. Positive perceptions of the sustainability of buying secondhand clothes also tend to, at least to some extent, increase consumers' tendency to distance themselves from the consumption system. While motivations in the form of taking a distance from the consumption system also improve attitude toward buying secondhand, the economic motivations (such as being able to buy more and paying a fair price) tend to have the strongest direct and indirect influence on attitude towards buying, as well as the strongest indirect effect on intention. Understanding what drives attitude is important, as attitude in turn is a very strong predictor of the intention to buy secondhand clothes on a P2P sharing economy platform. Given that these results apply to a sample of mixed demography and differing experience of buying secondhand, the study now turns to investigating whether there are any moderating influences that could change the relationships shown in the model results.

#### 4.3. Moderation tests

As all three moderator variables (past experience, age, and education) were categorical rather than interval, the hypothesized moderation effects were tested through multigroup analysis in Amos (Iacobucci, 2010). With this approach, the model is fit to one group's data and posited to be the same in the second group (Iacobucci, 2010). The first step was to identify groups within the different variables to be tested. *Past experience of buying secondhand clothes online* (H5a, H5b, H5c) was measured on a frequency scale ranging from 0 (=Never) to 5 (=Often). The sample was divided into two groups based on a median split and the cases in the median category (1) were excluded in order to achieve two distinct groups (cf. Yi & La, 2004). This resulted in one group of respondents who had answered 0; that is, they had never bought secondhand clothes online in the last three years ( $n=196$ ), and one group who had answered between 2 and 5 on the frequency scale ( $n=193$ ). Similarly, a median split was used to identify *age* groups (H6a, H6b, H6c). Subjects in the median category (35-44 years) were excluded (Yi & La, 2004) in the same way as for the buying experience variable, resulting in one group of 153 subjects in the "young" category (16-34) and 166 in the "older" category (45-65). Groups for *education level* (H7a, H7b, H7c) were created by dividing the sample into those without university education ( $n=241$ ) and those with university education ( $n=171$ ).

Then, measurement invariance was tested in terms of equality of factor loadings between each pair of groups (Yi & La, 2004). Overall model assessment of the two-group model for *past experience of buying secondhand clothes online* showed satisfactory fit ( $\chi^2/df=1.915$ , CFI=.964, and RMSEA=.049), and no



significant differences in factor loadings ( $p=.165$ ) were found. Likewise, two-group results for *age* did not indicate any differences between the groups, with change in Chi-square at a non-significant level for factor loadings ( $p=.431$ ). Model fit indexes were also at very similar levels as in the multigroup test for age groups. Finally, results also indicated metric invariance for *education level* ( $p=.532$ ), and model fit indexes were close to identical with the two previous tests.

Thus, as the model was assessed to be sufficiently invariant to allow for comparisons across the groups (Byrne, 2004; Hair et al., 2010), the study proceeded to multigroup analysis by running the structural model with each path coefficient constrained to be equal in both groups (i.e., at one degree of freedom). Results of these tests are displayed in Table 3, along with a summary of the results of all hypothesis tests. A significant change in Chi-square indicates that the path coefficient is in fact different between the two tested groups, and that a moderating effect is likely to exist.

INSERT TABLE 3 ABOUT HERE

Among the nine tested hypotheses of moderating effects, results indicated support only for one. For H5b, the findings suggest a significant positive moderation effect of previous experience of buying secondhand clothes online on the relationship between perceived sustainability and distance from the consumption system as a motivation to buy secondhand clothes. In the group with no experience (in the past three years), the path coefficient was non-significant, but for those who had past experience of buying secondhand online, the coefficient was .388 ( $p<.001$ ). Thus, it seems that an increasing perceived importance of sustainability aspects makes the consumer more likely to distance him-/herself from the consumption system, once the consumer has started to buy secondhand. On the other hand, contrary to H5c, the path from distance from the system to attitude was non-significant in the group with experience of buying secondhand clothes online, while it was positive and significant ( $\beta=.260$ ,  $p<.001$ ) among those who did not buy secondhand. Possibly, among those who already are secondhand buyers, a stronger tendency to distance oneself from the consumption society makes them more likely to decrease their clothing consumption in all forms, i.e., also second hand.

## 5. Conclusions

### 5.1 Implications for theory

From a theoretical point of view, this study contributes to both the sharing economy and collaborative consumption research streams (Belk, 2014; Hamari et al., 2016; Lee et al., 2018; Zervas et al., 2017) by identifying multiple psychological antecedents that drive online consumers to use sharing economy platforms to buy secondhand. More specifically, out of the motivations that have been examined and discussed in extant literature, the study identifies motivations in terms of taking distance from the consumption system, along with economic motivations and perceived sustainability, as major antecedents of consumers' attitudes to buying secondhand on P2P sharing economy platforms. This research illuminates the role of the aforementioned antecedents by means of a parsimonious model and find that motivations in the form of distance from the consumption system play a crucial role in affecting attitudes towards buying secondhand online, while being influenced in their turn by both perceived sustainability and economic motivations. As such, distance from the consumption system as a motivation to buy secondhand clothes has a mediating role among different sets of antecedents. This finding sheds light on the role of this specific type of critical motivations that in previous research (Ferraro et al., 2016; Guiot & Roux, 2010) have been highlighted as potentially influencing secondhand shoppers' attitudes and behavioral intentions.

Furthermore, our rich set of moderation tests indicates that past experience of buying secondhand online seems to have a strong positive influence on the relationship between perceived sustainability and distance from the consumption system as a motivation to buy secondhand clothes. This suggests that while economic motivation is the strongest predictor of distance from the system, as well as of



attitude toward buying secondhand online, once the consumer has some experience of buying secondhand clothes, the influence of the sustainability aspects becomes significantly stronger. This finding is also rather interesting if read in light of the Technology Acceptance Model (TAM) (Davis, 1986). TAM explains individuals' use and acceptance of a technology system based on individuals' perceptions of the ease of use and usefulness of that system that directly affect the individual attitude towards using the system (Davis, 1989). In the context of sharing economy and P2P platforms, despite the fact that perceived ease of use and perceived usefulness could be very high, past experience using them seems to make a difference.

Interestingly, age does not seem to play a relevant moderating role, contrarily to our expectations and a part of previous literature (Xu et al., 2014) and industry research (McKinsey, 2019; Nielsen, 2015; Roberts, 2019). This result suggests that environmental motives are not necessarily more influential for young generations than for older ones. Indeed, despite recent cases of young people sharing high concerns about ecological issues (for example, Greta Thunberg and Fridays for Future), the sensitivity of young people towards environmental issues might be also influenced by factors such as cultural differences, whose examination goes beyond the purpose of this paper. Moreover, this finding seems to corroborate extant literature that has shown that consumers' age does not influence attitudes toward buying secondhand (e.g., Cervellon et al., 2012). Similarly, the level of education does not seem to play a relevant moderating role contrarily to some of the previous literature (Xu et al., 2014) but consistently with contrasting studies (Beckmann, 2002).

Overall, we also find that consumers' demographic characteristics do not allow identifying clear-cut segments of consumers using P2P sharing economy platforms. This is consistent with the observation of Pedersen and Neergaard (2006) that there is no "green consumer stereotype" or "green consumer segment" and with the finding that the real world environmental concerned consumer with a specific lifestyle and clear-cut demographic characteristics is a rarity rather than the norm (Beckmann, 2002). Indeed, not only attention mosaics and bounded rationality can impact green consumers' behaviors in P2P platforms, but "consumers' attitudes and behavior affect and in turn are affected by the dominant economic, social, cultural and political institutions in society" (Pedersen & Neergaard, 2006, p. 25). As such, institutions in society coevolve with P2P sharing economy platforms and more generally with the digital technologies enabling the rise and consolidation of digital platforms (Nambisan, 2017). Therefore, we might argue that institutions – besides digital technologies – should be brought into the picture by sharing economy researchers interested in consumer behavior to gain a more comprehensive understanding of the phenomenon under investigation. This insight is even more relevant if we think that consumers are not born with unchangeable preferences, but rather "the ongoing interrelation between individuals and institutions shapes the value and belief system as well as the actual behavior" (Pedersen & Neergaard, 2006, p. 25).

This study also contributes to the literature of buying secondhand (Cervellon et al., 2012; Crosno & Cui, 2018; Guiot & Roux, 2010; Gullstrand Edbring et al., 2016; Roux & Guiot, 2008; Turunen & Leipämaa-Leskinen, 2015) in online contexts. More specifically, results illuminate cognitive and psychological factors that significantly influence behavioral intentions to buy secondhand on P2P sharing economy platforms. Motivations in the form of distance from the consumption system play a crucial role in affecting attitudes toward buying secondhand, while being influenced in their turn by both perceived sustainability and economic motivations. This implies that secondhand buying in P2P contexts displays distinctive features in that motivations stemming from a desire to distance oneself from the consumer and market society play a pivotal and mediating role.

Overall, in line with the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) and the Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991), it was found that attitude mediates the effect of the three different sets of perceptions and motivations on behavioral intention to use P2P platforms in secondhand buying.

## 5.2 Implications for practitioners

This study generates a number of practical implications that are relevant for three different audiences: (1) P2P sharing economy platform managers; (2) fashion industry producers/managers; (3) consumers and sellers active on sharing economy platforms.

As far as P2P sharing economy platform managers are concerned, this study suggests that economic motivations (in the form of fair or lower prices) are only one of the antecedents bringing consumers to buy secondhand online. Motivations in the form of taking distance from the market, a mass-consumption society and the traditional market channels seem to play a pivotal role in forming attitudes towards secondhand buying on P2P platforms. Accordingly, P2P platform managers and administrators (including Depop and Gumtree that have been mentioned frequently by respondents) should invest more in developing mechanisms that might empower two-way rating systems, allowing both the secondhand seller and the secondhand buyer to rate each other in addition to rating the transacted good. Moreover, they could embed a specific option allowing to acknowledge consumers that are particularly active in secondhand buying and engage more than the “average secondhand consumer” in secondhand P2P mediated purchasing. Mechanisms such as “badges” for the most ethical and engaged consumers could be implemented easily but this study did not detect them in every P2P website mentioned by respondents (e.g., Depop, Gumtree, Vinted, etc.). Furthermore, platform managers should invest more in creating a virtual community of like-minded P2P secondhand buyers to share their ideas, opinions and views about the role that the platform plays in helping them to meet their motivations (such as taking distance from the “traditional” consumption system). This might be a source for platform managers to improve and streamline the platform design and functionalities themselves, based on the actual needs of secondhand buyers and sellers. More generally, platform managers should not only encourage their users to share information and knowledge about environmental issues but also take a more proactive role in spreading environmental knowledge about the advantages of sustainable fashion products purchased on P2P platform: this conversation might ultimately drive more consumers to adopt (and consistently use) their P2P sharing economy platform.

As far as fashion industry producers/managers are concerned, clearly secondhand buying could be detrimental for fashion companies as P2P sharing economy platforms might represent substitutes for traditional e-commerce channels and incumbent companies, especially when there are high price differences for very similar fashion products. This can be compared to the way Airbnb is becoming in some destinations and at specific moments in time (due to seasonality) a substitute or complementor of “traditional” online travel agencies and hotel companies (Zervas et al., 2017). While it seems that the phenomenon of secondhand online exchange and transactions is clearly gaining momentum (McKinsey, 2019; WRAP, 2017), it is not easily quantifiable worldwide. Interestingly, a number of fashion companies are increasingly embracing the green paradigm and developing new value propositions and communication strategies revolving around green fashion and/or sustainable fashion (Chan, 2001; Lang & Joyner Armstrong, 2018; Pagiaslis & Krontalis, 2014). This seems to be the way forward for fashion companies willing to embed environmental goals within their companies’ missions. However, it might not be sufficient to avoid an erosion of transactions on their online distribution channels, if they do not start creating or strengthening ad hoc online communities of likeminded consumers, engaging with them on a lively conversation on sustainable consumption of fashion. As the moderating effects of demographic characteristics such as age and education do not seem to change across age range and education level, fashion industry producers/managers should understand that “green P2P consumers” are not a homogenous and stable segment sharing specific demographic characteristics or lifestyles. This implies that, as it is difficult to identify a stable segment of “green P2P consumers”, managers should find other ways (including leveraging on predictive analytics) to make the market of environmentally labelled fashion products more predictable.

As far as consumers and sellers active on sharing economy platforms are concerned, it is likely that the rate of success of secondhand transactions will be highly dependent on the way they present themselves online. Therefore, secondhand sellers operating in P2P platforms allowing the sellers to post comments, should engage to express the environmental motivations and concerns leading them to sell secondhand online, well beyond mere economic motivations. This might trigger a dialogue between sellers and buyers and even convince secondhand buyers to opt for a seller rather than another one, based not only on the “objective” reliability as appears from the P2P tracking of previous transactions but also on the real critical and ecological values espoused by the seller. Overall, certainly secondhand sellers should try to engage more with their potential buyers by explaining the environmental and ethical reasons bringing them to sell on P2P platforms.

### 5.3 Limitations and research agenda

This study has some limitations. First, while the researchers identified several psychological antecedents for the adoption of P2P sharing economy platforms in secondhand buying of clothing, there might be other reasons that, intentionally or not, were not taken into account and might generate an incremental capability to predict the intention to buy secondhand clothing on sharing economy platforms. For instance, factors related to the self, such as self-enhancement, self-assessment and well-being (Pera & Viglia, 2015) might be considered in future research.

Second, while the empirical results are based on a survey conducted in the UK where online secondhand buying has become increasingly relevant over the last decade, there might be a need to replicate the study in other geographical contexts to ensure the generalizability of the findings.

Last, the study controls for a number of variables and includes moderation effects. While this corroborates the findings and make them internally valid, moderation tests might provide different results in different contexts. For instance, age was not found to be a relevant moderating variable in the context of this study, nor in other collaborative consumption contexts in Europe. Moreover, since the empirical study was conducted in early 2019, the global environmental movement has gained even more momentum. For example, in September 2019, four million people joined the largest climate demonstration in human history. In December, 16-year-old Greta Thunberg, founder of the climate movement Fridays for Future, was elected Time Magazine’s “Person of the year” (Alter, Haynes, & Worland, 2019). It is thus possible that attitudinal changes with respect to environmental issues are growing even stronger, primarily among young consumers. Future research might pursue cross-cultural designs in order to ascertain if the moderating relationships are different across countries and cultures.

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## Tables

Table 1. Reliability, AVE, and correlation matrix

Construct	$\alpha$	CR	AVE	DIST	SUST	ECON	ATT	INT
Distance from cons system (DIST)	.863	.871	.773	<b>.879</b>				
Perceived sustainability (SUST)	.960	.960	.827	.421	<b>.910</b>			
Economic motivations (ECON)	.905	.906	.660	.565	.609	<b>.812</b>		
Attitude towards buying (ATT)	.943	.944	.849	.522	.583	.729	<b>.921</b>	
Intention to buy (INT)	.915	.915	.844	.584	.500	.726	.914	<b>.919</b>

Note: Square root of AVE on diagonal.

Table 2. Results of mediation tests

Relationship	Direct effect	Indirect effect	Total effect
SUST → DIST → ATT	.183	.020	.203
ECON → DIST → ATT	.537	.078	.616
SUST → ATT → INT	.000	.186	.186
DIST → ATT → INT	.000	.147	.147
ECON → ATT → INT	.000	.566	.566

Note: Standardized estimates. All values are significant at  $p < .01$ .

Table 3. Results of hypothesis tests

Hypotheses	Path coefficient	t	p (one-tailed)	Supported?	
H1: SUST → ATT	.183	3.955	<.001	Yes	
H2a: SUST → DIST	.122	2.095	.018	Yes	
H2b: DIST → ATT	.160	3.505	<.001	Yes	
H3a: ECON → ATT	.537	9.538	<.001	Yes	
H3b: ECON → DIST	.490	7.214	<.001	Yes	
H4: ATT → INT	.919	26.021	<.001	Yes	
Moderation hypotheses	Path coefficients	ΔX <sup>2</sup>	p	Supported?	
	No exp.	Has exp.			
H5a: Past experience + on SUST → ATT	.328***	.222**	1.180	.277	No
H5b: Past experience + on SUST → DIST	.038 (ns)	.388***	8.473	.004	Yes
H5c: Past experience + on DIST → ATT	.260***	.037 (ns)	6.776	.009	No
	Under 35	45+			
H6a: Age – on SUST → ATT	.193**	.127*	.328	.567	No
H6b: Age – on SUST → DIST	.145 (ns)	.133 (ns)	.011	.915	No
H6c: Age – on DIST → ATT	.193**		.096	.756	No
	No univ.	Has univ.			
H7a: Education + on SUST → ATT	.156**	.228***	1.489	.222	No
H7b: Education + on SUST → DIST	.104 (ns)	.131 (ns)	.136	.713	No
H7c: Education + on DIST → ATT	.124*	.204***	.999	.317	No

Note: \*\*\*)  $p < .001$ , \*\*)  $p < .01$ , \*)  $p < .05$ , ns) non-significant ( $p > .05$ )

## Figure legends

Figure 1. Research model

Figure 2. Structural model results

## Appendix

### Items in questionnaire

Factor loadings in parentheses.

#### **Distance from the consumption system** (Guiot & Roux, 2010)

1. By buying secondhand clothes, I feel like I'm escaping the consumption system\*
2. Buying secondhand clothes is for me a revenge on the consumption system (.792)
3. Buying secondhand clothes enables me to distance myself from the consumer society (.958)

#### **Perceived sustainability** (Hamari et al., 2016)

1. Buying secondhand clothes helps save natural resources (.892)
2. Buying secondhand clothes is a sustainable mode of consumption (.916)
3. Buying secondhand clothes is ecological (.938)
4. Buying secondhand clothes is efficient in terms of using energy (.901)
5. Buying secondhand clothes is environmentally friendly (.900)

#### **Economic motivations** (Guiot & Roux, 2010)

1. I can afford more clothes because I pay less secondhand (.834)
2. One can have more clothes for the same amount of money if one buys secondhand (.795)
3. I feel that I have lots of clothes for not much money by buying them secondhand (.892)
4. I don't want to pay more for a clothing item just because it's new (.659)
5. By buying secondhand, I feel I'm paying a fair price for clothes (.862)

#### **Attitude towards buying** (Hazen et al., 2017)

1. I like the idea of buying secondhand clothes online (.947)
2. Purchasing secondhand clothes online is a good idea (.875)
3. I have a positive attitude towards buying secondhand clothes online (.940)

#### **Intention to buy** (Möhlmann, 2015)

1. I am likely to choose an online platform/website offering secondhand clothes the next time I need a clothing item (.933)
2. In the future, I would prefer secondhand clothes to new ones\*
3. In the future, I am likely to choose an online platform/website offering secondhand clothes instead of buying newly manufactured clothes (.904)

\*) Item removed during CFA

All factor loadings significant at  $p < .001$ .