

Why do consumers free ride?

Investigating the effects of cognitive effort on postpurchase dissonance

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Abstract

Purpose

Building on the theoretical paradigms of consumer free-riding and cognitive dissonance, this study aims to evaluate whether consumers' cognitive effort when making a purchase decision impacts upon the relationship between free-riding habits and postpurchase cognitive dissonance.

Design/methodology/approach

To explore the relationship between cross-channel free-riding, cognitive efforts and cognitive dissonance, a framework was conceptualized and empirically tested on a sample of 518 Italian consumers. Covariance-based structural equation modeling and bootstrapped mediation analysis was performed with the PROCESS macro.

Findings

Results show that the more cognitively involved a free-riding consumer is, the more he/she will experience postpurchase cognitive dissonance.

Originality/value

Modern consumers habitually finalize their purchase activities through multiple different channels. The abundance of e-commerce/online platforms does indeed offer consumers a plethora of alternatives to physical/offline stores. Hence, consumers have been seen to act as “free-riders.” It is becoming more and more common for consumers to seek information in physical stores and then purchase a product online more conveniently. This notwithstanding, it has emerged that free-riding consumers tend to experience cognitive dissonance – which is a sensation of emotional discomfort – after making their purchases. The causes of this phenomenon are yet to be fully unpacked.

Keywords

Consumer Behavior; Free-Riding Behavior; Cognitive Efforts; Post-Purchase Cognitive Dissonance; E-Commerce.

Introduction

Recent data shows that around 73% of US individuals shop both in physical shops and online (Gartner, 2018). Consistently, around 55% of millennials in western countries' habitually try a product in-store but purchase it online (Zollo, Filieri, Rialti, & Yoon, 2020). Moreover, this manifestation has been exacerbated by the ongoing COVID-19 pandemic. In current times, in fact, majority of consumers tend to avoid crowded shops and places, visiting a physical shop only to see a good, with the intent of purchasing it online later (Ketchen & Craighead, 2020).

Shopping via multiple channels is therefore a rapidly developing phenomenon, with consumers increasingly exploiting different technological devices ubiquitously and finalizing their purchase activities at any time (Beck & Rygl, 2015). This occurrence is defined as multichannel shopping behavior, which concerns the possibility for consumers to finalize their purchases through different channels without sanctions or additional costs (Ofek, Katona & Sarvary, 2011). This derives from the wide diffusion of handy-portable smart devices (i.e., smartphones, tablets, compact laptops), the wide diffusion of ultra-broadband Internet, and sellers' strategies based on more than one channel (i.e., the simultaneous use of the physical shop and e-commerce) (Heitz-Spahn, 2013). Sellers' multichannel strategies, possibly creating within consumers a better consumer experience, could allow a seller to profit from such a behavior. A significant risk is due in part that nothing is preventing consumers from purchasing something from the e-commerce of a competitor (Chou, Shen, Chiu, & Chou, 2016). In the literature, channel-switching behaviors are labeled as "webrooming" (i.e., researching merchandise online or on a mobile device, but eventually making the actual purchase in a physical

store) and “showrooming” (i.e., visiting a brick-and-mortar store for products and then buying them from an online outlet) (Goraya et al., 2020). In the current era, channels are employed interchangeably throughout the search and purchasing process, and may even occur simultaneously in the same phase of the buying process (Flávian et al., 2020). According to a recent study (JRNI, 2019), 74% of United States and United Kingdom shoppers engage in webrooming, mainly for electronics, apparel, and household products while 57% of consumers engage in showrooming. Similar statistics have been found in Switzerland by Fuhrer and Hotz (2018). Asian shoppers, too, are increasingly engaging in channel-switching behaviors where almost 80% of consumers adopt both showrooming and webrooming behaviors when buying (BusinessToday, 2019).

Firms are therefore developing new touchpoints through which they can be constantly connected to consumers (Marino & Lo Presti, 2019). In these scenarios, digital channels have become widely used, resulting in more options for customers (i.e., digital vs. conventional in-store shopping). Consistently, customers — thanks to their more intensive use of different channels and their ability to shift between different channel preferences (Yuksel, Milne, & Miller, 2016) — have more control over the process of selecting and purchasing products and are thus becoming more empowered (van der Veen & van Ossenbruggen, 2015). According to Li, Lobschat, and Verhoef (2018), multichannel shopping consists of consumers using more than one channel in the shopping process across the different stages of the purchase, which includes information seeking, purchasing goods or services, and benefiting from after-sale assistance (Edelman, 2010). As a consequence of consumers’ hopping between one channel and another, another phenomenon has also been recently observed; namely, consumers acting as free-riders (Barwitz & Maas, 2018). Cross-channel free-riding occurs when consumers use one retailer’s channel, either online or offline, in one stage of the purchasing process, such as in the case of information seeking, and then conclude the transaction using a different channel of a different provider (Chiu, Hsieh, Roan, Tseng, & Hsieh, 2011). Consumers act as free-riders because they take advantage of the efforts of the retailer from which they gather information from but, subsequently, do not buy from them (Van Baal & Dach, 2005).

Academic literature has identified several determinants of channel choice from the consumer's viewpoint. First, channel attributes such as accessibility, convenience, perceived quality, price, and risk can influence consumers' decisions on channels (Barwitz & Maas, 2018). The consumer's purpose and the objective behind their interaction may be relevant (i.e., a purchase driven by hedonic motivation will probably be more likely to occur in a boutique rather than online) (Herhausen, Binder, Schoegel, & Herrmann, 2015). Researchers have identified some consumer features which may influence channel choice, such as product knowledge, past purchase experience, socio-demographic and psychographic characteristics, normative pressure, and prior channel exposure (Hammerschmidt, Falk, & Weijters, 2016). For example, a technology-savvy consumer might prefer to purchase a high-priced product online, despite the risks associated with digital payments (Zollo, Filieri, Rialti, & Yoon, 2020). On the other hand, a digital-adverse consumer wishing to purchase highly customized goods might prefer conventional channels and neglect digital alternatives (Casaló, Flavián, Guinalíu, & Ekinci, 2015). Understanding how consumers choose channels and the reasons that spur them to switch from one channel to another has become an issue of paramount importance for retailers, especially given that consumers can obtain similar offerings across alternative formats operated by competing providers and considering the easiness with which they migrate from outlet to outlet (Bansal, Taylor, & James, 2005).

Building on these premises, this study focuses on individuals who showroom: those that seek information regarding products at a brick-and-mortar retail outlet but then purchase from a competitor's online shop. In particular, based on the work of Chiu et al. (2011), this research considers cross-channel free-riding to be a multidimensional construct formed of four variables: the perceived risk of the online store, multichannel self-efficacy, the perceived attractiveness of the offline retail store, and the perceived difference in the online/offline decision process. In this regard, this research aspires to enrich literature on cross-channel free-riding, investigating what happens *after* such a behavior has occurred. Indeed, the most of extant research focused on which are the antecedents of such a behavior. In detail, the research aims to contribute to consumer marketing literature by

verifying if, and to what extent, cross-channel free-riding influences the cognitive dissonance arising after a purchase is made, the cognitive effort made when buying, and whether the latter mediates the relationship between cross-channel free-riding and post-purchase cognitive dissonance. Accordingly, managerial implications concerning how marketers may exploit such outcomes to push purchases on a specific channel will be proposed.

To do this, a survey was administered to consumers finalizing purchases through multiple channels. The results highlight the existence of micro-mechanisms underpinning the development of post-purchase cognitive dissonance in cross-channel free-riding. These questions were investigated through utilizing a sample of Italian consumers who sought to purchase footwear online. Accordingly, footwear is among one the principal products purchased by Italian consumers (mostly women) online (Statista, 2021). Likewise, it has been previously observed that footwear is one of the principal types of products purchased online after visiting a real-world store (Heitz-Spahn, 2013).

Cross-Channel Free-Riding

In the retail industry, consumer empowerment has increased customers' control over their choice of retailers across the purchase decision-making process enormously (van der Veen & van Ossenbruggen, 2015). Consistently, cross-channel free-riding happens when a firm is unable to charge separately for its services, which are used and exploited by consumers who eventually buy the product or service from another vendor and through a different channel (Chiu et al., 2011). Product information displayed by retailers is comparable to public goods. It can be hard or even impossible to restrict its access, meaning that it is available to both buyers and non-buyers. Free-riders can thus benefit from a retailer's vending activities, such as sales personnel assistance and advice, product descriptions, and trials, but conclude the transaction at another store, which might offer lower prices without providing the same free services (Hummel, Schacht, & Mädche, 2017). The consequences of free-riding behavior could be highly detrimental to retailers, eroding their incentive to invest in

product promotion, their personnel morale, and the efficacy of their sales and customer service tactics (Tang & Xing, 2001).

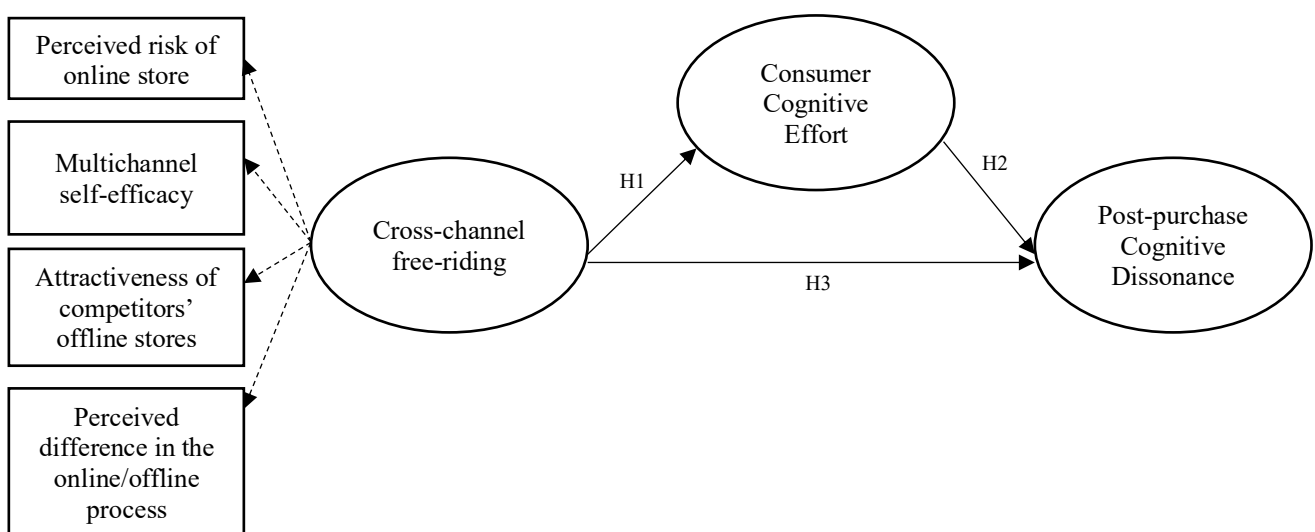
According to Heitz-Spahn, (2013), the motivations encouraging consumers to free-ride across channels can either be utilitarian or hedonic in nature. The former are primarily instrumental and functional motivations. They are based on rational motives, such as convenience or available payment methods. For example, a consumer driven by utilitarian motivations may decide to purchase a product online – instead of from a physical shop – due to a lower price or increased customization (i.e., if an online platform offers clients the opportunity to put a monogram on a product) (Bayer & Rese, 2020). The latter, instead, relates more to the affective and emotional sphere of individuals, such as the enjoyment of shopping or the exploration of new buying experiences. Consistently, a consumer that is spurred on by these kinds of motivations will select a seller promoting the most satisfaction and the best purchasing experience, regardless of the price (Harris et al., 2018).

To classify the factors that can influence a consumer's propensity to switch from one channel to another, considering the fact that the most common behaviors involve information searching online and the real purchase from a competing retailer offline, the push-pull-mooring (PPM) paradigm of migration has been selected (Bansal et al., 2005). According to this model, there are three determinants that affect consumers' switching behavior. The push effect, which is constituted by the elements that encourage people to switch from one retailer to another, occurs when a highly perceived risk toward the online store encourages consumers to buy offline, following the information seeking phase. The pull effect encompasses the positive elements that attract consumers toward an outlet — for instance, the attractiveness of an alternative retailer in terms of prices, assortment, customer service, and so on — and can increase the probability of a customer switching. The mooring effect, constituted by the obstacles that prevent channel switching from occurring, is represented by barrier swapping, such as perceived switching costs, brand loyalty, or variety-seeking tendencies (Chiu et al., 2011; Chou, Shen, Chiu, & Chou, 2016).

Conceptual Framework

To comply with the objective of this research, the proposed conceptual model (see Figure 1) aims to analyze cross-channel free-riding as a multidimensional construct composed of sub-dimensions, namely the perceived risk of the online store, multichannel self-efficacy, the attractiveness of competitors' offline stores, and the perceived differences in online vs. offline buying decisions. Furthermore, it aims to reveal if and to what extent multichannel free-riding impacts post-purchase cognitive dissonance and the cognitive effort that individuals put into their buying decisions, as well as how this, in turn, influences the buyer's post-purchase cognitive dissonance. Based on the hypothesized relationships, it is expected that subjective and contextual variables that lead consumers to adopt free-riding behaviors in a multichannel environment are related to the cognitive effort they expend throughout the entire buying and decision-making process. Furthermore, it is expected that the greater the cognitive effort, the greater the likelihood of facing post-purchase cognitive dissonance.

Figure 1 – Hypothesized conceptual model



Dotted lines indicate the factor loadings (statistical associations) between the first-order variable and its sub-dimensions.

Perceived Risk of Online Stores

Transactions on the Internet take place in anonymous and impersonal conditions with no face-to-face interaction. Consumers do not have the opportunity to inspect merchandise before buying. This type of transaction can cause perceived uncertainty (i.e., risk) regarding the consequence of a purchase on the part of the consumer, meaning that online shopping may involve more degrees of risk than traditional buying (Hong, 2015). When choosing to buy goods and services in the cyberspace, major risks are claimed to be associated with privacy issues; the extent to which consumers perceive that navigating an online environment is secure; the lack of ability of purchasers to directly interact with the vendor; the complexity of the navigation; the time spent looking for information; and uncertainty about the post-purchase services offered in comparison to more conventional ways of shopping (Pappas, 2016).

It has long been acknowledged that risks can be grouped into different categories (Jacoby & Kaplan, 1972), such as performance, financial, and psychological risk. On the Internet, performance risk may involve the receipt of an article different from the one ordered; financial risk may be linked to consumers' fear of having their credit card data misused by the retailer; and psychological risk could result from websites seizing personal information from consumers while they are unaware of the identity of the organization they are interacting with (Chiu *et al.*, 2011). Prevailing scholarly literature (Heitz-Spahn, 2013; Im, Kim, & Han, 2008; Kim, Ferrin, & Rao, 2008; Manzano, Pérez, & Blas, 2011) has found that a negative relationship exists between the perceived risk of online channels and intention to finalize an electronic transaction. This means that higher levels of perceived risk toward e-shops spurs consumers on when it comes to switching from a web vendor to a brick-and-mortar retailer. This can turn into cross-channel free-riding when the chosen physical store does not belong to the same owner or company as the electronic retailer (or e-tailer). According to the proposed model, financial, psychological, and performance risks are antecedents of the overall perceived risk of the online store.

Multichannel Self-Efficacy

Self-efficacy arises from people's perceptions regarding their ability to craft and perform the actions needed to achieve specific performances (Bandura, 1977). In the field of retailing studies, multichannel self-efficacy has been defined as the ability and self-reliance of consumers when using multiple channels throughout the entire buying process — the use of both online and physical stores for information searches throughout the entire transaction (Chiu et al., 2011). Academic literature has widely used the concept of self-efficacy to explain channel-switching behaviors in consumers (Arora & Sahney, 2017): first, as a variable influencing the perceived usefulness, trust, and risks associated with online shopping (Dash & Saji, 2007) as antecedents of perceived behavioral control in predicting channel-switching intentions in studies adopting the theory of planned behavior (Pookulangara, Hawley, & Xiao, 2011); second, as a moderator in the relationship between perceived offline search and purchase benefits and attitudes toward showrooming (Arora, Singha, & Sahney, 2017); and, third, as a variable which positively influences webrooming behavior (Arora & Sahney, 2017). This research concludes that the higher the consumers' perceived self-efficacy in relation to both online and brick-and-mortar stores, the higher the likelihood that they will switch between the two — possibly competing — channels when purchasing.

Attractiveness of Competitors' Offline Retail Stores

One of the factors influencing consumers' decisions to buy online or at a rival's physical store is the perceived attractiveness of the different viable channels (Chiu et al., 2011). The attractiveness of shopping alternatives pertains to customer perceptions regarding the extent to which possible competing substitutes exist in the marketplace and arise from the more or less positive attitudes that consumers hold toward their available options (Jones, Mothersbaugh, & Beatty, 2000). Based on psychological theories developed to predict and explain human behaviors, commonly referred to as social cognition models (Ajzen & Fishbein, 1973), both affective and cognitive factors (i.e., attitudes and beliefs) are the proximal causes of individual conduct. This means that consumer perceptions of

the attributes of alternative stores turn into purchase attractiveness, which eventually impacts upon store choices and willingness to buy from a specific retailer (Chou et al., 2016).

Perceived Differences in the Decision between Online or Offline Channels

In our current state of competition, firms must pay increasing attention to the drivers of customers' channel selection in the subsequent stages of the purchasing process, given that they may perceive different benefits and pitfalls in relation to opting for an online or offline buying strategy (Kollmann, Kuckertz, & Kayser, 2012). The perceived difference in purchasing through online or offline stores is claimed to be linked to different consumer considerations (Gupta, Su, & Walter, 2004), including: the evaluation effort, which entails inspecting and comparing attributes of goods and services, such as characteristics, texture, consistency, price, and brand; price-search effort, which involves spending time to find out (while comparing between channels) the price of the desired goods or service; and the delivery time (i.e., the time that elapses between the order and the delivery of the ordered product) for non-digitized objects, whose provision would be otherwise immediate. In this model, these variables are thought to constitute the overall perceived differences between shopping online or offline.

Building on this, we hypothesize the following:

H1. Cross-channel free-riding positively influences cognitive effort.

Cognitive Effort and Post-Purchase Cognitive Dissonance

Individuals invest various types of resources in their decision-making processes (Dholakia & Bagozzi, 2002). In terms of buying behaviors, these resources might include the time dedicated to search for and gather information about the available alternatives (products, services, prices, channels, etc.), the cognitive effort needed to recover and organize information accumulated in memory, and the process of comparing and choosing between alternatives. Effort may be also physical when consumers go to a real store to evaluate and buy products (Santos & Gonçalves,

2019). With specific reference to multichannel shopping, consumers often combine online and offline channels when collecting information about products, expending effort in gaining adequate product knowledge (Flavián, Gurrea, & Orús, 2016). Given that multichannel shopping is a highly evolving behavior (Neslin et al., 2006), consumers' informative needs have been seen to increase, spurring them on to expend greater cognitive effort throughout the entire purchasing process and after the purchase has been made (Flavián et al., 2016).

Individuals tend to act in ways that are consistent with their attitudes because inconsistencies between attitude and behavior produce an inherently unpleasant emotional state, referred to as dissonance (Cooper, 2007). When people perceive incongruity between their attitudes and behavior, they are induced to solve this contradiction by modifying their attitudes to be consistent with their behavior or by modifying or reinterpreting their behavior to be consistent with their attitudes (Balasubramanian, Raghunathan, & Mahajan, 2005; Séré de Lanauze & Siadou-Martin, 2019). The concept of cognitive dissonance has not without criticism (Vaidis & Bran, 2019) and has been widely used in the consumer behavior domain to describe the emotional discomfort that might be felt by consumers at any stage of their purchasing decision process (Cooper, 2019); especially in the post-purchase phase (Hinojosa et al., 2017). For cognitive dissonance to arise, three conditions are deemed to be necessary (Sweeney, Hausknecht, & Soutar, 2000): the buying decision must be relevant to the consumer, having invested a large amount of effort in decision making, and must have some bearing on the consumer; the consumer must have made their decision voluntarily, not under the coercion of third parties; and the decision must be irreversible and its outcomes unchangeable. In particular, considering consumer purchasing behavior, Sweeney et al. (2000) posit that cognitive dissonance is a multifaceted construct made up of three dimensions: the emotional — a consumer's psychologically unpleasant state following a purchase decision; the wisdom of a purchase — a consumer's acknowledgment in the post-purchase phase that they may not have needed the product or may not have chosen the right one; and concern over the deal — a consumer's recognition after the transaction that they may have been persuaded against their own beliefs by the vendor (Liang, 2016). In the

proposed model, the second type of cognitive dissonance is included, which can be interpreted as the admission by the consumer that they may have bought a product that they actually did not need or one that does not conform to what was desired. Accordingly, it is expected that cross-channel free-riding behavior will positively influence post-purchase cognitive dissonance and that the cognitive effort invested in the buying process will positively affect post-purchase cognitive dissonance, mediating the relationship between cross-channel free-riding and post-purchase cognitive dissonance, and increasing the likelihood of the arousal of cognitive dissonance (Wilkins, Beckenuyte, & Butt, 2016). Therefore, we propose the following hypothesis:

H2. Cognitive effort positively influences post-purchase cognitive dissonance.

Finally, our mediating effect is hypothesized as follows:

H3. Cognitive effort mediates the relationship between cross-channel free-riding and post-purchase cognitive dissonance.

Research Design

Sampling Procedure

To collect the data, we utilized a non-probabilistic convenience sampling procedure using an online questionnaire based upon recent literature on consumer behavior and e-commerce. Regarding the sample selection, all participants were required to be regular shoppers of both offline and online stores. To avoid a non-response bias, the questionnaire was pre-tested on a sample of five students enrolled in marketing courses at the University of Florence (Italy). Further, the questionnaire was also pre-tested by three academics of the same university (of whom were experts on marketing, consumer behavior, and quantitative methods, respectively). Neither the students nor the professors suggested any substantial change to the survey, thus affirming its careful design, appropriate length, and ease of completion. Moreover, to reduce the social desirability bias (Podsakoff et al., 2003), we

emphasized in the cover letter of the questionnaire that participation is completely voluntary and would not be compensated.

Italy was selected as the context of this research as it boasts developed digital channels used by consumers for their purchases. Thanks to the wide diffusion of high-speed Internet and the high adoption rate of computers, tablets, and smartphones, retail e-commerce revenue in Italy totaled €18.8 billion in 2018. Furthermore, the volume of e-commerce revenues is expected to reach €25.3 billion by 2024 (Statista, 2019). Moreover, one of the most important and largest Italian industry sectors is represented by footwear (Statista, 2021), with revenues amounting to more than \$13 million in 2021. The market is expected to grow annually by approximately 2.5% CAGR through 2025.

The survey was distributed in early 2020 and a total of 518 completed, valid, and usable responses were collected. While consistent with the Italian consumption of footwear (where women's expenditure represents approximately 2/3 (66%) of the total country's current expenditure, and 72% of the total quantity of purchased shoes (Assocalzaturifici, 2019)), our sample is mainly composed of women (81.9%).

The sample's characteristics are presented in Table 1.

Table 1 – Sample characteristics

Variable	Frequency	Valid percentage (%)
<i>Gender</i>		
Male	94	18.1
Female	424	81.9
<i>Age</i>		
18-25	278	53.7
26-30	109	21.0
31-40	43	8.3
41-50	26	6.9
Over 50	52	10.0
<i>Occupation</i>		
Student	310	59.8
Employee	148	28.6
Self-employed	33	6.4
Unemployed	27	5.2
<i>Purchase frequency</i>		
Daily	8	1.5
Weekly	18	3.5
Monthly	149	28.8
Yearly	343	66.2
<i>Average expense (Euros)</i>		

< 50	149	28.8
50-100	309	59.7
101-200	94	18.1
< 200	5	1.0
<i>Preferred purchasing channel</i>		
Offline/physical store	231	44.5
Online store (website)	127	24.6
Social media/marketplace	160	30.9

Source: Authors' Elaboration

Measures

The model's variables, items, and reference literature are shown in Table 2.

Cross-channel free-riding was conceptualized as a first-order construct composed of four sub-dimensions: 1) *Perceived risk of online store* was measured through three sub-dimensions following Chou et al. (2015) — financial risk, performance risk, and psychological risk; 2) *Multichannel self-efficacy* was captured using the four-item instrument of Chiu et al. (2010); 3) *Attractiveness of competitors' offline store* was assessed using the four-item scale by the same authors (Chiu et al., 2010); and 4) to capture the *Perceived difference in the decision process*, the eight-item instrument of Gupta et al. (2004) was used, including two sub-components — offline perceived differences and online perceived differences.

The mediating variable of *Cognitive effort* was assessed using the seven-item scale conceived by Cooper-Martin (1994).

Finally, to measure the dependent variable — *Post-purchase cognitive dissonance* — the four-item instrument used by Sweeney et al. (2000) was implemented.

Table 2 – Model variables, items, and reference literature

Variables and items	Source
Antecedents to cross-channel free-riding	
<i>Perceived risk of online store</i>	
<i>Financial risk (FR)</i> (Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)	
I am concerned that buying a product from an online store is more expensive than buying it from an offline store (FR1)	Adapted from Chou et al. (2016)
I am concerned that buying a product from an online store is more expensive than I thought (FR2)	
I am concerned that buying a product from an online store is much more expensive than I thought (FR3)	
<i>Performance risk (PMR)</i> (Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)	

I am concerned about maintaining transaction security when buying products from an online store (PMR1)	
I am concerned about the risk of interception of personal and credit information when buying products from an online store (PMR2)	
I am concerned about the reputation of the online store (PMR3)	
<i>Psychological risk (PR)</i>	
<i>(Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I am concerned that the product purchase from an online store may not suit me (PR1)	
I am concerned that the product purchase from an online store may not fit well with how I view myself (PR2)	
I am concerned that the product purchase from an online store may be different from my expectations (PR3)	
Multi-channel self-efficacy (MSE)	
<i>(Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I am confident in my ability to use different channels (MSE1)	Adapted from Chiu et al. (2011)
I have the ability to deal with services across different channels (MSE2)	
It is easy for me to successfully use different channels across the purchasing process (MSE3)	
I think I am good at evaluating the choices of multiple channels (MSE4)	
Perceived attractiveness of offline retail store (ACOS)	
<i>(Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I would be more satisfied with the services of the offline store where I purchased the product than from online stores (ACOS1)	Adapted from Chiu et al. (2011)
I would probably be happier with the services from this offline store (ACOS2)	
All in all, the policies of this offline store that I purchased from would benefit me more than online stores (ACOS3)	
Overall, purchasing from this offline store would be better than purchasing from online stores (ACOS4)	
Perceived difference in the online/offline decision process	
<i>Perceived difference in price search intention (PSI)</i>	
<i>(Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I put in a lot of effort, in physical stores, to find lower prices for this product (PSI1)	
I shop around several physical stores to take advantage of low prices for this product (PSI2)	
I consider the money saved by finding low prices in physical stores to be worth the effort (PSI3)	
I consider the time taken to find low prices in physical stores to be worth the effort (PSI4)	
I put in a lot of effort into finding lower prices online for this product (PSI5)	
I shop around several online sites to take advantage of low prices (PSI6)	
I consider the money saved by finding low prices online to be worth the effort (PSI7)	
I consider the time taken to find low prices online to be worth the effort (PSI8)	
<i>Perceived difference in evaluation effort (EE)</i>	
<i>(Likert 7-point scale; 7 = very adequate, 1 = very inadequate)</i>	Adapted from Gupta et al. (2004)
After searching and collecting information, we often need to evaluate a product in terms of its price, quality, and other product attributes. Do you perceive information gathered from physical stores to be adequate for you to evaluate this product? (EE1)	
After searching and collecting information, we often need to evaluate a product in terms of its price, quality, and other product attributes. Do you perceive information gathered online to be adequate for you to evaluate this product? (EE2)	
<i>Perceived difference in waiting/delivery time (WDT)</i>	
<i>(Likert 7-point scale; 7 = enormous problem, 1 = not a problem)</i>	
We usually need to wait in line to check-out in order to buy products from a physical store. Do you perceive waiting in line for this product to be a big problem for you? (WDT1)	
We usually need to wait for an online purchase to be delivered after we've placed an order. Do you perceive waiting for the delivery of this product to be a big problem for you? (WDT2)	
Cognitive effort (CE)	
<i>(Likert 7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I didn't take a lot of time to choose this product (CE1)	Adapted from Cooper- Martin (1994)
I was careful about which product I chose (CE2)	
I thought very hard about making this choice (CE3)	
I didn't pay much attention while making this choice (CE4)	
I concentrated a lot while making this choice (CE5)	
It was difficult for me to make this choice (CE6)	
Post-purchase cognitive dissonance (PPCD)	
<i>(7-point scale; 7 = strongly agree, 1 = strongly disagree)</i>	
I wonder if I really need this product (PPCD1)	Adapted from Sweeney et al. (2000)
I wonder whether I should have bought this product (PPCD2)	
I wonder if I have made the right choice (PPCD3)	
I wonder if I have done the right thing in buying this product (PPCD4)	

Source: authors' elaboration

Results

Preliminary Analysis

The reliability of the measures, along with descriptive statistics and correlation analyses, are reported in Table 3.

Table 3 – Correlation Matrix

	M	SD	MSE	ACOS	PSI	PMR	FR	PR	PPCD	EE	WDT	CE
MSE	4.99	1.49	(0.89)									
ACOS	4.61	1.21	-.253**	(0.72)								
PSI	4.64	1.55	.421**	0.023	(0.86)							
PMR	4.19	1.52	-.062	.159**	.207**	(0.65)						
FR	3.39	1.51	-.140**	.252**	.142**	.417**	(0.83)					
PR	5.04	1.46	-.168**	.394**	.096*	.381**	.377**	(0.82)				
PPCD	4.13	1.43	-.089*	.123**	.178**	.350**	.334**	.402**	(0.81)			
EE	4.52	1.25	.317**	.080	.391**	.096*	.030	-.011	.069	1		
WDT	4.40	1.28	.005	.082	.079	.265**	.320**	.178**	.135**	-.006	1	
CE	4.43	0.72	.134**	.142**	.383**	.257**	.267**	.356**	.428**	.251**	.137**	(0.77)

** p<0.01; * p<0.05; M: Mean; SD: Standard Deviation; Cronbach's alpha values reported on the diagonal.

MSE: multi-channel self-efficacy; ACOS: attractiveness of competitors' offline store; PSI: perceived difference in price search intention; PMR: performance risk; FR: financial risk; PR: psychological risk; PPCD: post-purchase cognitive dissonance; EE: perceived difference in evaluation effort; WDT: perceived difference in waiting/delivery time; CE: cognitive effort.

Source: Authors' Elaboration

Confirmatory Factor Analysis

For each of the dimensions of the proposed model — cross-channel free-riding, cognitive effort, and post-purchase cognitive dissonance —, a Confirmatory Factor Analysis (CFA) was conducted using SPSS module AMOS v. 25. To estimate the parameters and test the four hypothesized relationships (see Figure 1), the maximum likelihood function of AMOS was used. Goodness-of-fit measures were examined to assess the psychometric properties and the acceptable parsimony of the proposed model. Firstly, the absolute fit indexes were measured. The relative chi-square statistics suggested a good fit with a T -test of $\chi^2/df = 2.814$ (lower than 3, as required). The Goodness of Fit Index (GFI) of the model (0.957) suggested an acceptable level of fit. The last absolute fit index refers to the Root Mean Square Error of Approximation (RMSEA) (0.061),

which scored an acceptable fit level of less than 0.07, as required. Next, the relative fit indexes were measured. The Comparative Fit Index (CFI=0.951), the Incremental Fit Index (IFI=0.950), the Normed Fit Index (NFI=0.934), and the Tucker-Lewis Index (TLI=0.922) were all satisfactory at above 0.90, as required.

The measurement model showed that the factor loadings — the path coefficients between indicators and the latent variables — to be significant ($p < 0.01$), as shown in Table 4.

Table 4 – Measurement Model.

Construct / Indicators	Loading (γ)	γ^2	CR	AVE
Cross-channel free riding			0.744	0.68
<i>Perceived Risk of Online Store</i>	0.45*	20.3%		
<i>Multichannel self-efficacy</i>	0.52*	27.0%		
<i>Attractiveness of competitors' offline stores</i>	0.61*	37.2%		
<i>Perceived difference in the online/offline process</i>	0.78*	60.8%		
Cognitive effort			0.685	0.659
<i>CE1</i>	0.59*	34.8%		
<i>CE2</i>	0.60*	36.0%		
<i>CE3</i>	0.53*	28.1%		
<i>CE4</i>	0.84*	70.6%		
<i>CE5</i>	0.62*	38.4%		
<i>CE6</i>	0.64*	40.9%		
Post-purchase cognitive dissonance			0.672	0.452
PPCD1	0.48*	23.0%		
PPCD2	0.70*	49.0%		
PPCD3	0.81*	65.6%		

PPCD4	0.89*	79.2%		
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* $p < 0.01$; γ = factor loadings; γ^2 indicate the items' reliability;

CR = composite reliability; AVE = average shared explained.

Source: Authors' Elaboration

To assess the internal consistency of the variables' indicators, the composite reliability (CR) of each latent construct was evaluated. All the variables — *Cross-channel free-riding* (0.744), *Cognitive effort* (0.685), and *Post-purchase cognitive dissonance* (0.812) — showed acceptable composite levels of reliability of over 0.6, as required. Next, convergent validity was assessed using the Average of Variance Extracted (AVE) index. *Cross-channel free-riding* (0.680), *Cognitive effort* (0.659), and *Post-purchase cognitive dissonance* (0.672) all held satisfactory values higher than 0.5. Finally, the square values of AVE — *Cross-channel free-riding* (0.462), *Cognitive effort* (0.434), and *Post-purchase cognitive dissonance* (0.452) — were all higher than these variable correlations (see Table 1), thus determining the discriminant validity of the model. Overall, the fit indexes, along with the reliability and validity values, suggested an acceptable model fit.

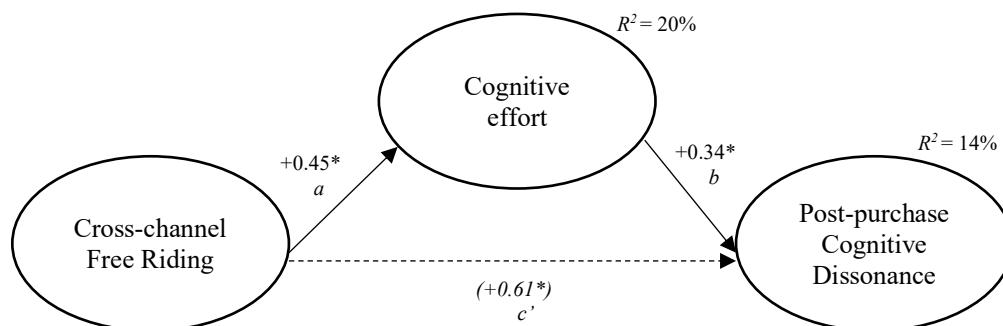
To control for Common Method Bias (CMB), the guidelines suggested by Podsakoff et al. (2003) were followed. First, the measure scales were pre-tested to remove ambiguous/vague items from the questionnaire. Second, Harman's one-factor test was performed, showing that the variance explained by the single factor was less than 50%, (31.65%). Finally, a CFA was conducted to compare the proposed model with a "one-factor model," which is a model loading all items onto a common method factor. The comparison produced a significant change in chi-square as required — the χ^2 difference test with one degree of freedom was greater than 3.84, which is the threshold value associated with $p = 0.05$, thus suggesting a better fit for the data of our proposed model in respect to the one-factor model. As a result, CMB was not a significant threat to our study.

Hypotheses Testing

We tested the mediational hypotheses following Hayes' (2013) guidelines and using SPSS PROCESS macro (v. 2.16). To conduct the mediation analysis (model 4 of PROCESS) a bootstrapping method (based on 5,000 bootstrap samples) was used. This computed 95% bias-corrected lower level confidence intervals (LLCIs) and upper level confidence intervals (ULCIs) around the estimates of indirect effects.

According to this statistical procedure, *Cross-channel free-riding* — the independent variable — should be significantly related to *Cognitive effort* (path *a*) — our hypothesized mediation variable. After controlling for the effect of the independent variable, the mediation variable should be significantly related to *Post-purchase cognitive dissonance* (path *b*) — the dependent variable of our model. Mediation is indicated by the significance level of the indirect effect (path *c* – path *c'*) from *Cross-channel free-riding* to *Post-purchase cognitive dissonance* through to *Cognitive effort*, as indicated by the *p*-value or the LLCIs and ULCIs. In other words, *Cross-channel free-riding* should have a different total (path *c*) rather than a direct effect (path *c'*) on *Post-purchase cognitive dissonance*, thus resulting in an indirect effect different from zero. Figure 2 shows the results of the bootstrapping procedure.

Figure 2 – Results of the Bootstrapped Mediation Analysis



Dotted lines indicate the hypothesized mediation effect;

The original path *c* becomes non-significant (*p*-value of path *c'* higher than 0.05), indicating a full mediation effect;

*R*² indicates the percentage of variance explained by the model.

Source: Authors' Elaboration

Cross-channel free-riding was positively related to *Cognitive effort* (path a : +0.45; $p < 0.01$), providing empirical evidence for $H1$. Similarly, *Cognitive effort* was positively related to *Post-purchase cognitive dissonance* (path b : +0.34; $p < 0.01$), thus statistically supporting $H2$. Next, concerning the relationship between *Cross-channel free-riding* and *Post-purchase cognitive dissonance*, the *total effect* (path c : +0.61; $p < 0.01$) significantly differed from the *direct effect* (path c' : $p > 0.05$), resulting in a full mediating effect of the *Cognitive effort* variable (see Hayes 2013). Thus, the bootstrapped mediational analysis provided statistical support for $H3$, indicating that the relationship between *Cross-channel free-riding* and *Post-purchase cognitive dissonance* was completely explained by consumers' *Cognitive effort*. Our hypothesized model was able to explain 20% of the *Cognitive effort* variable and 14% of the *Post-purchase cognitive dissonance* variable, thus the explanatory power was deemed adequate at higher than 10% (Falk and Miller, 1992; Van Tonder and Petzer, 2018).

Theoretical and Managerial Implications

Theoretical Implications

The model aimed to empirically test the ways in which cross-channel free-riding influences consumers' cognitive effort throughout the purchasing process and, in turn, how it impacts on post-purchase cognitive dissonance (Sweeney et al., 2000; Chiu et al., 2011).

Based on the proposed hypotheses, it was expected that the subjective and contextual elements that lead consumers to adopt a free-riding behavior within a multichannel environment would be related to the cognitive effort expended during the purchase decision-making process, from information seeking to the end of the transaction (Balasubramanian et al., 2005). It was also expected that cognitive effort would be a moderating variable in the relationship between the antecedents of cross-channel free-riding and the cognitive dissonance aroused after purchase (Harris et al., 2018). The results obtained corroborate these assumptions. Accordingly, the research aimed to extend extant

literature streams on cross-channel free riding and cognitive dissonance. To what concerns the first, the research empirically observed some of the neglected effects of cross-channels free riding behavior. In detail, the most previous research mostly focused on the antecedents of free-riding; instead, the authors wished to explore how free-riding may have a tool for consumers in term of cognitive efforts and then cognitive dissonance. Such findings thereby show the mechanisms that may foster consumer in developing a sense of remorse after free-riding (Lindenmeier et al., 2017). In respect to literature on cognitive dissonance, the research seminally explored the means post-purchases cognitive dissonance originate in the digital era and in younger consumers minds (Liang, 2016).

This research hence differs from previous literature as it observes a path connecting free-riding behavior and cognitive dissonance — a topic which has been rarely explored. As previously hinted, in fact, majority of research has been focused on the demographic motives underlying free-riding, (Heitz-Spahn, 2013), on consumers' perceived risks (Van Baal & Dach, 2005), and on consumer retention in the multichannel context (Chou, Shen, Chiu, & Chou, 2016). Accordingly, this study contributes to consumer marketing literature on cross-channel free-riding by observing the phenomenon from a twofold perspective. On the one hand, it observes the determinants of the phenomenon in offline/online contexts; specifically, with regards to the confirmation of extant research on the importance of perceived convenience and security as primary motivations for cross-channel behavior in an Italian context. Consumers, therefore, tend to hop between different channels to obtain the desired benefits (Flavian et al., 2016). In detail, consumers are more prone to switch between two different platforms if they can purchase a product more conveniently or if they feel that their personal data could be threatened according to existing regulations. Additionally, it has been observed how free-riding is frequently motivated by perceived ease of use or by a greater availability of products (Chatterjee, 2010). On the other hand, these findings identified the outcomes of free-riding and the micro-mechanisms underlying the emergence of post-purchase cognitive dissonance (Harris et al., 2018). Consumers' cognitive efforts do indeed matter. The more a consumer is solicited

in terms of the effort made when a purchasing decision, the more he/she will experience cognitive dissonance. The shift from a digital channel to a physical one (and vice versa) can result in a feeling of post-purchase emotional discomfort because of the efforts put into making the underlying decision and its irreversibility (Santos & Gonçalves, 2019). In this regard, if a consumer experiences a sense of guilt related to an online purchase after receiving support from a sales-assistant, he/she will develop greater discomfort while using the product.

These findings represent a novel finding in market research, as it extends knowledge as to the mechanism underlying consumers' dissatisfaction after the purchase of a product they would have otherwise appreciated (Miquel-Romero, Fraquet & Molla-Descals, 2020). Henceforth, it will be possible to develop some implications for managers wishing to exploit this process to drive consumers toward a specific purchase outlet.

Managerial Implications

Building on the principal findings of the quantitative research, the main implications of these results pertain to how marketing managers could improve customer relationships when adopting cross-channel strategies. Knowledge on which mechanisms relate cross-channel free-riding to cognitive dissonance may have several consequences for all kinds of retailers (i.e., e-tailer, physical retailers, and multichannel retailers). First, e-tailers, for instance, may wish to act on consumers' cognitive efforts and, therefore, their cognitive dissonance (Baier & Rise, 2020). Such an outcome may be reached by making the purchase decision journey smoother for the consumer (i.e., by reducing purchase time or by showcasing more information about the product across digital channels). Therefore, consumers may be more satisfied overall by their purchase due to the absence of negative emotions deriving from free-riding driven cognitive dissonance. Suitable approaches to achieve these results may be represented by reducing the number of clicks to purchase a product or by giving the platform a more pleasant interface (Faraoni et al., 2019). By doing so, an e-tailer may prevent consumers from switching toward another website, thus increasing revenues. Second, physical

retailers may benefit from these results through their examination of their propensity to increase cognitive dissonance. Physical retailers may in fact provide a better service and more convenient prices to consumers carrying out purchases *in situ* instead of online, thus preventing cognitive dissonance from arising (Back & Rygl, 2015). In this way, they may reduce consumer willingness to free-ride, increasing the turnaround of their businesses. Such a strategy may prove fundamental for physical retailers which have been significantly affected by COVID-19 pandemic and need consumers *to visit and stick* in physical shops. Third, the results may help multichannel retailers to develop strategies to promote the most cost-efficient outlet at a specific moment (Li et al., 2018). Indeed, when the need to promote physical shops emerges, they may reduce online information, increase cognitive efforts and dissonance, and drive consumers to the physical shops (where the salesforce may provide a different kind of service). Meanwhile, in a situation in which a physical shop needs to be closed, they may promote online information diffusion and increase online sales. Last, building on the results, in case marketers are not able to prevent free-riding, it is possible for marketers to potentially develop strategies to prevent consumers from purchasing on a competitors' e-commerce platform. For example, they may provide coupons (to consumers that are not purchasing within the store) exploitable on a proprietary e-commerce platform. Likewise, marketers may create a newsletter informing a consumer when the product they desire is available and allow reservations for in-store pickup.

Such implications are fundamental to the development of marketing strategies in a post-COVID-19 business context. In current times, indeed, consumers' purchases occur across more than one channel due to the constantly changing environment (Frasquet, Ieva & Ziliani, 2020). In effect, nowadays, the intention to purchase in a physical store is at its lowest point. To avoid risk of contagion, to reduce the need of traveling, and to better exploit spare time while working from home, consumers seem to prefer to rely on online channels (He & Harris, 2020). The availability of home delivery also encourages consumers to purchase online as they do not need to physically carry home their purchases. In this sense, cognitive efforts and dissonance may represent strategic levers with which

to drive consumers toward the best channel in the right moment. Specifically, marketers should invest in communication about the eventual existence of owned or controlled e-commerce where consumers could finalize their purchases. This is particularly important in the case where consumers do not wish to come to the physical store if they are frightened by contagion. This action could reduce cognitive dissonance and may reduce the likelihood that a consumer will purchase the product through one of the giant e-commerce platforms, such as Amazon.com or eBay. Accordingly, the possibility to foster a kind of *positive remorse* in consumers' minds could drive them towards old habits such as purchasing from a traditional physical shop. Likewise, marketers may also act on the perceived ease of using e-commerce to foster purchases. In addition, consumers desire new consumption experiences in the post-COVID-19 world (i.e., many may desire blended/hybrid purchase experiences). Accordingly, the development of new approaches integrating purchasing online, online sales assistance (i.e., through chats), in-store trial, and home delivery or contactless pickup should be utilized by marketers (Wang, Hong, Li & Gao, 2020). Such approaches may reduce cognitive dissonance and act as a strategy in the reduction of free-riding toward competitors.

Conclusions, Limitations, and Suggestion for Future Research

This study highlighted the ways in which free-riding consumers tend to experience greater levels of cognitive dissonance because of their greater cognitive effort. Additionally, alongside the increase in the cognitive effort made during the purchase decision-making phase, all factors considered inducing consumers to adopt free-riding behaviors increase as well. Thus, this research sheds some light on the formation of post-purchase cognitive dissonance, specifically for free-riding consumers (Sweeney et al., 2000).

This notwithstanding, some limitations are still evident in this research. First, the authors focused only on an Italian context. It may therefore be necessary to replicate this research in a different context, considering consumers with different consumption habits. Next, the authors focused on one

specific product category: namely, high-end shoes. Hence, it may be prudent to assess the validity of our findings considering a more generic product (Chiu et al., 2011). Similarly, our sample is mainly composed of women. Therefore, it is important to test our framework on a more heterogeneous sample. Moreover, it may be relevant to also consider different variables affecting the development of post-purchase cognitive dissonance, aside from cognitive effort. For example, hedonic or utilitarian orientation may play a role (Pappas, 2016). Similarly, it may be interesting to include consumer time-effort and the degree of reversibility of the purchase decision as significant antecedents (Sweeny et al., 2000). Consistent with this, future research should attempt to improve the predictive power of the proposed model by utilizing prediction-oriented methodologies such as partial least squares modeling (PLS-SEM). Along with considering more predictive variables, it would be beneficial to increase the R^2 values of the endogenous variables (i.e., cognitive effort and cognitive dissonance), which were low within the present study. Moving on from these limitations, we suggest that scholars continue to unpack the factors preceding post-purchase cognitive dissonance.

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