The showrooming phenomenon – Threat, opportunity or challenge in multi-channel retailing?

Inaugural dissertation

to obtain the Academic Degree of a Doctor of Economics

(Dr. rer. oec.)

at the Faculty of Economic Sciences

– Schumpeter School of Business and Economics –

of the University of Wuppertal

Submitted by

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Wuppertal, June 2020

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The PhD thesis can be quoted as follows:

urn:nbn:de:hbz:468-20210325-101502-2
[http://nbn-resolving.de/urn/resolver.pl?urn=urn%3Anbn%3Ade%3Ahbz%3A468-20210325-101502-2]

DOI: 10.25926/3b8y-rr98
[https://doi.org/10.25926/3b8y-rr98]

Acknowledgements

I am sincerely grateful to my supervisor Stephan Zielke for his continuous guidance and advice throughout the years. I also wish to thank my doctoral and chair colleagues for their support and helpful comments. In particular, I would like to thank my office partner Laura Bertrandie and my colleagues Alena Ortlinghaus, Kathrin Sinemus and Vanessa Schmieja who always listen to me and gave me useful comments whenever I wanted to discuss my work. I also want to thank Florian Kluge for his technical assistance, Svenja Wege and Melina Otte for their help in data collection processes and Ute Brüne for her mental support during the whole time.

Finally, I can never thank my parents – Bettina und Hartmut Schneider – my sister – Sabrina Schneider – and especially my boyfriend – Dominik Jung – enough for their patience and support. That is why this dissertation is dedicated to you. Your love and support sustains me every day.

Wuppertal, June 2020

Patricia J. Schneider

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1 Introduction

1.1 Relevance of showrooming for retail research and practice

Over the past twenty years retail has changed fundamentally. In addition to the classic distribution channels – stationary and the catalogue channel – the internet conquered the retail landscape. Online shares of retail in the U.S. rose from 9.7% in 2012 to 16.6% in 2018. In Germany, online retailing recorded even stronger growth of 9.2 percentage points (2012: 5.9%; 2018: 15.1%) (Center for Retail Research, 2020). With the success of the internet, other sales channels such as mobile and social commerce emerged (Levy, Weitz, & Grewal, 2019). In particular, mobile commerce is currently experiencing growth. An annual worldwide survey conducted by the consulting firm PWC shows that the mobile channel for shopping is steadily increasing (PWC, 2017). The number of e-shoppers that shop online at least once in twelve months as a percentage of the population in Germany in 2018 was 64%. In the UK the figure was as high as 73%. The trend is still rising (Center for Retail Research, 2020). In general, mobile shoppers globally use their smartphones mainly to search for products, to compare prices with competitors and to pay (PWC, 2017). Customers do this with an increasing frequency in traditional offline stores. This smartphone usage in-store changes the role of physical stores in general (Fuentes, Baeckstroem, & Svingstedt, 2017). Progressive digitalization has not only created new distribution channels but also additional distribution-independent touchpoints of consumers with retailers. All these touchpoints together influence the entire customer journey of today's multi-channel customers starting with past experiences and including all stages of the purchasing process as well as future purchasing intentions (Lemon & Verhoef, 2016).

Consequently, retailers today face customers who probably already have or will have contact with them or their products in various ways. This new shopping environment has changed customer behavior enormously in recent years and will continue to do so in the future. Apart from retailers selling exclusive products (Kuksov & Liao, 2018), customers are no longer dependent on one retailer or channel. On the contrary, they have a wide range of choices at their disposal, so that multi-channel retailers, for example, face the challenge of successfully integrating their marketing instruments between channels (Bertrandie & Zielke, 2017, 2019). The customer journey is becoming increasingly complex because customers switch channels between the various stages of the shopping process. The literature calls this research shopping (Verhoef, Neslin, & Vroomen, 2007), and this channel switching behavior has witnessed a definite upsurge in interest. The most common forms of research shopping are webrooming, i.e. searching online and buying offline and its opposite show-

rooming, i.e. searching offline and buying online (Kang, 2018). According to an annual consumer research report of an online booking platform for optimizing the customer journey, on average 74% of consumers webroom (searching online and purchasing in-store) especially for electronics, clothing and household items and 57% stated to showroom (searching in-store and purchasing online) predominantly for clothing, gifts and electronics among US and UK shoppers in 2019 (JRNI, 2019). Retailers assess showrooming in particular as a threat to stationary retail (Fulgoni, 2014; Teixeira & Gupta, 2015). With the implementation of multi-channel technologies such as check and reserve, click and collect or mere availability checks, multi-channel retailers try to keep customers in their own channels (Ortlinghaus, Zielke, & Dobbelstein, 2019). However, recent figures for city centers in Germany show that compared to 2014, in 2018 about every fourth person visits city centers less frequently for shopping (Ministry of economic affairs, innovation, digitalization and energy of North Rhine-Westphalia, 2019). This decline in frequency can have devastating consequences for city centers especially when those customers visiting brick-and-mortar retailers do not finalize their purchase in-store (Spiegel.de, 2020; Zuppinger, 2013).

Much effort in showrooming research has been expended on the identification and investigation of possible causes of this consumer behavior (Arora & Sahney, 2018; Arora, Singha, & Sahney, 2017; Balakrishnan, Sundaresan, & Zhang, 2014; Burns, Gupta, & Hutchins, 2019; Dahana, Shin, & Katsumata, 2018; Daunt & Harris, 2017; Gensler, Neslin, & Verhoef, 2017; Kang, 2018). Although, previous research identified numerous influencing factors, there is a lack of studies that relate these factors to each other. Especially price and service seem to be the most important drivers for showrooming processes. But so far, only a study by Fassnacht, Beatty, and Szajna (2019) brings them together examining the interaction effect of price matching and interaction quality on customers' in-store buying intentions. Hence, there is a lack of research examining the combined impact of various price differences and different levels of service (e.g. quality and availability) in one study.

Instead, the development of suitable counter-strategies and measures has aroused substantial research interest (Bell, Gallino, & Moreno, 2015; Fassnacht et al., 2019; Jing, 2018; Kuksov & Liao, 2018; Mehra, Kumar, & Raju, 2013, 2018; Rapp, Baker, Bachrach, Ogilvie, & Beitelspacher, 2015; Willmott, 2014; Wu, Wang, & Zhu, 2015). Most of these studies define showrooming as in-store search and online purchase (Balakrishnan et al., 2014). There is no study considering online information search behavior as an integral part of the showrooming definition. Beyond, there is only one study defining showrooming behavior as pure online search behavior (Rapp et al., 2015). However, considering the entire showrooming literature, showrooming includes online search behavior preceding the actual online purchase behavior and following the offline search behavior.

Concentrating on the act of purchasing, some studies focus on the final retailer for online purchase, e.g. Gensler et al. (2017) who concentrate on the so-called competitive showrooming, in which customers switch not only the channel but also the retailer or Gu and Tayi (2017) who examine pseudo-showrooming, in which customers search for a product in-store and purchase not the same but a similar product in the online store of the same retailer. So far, there is no study examining different facets of showrooming going beyond these definitions. Hence, there is no differentiation of positive and negative showrooming from a retailer's point of view or an investigation of other facets that could differentiate showrooming behavior, such as the time of online purchase, the device used for online purchase or the use of various information options in-store. Furthermore, research has not yet dealt with showrooming customers in particular. Instead, research focused on customer segmentations concentrating on online or offline shoppers (Brown, Pope, & Voges, 2003; Ganesh, Reynolds, Luckett, & Pomirleanu, 2010; Rohm & Swaminathan, 2004) or concentrating on mobile customers (Quint, Rogers, & Ferguson, 2013). Recently, some studies also offer customer segmentations considering channel interactions and thus, multi-channel-customers in general (Frasquet, Mollà, & Ruiz, 2015). Overall, little systematic research on the showrooming phenomenon exists so far.

1.2 Research objectives and framework

The aim of the present work is to close the aforementioned research gaps. The following research question guides this purpose: *How can stationary retailers successfully encounter the showrooming phenomenon or possibly even benefit from showrooming customers?* On the basis of this research question, the work discusses whether showrooming represents a threat, an opportunity or rather a challenge for stationary retail.

To answer this superordinate question, the basic idea of this work is to present a differentiated view of the showrooming phenomenon and thereby make an essential contribution to showrooming research. This differentiated approach includes the exploration of different forms of showrooming behavior, the presentation of a first typology of showrooming customers, the proposal of a new conceptualization of the showrooming phenomenon including a differentiation of various online search behaviors (showrooming potentials) that precede the online purchase (showrooming behavior). Further, a central concern of this work is to develop and empirically test a model of relationships between diverse online search forms and their impacts on showrooming behavior and finally determine the impacts of the most important showrooming antecedents, namely price and service, and their compensating effects. Examining the phenomenon as differentiated as possible, of-

fers opportunities to derive suitable and promising implications for retailers. This dissertation comprises three independent projects that differ in their research focus:

Research project 1: Focus on forms of showrooming behavior and showrooming customers

Research project 2: Focus on online search behavior (showrooming potentials) that precedes showrooming behavior

Research project 3: Focus on managerial antecedents (price vs. service) of showrooming

Figure 1 illustrates the relationships. Each project deals with separate research questions and makes its own research contributions in order to answer the overall research question of this dissertation.

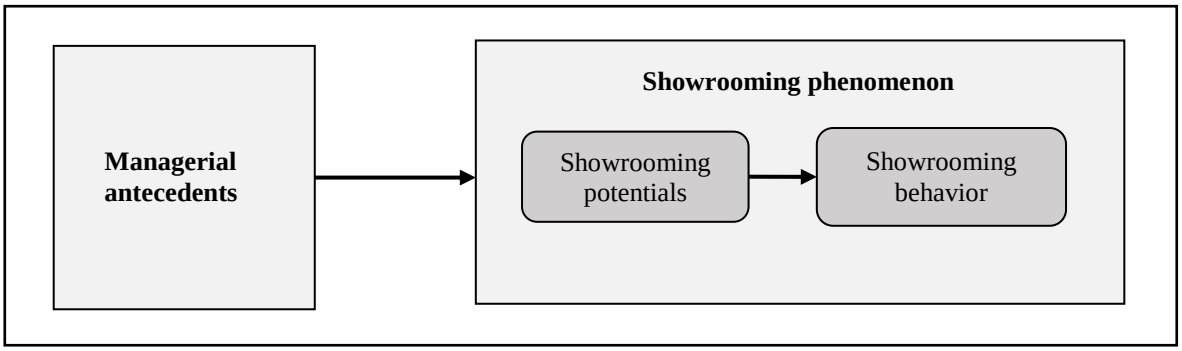


Figure 1. Research framework.

The first research project "Showrooming forms and segments" mainly focusses on online purchase behavior (showrooming behavior) after visiting a physical store with special consideration of loyal and disloyal behavioral tendencies. Moreover, it tries to identify various showrooming segments based on preferred showrooming forms.

The project particularly addresses two of the already mentioned research gaps: First, until now, research mainly focuses on competitive showrooming (Burns, Gupta, Bihn, & Hutchins, 2018; Daunt & Harris, 2017; Gensler et al., 2017; Kang, 2018; Mehra et al., 2018; Sit, Hoang, & Inversini, 2018; Teixeira & Gupta, 2015) and does not consider different forms of showrooming behavior. Although previous research suggests that showrooming does not always appear in the same characteristic form, no study investigates different facets of showrooming so far (Daunt & Harris, 2017). Secondly, to the current research state, there is no study providing a segmentation of showrooming customers. Hence, the first project answers the following research questions:

(1) Which factors characterize different forms of showrooming behavior?

(2) How can we use these factors to identify different showrooming segments?

(3) How can we characterize these segments based on psychographic variables?

A qualitative pre-study identifies different forms of showrooming behavior. A subsequent online study considers its results and measures the probabilities of different values of these so called characterizing forms of showrooming behavior. These forms comprise for example time, place or device used for online purchasing after visiting an offline store. In the online survey, values of the characterizing form "device used for online purchase" were for example smartphone, tablet, laptop or computer. Factor analyses of collected data compress these values into factors that we call characterizing factors of showrooming behavior. In case of device used for purchase, a factor analysis identified two factors, namely mobile and stationary devices used for purchase. Consequently, various characterizing forms (e.g. device used for online purchase) aggregate different characterizing factors of showrooming behavior (e.g. mobile and stationary device). Based on these characterizing factors, cluster analyses offer a first typology of showrooming customers that are further characterized by different demographic and psychographic variables. Beyond, we analyzed the impact of various psychographics on the general probability of showrooming.

Results offer five different forms of showrooming behavior with various characterizing factors indicating that showrooming is a multifaceted phenomenon. This is confirmed by four identified showrooming segments differing in demographics and psychographics, for example in loyalty tendencies or in their desire for social contact.

The second research project "Showrooming potentials and showrooming behavior" mainly investigates online search behaviors that follow an offline search and possibly lead to an online purchase. These online search behaviors differ in terms of mobile or later search and in terms of product information or price information search. They are called potentials because they are an integral part of the whole showrooming process. Showrooming potentials can but need not inevitable lead to online purchase behavior. Hence, they differ from typical showrooming antecedents that initiate the showrooming process as a whole but that are not an integral part of it, such as situational or personal factors. In summary, research project two proposes a new conceptualization of the showrooming phenomenon comprising offline search behavior, different forms of online search behavior (showrooming potentials) and the act of purchasing online (showrooming behavior).

The second research project is based on another already mentioned research gap, namely the non-consideration of online search behavior in previous showrooming definitions. Most existing studies understand showrooming as an offline search followed by an online purchase (Balakrishnan et al., 2014; Gensler et al., 2017). If existing studies consider online search behavior at all, then not as a major component of the showrooming process but for instance as showrooming behavior per se (see Rapp et al., 2015). Thus, there is no common understanding of the showrooming process in re-

search, hindering a systematic analysis of the phenomenon. Additionally, until now, research does not differentiate various online search behaviors, and consequently does not examine their relationships nor develops counter-strategies based on them. Psychological variables, such as perceived search convenience which is an important driver for showrooming (Sit et al., 2018) or choice confusion while facing a large amount of information on- and offline (Malhotra, 1984) might explain these relationships (here the relationship between in-store and later search). One strategy to reduce showrooming based on customers' online search behavior might be the use of QR codes in-store that direct customers to the multi-channel retailer's own online channel.

Therefore, research project 2 answers the following research questions:

(4) Which forms of online search behavior (showrooming potentials) exist in showrooming contexts?

(5) How are different forms of online search behavior related and how do they influence showrooming behavior?

(6) How do choice confusion and search convenience affect the relationships between showrooming potentials?

(7) Can multi-channel technologies such as QR codes keep customers in retailers' own channels?

The methodological approach comprises: (1) a qualitative pre-study exploring various online search behaviors in potential showrooming situations (showrooming potentials); (2) a multi-step development of scales to get valid individual measures of four identified showrooming potentials and the actual online purchase (showrooming behavior); (3) an online survey study that examines relationships between these showrooming potentials and their impacts on showrooming behavior; (4) a complementary study concentrating on the mediating effects of perceived choice confusion and perceived search convenience on the relationships between showrooming potentials and finally, (5) a subsequent laboratory experiment analyzing how multi-channel retailers can use customers' search behavior for a selected counter-strategy, namely the use of QR codes. QR codes are a cheap in-store technology that can easily combine offline information search with online information search behavior. When customers start online search behavior in-store (so if they are already in the middle of the showrooming process), QR codes enable retailers to direct customers' information search process to retailers' own online channels. Therefore, the aim of the experiment is to investigate whether the use of QR codes can reduce the probability of changing the retailer during channel switching behavior (and thus prevent competitive showrooming).

Results determine four different showrooming potentials comprising mobile vs. later online search as well as product vs. price information search online. Whereas product information search enhances price search, mobile search enhances later online search. Additionally, the latter effect is mediated by perceived choice confusion and desire for search convenience. Customers using QR codes that link to retailers' website search for longer, but less in other retailers' channels and less on additional websites.

The third research project "Managerial antecedents of showrooming" focuses on two main antecedents of the showrooming phenomenon, namely price and service. For this reason, the research project integrates the showrooming phenomenon more strongly into the customer journey (Lemon & Verhoef, 2016). Numerous multi-channel customers search and compare product and price information on the internet even before they enter a store (Rippé, Weisfeld-Spolter, Yurova, & Sussan, 2015). Verhoef et al. (2007) attribute this primarily to the advantages of the online channel in the search phase of the purchasing process. Hence, in addition to the previous understanding of showrooming this project includes an online search prior to the store visit. This project examines price differences between the online and offline channel as well as in-store service as two relevant situational influencing variables on showrooming behavior.

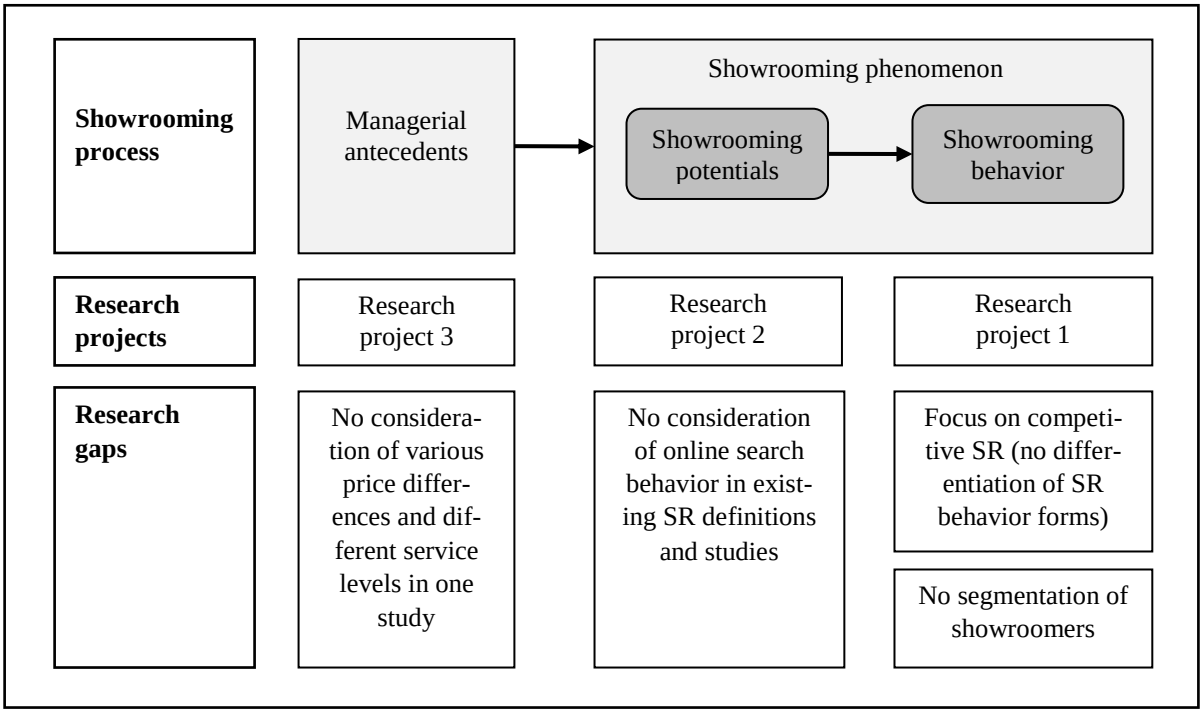
The third project focusses on the research gap identified in the context of showrooming drivers. So far, research identified numerous important antecedents of showrooming (Daunt & Harris, 2017; Fassnacht et al., 2019). Thereby, studies already prove the relevance of prices (Mehra et al., 2013; Sit et al., 2018) and sales personnel in the context of showrooming (Rapp et al., 2015; Verhoef et al., 2007). Fassnacht et al. (2019) combined facets of both variables in their study by investigating the impact of a price guarantee with interaction quality on customers' offline buying intention. Existing research confirms that service quality is one of the most important factors in customers' channel switching behavior (Chiu, Hsieh, Roan, Tseng, & Hsieh, 2011; Verhoef et al., 2007). Service availability seems to influence showrooming according to Gensler et al. (2017). Consequently, previous research lacks in examining various price differences combined with different service levels in-store. Therefore, the third project contributes to research by answering the following research questions:

(8) Can service compensate for the disadvantage of price differences in the offline channel in terms of showrooming behavior?
(9) What should this service look like?
(10) Do availability and quality of service personnel have a different impact on showrooming?
(11) What effect does the level of price difference have on showrooming?

(12) And up to what price difference is a compensation possible at all?

The project comprises three consecutive experimental online survey studies with different foci on price and service. Various price differences are manipulated as well as different service levels regarding pure usage, different quality and availability levels.

Results of the third research project indicate that mere service usage can partly compensate price disadvantages of the offline channel with regard to showrooming probabilities. While service quality reduces showrooming intentions, service availability only shows an impact on showrooming behavior if service staff offers service of high quality. Concerning price differences, with an increasing price difference between the offline and online channel (with a more expensive offline channel), the probability of showrooming behavior increases. A further result is the mediating role of price fairness for several effects. Figure 2 gives a schematic overview of the three research projects.



Note: SR = showrooming.

Figure 2. Schematic overview of research projects.

Overall, this dissertation shows that showrooming does not necessarily lead to sales losses and vacant retail spaces. Recent developments in customer behavior and the showrooming phenomenon only show that offline retailing has to redefine its role. This is roughly comparable to Riepl's law in media, which states that no socially established instrument for the exchange of information and ideas (such as the daily newspaper) is completely re- or displaced by other instruments (digital media) that are added over time (Riepl, 1913). Currently, stationary retail is still the most important channel for retailing (HDE, 2019). Offline retailers have to understand new needs and expectations

of multi-channel customers for the offline channel. They need to focus on their store's strengths and, if necessary, adapt or optimize their offer in order to secure their place in the retail landscape.

1.3 Structure of dissertation

This dissertation comprises five chapters starting with the introduction (1). The introduction begins by outlining the relevance of the showrooming topic both for research and for stationary retail, as retailers see showrooming as a major threat to stationary retailing. Afterwards, it presents three articles with different research objectives and contributions. It closes with the dissertation's structure.

The three subsequent chapters of this work, i.e. chapters 2, 3 and 4, represent three separate research articles. All three articles are broadly similar in structure but differ in the number of research studies included. Chapter 2 comprises the first research project "Showrooming forms and segments", chapter 3 the second research project "Showrooming potentials and showrooming behavior" and chapter 4 the last project "Managerial antecedents of showrooming". The dissertation finishes with a general conclusion (5) including a summary of core results, an elaboration of important research and managerial implications as well as the presentation of relevant limitations and resulting future research approaches. Finally, the author draws a personal conclusion. Figure 3 provides an overview of the dissertation's structure.

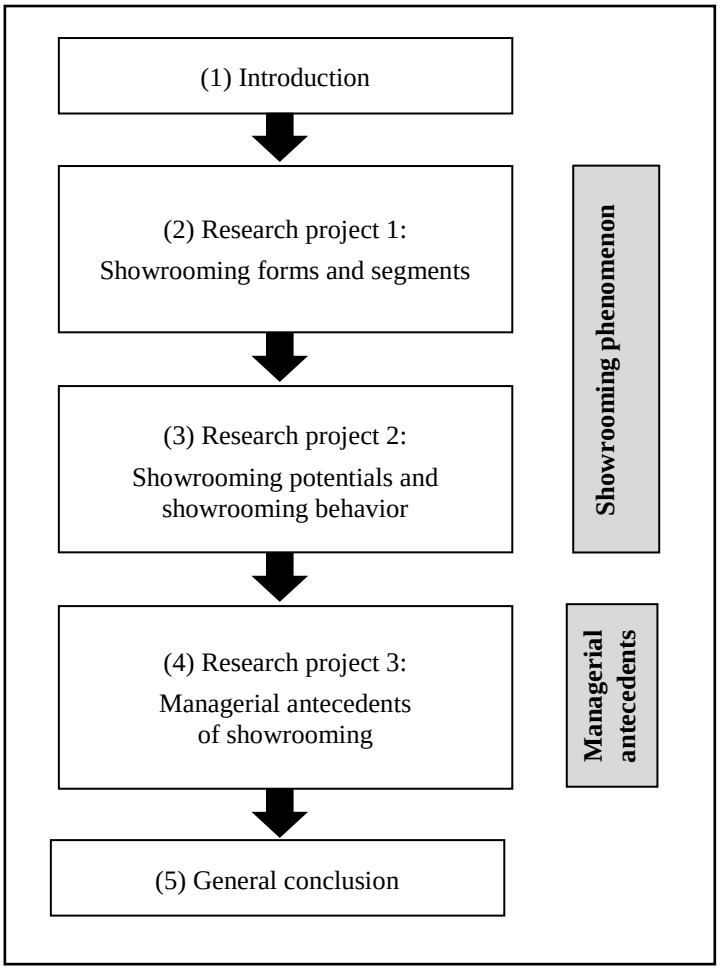


Figure 3. Structure of dissertation.

2 Showrooming forms and segments[1]

Abstract

Showrooming is a behavior in which customers search for information in brick-and-mortar stores and then purchase products online. While the literature conceptualizes showrooming as a one-dimensional variable, we argue that different forms of showrooming exist. We identify four showrooming segments that differ in retailer loyalty, usage of instore information, devices, place and time of the online purchase. We further show that loyal vs. competitive showroomers differ in psychographic variables, such as price consciousness, desire for social contact and bad conscience during showrooming. The results have important implications for retailers aiming to keep customers in their own channels.

Co-author: *Stephan Zielke (University of Wuppertal)*

[1] Chapter 2 is based on the article "Searching offline and buying online – An analysis of showrooming forms and segments", published in the *Journal of Retailing and Consumer Services* (2020, Vol. 52).

2.1 Introduction

Imagine you are a retailer: "A young man – let's call him Andy – walks into your store and starts looking at your merchandise. Suddenly he pulls out a smartphone and snaps a picture. Then he starts tapping away at the keys on his device. What's going on? It seems Andy is looking up your merchandise on the Internet, seeking a better price. When he finds one, he'll order the item online. With that done, he'll walk out of your store. Revenues to you: Zero." (Perry, 2013, p. 36). This is a typical example of showrooming – a behavior in which customers search for products in retail stores and then purchase them online (Teixeira & Gupta, 2015). It is a phenomenon which primarily concerns multi-brand-stores and where the comparison of prices to other retailers is possible and easy due to the internet.

In the context of rapid technology development, increasing smartphone coverage and therefore ubiquitous access to the mobile internet (Kau, Tang, & Ghose, 2003), customers' multi-channel behavior is becoming more complex. Therefore, showrooming as one particular form of customer behavior seems to be a topic of current relevance and interest. Surprisingly, not many research articles have examined the showrooming phenomenon thus far. The existing literature mainly focuses on root cause analysis (Balakrishnan et al., 2014) or identifying counter-strategies (Mehra et al., 2013; Rapp et al., 2015). Most studies focus on competitive showrooming in which customers switch the channel and the retailer, i.e. they buy the product online at a competing retailer (Gensler et al., 2017). However, customers can also show loyal showrooming behavior, in which they order a product online after visiting the physical store of the same retailer. Furthermore, most studies neglect the fact that showrooming behavior appears in different forms depending on situational factors, such as available instore information, usage of devices, time and place of the online purchase.

These characteristic forms of showrooming behavior might differ between customers. Many research projects focus on customer segmentations concerning online and offline shoppers or recently on channel interactions, but so far, segmentation studies of showroomers do not exist. In this context, a segmentation based on loyalty and the aforementioned situational factors can contribute to a better understanding of the showrooming phenomenon. Furthermore, as loyalty factors are particularly relevant from a managerial perspective, it is important to understand which personal customer characteristics stimulate or attenuate loyal vs. competitive showrooming.

Therefore, the aim of this study is to explore different characteristic forms of showrooming behavior and develop a first typology of showrooming customers based on potential showrooming factors (loyalty and situational factors). Additionally, the study aims to discover psychographic differences between showrooming segments with a particular focus on loyal vs. disloyal customer

groups. Hence, the study provides an important contribution to showrooming research by identifying and characterizing different patterns of showrooming behavior with a special focus on loyalty issues. The results should be useful for retailers to address potential showroomers more effectively via specific marketing actions and communication strategies to retain them in their own channels. In particular, the following research questions should be answered:

- Which factors characterize different forms of showrooming behavior?
- How can we use these factors to identify different showrooming segments?
- How can we characterize these segments based on psychographic variables?

The next section provides an overview of the theoretical background and develops a conceptual framework for showroomer segmentation. We then present a qualitative pre-study, followed by a quantitative survey study. The paper reports four different showrooming segments and provides implications for retailers how to handle these segments in-store. This paper contributes to the literature by (1) identifying different forms of showrooming behavior, (2) providing a first typology of showrooming segments and (3) linking psychographic variables with loyal vs. disloyal segments.

2.2 Theoretical framework

2.2.1 From channel choice to showrooming

As the literature on showrooming is scarce, studies examining channel choice in general can be seen as a starting point (Balasubramanian, Raghunathan, & Mahajan, 2005; Frambach, Roest, & Krishnan, 2007). Concerning channel-switching behavior, some articles analyze the so-called *research shopping* or *free-riding* phenomenon (Kalyanam & Tsay, 2013; Van Baal & Dach, 2005; Verhoef et al., 2007). Whereas research shopping is "the propensity of consumers to research the product in one channel (e.g. the internet), and purchase it through another channel (e.g. the store)" (Verhoef et al., 2007, p. 129), free-riding has a negative connotation because customers use resources of the searching channel without any benefit to retailers in this channel (Van Baal & Dach, 2005). The literature analyzed different types of influencing factors of research shopping. These are psychographic and sociodemographic characteristics of customers (Chiu et al., 2011; Heitz-Spahn, 2013; Pookulangara, Hawley, & Xiao, 2011), product characteristics (Heitz-Spahn, 2013; Van Baal & Dach, 2005) and channel attributes (Chiu et al., 2011; Kucuk & Maddux, 2010; Verhoef et al., 2007). Kalyanam and Tsay (2013) examine the impact of research shopping and use the term "hybrid shopping" (pp. 20-21), in which they integrate retailer (dis)loyalty as a characterizing element. Further research analyzed strategies to counter free-riding (Shin, 2007).

In our study we focus not only on research shoppers in general but more specifically on the so-called showroomer. *Showrooming* can be considered as a specific form of research shopping or free-riding combined with online shopping behavior. Balakrishnan et al. (2014) define showrooming as "the practice among some consumers of first browsing at a physical store and then ordering from an online seller (…)" (p. 1144). Showrooming is a kind of natural customer behavior in a multi-channel environment (Bachrach, Ogilvie, Rapp, & Calamusa, 2016; Neslin et al., 2014; Vanheems, Kelly, & Stevenson, 2013). However, studies focusing on showrooming are rare. Some discuss and analyze the antecedents of showrooming behavior or potential influencing factors (Bachrach et al., 2016; Balakrishnan et al., 2014; Daunt & Harris, 2017; Gensler et al., 2017). Other studies focus on consequences of showrooming behavior from different perspectives. Chiou, Wu, and Chou (2012) analyze how customers use "techniques of neutralization to rationalize" (p. 883) their own showrooming behavior. Rapp et al. (2015) focus on the negative impact of showrooming on salespersons' behavior and performance. Simultaneously, they analyze counter-strategies, which is also a popular topic (Ankosko, 2012; Bachrach et al., 2016; Bell et al., 2015; Kalyanam & Tsay, 2013; Mehra et al., 2013; Wu et al., 2015).

Hence, it seems that existing studies view showrooming as something negative because they assume that customers always change the retailer (Kalyanam & Tsay, 2013; Mehra et al., 2013; Texeira & Gupta, 2015). Therefore, Gensler et al. (2017) use the term "competitive showrooming" (p. 29). Nevertheless, showrooming can even be positive to the retailer when customers switch only the channel, but not the retailer (Van Baal & Dach, 2005). Rejón-Guardia and Luna-Nevarez (2017) characterize this behavior as "loyal showrooming" (p. 177). Using multiple channels of the same retailer can result in a positive customer experience (Lemon & Verhoef, 2016). Furthermore, some authors refer to specific devices and places in their definitions, such as usage of mobile phones in stores (Rapp et al., 2015). Obviously, showrooming does not always appear in the same characteristic form. Conversely, showrooming behavior has different facets. As Daunt and Harris (2017) already requested, it is important to look at showrooming devices, timings, product categories and further aspects that could differentiate various forms of showrooming behavior. Therefore, this paper aims to identify multiple showrooming factors leading to different forms of showrooming behavior. The aforementioned research on channel choice and showrooming suggests that retailer loyalty and situational factors are important impact variables for characterizing showrooming behavior. Consequently, showrooming segments might differ in these variables.

2.2.2 Multi-channel segments

As showrooming is a complex phenomenon, it might also be helpful for retailers to identify different segments of showroomers, which they can address more effectively. Several recent segmentation studies focus on the development of internet shopper typologies (Bhatnagar & Ghose, 2004; Brown et al., 2003; Kau et al., 2003). However, most studies either examine only internet shoppers or just compare them with offline shopping segments (Ganesh et al., 2010; Rohm & Swaminathan, 2004). Studies considering channel interactions are rare. Konuş, Verhoef, and Neslin (2008) develop a segmentation related to channels for search and purchase, but they identify only multi-channel shoppers as one general segment. Sands, Ferraro, Campbell, and Pallant (2016) add the after sales stage and Frasquet et al. (2015) go even further by classifying multi-channel customers based on their real channel usage across all three stages of the shopping process. Another qualitative study maps customer journeys and uses the results to segment multi-channel shoppers (Wolny & Charoensuksai, 2014). All studies reveal customer segments, using both online and offline channels during their path-to-purchase, but did not focus on showrooming behavior in particular.

Studying customer behavior in general, Naik and Reddy (1999) mention, “we have to consider not only what people buy, but where, how often, and under what conditions they make their purchase” (p. 2). We can conclude that showrooming definitely is a form of customer behavior. Since segmentation studies of showroomers do not exist, while the segmentation of customers is a fundamental requirement for any marketing action (East, Wright, & Vanhuele, 2013), a segmentation of showrooming customers is necessary.

Many segmentation studies of online shoppers or multi-channel shoppers identify one store-focused segment that favors the offline channel (De Keyser, Scherpers, & Konuş, 2015; Frasquet et al., 2015; Kau et al., 2003; Konuş et al., 2008; Quint et al., 2013; Rohm & Swaminathan, 2004). Other segmentation studies of multi-channel shoppers determine the existence of online-focused segments (De Keyser et al., 2015; Frasquet et al., 2015; Sands et al., 2016) or especially of mobile-assisted shoppers that are predominantly driven by digital attributes (Quint et al., 2013). Especially for showroomers the visit of a physical store in the search stage as well as the usage of the internet channel for purchase are essential by definition. Therefore, a high affinity to offline-searching and online-purchasing behavior might characterize the classical showroomer. Nevertheless, showrooming segments can differ in their offline- or online focus. As mentioned in section 2.2.1, we also expect that customer segments differ with regard to showrooming factors, such as devices used for purchasing, time of purchase, retailer loyalty vs. switching, etc. Furthermore, showrooming segments as a special form of multi-channel segments might also show differences in psychographic

and demographic variables (Frasquet et al., 2015; Konuş et al., 2008). Therefore, this paper aims to identify different customer segments based on the aforementioned aspects of showrooming behavior. According to existing segmentation studies, we expect more store-focused showrooming segments which might rather stay with the retailer and more online-focused segments that will rather change retailers. Besides, there might also be at least one mobile-focused segment that uses mobile devices in the search and purchase stage of showrooming. Hence, recent multi-channel segmentation studies corroborate the assumption that retailer loyalty and multiple situational factors characterize showrooming segments. Furthermore, demographic and psychographic variables differ between these segments.

2.2.3 Psychographic dimensions in showrooming contexts – a conceptual framework

Following the arguments presented in section 2.2.2, we assume that showrooming segments differ in several psychographic variables, especially as customer characteristics have an essential impact on channel switching behavior (see Konuş et al., 2008; Verhoef, Kannan, & Inman, 2015). Based on multidimensional value conceptualizations (Sweeney & Soutar, 2001), we selected psychographic variables related to economic, social and emotional benefits. These variables can potentially explain the value of loyal vs. disloyal showrooming behavior. We develop hypotheses with a focus on retailer loyalty, because this showrooming factor is highly important for retailer performance.

The probably most important context-relevant customer characteristic is *price consciousness*, which is "the degree to which the consumer focuses exclusively on paying low prices" (Lichtenstein, Ridgway, & Netemeyer, 1993, p. 235). Price consciousness is an important differentiating factor in customer segmentation studies and related to economic benefits of shopping. Morschett, Swoboda, and Foscht (2005) identify customer segments based on shopping motives, including price orientation. They found that price-focused segments prefer cheaper discounters. Compared to the offline channel, the online channel is often cheaper, so we could imagine a similar pattern for showroomers. Gensler et al. (2017) found out that customers' perception of higher price dispersion and lower average prices online increases competitive showrooming. Accordingly, price-conscious segments should show increased competitive vs. loyal showrooming behavior. Moreover, existing studies examining online shoppers (Brown et al., 2003; Ganesh et al., 2010) and multi-channel shoppers (Konuş et al., 2008) also find that price consciousness differs significantly across customer segments. Furthermore, the price itself is a relevant channel attribute explaining channel choice (Balasubramanian et al., 2005) and channel-switching behavior, namely research shopping and free-riding (Kucuk & Maddux, 2010; Verhoef et al., 2007). Although high price consciousness can

stimulate showrooming, customers can also showroom for other reasons than price (e.g. rethink the decision before purchasing, further information search, convenient delivery, etc.). We therefore assume that price consciousness differs between showrooming segments. In particular, we expect less loyal showrooming segments to be more price conscious than loyal showrooming segments.

H1[2]*: Showrooming segments with lower retailer loyalty have a higher level of price consciousness than showrooming segments with higher retailer loyalty.*

Another customer characteristic that could differ across showrooming segments is *desire for social contact*. This characteristic is related to social benefits of shopping. Recent literature suggests that a personalized service experience still has an important role in the shopping process (Balasubramanian et al., 2005; Brown et al., 2003). Rohm and Swaminathan (2004) argue that especially store-oriented shoppers have a distinct desire for social contact. Hence, customers who value the social benefit of physical stores should have a stronger tendency for loyal vs. competitive showrooming behavior. However, Koenigstorfer and Groeppel-Klein (2012) also found that the lower the desire for social contact, the more likely people use a mobile device in-store, which is an important indicator of competitive showrooming behavior (Rapp et al., 2015). Taken together, the results of previous studies lead to the conclusion that at least some showrooming segments have a limited need for social interaction and likely switch retailers. However, a desire for social contact could also explain showrooming behavior, as customers can socially interact while searching for information and benefit from advantages of purchasing online. Therefore, we also expect segments with a higher desire for social interaction and retailer loyalty. We hypothesize:

H2: Showrooming segments with lower retailer loyalty have a lower level of a desire for social contact than showrooming segments with higher retailer loyalty.

In the context of normative social influence, *motivation to conform* means public compliance, which is a superficial change in behavior, not in one's opinion (Stangor, Jhangiani, & Tarry, 2011). It also relates to social aspects of shopping value. It further affects channel choice (Verhoef et al., 2007) and the channel-switching intention (Pookulangara et al., 2011). Hence, "individuals attempt to fit in with perceived opinions of relevant others due to the use of shopping via channel migration" (Pookulangara et al., 2011, p. 196). When analyzing motivation to conform in the context of showrooming, it is necessary to define those "relevant others". Depending on the individual shopper, other customers in the store, shopping companions or the sales personnel itself can be relevant. Conformity with sales personnel could, for example reduce showrooming, while a motivation to

[2] Due to the study's highly explorative character and a lack of prior research on showrooming segments, we formulate hypotheses on a rather general level to compare different expected showrooming segments.

conform to thrifty family members or deal searching friends might stimulate showrooming. Therefore, we assume different levels of this influencing factor between showrooming segments. Regarding loyalty, in particular a low motivation to conform with the sales personnel might reduce psychological restraints of competitive showrooming and thus stimulate disloyal behavior. We hypothesize:

H3: Showrooming segments with lower retailer loyalty have a lower level of motivation to conform than showrooming segments with higher retailer loyalty.

Finally, a feeling of guilt or a *bad conscience* is an important emotion in the context of customers' choices. It relates to the emotional dimension of shopping value. Anchored in exchange theory, using services and sales staff in the offline channel but buying somewhere else contradicts the expected balance in exchanges (Homans, 1958). Furthermore, different studies reflect the importance of guilt in consumption situations (Antonetti & Maklan, 2014; Steenhaut & Van Kenhove, 2006; Zielke, 2011). Especially in a multi-channel environment, customers try to justify their channel-switching behavior (Chiou et al., 2012) that results from bad conscience. A strong tendency of having a bad conscience might in particular attenuate showrooming behavior in which customers switch the channel and the retailer, but not behavior in which customers only switch channels of the same retailer. Therefore, we suppose:

H4: Showrooming segments with lower retailer loyalty have a lower level of bad conscience during showrooming than showrooming segments with higher retailer loyalty.

The psychographic variables discussed before can either motivate or attenuate showrooming behavior. However, their relevance and impact might differ between customer segments. Therefore, this paper aims to show how different showrooming segments differ in terms of price consciousness, desire for social contact, motivation to conform and bad conscience related to showrooming. Our literature analysis shows that psychographic variables can act as antecedents of showrooming factors and especially explain loyal vs. competitive showrooming behavior. Figure 4 summarizes the suggested conceptual framework.

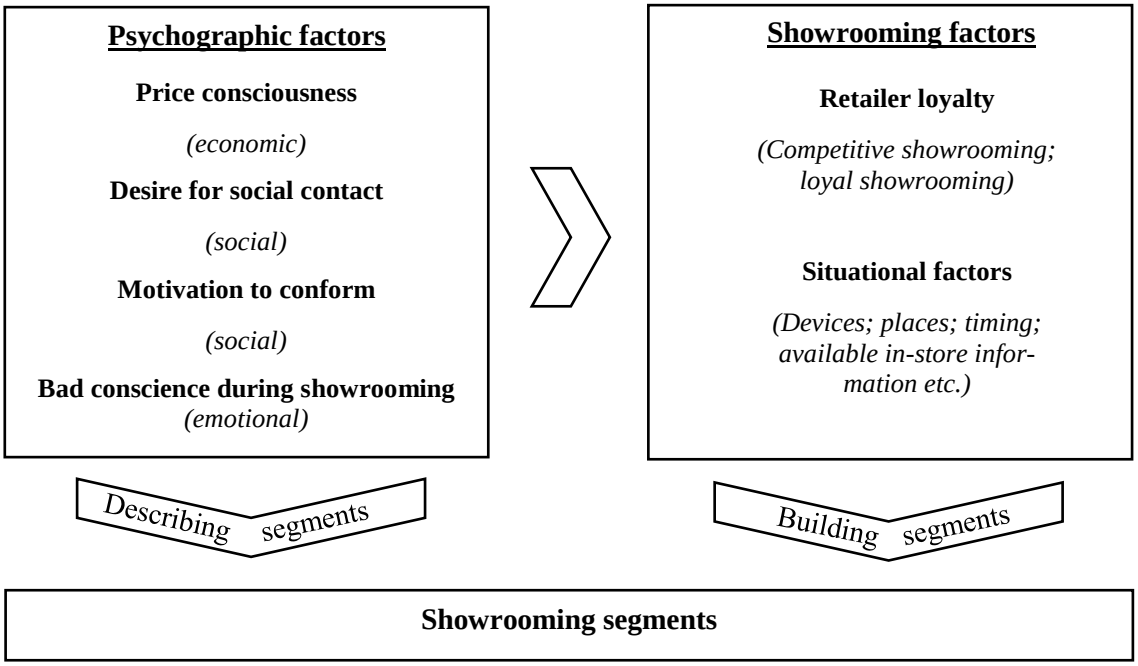


Figure 4. Conceptual framework.

2.3 Research design and sample description

2.3.1 Qualitative pre-study

As a first step, we identified different forms of showrooming behavior from a qualitative pre-study with 114 customers. Participants answered a partly standardized online questionnaire with primarily open questions that we pre-tested with ten participants using the think-aloud method. Without revealing that we were interested in showrooming, we generally asked: "Imagine, you would like to buy a new television. Please describe a typical purchasing process, starting with your desire for a new television and ending with the purchase itself. Think of the searching and purchasing phase as well as of media and channels you use in the process." We collected data via email and snowball principle to address as many customers as possible with experiences in showrooming behavior. The sample includes 62 female (54%) and 52 male (46%) respondents with an average age of 35 years.

For data analysis, one coder used inductive category development in form of content structuring to build a category system of showrooming behavior (Mayring, 2015). Intra-coder reliability was proofed after a few weeks, when coder one encoded the data again. To proof inter-coder-reliability another coder used the optimized coding system and categorized the data. Table 1 illustrates the results. A check of inter-coder-reliability resulted in 91 percent agreement. We only focus on categories referring to the search and purchasing phase according to existing showrooming definitions (cf. Balakrishnan et al., 2014; Mehra et al., 2013). Furthermore, we consider only categories related

to observable showrooming behavior, not psychographic variables, such as buying motivations or shopping motives. Table 1 shows the final coding system and how frequently both coders assigned the codes to the particular categories. Respondents most frequently mentioned options for information searching in-store before purchase and the selection of purchase channel and retailer. However, they also mentioned devices and aspects related to the place and time of purchase (category "after visiting the offline channel").

Table 1. Category system of explorative pre-study.

Main category	Subcategories	Coder 1	Coder 2
Device	Searching / buying via smartphone	19	16
	Searching / buying via laptop	6	6
	Searching / buying via computer	5	5
	Searching / buying via tablet	2	3
Selection of purchase channel and retailer	(Probably) buying offline	45	45
	Buying from retailer with best price (online / offline)	28	24
	Buying offline, if excellent price-performance-ratio	17	23
	(Probably) buying online	14	16
	Buying online up to an individual price level	14	16
	Buying the best offer (online / offline)	13	14
Options for information in-store before purchase	Advice given by sales staff	104	105
	Looking at product in-store	85	94
	Advice given by friends / family / partner / colleague	27	27
	Testing the product	7	9
	Touching the product	2	2
	Taking photos	1	2
Additional information channels	Different store/s	26	26
	Print media	20	18
After visiting the offline channel	Searching online from home	23	17
	Immediate / fast purchase online	15	16
	Purchase after some days	4	4

Note: absolute figures; n = 114.

Based on the results presented in Table 1, a group discussion with 14 participants confirmed the completeness of the general framework and evaluated the category system considering practical application. As a result we derived five factor groups of showrooming behavior: device used for purchase, options for information in-store before purchase, place of purchase, time of purchase and retailer for purchase.

2.3.2 Main study

Based on the results of the pre-study, we developed an online questionnaire. Its objectives were the measurement of different characterizing forms of showrooming behavior and the identification of showrooming clusters. Two questions measuring channel usage were used to identify potential showroomers in general: Imagine the purchase of (specific product). (1) What is the probability for purchasing the product via the online channel? (2) What is the probability for informing yourself about (the specific product) in the offline channel before the purchase? We identified potential showroomers as respondents using the store for information search about a product and the online channel for buying the product. Customers rating both questions with four or more on a seven-point Likert-Scale were defined as potential showroomers. We used this indirect approach to include as many customers as possible who could at least imagine showrooming behavior; in other words, customers who potentially use these channels. Concerning our identified forms of showrooming, the questions in the main section addressed sources of information search in-store, devices used for purchasing, the place and time of purchasing and retailer loyalty or switching, measured on seven-point Likert-scales. To gather information on the device used for purchase the question was e.g., "You have indicated that you potentially buy the respective product on the internet. What is the probability of using one of the following devices for the purchase?" Table 2 (left part) provides a complete list of items.

Respondents answered the questions on showrooming behavior and channel usage with regard to one of four randomly assigned product groups: game console, MP3 player, electronic toothbrush or washing machine. The product groups represent different price levels and functional-hedonic orientation (Shen, Cai, & Guo, 2016) to vary in showrooming situations and strengthen extern validity, as showrooming is a category-specific phenomenon. We chose electronic products because electronics was by far the most frequently mentioned showrooming category in our qualitative pre-study.

For further characterizing the segments, we also measured the previously mentioned psychographic variables (e.g. price consciousness – later called profiling factors), a variable measuring general showrooming propensity and demographics. We used proven scales from the literature. Using AMOS 25, a confirmatory factor analysis with all construct measures yielded a good model fit concerning standard cut-off values according to Hu and Bentler (1999): $\chi 2 = 413.65$ (df = 142, $p < .001$), SRMR =.05, RMSEA = .06, NFI = .93, TLI = .94 and CFI = .95 (although the RMSEA value was slightly over the respective threshold of .05). Results corroborated the one-dimensionality of all constructs. Factor reliability scores of all constructs were above .6 (Bagozzi & Yi, 1988).

Values for average variance extracted (AVE) ranged from .53 to .72 and were above squared correlations of all constructs (.00 to .35), indicating discriminant validity (Fornell & Larcker, 1981). Furthermore, constructs show good levels of reliability (α = .80 to .91; Nunnally, 1978). Appendix A provides all item scales used for measuring psychographic variables along with information about sources, the results of reliability measures, lambda loadings and values for AVE of the confirmatory factor analysis.

The online survey was posted for a four-week period in spring 2016. We pretested the questionnaire using thinking-aloud method with 20 participants of a master's degree course from a large European university. We distributed a link to the online survey via snowball principle, starting with personal contacts of the aforementioned master students. We distributed the link and an associated password to the online survey using social media and email. We used quotas for age and gender to guarantee the representativeness of the sample. In total, 564 people participated in the online study. The average age was 34 years and 51% were female.

Table 2. Characterizing forms, showrooming behavior questions and characterizing factors due to multiple factor analyses (n = 332).

Charact. forms	Showrooming behavior questions*	F1	F2	F3	Charact. factors
Options for information in-store before purchase	Displayed brochures/catalogues in-store	.857			F1: Mediated information searching in-store before purchase
	Electronical terminal	.638			
	Banner/ads etc. in-store	.823			
	People who accompany you on your shopping trip		.645		F2: Personal information searching in-store before purchase
	Price labelling and product information on the product		.673		
	Watching, touching and trying products		.753		
	Sales staff		.461		
	Searching via own smartphone (QR codes, internet etc.)			.893	F3: Mobile information searching in-store before purchase
		F4	**F5**		
Device used for purchase	Laptop	.759			F4: Stationary devices for purchase
	Desktop computer	–.752			
	Smartphone		.795		F5: Mobile devices for purchase
	Tablet		.794		
		F6	**F7**		
Place of purchase	In-store via smartphone	.860			F6: Mobile place of purchase
	In an internet café	.592			
	On the way outside the store	.855			
	From home		–.761		F7 :Home purchase
		F8	**F9**	**F10**	
Time of purchase	Immediate purchase in-store	.882			F8: Prompt purchase
	Less than 2 hours after leaving the store	.677			
	Less than 12 hours after leaving the store		.899		F9: Mean time purchase
	Less than 24 hours after leaving the store		.641		
	Less than 48 hours after leaving the store			.904	F10: Late time purchase
	48 or more hours after leaving the store			.863	
		F11			
Retailer for purchase	Purchase from a different retailer	.832			F11: Other retailer for purchase
	Purchase from the same retailer	–.832**			F12: Same retailer for purchase

*Example for complete question: *"What is the probability of using the following options for information in-store?"* / **Content-based classification into two factors.

2.4 Analysis and results

2.4.1 Potential showroomers and characterizing factors

In accordance with other segmentation studies, we conducted factor analysis and a subsequent clustering (Frasquet et al., 2015; Ganesh et al., 2010; Rohm & Swaminathan, 2004). In a first step, the sample was filtered to identify only potential showroomers according to our previous definition and operationalization. In total, 332 participants could be characterized as potential showroomers. This pre-definition tallies with the results of a specially developed multi-item question measuring showrooming propensity more directly (see Appendix A).

The detailed questions about showrooming behavior were analyzed using exploratory factor analyses with principal component analysis (PCA) and varimax rotation separately for each of the five main characterizing forms of showrooming. We used these separate exploratory factor analyses only to reduce and summarize data within the five main forms. Therefore, we maintained our content-based characterizing forms identified in the pre-study. Table 2 shows how the five main factor groups are now subdivided into two to three characterizing factors. For example, options for information instore before purchase are subdivided in mediated (F1), personal (F2) and mobile instore information search (F3). Devices used for purchase can be stationary (F4) or mobile (F5). Regarding the place of purchase, customers can order mobile out of home (F6) or from home (F7). The time lag between visiting the store and purchasing can be small (F8), medium (F9) or large (F10). Finally, customers can purchase from a different (F11) or from the same retailer (F12). In total, the analysis yielded twelve characterizing factors. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was between .50 and .68. Thus, the values are above the minimum score of .5, which is considered necessary for using factor analysis.

2.4.2 Cluster analyses

In a subsequent step, a hierarchical cluster analysis identified customer segments based on the twelve characterizing factors resulting from the factor analyses. We used single-linkage clustering to identify possible outliers and for the main analysis Ward's minimum variance model and squared Euclidean distance as proximity measures (Punj & Stewart, 1983; Ward, 1963). Considering the dendrogram, the line plot of the coefficients of the cluster agglomeration steps and the feasibility of the cluster number, a four-cluster solution seemed appropriate. Although the elbow-criteria of the dendrogram also justified a three-cluster solution, we decided to use a four-cluster solution because of content-related issues. Since statistical tests justified both solutions, the four-cluster solution en-

ables a better differentiation of segments, which improves their interpretability (Mooi & Sarstedt, 2011). The variance ratio criterion (VRC) by Caliński and Harabasz (1974) confirmed our decision. We tested the discriminatory power of the cluster solution using MANOVA with the four clusters as independent variables and the twelve factors as dependent variables (Dant & Gundlach, 1998). The analysis confirmed significant main effects of clusters, indicating discriminatory power (Table 3). Depending on variance homogeneity, we used either Scheffé's post hoc test or Dunnett-T3 to provide more insight into differences between clusters. For testing hypotheses and further characterizing the showroomer segments, we also compared these based on additional profiling factors (psychographic variables) using MANOVA (Table 4) and on demographic factors performing chi-square tests (Table 5) (Frasquet et al., 2015) or Fisher's exact test when sample sizes were too small.

Table 3. Characterization of showrooming segments – characterizing factors.

Characterizing factors (means and standard deviation)	**Showrooming type**				**Total sr.**	**F value*** (***p***)	**Results of post hoc tests*** **
	Comfort-oriented econ. sr. (A)	**Loyal sr. (B)**	**Mobile econ. sr. (C)**	**Con-serv. sr. (D)**			
N	121	63	70	78	332		
Mediated information searching in-store before purchase (F3)	2.84 (1.30)	3.25 (1.19)	3.70 (1.23)	2.46 (1.15)	3.01 (1.30)	14.03 (< .001)	C>A,D B>D
Personal information searching in-store before purchase (F4)	5.20 (1.03)	5.67 (.79)	5.49 (1.03)	5.48 (1.01)	5.42 (1.00)	3.60 (< .05)	A<B
Mobile information searching in-store before purchase (F5)	5.34 (1.28)	5.52 (1.34)	4.89 (1.59)	1.62 (.89)	4.40 (2.02)	259.23 (< .001)**	D<A,B,C
Stationary devices for purchase (F1)	5.09 (1.77)	5.85 (1.29)	4.84 (1.52)	5.33 (1.83)	5.24 (1.68)	6.49 (< .01)**	B>A,C
Mobile devices for purchase (F2)	3.47 (1.65)	3.94 (1.77)	4.95 (1.61)	2.26 (1.48)	3.59 (1.86)	34.72 (< .001)	C>A,B,D D<A,B
Mobile place for purchase (F6)	1.63 (.83)	1.80 (.74)	2.90 (1.49)	1.27 (.58)	1.85 (1.10)	27.55 (< .001)**	C>A,B,D D<A,B
Home purchase (F7)	6.78 (.49)	6.33 (1.23)	6.60 (.75)	6.76 (.61)	6.65 (.78)	3.26 (< .05)**	A>B
Prompt purchase (F8)	2.51 (1.25)	3.31 (1.77)	4.16 (1.50)	2.23 (1.31)	2.94 (1.60)	27.56 (< .001)**	C>A,B,D B>A,D
Mean time purchase (F9)	4.59 (1.50)	3.99 (1.68)	5.17 (1.26)	4.28 (1.46)	4.53 (1.53)	7.98 (< . 001)	C>B,D
Late time purchase (F10)	2.81 (1.58)	3.63 (2.09)	4.89 (1.53)	4.19 (1.80)	3.73 (1.90)	28.26 (< .001)**	A<B,C,D B<C
Other retailer for purchase (F11)	5.50 (1.23)	3.22 (1.35)	5.66 (1.19)	4.47 (1.67)	4.86 (1.63)	52.52 (< .001)**	B<A,C,D D<A,C
Same retailer for purchase (F12)	3.45 (1.72)	5.54 (1.13)	4.57 (1.67)	4.88 (1.68)	4.42 (1.79)	33.05 (< .001)**	A<B,C,D B>C,D

Note: sr. = showroomer / *df =3. / **Welch-Test because Levene-test was significant. / ***Scheffé's or Dunnett-T3's post hoc multiple-range test according to variance homogeneity (α=.05).

Table 4. Characterization of showrooming segments – profiling factors.

Profiling factors (means and standard deviation)	**Showrooming type**				**Total sr.**	**F value* (*p*)**	**Results of post hoc tests*** **	**Non sr.**
	Comfort-oriented econ. sr. (A)	**Loyal sr. (B)**	**Mobile econ. sr. (C)**	**Con-serv. sr. (D)**				
n	121	63	70	78	332			232
Price consciousness	5.42 (1.16)	4.85 (1.40)	5.51 (1.12)	4.91 (1.30)	5.21 (1.26)	5.95 (< .01)	A>B,D C>B,D	4.80 (1.45)
Desire for social contact	4.13 (1.48)	4.59 (1.48)	4.01 (1.56)	4.87 (1.57)	4.36 (1.55)	5.52 (< .01)	D>A,C	4.68 (1.77)
Motivation to conform	3.13 (1.46)	3.02 (1.24)	3.61 (1.40)	2.96 (1.25)	3.17 (1.37)	3.31 (< .05)	C>D	2.88 (1.28)
Bad conscience during showrooming	3.08 (1.65)	3.79 (1.69)	2.83 (1.44)	3.71 (1.94)	3.31 (1.73)	5.95 (< .01)**	B>A,C C<D	3.66 (1.92)
Channel usefulness: Store	5.78 (1.29)	5.92 (.97)	5.91 (1.24)	6.24 (.97)	5.94 (1.16)	3.04 (< .05)**	A<D	4.08 (1.71)
Channel usefulness: (mobile) internet	6.60 (.64)	6.30 (.94)	6.63 (.73)	6.10 (1.16)	6.43 (.89)	5.66 (< .01)**	D<A,C	5.18 (1.76)

Note: sr. = showroomer / *df =3. / **Welch-Test because Levene-test was significant. / ***Scheffé's or Dunnett-T3's post hoc multiple-range test according to variance homogeneity (α=.05).

Table 5. Demographic factors of showrooming segments.

Demographic factors (absolute figures)	**Showrooming type**				**Chi² (*p*)**	**Total sr.**	**Non sr.**	**Chi² (*p*)**
	Comfort-oriented econ. sr. (A)	**Loyal sr. (B)**	**Mobile econ. sr. (C)**	**Conserv. sr. (D)**				
N	121	63	70	78		332	232	
Gender								
Female	60	40	35	48	5.32 (.150)	183	107	4.43 (.035)
Male	61	23	35	30		149	125	
Age								
Ø	32	32	27	35	160.70 (.260)	32	37	78.12 (.022)
Level of education								
High school	111	53	64	73	Too many	301	200	6.04
Low level education	4	3	0	4	cells less	11	16	(.196) /
Fulltime student	1	1	1	0	than or	3	0	Fisher's
Other	5	3	4	1	equal 5 >	13	8	exact test
No answer	0	3	1	0	value not calculated	4	2	5.56 (.223)
Marital status								
Married	36	16	7	21	11.71 (.069) / Fisher's exact test 12.49 (.037)	80	79	8.67 (.013)
Single/ divorced/widowed	82	46	59	55		242	145	
No answer	3	1	4	2		10	3	

Table continued: **Demographic factors** (absolute figures)	**Showrooming type**							
	Comfort-oriented econ. sr. (A)	**Loyal sr. (B)**	**Mobile econ. sr. (C)**	**Conserv. sr. (D)**	**Chi² (*p*)**	**Total sr.**	**Non sr.**	**Chi² (*p*)**
N	121	63	70	78		332	232	
Professional stage								
Employee	60	37	25	39	To many cells less than or equal 5 > value not calculated	161	128	23.41 (.001) / Fisher's exact test 23.38 (.001)
Homemaker	6	1	0	2		9	7	
Pensioners	3	2	1	4		10	15	
Student	3	2	3	0		8	2	
University student	45	20	37	27		129	54	
Unemployed	0	0	1	2		3	3	
Other	4	0	2	4		10	10	
No answer	0	1	1	0		2	7	
Household size (including all adults and children)								
1 person	21	15	23	24	11.51 (.242)	83	46	2.85 (.415)
2 persons	54	23	25	30		132	101	
3 and more persons	45	24	21	21		111	77	
No answer	1	1	1	3		6	2	
Income								
< 1000 EUR	23	9	22	22	21.99 (.233)	76	31	15.33 (.018)
1000 < 2000 EUR	21	13	11	13		58	53	
2000 < 3000 EUR	19	14	15	10		58	29	
3000 < 4000 EUR	15	7	4	13		39	40	
4000 < 5000 EUR	11	7	8	2		28	22	
5000 EUR and more	14	5	4	5		28	26	
Do not know / No answer	18	8	6	13		45	25	

Note: sr. = showroomer.

2.4.3 Description of showrooming clusters

Hereinafter, we describe the four identified clusters with regard to their significant differences resulting from post hoc tests. The *comfort-oriented economic showroomer* (n = 121) is the largest cluster with more than one third of the respondents. In addition, it is the most critical one for retailers. This segment buys significantly more often from other retailers when engaging in showrooming behavior (M: 5.50, SD: 1.23). They prefer buying from home with a stationary device, which goes hand in hand with a low value in doing prompt purchases. This is why they are called comfort-oriented. Having a look at the other profiling factors, it can be noted that this segment has very high rates in price consciousness (M: 5.42, SD: 1.16) whereas all other factors do not show high deviations compared to the other clusters. Their high rating in the usefulness of the internet as a channel (M: 6.60, SD: .64) indicates that customers in this segment are internet-focused. Regarding demographics, subjects in this segment have the average age of 32 years and men and women are more or less equally dispersed. Concerning people in the household, the cluster shows the highest scores for two or more people compared to the other clusters and with a view to the income distri-

bution of the clusters the comfort-oriented economic showroomers are better represented in the upper half. All in all, not having unique characteristics makes it a critical segment for retailers.

For the *loyal showroomer cluster* (n = 63), subjects show significant values in terms of changing and sticking with one retailer when switching from an offline to an online channel. They reveal the highest degree of sticking with one retailer (M: 5.54, SD: 1.13) and the lowest changing compared to the other segments (M: 3.22, SD: 1.35). Hence, sticking with one retailer or not seems to be a very important characteristic in the context of showrooming. Loyal showroomers use stationary devices to purchase but mobile devices to get information in the store more often than other segments. They also show the highest score for personal information searching in the store (M: 5.67, SD: .79). Consistent with a high desire for social contact, their higher level in bad conscience during showrooming shows the normative influence. All other profiling variables are not remarkable. The only notable demographic attribute is that female customers are represented more often in this cluster.

The *mobile economic showroomer* (n = 70) is predominantly driven by mobile devices. Compared to the other segments, these customers show the highest values in purchasing via mobile devices (M: 4.95, SD: 1.61 vs. M: 3.59, SD: 1.86) and using a mobile place for purchase (M: 2.90, SD: 1.49 vs. M: 1.85, SD: 1.10). In general, scores of most variables are in the upper range. This also includes the highest score in changing the retailer in the stage of purchase (M: 5.66, SD: 1.19). Concerning demographics, the mobile economic showroomer is younger than other showroomers with an average age of 27 years. Subjects are above average university students, single, living in single-person households and cover all income groups.

Finally, *conservative showroomers* (n = 78) show low scores in all showrooming factors which are related to mobile devices. Therefore, it is not surprising that they also use a smartphone in-store to a far lower extent than other clusters. These customers primarily use stationary devices (M: 5.33, SD: 1.83) at home (M: 6.76, SD: .61) to purchase products on the internet. Furthermore, in contrast to the comfort-oriented economic showroomer, they have a stronger tendency to stick with the retailer (M: 4.88, SD: 1.68 vs. M: 3.45, SD: 1.72) and a lower tendency of switching the retailer (M: 4.47, SD: 1.67 vs. M: 5.50, SD: 1.23). Looking at the profiling variables, conservative showroomers have significantly higher scores in the desire for social contact (M: 4.87, SD: 1.57). The score for bad conscience during showrooming is above average as well as the evaluation of the usefulness of the stationary channel in general. However, price consciousness is below average and the motivation to conform shows even the lowest score. The conservative showroomer is older than the average (35 years), mostly female and shows an income in the lower half of the distribution.

A further analysis of product groups (game consoles, MP3 players, electric toothbrushes and washing machines) revealed no significant effect on the cluster distribution. Therefore, our results suggest that all showrooming types exist in all considered product groups.

2.4.4 Comparison of showrooming segments concerning psychographic dimensions

Before testing the hypotheses, we have to define loyal vs. competitive showrooming segments. Two factors relate to retailer loyalty, namely factor 11 “other retailer for purchase” and factor 12 “same retailer for purchase” (cf. Table 2). Comparing mean values of both factors between segments, “other retailer for purchase” shows the highest scores for the mobile economic and comfort-oriented economic segment, whereas the loyal and the conservative segments score highest for “same retailer for purchase”. Loyal showroomers are the most retailer loyal segment, followed by conservative showroomers, mobile economic showroomers and finally comfort-oriented economic showroomers. H1 suggests that segments with a low retailer loyalty show a higher level of price consciousness compared to segments with a high retailer loyalty score. Accordingly, results show that comfort-oriented economic showroomers (M: 5.42, SD: 1.16) and mobile economic showroomers (M: 5.51, SD: 1.12) have a significantly higher price consciousness than conservative (M: 4.91, SD: 1.30) and loyal showroomers (M: 4.85, SD: 1.40), supporting H1 (cf. Table 4). Regarding desire for social contact, conservative showroomers have a significant higher mean value (M: 4.87, SD: 1.57) than mobile economic (M: 4.01, SD: 1.56) and comfort-oriented economic showroomers (M: 4.13, SD: 1.48). For the loyal segment, desire for social contact is close to the conservative segment (M: 4.59, SD: 1.48) and larger compared to the other two segments, but these differences are not significant. Nevertheless, the results can at least partly support H2. For motivation to conform, only mobile economic showroomers (M: 3.61, SD: 1.40) show a significant higher mean value than conservative showroomers (M: 2.96, SD: 1.25). Hence, H3 finds no support. Finally, results indicate that retailer loyal clusters show higher values in bad conscience during showrooming. Loyal showroomers (M: 3.79, SD: 1.69) show significant higher mean values than comfort-oriented economic (M: 3.08, SD: 1.65) and mobile economic (M: 2.83, SD: 1.44) showroomers. Furthermore, the value for conservative showroomers (M: 3.71, SD: 1.94) is significantly higher compared to mobile economic showroomers. These results support H4.

2.4.5 Additional analyses

Although we were mostly interested in differences in psychographic variables between showrooming factors, we additionally analyzed the impact of psychographics on the general showrooming

propensity. This analysis aims to underline the important role of psychographic variables in the showrooming context. We estimated a structural equation model including the profiling factors, namely price consciousness, desire for social contact, motivation to conform and bad conscience as independent variables (see Figure 5). The dependent variable was our additionally developed multi-item question measuring general showrooming propensity. The structural equation model shows the same model fit (χ^2 = 413.65 (df = 142, p < .001), SRMR = .05, RMSEA = .06, NFI = .93, TLI = .94, CFI = .95) compared to the confirmatory factor analysis documented in section 2.3.2 (see this section also for reliability and validity checks). Results show that all variables have a significant influence on showrooming propensity – especially price consciousness (.38, p < .001) and bad conscience (-.38, p < .001) followed by motivation to conform (.21, p < .001) and desire for social contact (-.13, p = .003). Therefore, results confirm the relevance of the profiling variables in the showrooming context and thus as differentiation criteria between showrooming clusters.

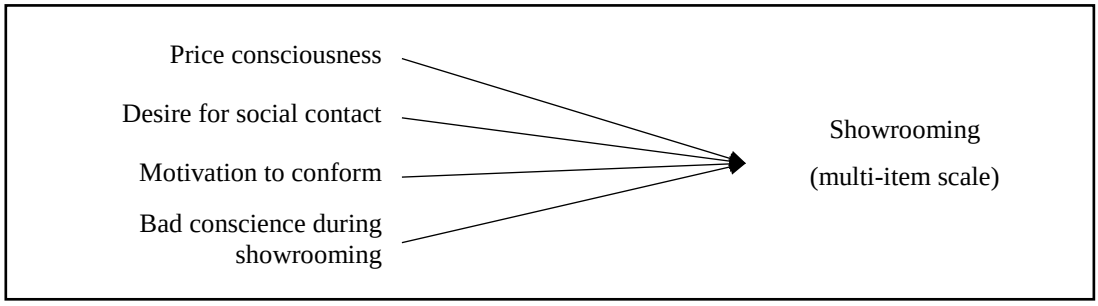


Figure 5. SEM model.

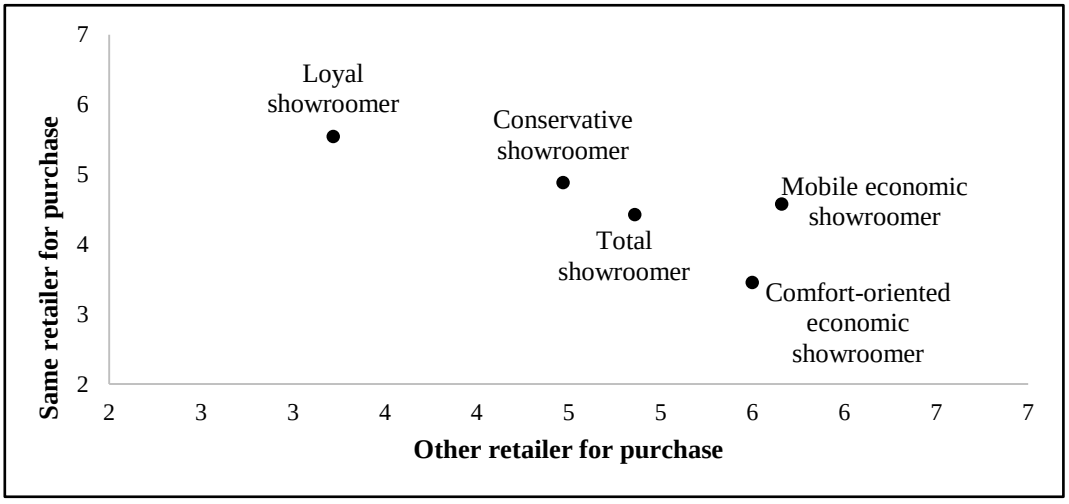
A comparison of showroomers (SR) and non-showroomers (NSR) confirms this result. We found significant differences for price consciousness (M_{SR} = 5.21, M_{NSR} = 4.80, p < .001), for desire for social contact (M_{SR} = 4.27, M_{NSR} = 4.68, p = .004), for motivation to conform (M_{SR} = 3.17, M_{NSR} = 2.88, p = .012) and for bad conscience during showrooming (M_{SR} = 3.31, M_{NSR} = 3.66, p = .024) (see also Table 4).

2.5 General discussion

The results show that the modern customer behavior referred to as showrooming is a complex phenomenon. We identified showrooming forms and characterizing factors of showrooming behavior. Based on these factors, potential showroomers can be divided into segments, supporting our propositions outlined at the beginning of the study. Four types of showroomers were identified: comfort-oriented economic showroomers, loyal showroomers, mobile economic showroomers and conserva-

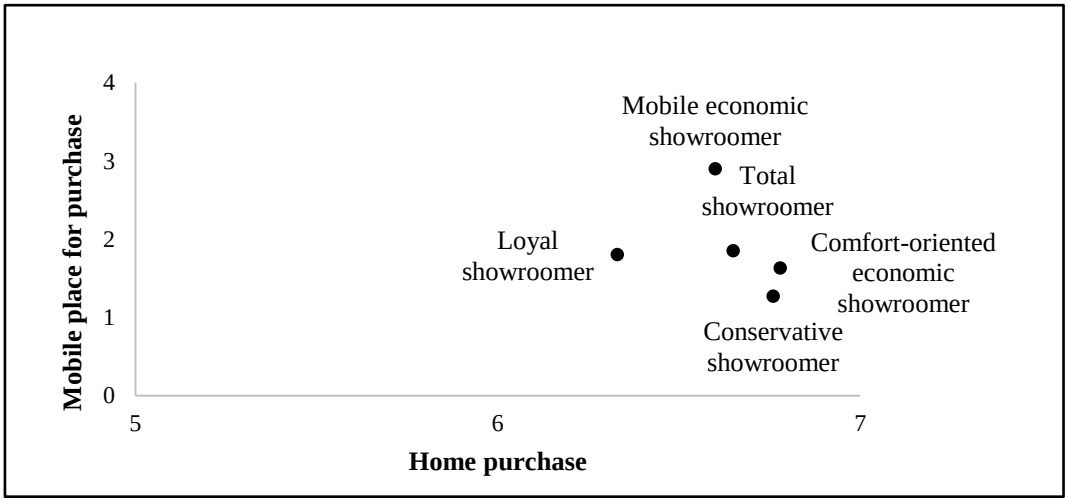
tive showroomers. These segments differ not only in their type of showrooming but also in further psychographic and demographic variables.

Some of the results are particularly relevant or surprising. Figures 6 and 7 illustrate the differences in loyalty (same vs. other retailer) and place of purchase (mobile vs. home purchase) for the identified segments (mean values on a seven-point scale). The segment of loyal showroomers underlines, for example, that a substantial proportion of showroomers switch channels, but not retailers. The conservative showroomer shows also a slightly higher value for sticking with the retailer while switching channels. Although the mobile showroomer shows some tendency to stick with the retailer, it has the highest score for purchasing at a competitor. Furthermore, the largest segment of comfort-oriented economic showroomers has a high score for changing retailers and channels and the lowest loyalty score. This most problematic segment, however, prefers purchasing at home using stationary devices. Hence, retailers cannot identify problematic showroomers for certain by observing in-store mobile phone usage.



Note: All items were measured on a seven-point scale (1 = “I do not agree at all” and 7 = “I totally agree”).

Figure 6. Preferred retailer for purchase across showrooming segments (same vs. other retailer).



Note: All items were measured on a seven-point scale (1 = "I do not agree at all" and 7 = "I totally agree").

Figure 7. Preferred place for purchase across showrooming segments (mobile vs. home purchase).

This paper contributes to the literature in different ways. Firstly, it extends our understanding of showrooming by suggesting factor groups and factors characterizing different forms of showrooming. So far, the literature has discussed showrooming as a one-dimensional behavior only. Secondly, it draws attention to the fact that showrooming is not always negative, in particular when customers remain loyal to the retailer while switching channels. Thirdly, the paper provides a first typology of showrooming clusters that has not existed in the literature so far. Fourthly, we are able to describe these clusters with psychographic and demographic variables. Fifthly, we show that psychographics related to economic, social and emotional shopping value differ between loyal vs. competitive showrooming segments.

2.6 Management implications

Regarding management implications, managers need to train their sales staff to identify different showrooming customers. This can happen based on obvious demographical issues as well as in consideration of attitudinal preferences, which have to be figured out in a personal conversation or by means of customer observations at the point-of-sale. Having noticed potential showroomers, the sales staff needs to behave in a certain way to prevent competitive showrooming. Since loyal showroomers are the most desirable segment, retailers can benefit from this showrooming group by helping them in-store and providing incentives for buying online in their own shop. Especially new technologies such as beacons or apps can help them to find their way in-store or find product

specific information (availability, colors, etc.) more easily. Furthermore, retailers can use reminder e-mails or mobile push messages when customers were identified by using customer cards or beacon apps when searching for information in-store.

For the conservative segment, retailers seem to have a good chance of keeping customers in their own channels by means of marketing communication. In contrast to the loyal showroomer, technical opportunities in the store do not reach this group, while personal contact with the sales staff might be more effective. It is therefore important to train the sales staff, so they can inform this customer group optimally about advantages of staying with the retailer. Furthermore, addressing their bad conscience while showrooming, might prevent this segment from purchasing at other retailers.

Even the mobile economic showroomer indicated a tendency of being loyal to the retailer. As the name suggests, mobile economic showroomers tend to use a broad range of different tools and options. The challenge for retailers lies in providing this segment with many different information search opportunities (apps, homepage, TV spot, information in-store etc.), paying options (e.g. mobile phone payment systems), etc. Retailers may in particular use mobile apps to support in-store mobile search in their own channels. Taking the young age of this group into account, technical innovation is an important feature for targeting. However, as price is also important, cross-channel price promotion may work.

The most problematic segment, the comfort-oriented economic showroomer, does not purchase immediately and with stationary devices. Here, retailers have a small time buffer before the customer purchases at another retailer in the online channel. Price consciousness seems to be a possible starting point. Retailers can offer this segment price promotions or additional services to accelerate the purchase decision. Bundle offers may make it more difficult to compare competitor prices online (Rapp et al., 2015). Retailers may also consider offering price matching guarantees as a signal that accelerates the purchase decision. Consequently, sales staff should motivate this cluster to complete the purchase directly at the store because they are likely to switch retailers at home. Hence, the segmentation approach shows potential starting points for retail managers to better address different showrooming groups and keep them in their own channels.

2.7 Limitations and future research

A limitation of the study might be the focus on consumer electronics. Future research should analyze the importance of the identified segments for further product categories. Additionally, further studies may also find other profiling factors and examine differences between showroomers and

non-showroomers in more detail. Future studies may also consider the impact of further market characteristics (e.g. variety of products available or level of retailer competition) on showrooming forms. Another limitation might be the identification of potential showroomers, although a comparison of a general showrooming tendency between identified showroomers and non-showroomers supports our approach. Furthermore, the definition of showrooming as a situational behavior implies that showrooming segments are not stable. They might differ depending on situational factors, e.g. the product category or shopping intentions. Further research needs to identify further situational factors that require changes in showrooming segment categorization. Additionally, research should also determine if and how different marketing actions affect showrooming segments and their behavior. Thereby, studies can stress and manifest the managerial relevance of the differentiation of showrooming clusters.

3 Showrooming potentials and showrooming behavior

Abstract

Literature often defines showrooming as a behavior, in which customers search for information at physical stores and then buy the product online (often at a competing retailer at a lower price). However, research does usually not consider price and product information search in online channels during and after store visits (showrooming potentials) that lead to the online purchase. The authors therefore analyze relationships between four types of showrooming potentials and their impact on showrooming behavior. Based on qualitative data and structural equation modeling, we find support that product information search stimulates price search and in-store search stimulates later search. More precisely, the showrooming process can start with mobile product information search stimulating mobile price search (i.e. price search is not necessarily the starting point of showrooming). Mobile search in turn increases later search, which has a considerably stronger impact on showrooming behavior, i.e. showrooming customers tend to postpone their purchase. A supplementary study underlines the role of choice confusion and search convenience. Further, a scenario experiment shows how QR codes provide an opportunity to influence information search and keep customers in retailers' own channels.

Co-author: *Stephan Zielke (University of Wuppertal)*

3.1 Introduction

Emma is looking for a new winter jacket. She walks into a small and cozy store in the city center that offers clothes of different brands. When she enters the store she touches and tries different products. After a while she finds a jacket from the current collection that she really likes. Since there is no sales staff to ask, she pulls out her smartphone to get to know what other customers think about the jacket. In doing so, she comes across an online shop that offers the jacket for about 20% less. She hangs the jacket away and leaves the store. Later in the day after checking the price again she purchases it online. Noah needs a new TV. He drives to an electronics store and finds a TV that fits his needs. As no sales personnel is available, Noah scans the QR code shown at the TV's price tag for obtaining further information. The code guides him to the store's online shop where he reads several positive reviews about the TV. Because of the positive reviews, Noah walks to the checkout and buys it.

Both are typical examples of customer behavior nowadays. The first example illustrates the so-called showrooming phenomenon in which customers search for information in-store and finish their purchase online (Balakrishnan et al., 2014). In particular for traditional brick-and-mortar retailers, showrooming is a serious issue. As a reaction, some even introduced service fees that they refund when customers buy in their stores (Mehra et al., 2013). The examples also illustrate that the online search for product and price information during and after store visits plays an important role in the showrooming process. Quint et al. (2013) report that around half of their respondents use the mobile internet in-store regularly to make price comparisons or to look for product information and product evaluations. However, the second example also shows that a deeper understanding of the online search that potentially precedes showrooming may help retailers to develop counter-strategies.

After examining various channel combinations in customers' shopping processes Flavián, Gurrea, and Orús (2020) conclude that "however, real-world experiences may involve several interactions across virtual and physical channels during the information search stage of the process. Future studies might, thus, investigate the online-offline channel combination not only as a unidirectional sequence (from online to offline, or from offline to online) but examine also the effects of varied channel combinations" (p. 8). Hence, customers' purchase processes or journeys are complex. Previous research has not sufficiently considered this complexity, as it does not consider online search behavior as a separate and inevitable stage of the showrooming process. Instead, typical showrooming concepts focus on offline search behavior which in a next step leads to online purchases (Gensler et al., 2017; Gu & Tayi, 2017). However, as the examples illustrate, after searching in-store at

least two separate behaviors emerge in the online channel: First, search for information online and secondly, the act of purchasing. Thus, research needs a new and more complex conceptualization of the showrooming phenomenon. Therefore, the first objective of this study is to propose a new conceptualization of showrooming, in which we add a differentiated understanding of online search behavior. We define different forms of online search behavior as *showrooming potentials* and the act of purchasing as *showrooming behavior*. This differentiation provides a better understanding of the phenomenon and enables retailers to retain customers in their own channels.

The second objective addresses relationships between showrooming potentials. In the initial example, Emma searches for information in different ways. She touches and feels the product, searches product information online via her mobile device and thereby comes across a better price. The actual purchasing behavior emerges later after leaving the store. This example illustrates that searching for product information can lead customers to price information and thus results in showrooming behavior, even in situations in which customers do not deliberately search for price information online. It further shows that one part of the showrooming process happens in-store, while another part can happen later after leaving. Based on research on goal hierarchies (Bettman, 1979) and adaptive behavior (McDowell, 2013), this research therefore considers two main relationships between online search behaviors: (1) product information search online enhances price information search online and (2) mobile online search in-store enhances later online search.

Regarding the first relationship between product and price information, Chernev (2006) shows that price often plays a role in customer decision processes after consumers feel informed about the products and have formed attitudes towards them. This is particularly problematic for retailers. When customers search for additional product information online in-store with their mobile device, they can easily come across cheaper prices of competitive online retailers. Hence, if such a relationship exists, retailers have to develop counter-strategies. QR codes that guide customers to pre-programmed online pages (Narang, Jain, & Roy, 2012), here the retailers' own online shop, where they find additional product information without coming across websites of competitors might be a promising strategy. Customers would then not encounter lower competitor prices and therefore be less likely to engage in competitive showrooming behavior.

The second relationship between mobile in-store and later online search reflects a temporal sequence that results from a postponement of the purchase decision. Facing a numerous amount of information while searching in-store with a mobile, cognitive overload and confusion can occur (Malhotra, 1984), such that customers feel no longer able to make a purchase decision (Blackwell, Miniard, & Engel, 2006). This psychological process is highly relevant for brick-and-mortar

retailers, as postponements of the purchase decision decrease the probability of an offline purchase. Additionally, Sit et al. (2018) found that customers' convenience of cross-checking information between the offline and online channel is an important driver of showrooming behavior and studies examining online shoppers often identify convenience-oriented segments (Rohm & Swaminathan, 2004). We therefore expect that search convenience also enhances later online search behavior because it is easier and more comfortable to search for and compare information on the internet later after leaving the store (e.g. from home) with a stationary device (e.g. laptop).

Analyzing the different forms of online search (showrooming potentials) arises the question of how they influence actual purchase behavior. Buying process models suggest that information search behavior precedes purchase behavior (Kotler, Keller, Brady, Goodman, & Hansen, 2019). Consequently, these various online search behaviors (showrooming potentials) can lead to both online (showrooming behavior) and offline purchases (webrooming behavior). Hence, showrooming and webrooming are closely linked, because they are alternative outcomes of combined in-store offline and online search. Previous research has often examined both phenomena together as both were previously regarded as two-stage processes (e.g. Flavián, Gurrea, & Orús, 2019). However, as in particular showrooming is a serious issue for brick-and-mortar retailers, we concentrate on the former keeping in mind that the decision not to showroom and purchase offline could be considered as webrooming. To sum up, the second objective of the paper is to generate insights into the relationships between diverse showrooming potentials and their impact on showrooming behavior. The following research questions address the two strongly related purposes of our study:

- Which forms of online search behavior (showrooming potentials) exist in showrooming contexts?
- How are different forms of online search behavior related and how do they influence showrooming behavior?
- How do choice confusion and search convenience affect the relationships between showrooming potentials?
- Can multi-channel technologies such as QR codes keep customers in retailers' own channels?

Each research question is assigned to one respective study presented in this paper. Answering the research questions is theoretically and practical important to understand the showrooming phenomenon and to develop counter-strategies. If, for example, the mere search for product information stimulates price search and thus showrooming behavior, retailers must try to stimulate product information search in their own channels, for example by using QR codes. Retailers may

further address choice confusion or search convenience to influence online information search.

We will start with a theoretical framework providing the research basis and defining and differentiating showrooming potentials and showrooming behavior. Then, we derive hypotheses and the conceptual model of the study. A qualitative pre-study emphasizes the focus on different online search behaviors in showrooming contexts (showrooming potentials). Next, a survey study examines the hypothesized relationships based on structural equation modeling. Moreover, a complementary survey study sheds light on the role of choice confusion and search convenience. Finally, an experiment illustrates how retailers can translate the findings in a selected counter-strategy (support of in-store information search by QR codes). We end up with a general discussion that highlights the importance of separating showrooming potentials and behavior, especially in terms of influencing customers' mobile product information search in-store to retain them in retailers' own channels.

3.2 Theoretical framework

3.2.1 Background: buying process models and adaptive behavior

The framework of this study is anchored in process models of consumer purchase decisions and theories of adaptive human behavior, which are both closely linked. As consumers' shopping behavior becomes more and more complex due to digitalization, Lemon and Verhoef (2016) mention the customer journey in which multi-channel customers "interact with multiple touch points, moving from consideration, search, and purchase to post-purchase, consumption, and future engagement or repurchase" (p. 79). Hence, the customer journey is divided into different stages of a shopping process following typical buying process models (Kotler et al., 2019). The five-stage model of the consumer buying process comprises the stages problem recognition, information search, evaluation of alternatives, purchase decision and post-purchase behavior (Kotler et al., 2019). Its origins go back to the EKB model and its further development to the EBM model of consumer decision-making (Blackwell et al., 2006). According to Kotler et al. (2019) firstly, consumers recognize their problem caused by internal or external stimuli. Then, the information search stage begins in which consumers become more receptive to product information and actively start to search for information. Starting with a total set including all products available, consumers build an awareness set with brands that they know and later on a consideration set with product options that meet their buying criteria. In a further step consumers search for more information on a few selected products that make up their choice set from which they select the final product to buy. Hence, consumers stepwise filter product alternatives before making a purchase decision, which is

finally followed by the post-purchase stage. Whether consumers pass through all five stages of this process depends on the product and customers' experiences with it (Kotler et al., 2019). For the purpose of this study, we will focus on the "information search" and the "evaluation of alternatives" as both stages are relevant in showrooming contexts and potentially precede showrooming behavior.

As Flavián et al. (2020) state, the customers' purchase-decision making process is a complex sequence of different channels or in the words of Lemon and Verhoef (2016) various "touch points" (p. 69). Based on an extensive literature analysis Lemon and Verhoef (2016) determined that these multiple touchpoints influence each other and customers' purchase behavior. This causal relationship is evolutionary-biologically determined and manifests itself in research on adaptive behavior. Humans adapt their behavior to natural and social environmental conditions (Borthwick-Duffy, 2007; Tassé, 2013). This adaption in turn leads to new patterns of behavior resulting from previous ones (McDowell, 2013). Bettman (1979) refers to this adaptive process by a goal hierarchy, in which new goals emerge from the previous ones. To sum up, the customer journey reflects a sequence of adaptive human or rather customer behavior. Observable customer behavior results from previous behavior and thus, contacts with previous touchpoints.

In channel switching contexts this means that customers adapt their behavior by using different channels at different stages of the purchase process (Verhoef et al., 2007). Decisions to switch a channel or touchpoint depend on information customers collected or received at preceding channels or touchpoints. Speaking of the showrooming phenomenon, customers can, for example, start with an offline search. Depending on the availability and quality of information they find in the store, they may adapt their search behavior and switch to the online channel, where they ultimately purchase the product. Hence, adaptive search behavior can potentially result in showrooming.

3.2.2 Defining showrooming potentials and behavior

Literature on channel switching often examines showrooming and webrooming behavior simultaneously (Flavián et al., 2019; Jing, 2018; Kang, 2018; Reid, Ross, & Vignali, 2016; Fernández, Pérez, & Vázquez-Casielles, 2018). This is because research has so far treated both behaviors as two-stage processes: showrooming as searching offline and buying online and webrooming as searching online and buying offline. Studies focusing on webrooming only are rare. They mainly examine drivers (Arora & Sahney, 2017; Santos & Gonçalves, 2019) and/or consequences (Flavián, Gurrea, & Orús, 2016). In contrast, showrooming research has increased significantly in recent years, also focusing primarily on antecedents and consequences (see Table 6). These papers usually

do not consider the online search in between, which necessarily precedes the online purchase. Typical examples of showrooming definitions used in these papers are "(…) the practice among some consumers of first browsing at a physical store and then ordering from an online seller (…)" (Balakrishnan et al., 2014, p. 1144) or "(…) consumers gathering information about a product from the offline retailer and then purchasing the product online" (Basak, Basu, Avittathur, & Sikdar, 2017, p. 34). Only single definitions consider online search to some extent, e.g. in form of mobile search at physical stores, but do not include the final act of purchasing online. For example, Rapp et al. (2015) define showrooming as "a practice whereby consumers visit a brick-and-mortar retail store to (1) evaluate products/services first-hand and (2) use mobile technology while in-store to compare products for potential purchase via any number of channels" (p. 360). So far, there is no conceptualization of showrooming that includes all three stages of the showrooming process, namely offline search, online search and online purchase (see Table 6). Furthermore, up to now, there are no research studies examining various types of online search and relationships between these (for example product vs. price information search or mobile in-store vs. later search outside the store).

Table 6. Research on antecedents and consequences in showrooming contexts.

Author(s) and year	Considered parts of SR conceptualization	Method	Product group	Identified antecedents	Identified consequences
Arora and Sahney (2018)	In-store search / online purchase	Survey	Electronics	Perceived relative search benefits offline; relative purchase benefits online; perceived ease of purchasing online; overall usefulness of SR	SR behavior
Arora et al. (2017)	In-store search / online purchase	Survey	Not specified	Importance of touching and feeling the product; importance of sales staff assistance Online service quality; lower online prices Price consciousness; ability to use multiple channels	Visit store before online purchase SR behavior
Balakrishnan et al. (2014)*	In-store search / online purchase	Game theory	Diverse	Option for consumers to browse-and-switch (SR behavior)	Competition between retailer and e-tailer; profits of firms
Basak et al. (2017)*	In-store search / online purchase	Game theory	Not specified	SR behavior	Profit of traditional and online retailer; overall retail prices
Dahana et al. (2018)	In-store search / online purchase	Survey	Apparel	Involvement; price consciousness Prior knowledge; perceived risk; price consciousness; internet usage; device usage; age	Potential showroomers SR behavior frequency

Author(s) and year	Considered parts of SR conceptualization	Method	Product group	Identified antecedents	Identified consequences
Daunt and Harris (2017)	In-store search / online purchase	Survey	Diverse	Technological speed of change; product acquisition value; product price; product availability; product involvement; in-store shopping savviness; internet savviness; trust in in-store sales employees; trust in online stores; value of in-store shopping; value of online-shopping	In-store value taking; online value co-destruction/co-creation
Fassnacht et al. (2019)	In-store search / online purchase	Survey	Electronics	Interaction quality with service staff; price matching strategy; offering alternative products; explaining store's return policy	Showroomers' and non-showroomers' in-store buying intention
Flavián et al. (2019)	In-store search / online purchase	Qualitative interviews; survey; laboratory experiment	Diverse	Webrooming; SR behavior	Search process satisfaction; confidence in making the right purchase; smart shopping feelings
Flavián et al. (2020)	In-store search / online purchase	Survey	Apparel	Webrooming; SR behavior	Customer experience (smart shopping perceptions and feelings)
Gensler et al. (2017)	In-store search / online purchase	Survey	Clothing, shoes, sporting equipment, furniture, toys/games, electronics	Price savings; perceived dispersion of online prices; fit with consumer's needs; waiting time for service staff; time pressure	SR behavior
Gu and Tayi (2017)*	In-store search / online purchase	Game theory	Diverse	Pseudo-showrooming via offering higher-quality product/ higher demand product online exclusively	Profit of firms
Jing (2018)*	In-store search / online purchase	Game theory	Not specified	SR behavior	Price competition; retailers' profits
				Consumer search costs; return policy of retailer	SR behavior
				Webrooming	SR behavior; competition; online retailers' profit

Author(s) and year	Considered parts of SR conceptualization	Method	Product Group	Identified antecedents	Identified consequences
Kang (2018)	In-store search / online purchase	Survey	Apparel and beauty	Showroomers Social interaction	User-generated content creation intention on social media, information attainment; price comparison SR behavior
Rapp et al. (2015)	In-store search (incl. mobile search in-store) / no purchase behavior	Survey	Running shoes and clothing	Perceived showrooming (moderating variables: salesperson's coping strategies; cross-selling strategies)	Salesperson's self-efficacy; salesperson's performance
Reid et al. (2016)	In-store search / online purchase	Survey	Not specified	Missing possibility of efficient price and product comparisons in physical channels	SR behavior
Schneider and Zielke (2020)	Mobile search as one characterizing factor of in-store search / online purchase	Survey	Electronics	Price consciousness; desire for social contact; motivation to conform; bad conscience during SR behavior	SR behavior

Note: SR = Showrooming / *identified antecedents and consequences are modeled due to game-theoretic modeling approach.

Addressing these issues, we propose a new showrooming definition that includes not only offline search and online purchase behavior, but also online search behavior in between. Furthermore, we distinguish different types of online information search that precede the online purchase. We call these types of online search behavior showrooming potentials. With the term "potential" we distinguish online search as a necessary and integral part of the showrooming process from other influencing factors of showrooming, such as situational aspects (i.e. time pressure) or customer characteristics (i.e. price consciousness). Hence, by using the term showrooming potentials, we differentiate online search from other antecedents or drivers of showrooming. The term "potential" further underlines that online search is a precondition that can but does not need to ultimately result in an online purchase. As mentioned before, the pattern of search and purchase behavior is driven by adaptive behavior (McDowell, 2013). Depending on the information customers find online, online search behavior can also result in a decision to buy at the store, i.e. webrooming, in which online search precedes offline purchases (Arora & Sahney, 2017).

For understanding the showrooming process, it is further important to distinguish different types of online search. Customers and in particular showroomers search for product and price information that influence their buying decisions (Sit et al., 2018). Product information search comprises search for product descriptions or reviews of other customers (Park & Kim, 2003). Customers can further search for additional product and price information with their mobile in-store (Quint et al., 2013) or

with any device afterwards (Fuentes & Svingstedt, 2017). The use of the smartphone in-store in the search phase of the shopping process has become a natural part of today's shopping behavior (Fuentes et al., 2017; Fuentes & Svingstedt, 2017; Grewal, Ahlbom, Beitelspacher, Noble, & Nordfaelt, 2018). However, searching for online information can also take place after leaving the store, for example on the way home, at work or from home (Fuentes & Svingstedt, 2017; Schneider & Zielke, 2020). Hence, we distinguish four showrooming potentials:

(1) Price information search online via mobile devices in-store,
(2) Price information search online after leaving the store,
(3) Product information search online via mobile devices in-store and
(4) Product information search online after leaving the store.

We define and conceptualize showrooming as a process, in which customers visit a physical store to select a product, then search for product and/or price information online in-store or later (showrooming potentials) before they purchase the product online.

3.2.3 Relationships between showrooming potentials and showrooming behavior

We further propose relationships between showrooming potentials. Since human behavior is adaptive (Borthwick-Duffy, 2007; Tassé, 2013) and decision making processes are hierarchical (Bettman, 1979), customers' search for information is based on their goal hierarchy and previous experiences. Therefore, we assume relationships between the different types of online search behavior (showrooming potentials) as a consequence of adaption. We will now discuss these relationships.

Chen (2009) offers a modified model of the consumer decision process in which he considers a first search and evaluation stage followed by a second information search and evaluation stage. He states that in the first search and evaluation phase customers focus on "product-related information, such as brand, specification, function and appraisal. Consumers rigorously search for and evaluate products, while only generally referring to price to ensure the products are within their budgets." (p. 311). Chernev (2006) follows a similar direction in his argumentation, stating that due to customers' degree of uncertainty of their consumption preferences concerning a specific product, price information often plays a subordinate role.

At the end of this first phase customers have only a few products or at least one product left (Chen, 2009). These few products match the product choice set that Kotler et al. (2019) place at the end of the search and evaluation stage. Based on customers' information at this point, they adapt their be-

havior and according to Chen (2009) follow a second search and evaluation phase focusing on price information. “They tend to undertake price comparison across a variety of retailers and then make their final decision which product and on where to purchase the product (both online and offline)” (Chen, 2009, p. 312). Hence, price plays a primary role in the final decision between products of an already selected choice set. Further, product and price search characteristics also support the assumption that information search starts with product search and ends up with price search. Searching for product information encompasses more than one search category, such as product description, product quality or product specifications whereas searching for price information is one single search category (Detlor, Sproule, & Gupta, 2003). Hence, product information search is often exploratory and wide, whereas price search is more targeted.

In showrooming contexts, we assume that potential showroomers often switch from offline to online search during the first search and evaluation stage in order to find additional product information or search for further product alternatives. After a stepwise filtering process, customers select their final choice set. This channel switching behavior in the first search and evaluation stage occurs more frequently when no sales staff is available (Gensler et al., 2017).

Hence, we can assume that especially in the showrooming context, customers see a specific product in-store for which they want to search for more information or find alternatives to form a final choice set. When they feel that in-store information is not sufficient, they adapt their search strategy and start searching online for product information. In particular, when customers observe cheaper online prices while searching for product information, they may adapt their search strategy by searching for cheaper offers online. According to the phases suggested by Chen (2009) and the arguments presented before, customers will then in a second phase search for price information online. Hence, the decision process is adaptive (Borthwick-Duffy, 2007; Tassé, 2013) and hierarchical (Bettman, 1979) and searching for product information stimulates customers subsequent search for price information online. We assume this effect for both mobile in-store as well as for later online search.

H1a. Mobile product information search in-store is positively related to mobile price information search in-store.

H1b. Later product information search is positively related to later price information search.

In addition, we know that customers increasingly use their mobile devices in-store to search for more information (e.g. further product information and positive reviews or price checking for a considered product) (Quint et al., 2013). Some studies even consider mobile search as an indicator of showrooming (Rapp et al., 2015). At the same time, results from Schneider and Zielke (2020) show

that most showroomers complete their purchases primarily from home. In a qualitative pre-study conducted by the authors, some customers stated that when they search for additional information on their smartphone in-store, they feel uncomfortable because of the small display. Therefore, they prefer to continue their search later at home using a stationary device (e.g. laptop).

For the relationship between mobile in-store and later online information search in showrooming contexts this means that customers often search with their mobile devices in-store, but continue their search at home. Again, this is also a reflection of adaptive behavior in the purchasing process. As we will discuss later, customers may not be ready for making a decision and find the device (mobile) or place (store) inconvenient for searching additional information and completing the purchase. As a consequence, they adapt their behavior and continue their search later online. We further expect that customers continue their search behavior at the point at which they stopped in-store, i.e. mobile product search stimulates later product search and mobile price search stimulates later price search. We therefore hypothesize:

H2a. Mobile product information search in-store is positively related to later product information search.

H2b. Mobile price information search in-store is positively related to later price information search.

We already mentioned that customers often adapt their search behavior by continuing mobile search in-store later at home or at another place outside the store. We now discuss reasons for adaptive behavior more deeply. Once customers start mobile information search in-store, they find nearly endless information online and can easily get confused since human processing capacity is limited. Too many information will lead to cognitive overload (Malhotra, 1984), i.e. a state in which customers are no longer able to compare or comprehend given alternatives (Mitchell, Walsh, & Yamin, 2005; Walsh, Hennig-Thurau, & Mitchell, 2007). This cognitive stage results in an increased perceived risk of purchase (Blackwell et al., 2006) and in the context of showrooming, customers being in-store may hope to reduce this negative state by further expanding their search behavior and effort (Blackwell et al., 2006).

Moreover, another important aspect is search convenience. Customers searching for information in-store may perceive the small smartphone display as inconvenient to obtain all information they need (PWC, 2017), especially when they are already confused by too much information. Singh and Swait (2017) confirm that customers rate perceived search and purchase convenience of mobiles much lower compared to desktops. Furthermore, Holmes, Byrne, and Rowley (2014) show that consumers perceive computers (vs. mobiles) to be better in terms of convenience, helpfulness and clear-

ness. With regard to showrooming, Sit et al. (2018) found out that customers' convenience of cross-checking information between the offline and online channel is an important driver of showrooming behavior.

Thus, customers being in-store could postpone their purchase decision to a later time. To sum up, we argue that mobile search in-store stimulates later search, because while searching for information online, customers get confused by the amount of information they find and thus continue their search in a more convenient environment.

H2c. The impact of mobile search behavior in-store on later search behavior is sequentially mediated by choice confusion and perceived search convenience.

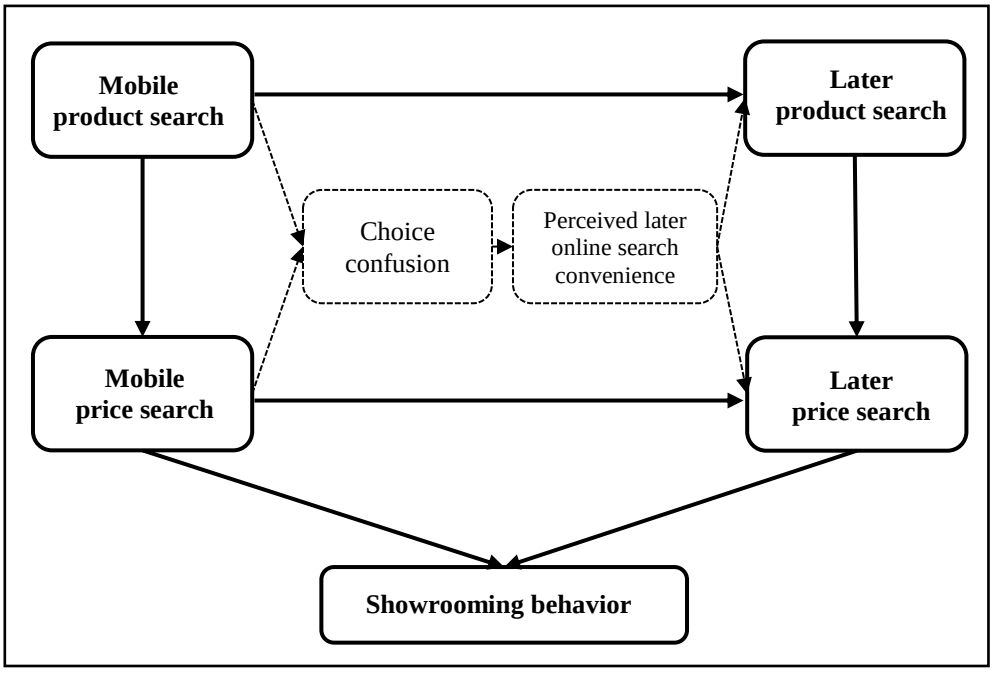
According to Chen (2009) and the arguments presented before, price information search in the second search and evaluation phase determines the final purchase decision. At this point, customers can adapt their behavior by continuing their search later, purchase the product in the store (webrooming) or purchase the product online (showrooming). As the online channel offers diverse opportunities to find products at competitive prices (e.g. price search engines) and as online prices are often considered to be lower than offline prices, the probability that online price search results in showrooming behavior is large. We therefore assume that price information search is directly linked to showrooming.

H3a/b. Mobile price information search in-store (a) and later price information search (b) are positively related to showrooming behavior.

Recent literature shows that mobile search behavior in-store via mobile devices increases (Gross, 2015), but until now the proportion of customers purchasing online via mobile devices in-store is low (Holmes et al., 2014). As mentioned before, most showroomers continue their online price search later and prefer to purchase from home (Schneider & Zielke, 2020). Therefore, later price search should have a stronger impact on showrooming behavior than mobile price search in-store.

H3c. Later price information search has a stronger impact on showrooming behavior than mobile price information search in-store.

Figure 8 summarizes our framework. Since we argue that the showrooming process starts with mobile product information search in-store, the other showrooming potentials mediate the effects on the final showrooming behavior.



Notes: bolt: main model / dashed: psychological explanations.

Figure 8. Model of showrooming potentials and showrooming behavior.

We analyze the theoretical framework in different studies. Firstly, a qualitative study provides some general insights in the relevance of showrooming potentials. Then, a first survey study analyzes relationships between showrooming potentials and behavior using structural equation modeling. A complementary survey study replicates results from the first study and analyzes the role of choice confusion and search convenience. A final laboratory experiment tests a counter-strategy for retailers that appears promising based on the results of the survey studies. Figure 9 provides an overview of the four studies.

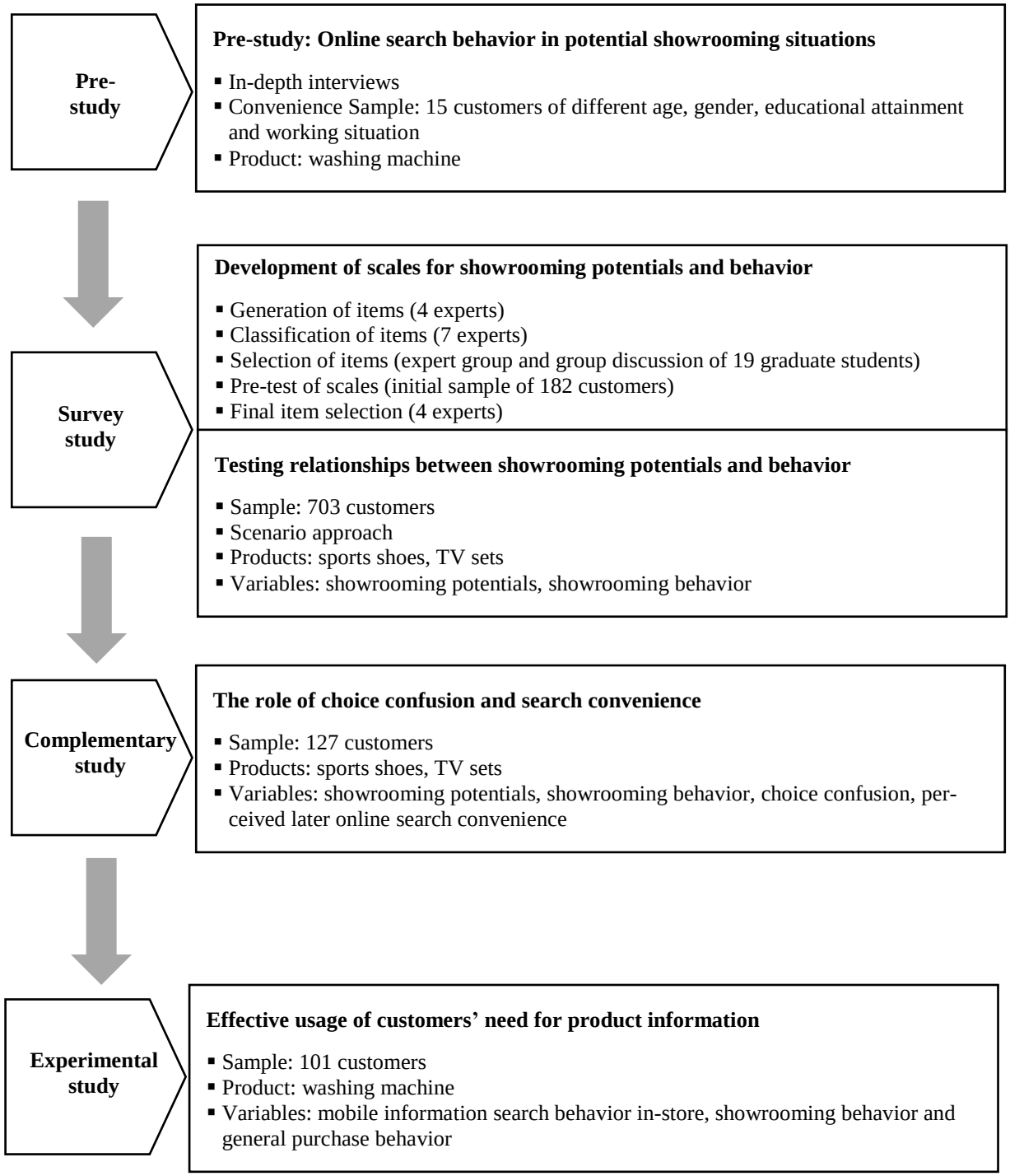


Figure 9. Overview of empirical studies.

3.3 Qualitative pre-study: online search behavior in potential showrooming situations

The aim of the qualitative pre-study is to support the conceptual model and simultaneously shed more light on relationships between showrooming potentials.

3.3.1 Research design and sample description

We conducted 15 in-depth interviews. Participants were between 18 and 64 years and 53% were male. We interviewed participants of different age, gender, educational attainment and working situation. The questionnaire started with some closed questions about general shopping behavior and the ownership of mobile devices. We asked participants to imagine and describe a typical shopping process for a washing machine – a typical (complex) showrooming product for which customers usually invest time in information search before they make a purchase (Shen et al., 2016). Afterwards, participants were instructed to imagine being in an electronics store to buy a washing machine. We showed them photos of six real washing machines with real product information charts and asked them to explain, what they would probably do next after finding these machines in the store. Then, we told them that no sales staff is available and that they should use their smartphone if they need more information for making a purchasing decision. We gave them the time they needed to search for information with their own smartphone. Afterwards, we asked them which websites and keywords they have used, which information they have found and if and where they would buy a machine. Participants evaluated the given situation as realistic with a mean value of 6.13 (on a seven-point scale with 1 = “not realistic” and 7 = “totally realistic”).

3.3.2 Analysis and results

We used deductive category assignment (structuring method) for analyzing the data (Mayring, 2015). Categories were based on our conceptual framework. In the free imagination question of a shopping process, all participants stated to search for information before purchasing a washing machine. Eight mentioned product information search before price information search. Three started with price search in terms of setting a price range, then searched for product information in this price frame and finally ended up again with searching for the best offer. Another three participants mentioned to search for price and product information simultaneously and one apparently started with price before product information search. When imagining being in the store that offers the six washing machines, six participants stated that it is highly likely that they would use their smartphone in-store, five said it is possible, for example when no sales staff is available, two men-

tioned a low probability, one said that he would do it outside the store and one could not imagine it at all. Therefore, one person was not asked to perform the task of searching additional information with a smartphone. When participants reported their mobile search behavior in-store, almost all (13) started searching via google. Most participants searched for the name of the washing machine in combination with the brand. Additionally, their search often included words like "washing machine" or "test". Nobody used the word "price", but twelve customers stated that they have found price information as well and even five reported that the price was the most obvious information, they have found. Furthermore, we could recognize choice confusion (2 participants) and a desire for more convenient devices (9 participants) after using the smartphone for additional information in the in-store situation. One participant stated for example:

> "I think I'm a little overwhelmed with the information (…). That's why I wouldn't buy anything now anyway, I think. No, that would be too much for me right now. I think I would normally need more time and would like to do it on the computer. I could imagine that maybe I will try to google something. But anyway, I can't get all the information I need to choose a machine on the smartphone, because the display is too small."
>
> (Interview 3)

To sum up, searching for product information online most commonly precedes searching for price information. Choice confusion and a more convenient perception of later search at a desktop computer could be drivers for a postponement of online search. Hence, this qualitative pre-study supports the assumed relationships to be tested in the main study.

3.4 Survey study: relationships between showrooming potentials and behavior

In a first survey study we analyze the fundamental relationships between showrooming potentials and behavior according to H1a/b, H2a/b and H3a/b/c. As part of this study, we also developed measures for showrooming potentials and behavior.

3.4.1 Development of measurements

We developed multi-item scales for showrooming potentials and behavior in a multi-step process (Walsh et al., 2007). As we later worked with scenarios, we intended to measure intentions as latent constructs and not actual behavior. We started with a small panel of four experts (incl. authors), who created 109 different items for measuring these constructs. Then, seven other experts assigned every single item to the respective construct to proof face validity. Based on this work and a group discussion with 19 graduate students, the initial expert panel explored the differentiability and practical usability of the remaining items. This purification reduced the number of items to 39. We then pre-tested the scale based on a sample of 182 respondents. A first confirmatory factor analysis

yielded good model fit. Nevertheless, the expert panel from the beginning reduced the large scale for practical reasons to four items for each concept based on face validity. To validate this content-related selection we used confirmatory factor analysis that yielded a good model fit. We used the final multi-item scale for the main study (see Appendix B for the item list).

3.4.2 Research design and sample description

We conducted a scenario-based online survey with two product categories (sports shoes / TV sets) and two shopping scenarios (buying / browsing) to strengthen external validity. The scenario approach is often used in consumer behavior research (e.g. Turley & Milliman, 2000). We chose sports shoes and TV sets as they belong to typical showrooming product categories examined in research so far (see Table 6). However, both product categories differ in customers' need for touch and feel, the degree of perceived risk and involvement. Considering both product categories allows us to check generalizability of our results across products.

The questionnaire started with the presentation of one of the four scenarios. Participants should imagine visiting a brick-and-mortar store that they usually consider, when they are looking for the respective product. In the store, they find a product that they really like, test/try it and ask the sales staff for further information. Finally, they would like to buy the product (see Appendix C). Afterwards participants should report the probability for showrooming potentials and behavior (intentional constructs) in the given situation. We used manipulation checks to be certain that participants have read and understood the scenario instructions. Later on, we asked for some psychographics, aspects of their general shopping behavior and finally demographical information. Respondents answered most questions on seven-point scales.

We decided to start the process with a brick-and-mortar store visit, as we considered buying and browsing situations. The latter often starts with information search in physical stores. Even though this is usually not the case for customers with a clear buying intention (as they have often already obtained information online before visiting a store), we decided to start all scenarios consistently in-store for comparability reasons.

After pre-testing, we distributed a link to the questionnaire and an associated password online via snowball sampling. We considered quotas for age and gender to enable comparability between the four scenarios. We collected 703 questionnaires with 53% female and 47% male respondents at an average age of 33 years. 343 participants answered the sports shoes scenario (buying: 179 / browsing: 164) and 360 the TV sets scenario (buying: 177 / browsing: 183). Almost 98 % of respondents

own a smartphone, 85% go to the city center at least once a month and 75% order a product online at least once a month. Additionally, participants considered the scenario as realistic (M: 5.59, SD: 1.21) and their general shopping behavior indicates that they could easily imagine the given situation.

Cronbach's Alpha for all showrooming constructs exceeded .7 (Nunnally, 1978). Confirmatory factor analysis of the measurement models shows a good model fit according to criteria suggested by Hu and Bentler (1999): $\chi 2$ = 357.904 (df = 160, p < .001), SRMR = .017, RMSEA = .042, NFI = .984, TLI = .989 and CFI = .991. Indicator reliability (squared multiple correlation), composite reliability (CR) and average variance extracted (AVE) were above the minimum accepted values in the literature (Fornell & Larcker, 1981). Besides, the Fornell and Larcker (1981) criterion proves discriminant validity, as AVEs for each construct (.829 to .935) were greater than squared factor correlations (.109 to .503) (see Table 7).

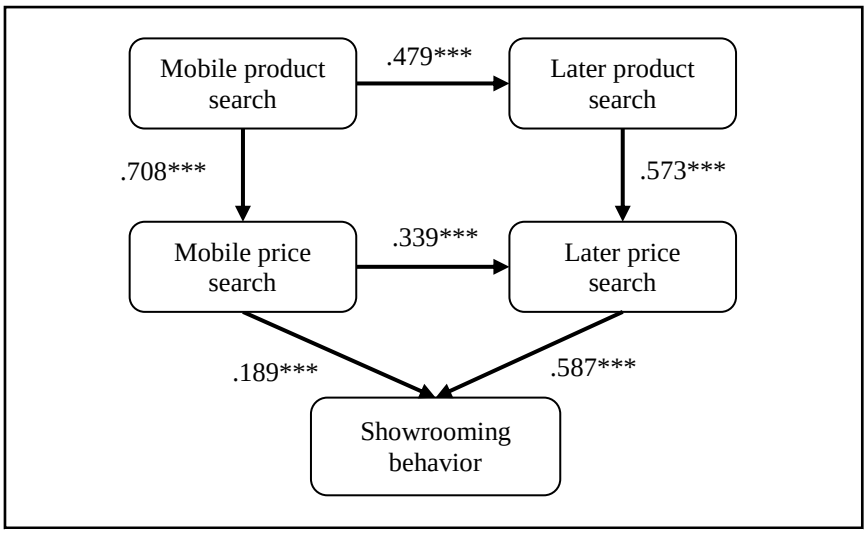
Table 7. Means, standard deviations, square root of AVE and correlations between constructs (survey study).

			Correlations				
Construct	**Mean**	**SD**	**P1**	**P2**	**P3**	**P4**	**SB**
Mobile product search (P1)	2.771	1.930	*.963*	.483	.709	.409	.451
Later product search (P2)	4.163	2.033		*.946*	.330	.686	.520
Mobile price search (P3)	3.596	2.275			*.966*	.532	.499
Later price search (P4)	4.717	2.019				*.930*	.683
Showrooming behavior (SB)	3.284	1.684					*.910*

Note: Diagonal values in italics are square roots of AVE and others (off-diagonal) are correlations between variables.

3.4.3 Analysis and results

We used structural equation modelling (SEM) to analyze relationships between showrooming potentials and their impact on showrooming behavior (H1 to H3). The model has a good fit ($\chi 2$ = 413.034 (df = 164, p < .001), SRMR = .034, RMSEA = .047, NFI = .981, TLI = .987 and CFI = .988) and all coefficients indicate significant relationships (see Figure 10). Moreover, except for the path of mobile price search in-store on showrooming behavior, all path coefficients have meaningful values (> .2) according to Chin (1998).



Note: * $p < .05$ / ** $p < .01$ / *** $p < .001$.

Figure 10. Standardized factor loadings for basic model (survey study).

Hence, the results confirm the positive relationship between showrooming potentials and showrooming behavior. Moreover, the results show that online search for product information precedes online search for price information. Mobile product information search strongly stimulates mobile price search at the physical store (.708, $p < .001$) and later product information search also has a positive effect on later price search (.573, $p < .001$). Hence, results support H1a and H1b.

Results also indicate that mobile information search in-store precedes later information search. Mobile product information search in-store shows a significant positive effect on later product information search (.479, $p < .001$) as well as mobile price search in-store on later price search (.339, $p < .001$). This supports H2a and H2b. Regarding the impact of mobile in-store versus later price search on actual showrooming behavior, both path coefficients show significant effects ($p < .001$), supporting H3a and b. Whereas the model reveals a high impact of later price information search (.587, $p < .001$), it indicates a smaller positive effect of mobile price search in-store (.189, $p < .001$) on showrooming behavior. This supports H3c. Table 8 summarizes the results of all hypotheses tests. Additional analyses indicate similar effects for offline shopping behavior as the dependent variable (webrooming), but expectedly with a negative sign. Alternative model specifications and additional mediation analyses prove the robustness of all results. For example, we analyzed an alternative model with switched positions of product and price search (in which price search precedes product information search behavior). This model resulted in a worse fit compared to our proposed model.

We also applied multi-group structural equation modeling to test the robustness of our findings and to explore possible moderating effects of the product category (sports shoes vs. TV sets) and the

shopping scenario (buying vs. browsing). Results present significant relationships for each path in the conceptual model irrespective of the product category and shopping situation. However, after successfully testing for measurement equivalence between both product categories, a comparison of model fit values between the unconstrained model and the measurement residual model indicates a moderating effect (Cheung & Rensvold, 2002). Critical ratios for differences in parameters show that the impact of mobile in-store on later product information search is significantly larger for sports shoes (.526, $p < .001$) compared to TV sets (.391, $p < .001$). The impact of mobile in-store on later price search is also significantly larger for sports shoes (.373, $p < .001$) compared to TV sets (.307, $p < .001$).

Table 8. Results of hypotheses tests.

	Hypotheses	Results survey study	Results complem. study
H1a	Mobile product information search in-store is positively related to mobile price information search in-store.	Supported	Supported
H1b	Later product information search is positively related to later price information search.	Supported	Supported
H2a	Mobile product information search in-store is positively related to later product information search.	Supported	Supported
H2b	Mobile price information search in-store is positively related to later price information search.	Supported	Supported
H2c	The impact of mobile search behavior in-store on later search behavior is mediated by choice confusion and perceived search convenience.	Not tested	Supported
H3a/b	Mobile price information search in-store (a) and later price information search (b) are positively related to showrooming behavior.	Supported	Supported
H3c	Later price information search has a stronger impact on showrooming behavior than mobile price information search in-store.	Supported	Supported

The study suggests dividing the showrooming phenomenon in showrooming potentials and showrooming behavior. Moreover, different showrooming potentials exist, depending on the type of information search (product vs. price) and the place and time of search (mobile in-store vs. later outside the store). The results show relationships between the showrooming potentials and they suggest that the showrooming process can start with mobile product search in-store that (automatically) stimulates price search and then might lead to showrooming behavior.

The findings also indicate that a differentiation between mobile in-store and later online search is essential, because mobile search increases later search. This indicates that showrooming customers tend to postpone further information search and the final online buying decision. We explained this effect by the large amount of available information in the online channel that evokes confusion in an in-store purchase setting. Accordingly, our model reveals that later price search influences showrooming behavior more strongly than mobile price search in-store. This is an important contribution

because it underlines that studies with a focus on mobile search in-store are too narrow (Rapp et al., 2015).

Finally, we identified product category as a moderator. Although, all paths show the same relationships for both product categories, we found some differences in the strength of some effects. The impact of mobile in-store on later search is significantly stronger for sports shoes (look and feel product) compared to TV sets (complex electronic product). This holds for product and price information search as well. Recent research argues that customers need to evaluate products in terms of haptic and quality in personal before they make a purchase (Rejón-Guardia & Luna-Nevarez, 2017), as this reduces uncertainties about product features (Kuksov & Liao, 2018). Sports shoes as a look and feel product belong to experience goods, which require personal experience before purchase, whereas a TV set is a typical search good that "can be evaluated by external information" (Chiang & Dholakia, 2003, p. 179). Hence, for sports shoes customers rather tend to postpone their search and purchase behavior to a later time because it is more difficult to make a decision based on available information than for TV sets.

3.5 Complementary study: the role of choice confusion and search convenience

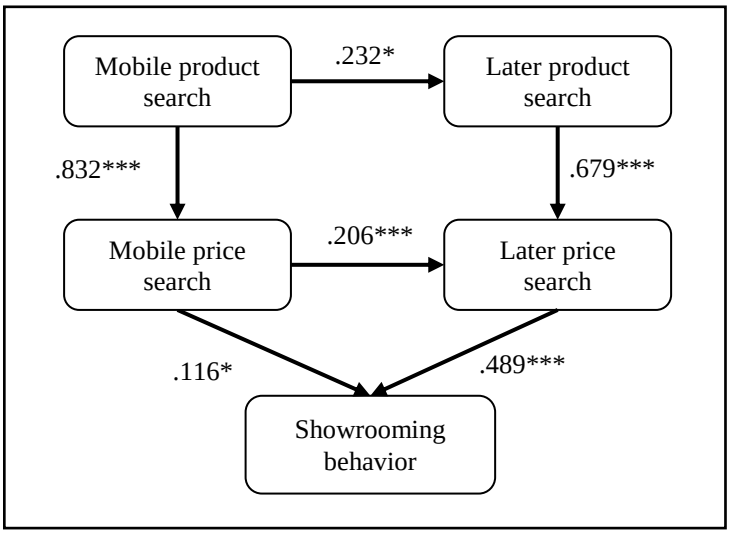
A second survey study aims to replicate the findings from the first study and to analyze the role of choice confusion and search convenience according to H3c (see Appendix B for additional item scales). Since we observed no differences between the buying and browsing condition in the first study, we only used the buying scenario in this study. A snowball sampling procedure resulted in 127 usable questionnaires (sports shoes: 65 / TV set: 62). Participants' average age was 34 years with 55% female respondents. All respondents own a smartphone, 85% go to the city center at least once a month and 75% order a product online at least once a month. Additionally, 71% stated that they have already searched offline and purchased online before. Participants also considered the scenario as realistic (M: 5.54, SD: 1.41). Factor analyses and Cronbach's alpha values above .7 for all constructs indicate reliability of multi-item scales. Again confirmatory factor analysis of the measurement models shows a good model fit ($\chi 2 = 290.009$ (df = 160, $p < .001$), SRMR = .035, RMSEA = .080, NFI = .936, TLI = .964 and CFI = .970) and squared multiple correlation, CR and AVE were above the thresholds set by Fornell and Larcker (1981) (see Table 9).

Table 9. Means, standard deviations, square root of AVE and correlations between constructs (complementary study).

			Correlations				
Construct	**Mean**	**SD**	**P1**	**P2**	**P3**	**P4**	**SB**
Mobile product search (P1)	3.134	1.994	*.957*	.218	.697	.228	.280
Later product search (P2)	4.026	1.954		*.960*	.201	.733	.497
Mobile price search (P3)	4.053	2.228			*.954*	.373	.360
Later price search (P4)	4.543	2.050				*.968*	.617
Showrooming behavior (SB)	3.000	1.653					*.938*

Note: Diagonal values in italics are square roots of AVE and others (off-diagonal) are correlations between variables.

In a first step, we replicated the structural equation model from the first survey study. Results reveal similar coefficients and thus confirm the robustness of findings. Model fit measures show a good model fit ($\chi 2$ = 296.408 (df = 164, p < .001), SRMR = .051, RMSEA = .080, NFI = .935, TLI = .965 and CFI = .969) (see Figure 11).

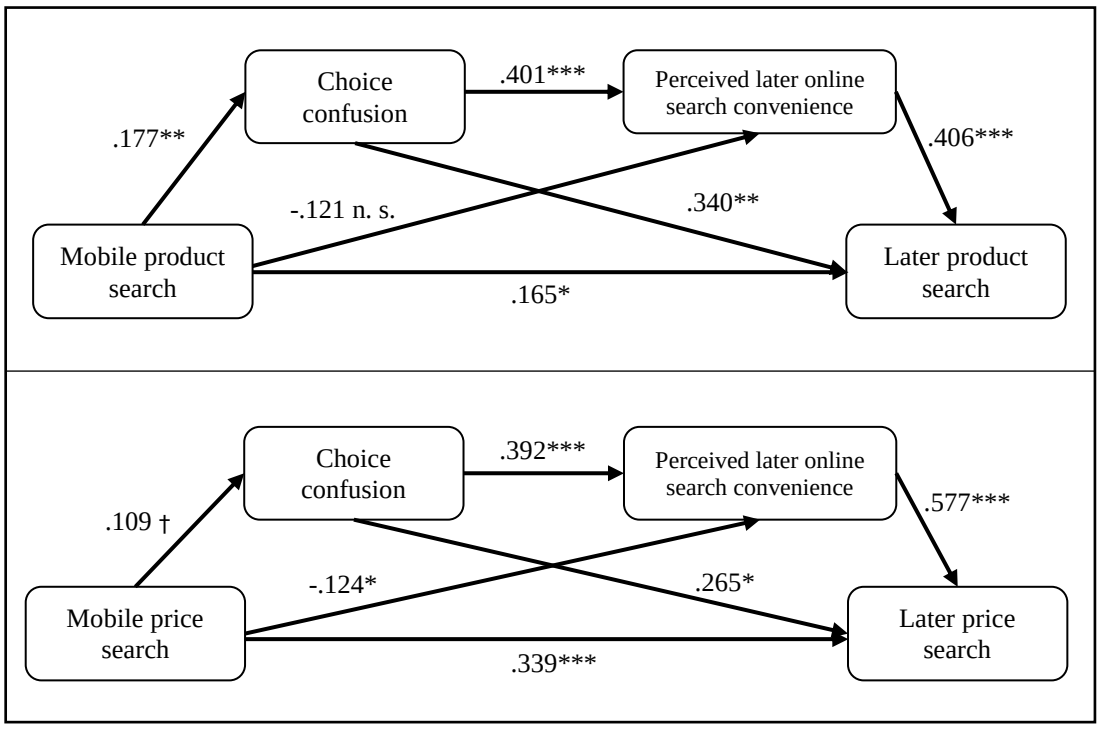


Note: * p < .05 / **p < .01 / ***p < .001 / n. s. (not significant).

Figure 11. Standardized factor loadings for basic model (complementary study).

Additionally, we conducted mediation analyses using the process macro for SPSS (Hayes, 2018). We found a significant sequential mediation effect of mobile product information search in-store via search confusion that increases search convenience and ultimately later product information search (indirect effect: .029; CI = .007 to .080). We observe the same result for the relationship between mobile price search in-store, the two mediators and later price search (indirect effect: .025; CI = .003 to .065). This confirms H3c, as mobile information search in-store increases choice confusion (product search: .177, p = .005 ⎮price search: .109, p = .055), which increases customers' perceived convenience of later search (.401, p = .000 ⎮ .392, p = .000) that finally results in stronger

later online search behavior (.406, p = .000 | .577, p = .000). Hence, results show that mobile product information search in-store has a stronger impact on choice confusion than mobile price search in-store and that the effect of the latter is only marginally significant. Figure 12 presents the results of both mediation analyses. The complementary study again underlines the important role of mobile product search behavior in the showrooming context. Therefore, we conducted an experimental study to analyze how retailers can control product search behavior.



Note: * p < .05 / ** p < .01 / *** p < .001 / † (p < .10) / n. s. (not significant).

Figure 12. Results of sequential mediation analyses (complementary study).

3.6 Experimental study: effective usage of customers' need for product information

According to customers' desire for mobile product information search in-store, we examine whether QR codes could be an opportunity to satisfy this need by providing additional information online (e.g. product information on technical data, product availability, videos, reviews, etc.) and to reduce customers additional search on websites of competing retailers, where they may also find price information that can result in showrooming.

3.6.1 Research design and sample description

We tested whether quick response (QR) codes are an appropriate strategy to keep customers in retailers' own channels. A smartphone camera (combined with a smartphone application) can read the QR code and redirect to a variety of online contents (Narang et al., 2012), for example the website of the retailer. We used a laboratory experiment to explore effects of QR codes on mobile search behavior in-store (similar to other studies investigating information search behavior or shopping situations in general) (cf. Hoelscher & Strube, 2000). We simulate a shopping situation for washing machines in an electronics store using a computer lab. Each participant stood in-front of four pictures representing different washing machines with separate fact sheets that present some decision relevant information, such as washing capacity or maximum spin speed. The experiment used three treatment groups: A) participants face fact sheets for the washing machines without QR codes, B) participants face fact sheets for exactly the same machines with QR codes and C) participants also face fact sheets with QR codes, and were encouraged to install and use a QR code scanner on their smartphone. The QR codes in the treatments linked to the respective websites of an existing multi-channel electronics retailer, where more details of the machines were shown.

After pre-testing, we used direct recruitment of potential study participants by asking students at a European university to participate in the experiment. To encourage participation, we held a draw for three vouchers of an electronics store. During recruitment, we pointed out that participants will need their smartphone, a stable internet connection and an adequate battery load. We decided to use a student sample because this age group has a high online shopping affinity and frequently uses smartphones for shopping (Quint et al., 2013). Additionally, students face a similar life situation.

The experimental task required to imagine that participants have just finished their studies, signed an employment contract and need to move into a new home and purchase a new washing machine. Participants should imagine being in an electronics store, facing four washing machines with the fact sheets in front of them. They were told that no sales staff is available at the moment. Therefore, they have to search for more information online using their smartphone. After finding enough information and being ready to make a purchase decision for a machine, they moved on to an online questionnaire that was already open at a computer screen. The online questionnaire comprised questions about participants' search and intended purchase behavior, control questions related to participants' smartphones, familiarity with and sympathy for the electronics retailer and finally demographics.

While in the survey studies scenarios mentioned that sales personnel was available, the OR code experiment focused on a situation without available sales personnel. This allowed us to focus spe-

cifically on the online search processes in-store. Existing research shows that especially in situations without available sales staff, the probability of showrooming behavior increases (Gensler et al., 2017). Furthermore, Rapp et al. (2015) state that sales staff consciously withdraws when they perceive mobile searching customers in the store. Our own qualitative pre-study also confirms that customers especially use their smartphone to find more information on washing machines when no sales staff is available.

Overall, 101 students successfully participated in the experiment (group A: n = 32; group B: n = 30; group C: n = 39). 52% were female and the average age was 23 years. About 88% visit the city center at least once a month and 73% order a product online at least once a month. Moreover, 78% report personal showrooming experience. All participants stated to use their smartphone to search for more information, when they are in an offline store (>1 on a seven-point Likert scale with 1 = "never"). Concerning QR codes, 21 of 30 participants in group B used the QR code on the fact sheet without having the task to use it. However, 10 of these 21 participants state that they never use a QR code when usually being in an offline store. In the whole sample, 63 participants (62%) state that they never scan a QR code in-store. Nevertheless, participants considered the experiment as realistic (M: 5.97, SD: 1.05, seven-point scale).

3.6.2 Analysis and results

Results show that participants' frequency to search for product information via their smartphone differs significantly between treatments (Chi²: p = .002; Cramér's V: p = .002). 88% of group A searched for product information on the internet, whereas only 57% of group B and 49% of group C searched for more product information on the internet (excluding usage of the QR code). For price information search, group differences are marginally significant (Chi²: p = .060; Cramér's V: p = .060) with 53% searching for price information without facing a QR code (group A), whereas 40% of group B and 26% of group C searched for price information online (excluding usage of the QR code). Considering the number of websites used to search for further information, an ANOVA with Scheffé's post-hoc comparisons shows that participants in group A visited significantly more websites than participants who faced a QR code in group B (p = .003) and C (p = .000). On average, participants visited 2.50 websites in group A, 1.20 additional websites in group B and 1.08 in group C. Results also indicate a significant impact of treatments on the time used for information search. Without QR codes participants searched for a shorter time than with a QR code (M group A: 10:09 mm:ss, SD: 3:49; M group B: 10:33 mm:ss, SD: 3:25; M group C: 12:38 mm:ss; SD: 3:38). The difference between group A and C (p = .024) is significant and between group B and C marginally

significant (p = .068). Contrary to our assumptions, we observed no significant differences in participants' intended purchase behavior (e.g. the probability to purchase online at a competing retailer or to purchase offline at the electronics store) between the experimental groups.

Results reveal some interesting effects of the experimental groups regarding 1) the usage frequency of further online product and price information search, 2) the number of websites used for searching further information and 3) the time spent on information search. We observe that customers facing a QR code (groups B and C) search with lower probability for information outside the retailer's channels and visit less additional websites, but search for a longer time. Therefore, we can argue that QR codes can help multi-channel retailers keeping customers in their own channels for longer periods of time. Furthermore, QR codes could reduce information search behavior on other websites, reducing the probability that customers come across cheaper prices elsewhere. The experimental study could not figure out significant differences in customers' purchase behavior between experimental groups facing a QR code or not. This could be caused by the hypothetical buying situation in the experiment. Furthermore, several respondents in our (European) sample were unfamiliar with the use of QR codes due to a low usage by retailers. In contrast, other cultures and countries – especially China – show a high use and acceptance of QR codes (Wang, 2017).

3.7 General discussion

Customers nowadays use different channels in their path to purchase, resulting in more and more complex customer journeys. New behavioral patterns such as showrooming threaten brick-and-mortar stores and online market shares have constantly increased in recent years. This paper proposes a new conceptualization of showrooming that contributes to a better understanding of the phenomenon. These insights enable retailers to develop counter-strategies and thus retain customers in their own channels.

We addressed our research questions by (1) identifying forms of online search behavior (showrooming potentials), which are relevant in showrooming contexts, (2a) examining how online product information search goes along with price information search and (2b) how mobile in-store search goes along with later online information search after leaving the store, (2c) developing a model of relationships between showrooming potentials and subsequent behavior, (3) analyzing the role of choice confusion and perceived online search convenience in the online search process and finally (4) showing how QR codes reduce information search outside the retailer's channels and

thus showrooming. We conducted multiple consecutive qualitative and quantitative studies, including surveys and a laboratory experiment.

Extending existing research, our results provide clear evidence for the complexity of the showrooming phenomenon, i.e. its composition of two separate behaviors after visiting an offline store – online search behavior (showrooming potentials) and online purchase behavior (showrooming behavior). We identified four different showrooming potentials according to the type of information searched (product vs. price information) and the time and place of search (mobile in-store using a mobile device or later outside the store). Our results show that the showrooming process can start with the more exploratory product information search that leads to price information search. Moreover, we figured out that mobile search in-store enhances later search after leaving the store considering two mediators. Too much online information leads to choice confusion. We also see that the amount of product information online increases customers' choice confusion more strongly than the amount of online prices. In a next step, choice confusion increases customers' perceived online search convenience that a mobile device cannot satisfy. As a result, later online information search increases. This is an important insight for understanding the showrooming process. We further confirmed the robustness of our findings across product categories and shopping situations (although the strength of some relationships differed between product groups). Finally, we tested whether QR codes are an appropriate strategy to keep customers in retailers' own channels. We could not identify direct effects on intended shopping behavior, but we found effects of retailers' usage of QR codes on type and duration of mobile in-store search. This paper provides an important contribution to the showrooming literature by differentiating showrooming potentials and showrooming behavior. It offers a new conceptualization for research and retail management. More generally, this paper contributes to research on channel switching behavior (in particular showrooming and webrooming) by considering that goal hierarchies and adaptive behavior require more complex analyses of customers' information search.

3.8 Management implications

Based on the results of our main study, we recommend that retailers should focus especially on customers' mobile search behavior in-store – but not because it immediately causes online shopping at a competing retailer. The main problem is that it stimulates the postponement of the purchase decision for additional later online search, which in turn increases showrooming behavior significantly. Additionally, the showrooming process often starts with mobile search for product information in-store. Then, customers might automatically come across cheaper prices elsewhere which increases

online shopping behavior at competing retailers. Hence, retailers must either limit mobile search in-store or control it in a way that it does not result in a postponement of the purchase decision or in a purchase transaction with a competing online retailer. However, limiting mobile search in-store is problematic. Grewal et al. (2018) found that customers using their smartphones in-store spend more and are therefore an attractive customer group. Consequently, controlling the mobile search process in-store, as well as simplifying and utilizing it for retailers' own purposes might be the better strategy. The mediation effects of choice confusion and perceived online search convenience from mobile in-store to later search have also practical implications. Retailers should try to reduce choice confusion, for example by offering clear and coordinated product ranges. They should further provide consistent and not confusing information in their offline and online channels.

Perceived search convenience in-store should be maximized as much as possible. This is highly important as, nowadays, mobile online search behavior in-store is part of the daily buying process (Fuentes et al., 2017; Fuentes & Svingstedt, 2017; Grewal et al., 2018). Hence, brick-and-mortar stores should offer free Wi-Fi, in-store technologies like information terminals or freely available tablets as well as QR codes that directly transfer the mobile product searching customer in-store to retailers' own information channels (cf. Jacob, 2018). Especially, the display of online information provided via QR codes should be optimized for mobile devices in order to enable a convenient information search.

Alongside these strategies, sales staff should be available and trained to pro-actively contact customers showing mobile showrooming potentials. As a postponement of the purchase decision is that critical, sales staff should try to accelerate purchase decisions of mobile searchers in-store, for example through time-limited promotions. The prerequisite for this, however, is that retailers increase both the quantity and the quality of their service personnel on the sales floor. Furthermore, it is important to communicate to the sales personnel that mobile searching customers in-store are not lost and just search for support in their buying decisions. Hence, avoidance strategies as sales personnel's reaction towards mobile searching customers in-store (reported by Rapp et al., 2015) are highly problematic.

3.9 Limitations and future research

A limitation of the survey and complementary studies is the usage of scenarios. However, alternative retrospective studies of customer journeys face their own difficulties, such as correct remembering of past shopping processes. Consistently, the store was examined as the first touchpoint in

the studies to ensure comparability of the results since we considered buying and browsing situations. Nevertheless, we assume that in contrast to browsing customers, customers with a clear purchase intention often search for information online before entering a store. For this reason, future research should shed more light on diverse sequences of offline and online search behavior. Furthermore, although our samples are not representative, we recruited participants with high online affinity and experience in showrooming situations. Even though we have selected products that most participants have already purchased once, respondents may differ in perceived difficulty of the purchase decision process and the perceived risk of making a purchase. As both aspects may have an impact on information search, future studies should shed more light on their role in the showrooming process. Since we used structural equation modeling, we must interpret causal relationships with caution. However, our theoretical framework and underlying theories support the proposed causal effects and testing models with alternative causal relationships yielded worse model fit. Future studies should focus on further moderating variables influencing the relationship between showrooming potentials and showrooming behavior. They should also shed additional light on situational variables (e.g. availability of sales personnel) and psychological processes (e.g. the impact of anticipated regret) that stimulate mobile product information search in-store. Finally, additional experiments, preferably in real shopping environments, should investigate further possibilities to keep mobile searching customers in retailers' own channels.

4 Managerial antecedents of showrooming

Abstract

This study examines how price differences between the online and offline channel and in-store service influence showrooming behavior. Three consecutive online experiments show that (1) showrooming increases with larger price disadvantages in the offline channel, (2) that mere service usage by customers compensates these effects at least partly, while it has no effect without a price disadvantage (e.g. showrooming probability is lower with a 20% offline price disadvantage and service usage compared to a 10% price difference without service usage). (3) Service quality also reduces showrooming, while (4) service availability is only relevant at high service levels. Furthermore, (5) no service usage results in lower showrooming tendencies than low quality service (i.e. no service is better than low quality service) and (6) high quality and quickly available service can better compensate effects of price disadvantages than mere service usage. Finally, (7) price fairness mediates several of the aforementioned effects.

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4.1 Introduction

Digitalization has caused dramatic changes in the retail sector. New distribution channels (e.g. mobile shopping) and touchpoints (e.g. apps, social media) have emerged (Gross, 2015; Lemon & Verhoef, 2016) and offer consumers a multitude of options during their customer journey (Lemon & Verhoef, 2016). Customers have adapted their behavior to these changes. Research identified multi-channel customers (Konuş et al., 2008) who use and switch between different channels during their path to purchase (Frasquet et al., 2015). One of these channel switching behaviors is showrooming, in which customers search for information offline before they buy online (Balakrishnan et al., 2014). This behavior causes serious issues for offline retailers facing losses in sales (Kalyanam & Tsay, 2013). Moreover, customers use smartphones in-store for tasks that were previously taken over by sales staff (Fuentes et al., 2017). Against this background, traditional offline retailers have to realign their raison d'être in the customer journey. They have to find new ways to keep customers in their own channels. The traditional brick-and-mortar store still plays an important role in the purchasing process, as customers want to touch and feel products (Levin, Levin, & Heath, 2003), they want to ask questions, seek advice and overall, they seek a unique shopping experience (Rohm & Swaminathan, 2004). Hence, traditional competences of offline stores have to be optimized.

In recent years, considerable efforts have been made to study the showrooming phenomenon. Previous studies especially focus on antecedents of showrooming (Arora & Sahney, 2018; Arora et al., 2017; Balakrishnan et al., 2014; Burns et al., 2019; Dahana et al., 2018; Daunt & Harris, 2017; Gensler et al., 2017; Kang, 2018) as well as on counter-strategies (Bell et al., 2015; Fassnacht et al., 2019; Jing, 2018; Kuksov & Liao, 2018; Mehra et al., 2018; Willmott, 2014; Wu et al., 2015). However, whilst research has identified price as one of the most important antecedents of showrooming (Arora et al., 2017; Burns et al., 2019; Gensler et al., 2017), offline retailers can match prices of online competitors only to a limited extent. Pure online retailers can offer cheaper prices because of lower cost structures (Brynjolfsson & Smith, 2000). Beyond price, another important antecedent of showrooming is the lack of service and/or service personnel (or service availability and quality as factors limiting showrooming). Research often mentions the role of service (Arora & Sahney, 2018; Arora et al., 2017; Daunt & Harris, 2017; Gensler et al., 2017; Reid et al., 2016; Sit et al., 2018), but rarely focuses on it explicitly (Fassnacht et al., 2019; Rapp et al., 2015). However, there is still a lack of research examining how service usage and/or quality compensate for different levels of price differences between pure online and offline retailers. Hence, the primary research question is:

- To what extent can offline retailers compensate a disadvantage in price by service to prevent showrooming behavior? Further questions follow:
- How should this service look like?
- Do availability and quality of service personnel have a different impact on showrooming?
- How does the level of price difference impact showrooming?
- Do customers tolerate small price disadvantages in the offline channel and up to what price difference is a compensation through service possible at all? And finally:
- What role does perceived price fairness play in this context?

Answering these questions allows retailers to better understand customers' channel switching behavior and moreover enables them to develop strategies to keep customers in their own channels. The paper contributes to the literature by examining effects of and interactions between offline price disadvantage levels and service strategies on showrooming behavior. For this purpose, we conducted three experimental studies. Study A investigates the effects of price differences and service usage on showrooming and, besides, the extent to which these effects are mediated by customers' perception of price fairness. The study also discusses possible interaction effects between price differences and service usage. Study B focuses on effects of service availability vs. service quality, which are relevant for retailers' allocation of service personnel.

4.2 Theoretical framework

4.2.1 Showrooming

The literature offers diverse definitions that reflect different forms of showrooming (Gensler et al. 2017; Gu & Tayi, 2017; Rapp et al., 2015). We use the definition of "competitive showrooming" by Gensler et al. (2017, p. 29), in which customers search for information offline at a physical store but make their purchase online at a competing retailer. The definition explicitly considers the purchase channel and retailer. This is important, as customers purchasing from a competing online retailer after visiting a brick-and-mortar store have cause costs, but no turnover in the offline channel (Gensler et al., 2017). Such competitive showrooming behavior therefore calls for counter-strategies.

In recent years, diverse studies on the showrooming phenomenon have been published. In addition to studies that constitute different forms of showrooming (Gu & Tayi, 2017; Gensler et al., 2017; Jing, 2018) or examine characteristics of showrooming customers (Fernández et al., 2018; Schneider & Zielke, 2020), research mainly focusses on antecedents and effects of showrooming or counter-strategies against it. Important antecedents of showrooming are in particular price and price con-

sciousness, different types of service variables, as well as trust and risk-related variables. Table 10 provides an overview of important studies in this field according to Daunt and Harris' (2017) classification into product, consumer and channel characteristics. Concerning the effects of showrooming, studies focus on consequences for sales personnel (Rapp et al., 2015) or on offline and online retailing in general (Basak et al., 2017; Kuksov & Liao, 2018). Finally, studies examining counter-strategies refer to offering exclusive products, price promotions or price matching guarantees (Bell et al., 2015; Jing, 2018; Kuksov & Liao, 2018; Mehra et al., 2018; Willmott, 2014; Wu et al., 2015). One recent study focused on the impact of service quality on the in-store buying intention of showroomers vs. non-showroomers (Fassnacht et al., 2019).

In this paper we focus on two main antecedents of showrooming which can also be important tools to encounter showrooming, namely price and service. Whereas price is often an advantage of the online channel, service is considered an advantage of the offline channel (Verhoef et al., 2007). Because of more expensive cost structures, offline retailers often cannot match online prices, while they can easily control service aspects. However, literature does not provide clear evidence if retailers should invest in service availability or quality and to what extent such investments can compensate for price differences.

Table 10. Summary of previous research on the antecedents of showrooming.

Authors	**Antecedents of showrooming**	**Antecedents Characteristics**
Arora and Sahney (2018)	Anticipated regret; Attitude towards showrooming; Intention to showroom; Perceived behavioral control; Perceived ease of purchasing online; Perceived usefulness; Relative purchase benefits online (deals and discounts, online service quality, cost savings, product assortment); Relative search benefits offline (socialization, feel and touch, sales staff assistance); Subjective norms; Trust	Channel; Consumer
Arora et al. (2017)	Ability to use multiple channels; Lower online prices; Online service quality; Perceived purchase benefits; Perceived search benefits offline; Price consciousness; Sales staff assistance; Touching and feeling	Channel; Consumer
Balakrishnan et al. (2014)	Lower online prices; Uncertainty whether a customer likes a product or not	Channel; Consumer
Burns et al. (2018)	High value of customer service; Low product quality; Price consciousness	Channel; Consumer; Product

Authors	Antecedents of showrooming	Antecedents characteristics
Dahana et al. (2018)	High involvement; Internet experience; Perceived risks in online shopping; Price consciousness; Prior knowledge; Usage of focal internet device; Younger age	Consumer; Product
Daunt and Harris (2017)	In-store shopping savviness; Internet savviness; Product acquisition value; Product availability; Product involvement; Product price; Technological speed of change; Trust in in-store sales employees; Trust in online stores; Value of in-store shopping; Value of online shopping	Channel; Consumer; Product
Gensler et al. (2017)	Computer category; Higher online search costs; Higher quality; Lower online price; Perceived time pressure; Price dispersion; Unavailability of in-store personnel	Channel; Product
Kang (2018)	Information attainment; Price comparison; Social interaction	Channel
Reid et al. (2016)	Access convenience; Discounting; Greater product availability; Greater product selection; Price reduction; Security; Time savings; Website functions	Channel; Product
Sit et al. (2018)	Non-price attributes (brand reputation and customer service); Price matching; Value trade-off	Channel; Product

4.2.2 Conceptual model and development of hypotheses

Our research model is grounded in equity theory (Adams, 1965). It reflects the idea of social exchange in conjunction with the concept of perceived fairness. Perceived fairness is the result of a relationship of contribution (input) and reward (output) of a person. If the ratio of input and output is equal, this results in perceived fairness. If it is unequal and disadvantageous, it results in perceived unfairness. Inequity results in negative emotions and hence, motivates people to change their

in- or outputs, e.g. by "distorting his or her of other's inputs and/or outcomes cognitively; 'leaving the field' or changing the object of comparison" (Chell, 1985, p. 178).

In the context of showrooming we focus on perceived price fairness as a motivator of purchase behavior. According to Bolton, Warlop, and Alba (2003), consumers assess whether a price is fair by comparing it with external reference prices. These price comparisons result in perceived price fairness or unfairness (Xia, Monroe, & Cox, 2004). Hence, online prices can act as external reference prices for price evaluations in the offline channel (Bodur, Klein, & Arora, 2015) and therefore influence price fairness and showrooming. Relevant influencing factors of perceived price fairness in showrooming contexts are price differences between the online and offline channel (price as customer input), but also service (as part of the output the customer receives). Recent research highlights both variables, price (Balasubramanian et al., 2005) as well as service (Verhoef et al., 2007) as important antecedents in channel switching contexts.

Price is one of the most frequently discussed influencing factors of showrooming (Arora & Sahney, 2018; Arora et al., 2017; Balakrishnan et al., 2014; Burns et al., 2018; Dahana et al., 2018; Daunt & Harris, 2017; Gensler et al., 2017; Kang, 2018; Sit et al., 2018). Price conscious customers prefer to purchase from retailers offering the lowest price (Bachrach et al., 2016; Balasubramanian et al., 2005; Dahana et al., 2018) and research confirms that the online channel can offer cheaper prices than brick-and-mortar stores (Verhoef et al., 2007). Previous research confirms that price consciousness significantly enhances the probability and frequency to showroom (Burns et al., 2018; Dahana et al., 2018). Hence, we argue that cheaper online prices enhance the probability for showrooming behavior and considering the aforementioned price fairness theory, we presume that price fairness mediates this effect.

H1a: The cheaper the online price, the more likely showrooming behavior occurs.

H1b: The effect of price differences on showrooming behavior is mediated through price fairness perception.

When speaking of service in the showrooming context, most studies focus on the "core service encounter" (Voorhees et al., 2017, p. 270), i.e. the actual face-to-face interaction with service personnel in-store, which contributes significantly to the overall customer experience (Baeckstroem & Johansson, 2006; Voorhees et al., 2017). According to Baeckstroem and Johansson (2006), just the mere availability of service personnel creates positive emotions during the shopping process. However, also "perceived wait duration" (McGuire, Kimes, Lynn, Pullman, & Lloyed, 2010, p. 272) plays a role for customer experience. The longer customers have to wait for service the more intensely negative emotions arise, which then end up in a "negative reaction to the wait" (McGuire et

al., 2010, p. 275). In the context of showrooming, Gensler et al. (2017) have already found that the availability of service personnel, measured as the perceived waiting time, has a significant impact on the decision to showroom. According to the aforementioned equity theory, long waiting times equal unfavorable outputs for customers.

However, service quality also equals rewards and outputs in the showrooming context. Service quality refers to the way service is provided, e.g. how helpful service staff's advices are and how sales staff behaves in general (Baeckstroem & Johansson, 2006; Kacen, Hess, & Chiang, 2013). According to Fassnacht et al. (2019), the quality of interactions of salespeople with customers impacts in-store buying intentions. Hence, perceived service quality is also important for offline stores to hold purchases in their own channel. According to Chiu et al. (2011) and Verhoef et al. (2007), the impact of service quality is one of the most relevant factors in customers' channel switching behavior. Thus, we also suspect a significant relationship to showrooming behavior. We further assume a stronger impact of service quality compared to service availability because just being available is the basic requirement of a good service quality. Baeckstroem and Johansson (2006) argued similarly, saying that sales staff just being available contributes to positive feelings while "positive in-store experiences were created when the personnel made extra efforts (…)" (p. 424). Consequently, we assume that the use of service in general as well as service availability and quality have a crucial impact on customers' showrooming behavior.

H2a: If service is used, then showrooming behavior is less likely than when it is not used.

H2b: Fast service availability reduces and slow service availability increases the probability for showrooming behavior.

H2c: High service quality reduces and low service quality increases the probability for showrooming behavior.

H2d: The effect of service quality on showrooming behavior is stronger than the effect of service availability.

We further argue that availability becomes less important, when service quality is low. In this case, fast availability of the service does not provide a large benefit for the customer. The positive impression of the quick service is destroyed by low service quality.

H2e: The effect of fast service availability on showrooming behavior is weaker when service quality is low compared to high service quality.

As already stated, especially perceived price fairness seems to be an important motivator for showrooming behavior, because it reflects if a price disadvantage (as customer input) is acceptable at a given outcome level (service quality). A study of multi-channel retailers by Fassnacht and Unterhu-

ber (2016) shows that lower prices are not necessarily considered to be fairer. They reveal that consumers' implicit assumptions and information about costs to the retailer as well as the way price differences are communicated play a crucial role as determinants of consumers' reaction when facing channel-based price differences. Concerning implicit assumptions about costs, offered and utilized services might play a role. Moreover, with regard to equity theory we assume that service usage as well as availability and quality are rewards for customers whereas the price to pay is the contribution to make. Hence, service usage, its availability and quality contribute to customers' perceived price fairness which in a next step reduces showrooming behavior.

H2f-h: The effect of (f) service usage, (g) availability and (h) quality on showrooming behavior is mediated through price fairness perception.

As discussed before, consumers assess whether a price is fair by using external reference prices. While showrooming, customers compare the offered offline price with prices of online retailers. In a next step, customers set this input, speaking in terms of equity theory, in relation to received rewards, i.e. the quality of the product itself and additionally perceived service quality in-store (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). In their qualitative study on showrooming, Sit et al. (2018) conclude that customers finalize their purchase decision based on the trade-off between economic (e.g. price, price differences) and service-excellence (e.g. offered service) factors. We argue that a price disadvantage is the trigger of showrooming intentions and that service can cushion its effect. Hence, service should only have an impact on showrooming, when the trigger of a price disadvantage is present. Formally, the online-offline price difference and service should interact. So, we propose:

H3: In the absence of a price difference, service usage compared to non-usage has no effect on showrooming behavior, whereas in the presence of a price difference service usage compared to non-usage has a mitigating effect on showrooming behavior.

Figure 13 shows the conceptual model. Study A examines the direct effects of price differences (H1a) and service-usage (H2a) on showrooming behavior and their interaction effects (H3). Furthermore, it analyses if perceived price fairness acts as a mediator (H1b; H2f). Study B focuses on service by examining the effects of service quality and availability on showrooming behavior separately (H2b, H2c), in comparison (H2d) and interactively (H2e). This study also considers the mediation effect of price fairness (H2g/h). In addition to the hypotheses, study C looks at the impact of price differences on showrooming behavior in case of high service quality and fast availability.

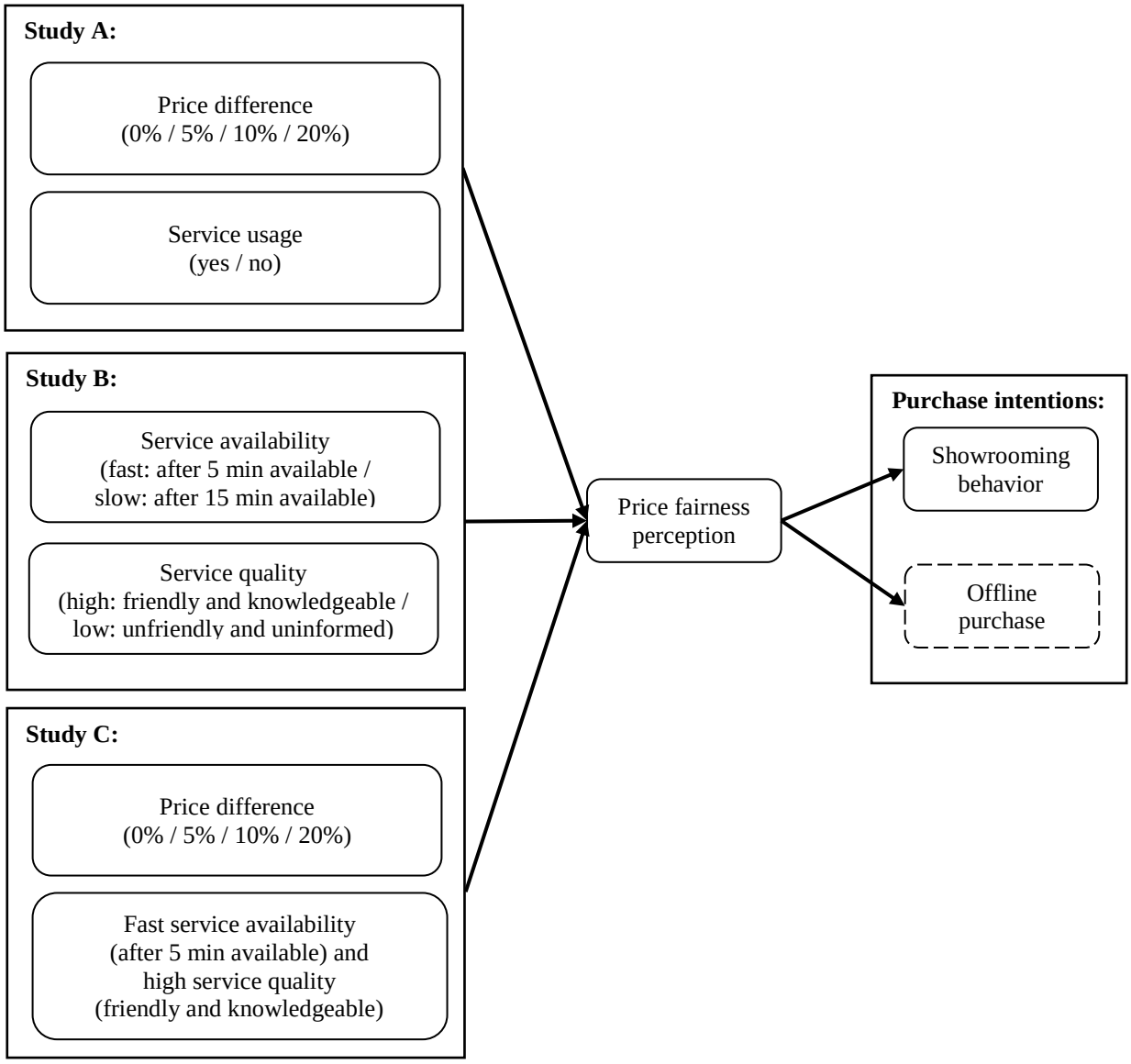

Figure 13. Conceptual framework.

4.3 Study A: price differences and service usage

Study A analyzes the impact of price difference levels and service usage on showrooming behavior and offline purchases (H1a, H2a and H3). It further considers the mediating role of price fairness perception (H1b, H2f).

4.3.1 Research design and sample description

We conducted a scenario experiment and collected data using an online survey. The scenarios describe a situation in which respondents have found a pair of sports shoes at a pure online retailer

that they want to try on at an offline store. We decided to focus on sports shoes, because firstly, we assumed that most respondents have shopping experience with sports shoes. Secondly, sports shoes (as clothing and footwear in general) are a product that customers want to touch and feel before making a purchase (Frasquet et al., 2015; Levin et al., 2003) and thirdly, sports shoes are a product with a need of explanation regarding fit, purpose of use, materials and technologies. Therefore, they are a typical showrooming product (Van Baal & Dach, 2005). For simplicity reasons, we focus on a pure offline vs. online retailer. Respondents were asked to imagine a situation in which they had a clear intention to buy a pair of sports shoes (planned purchase).

We used a between-subject scenario design with four price difference levels and two levels of service usage (4x2-design). We selected the four price difference levels (0%, 5%, 10% and 20%) based on already existing studies comparing prices between the offline and online channel (Homburg, Lauer, & Vomberg, 2019; Keen, Wetzels, de Ruyter, & Feinberg, 2004). The offline price is always 130 EUR. The online price was calculated based on the respective percentage levels, but communicated in a EUR amount. For service, scenarios included either service usage or no usage (Homburg et al., 2019). In the service usage condition, the scenario explains: "At Run4Fun you can examine the sports shoes in detail, try them on and get advice from the sales staff. The salesperson measures your feet and makes a fit analysis to determine the right size of your favorite sports shoes", whereas in the non-usage condition the scenario text describes that customers dispense on additional services by the sales staff. Appendix D includes the complete scenario description.

The scale for price fairness is based on previous studies (Fassnacht & Unterhuber, 2016; Malc, Mumel, & Pisnik, 2016) and includes four items ("I consider the offline retailer's price for sports shoes to be acceptable/justifiable/fair/reasonable") measured on seven-point Likert-scales (1 = "I do not agree at all" and 7 = "I totally agree"; $\alpha = .939$). The probability of showrooming and offline purchase intention were measured with single items on a seven-point Likert-scale ("I order the sports shoes online at sportdreamz.de." and "I purchase the sports shoes in the retail store of Run4Fun."). As these two variables reflect concrete behaviors, single item-scales are suitable according to Rossiter (2002).

Although, we did not include offline purchasing explicitly in the hypotheses, we included it as a supplementary dependent variable, as it is the counterpart of showrooming. Results for showrooming behavior describe respondents' tendency to showroom whereas the results for offline purchase intention might reflect customer loyalty towards the offline channel. Hence, we consider that actual purchase behavior results from a combination of both behavioral tendencies. Due to space restrictions, we only report results for offline purchase intention in the text when they offer additional

insights (however, they are included in all results tables).

For data collection, university students distributed a link to the questionnaire together with a password via their social networks (friends, acquaintances, relatives, etc.). This approach guaranteed at least some online affinity of the sample. The online questionnaire further guaranteed anonymity to prevent socially desirable responses, which we expect in showrooming contexts. The final sample consists of 699 participants. About 54% are female. The average age is 32 and ranges between 15 and 86 years (see Appendix E for more details).

4.3.2 Analysis and results

We conducted a MANOVA with showrooming and offline shopping intention as dependent and price differences and service usage as independent variables. Although, Levene's test indicated variance heterogeneity ($p < .001$), we report F-Test results, as group sizes were approximately equal and sufficiently large (see Table 11 for MANOVA results and Table 12 for mean values of dependent variables in the eight scenarios).

Table 11. Results of MANOVA with price differences and service usage as independent variables (study A).

Price differences						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	Post hoc comparison by Games-Howell
multivariate	.795	27.906	6	.108	.000	-
Univariate						
Showrooming	-	55.076	3	.193	.000	0 < 5 < 10 < 20
Offline purchase	-	40.016	3	.148	.000	0 > † 5 > 10 > 20
Service usage						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	Comparison of mean values
multivariate	.948	18.816	2	.052	.000	-
Univariate						
Showrooming	-	28.217	1	.039	.000	u < n
Offline purchase	-	34.234	1	.047	.000	u > n
Price difference x service usage						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	
multivariate	.983	1.986	6	.009	.065	
Univariate						
Showrooming	-	2.589	3	.011	.052	
Offline purchase	-	2.925	3	.013	.033	

Note: 0 = 0% price differences; 5 = 5% price differences; 10 = 10% price differences; 20 = 20% price differences / u = service usage; n = service non-usage; </> reflects significant differences at $p < .05$; † marginal significant differences $p < .10$.

Price and service explain 22% of the variance of showrooming intention. Results show significant main effects of price differences on showrooming [$F(3,690) = 55.076$, $p < .001$, $\eta^2=.193$]. The main effect of service usage on showrooming behavior [$F(1,690) = 28.217$, $p < .001$, $\eta^2=.039$] is also significant. Post hoc comparisons of price differences show that no price difference between the online and offline channel leads to the lowest probability to showroom. With increasing price differences, the probability of showrooming increases significantly. Hence, results support H1a. Furthermore, service usage leads to a significantly lower probability of showrooming than service non-usage. This supports H2a.

Results also reveal a marginally significant multivariate interaction effect between price differences and service usage (Wilk's lambda: [$F(6,1378) = 1.986$, $p = .065$, $\eta^2=.009$]). Univariate effects are marginally significant for showrooming ($p = .052$) and significant for offline purchase intention ($p = .033$). Interactions plots presented in Figure 14 and results presented in Table 12 illustrate that without a price disadvantage, service usage has no relevance for showrooming and offline purchases, while service usage significantly reduces showrooming at all price difference levels ($p < .001$). Hence, results support H3.

Table 12. Mean values and standard deviation of showrooming and offline purchase behavior according to price difference levels and service usage (study A).

	Showrooming behavior				
	Service usage	Service non-usage	Differences (non-usage – usage)	T-test (*p*-values)	Total
	n = 386	n = 313			
0% price differences	2.21 (1.58)	2.29 (1.82)	.08	.534	2.25 (1.69)
5% price differences	2.63 (1.63)	3.64 (2.17)	1.01	.000	3.06 (1.94)
10% price differences	3.41 (2.03)	4.31 (1.97)	.90	.000	3.79 (2.04)
20 % price differences	4.20 (2.06)	5.26 (1.79)	1.06	.000	4.72 (2.00)
Total	3.09 (1.97)	3.88 (2.22)	.79	.000	3.44 (2.12)
	Offline purchase behavior				
	Service usage	Service non-usage	Differences (non-usage – usage)	T-test (*p*-values)	Total
	n = 386	n = 313			
0% price differences	5.89 (1.42)	5.70 (1.79)	-.19	.118	5.80 (1.60)
5% price differences	5.67 (1.57)	4.92 (1.96)	-.75	.000	5.35 (1.78)
10% price differences	5.07 (1.91)	4.12 (1.99)	-.95	.000	4.67 (1.99)
20 % price differences	4.47 (1.82)	3.18 (1.84)	-1.29	.000	3.84 (1.94)
Total	5.29 (1.77)	4.47 (2.11)	-.82	.000	4.93 (1.97)

Note: Standard deviation in parentheses.

A comparison of plots for showrooming vs. offline purchase intention also reveals interesting insights. While the effect of service usage on showrooming behavior is similar at all price disadvantage levels (parallel lines in Figure 14), the effect of service usage on offline purchase intention increases with the price disadvantage (dispersing lines in Figure 14). Furthermore, the plots show that a 10% price difference with service usage is more likely to result in an offline purchase than a 5% price difference without service usage. This effect becomes even larger for comparing a 20% price difference plus service usage with a 10% difference without service usage.

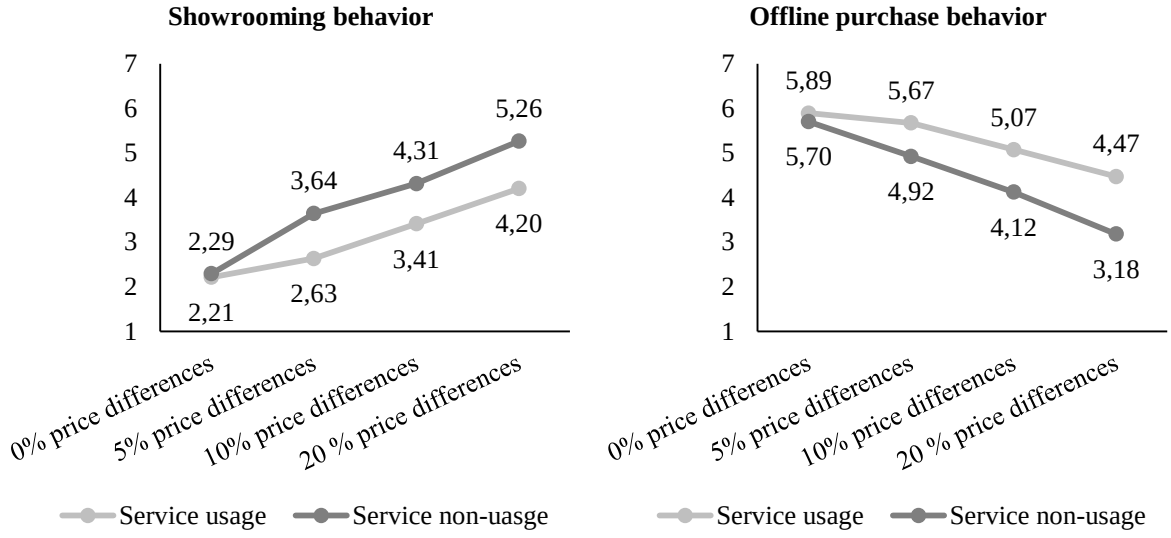

Figure 14. Interaction plots of price differences and service usage on showrooming and offline purchase behavior (study A).

We further analyzed how price fairness mediates the effects of price differences (H1b) and service usage (H2f) on showrooming. Since price difference is a categorial variable with four categories, we used a sequential coding system to conduct the mediation analysis with Hayes' (2018) process macro (model 4). Using 5,000 bootstrap samples, two of three 95% bootstrap confidence intervals for the relative indirect effects of price difference on the probability of showrooming show values entirely above zero (10% compared to 5%: β = .146, CI = .064 to .259 and 20% compared to 10%: β = 140, CI = .050 to .264). Moreover, all relative direct effects are significant (10% compared to 5%: β = .586, CI = .186 to .985; 20% compared to 10%: β = .769, CI = .368 to 1.170). Hence, price fairness partially mediates the effects of price differences on showrooming, which supports H1b. Price fairness also mediates the effect of service usage on showrooming behavior (indirect effect: β = .166, CI = .077 to .271). Again, also the direct effect is significant (β = .604, CI = .298 to .909), which underlines partial mediation effect, supporting H2f.

Results of study A show the impacts of price differences and customers' service usage in the showrooming context. Whereas price differences increase the probability to showroom, the usage of ser-

vice compared to non-usage significantly reduces it. Moreover, service usage is only relevant when a price disadvantage exists and for offline purchases it becomes more relevant with increasing price differences. These results raise the question of how exactly service must be designed in order to increase the probability of in-store purchases.

4.4 Study B: service availability and service quality

Study B examines the impact of service availability and service quality on showrooming behavior and offline purchase intention (H2b-e). It further considers the mediating role of price fairness (H2g/h).

4.4.1 Research design and sample description

As in the previous study, we conducted an experimental online survey with different scenarios. We used a 2x2-design (plus control group), in which we manipulated service quality (high vs. low) and service availability (fast vs. slow). For manipulating service quality and availability we consulted recent studies. Based on Gensler et al. (2017), we manipulated fast availability by five minutes waiting time and slow availability by fifteen minutes. In terms of service quality, we manipulated high service quality by writing “Sales staff makes a friendly and professional impression on you. The salesperson is motivated and asks you questions to understand what is important to you. All in all, you perceive the service quality as high”. For low service quality, we included “Sales staff makes an unfriendly and unprofessional impression on you. The salesperson does not ask you any questions to find out your needs and seems unmotivated. Overall, you perceive the service quality as low”. Overall, we had five scenarios, considering service availability (fast vs. slow), service quality (high vs. low) and no service offering at all in the control group (see Appendix D).

As in the first study, the scenarios presented a sports shoes shopping situation, in which participants have found a pair of shoes at a pure online retailer that they try on at an offline store. We set the online price at 117 EUR and the offline price at 130 EUR (i.e. the online price is 10% cheaper) in all scenarios. We used the same data collection procedure and item scales as in study A (price fairness: $\alpha = .929$). The final sample consists of 324 participants with 58% females and a mean age of 31, which is comparable to sample characteristics of study A (see Appendix E for more details). The number of participants ranged between 61 and 74 for the different scenarios (see Appendix D).

4.4.2 Analysis and results

We conducted a MANOVA with service availability and service quality as independent variables and showrooming behavior and offline purchase intention as dependent variables to examine hypotheses H2b to H2e (see Table 13 for MANOVA results and Table 14 for mean values of showrooming and offline purchase intention in the scenarios). We further considered additional control variables that may have an impact on the choice of the purchase channel (see Verhoef et al. (2007) for such influencing factors).

Table 13. Results of MANOVA with service availability and service quality as independent variables (study B).

Service availability						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	Comparison of mean values
multivariate	.996	.556	2	.004	.574	-
Univariate						
Showrooming	-	.227	1	.001	.634	-
Offline purchase	-	.251	1	.001	.617	-
Service quality						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	Comparison of mean values
multivariate	.534	109.432	2	.466	.000	-
Univariate						
Showrooming	-	93.918	1	.272	.000	h < l
Offline purchase	-	217.373	1	.463	.000	h > l
Service availability x service quality						
Dependent variables	Wilks's lambda	F-value	df	Effect size (η^2)	$p <$	
multivariate	.984	1.995	2	.009	.138	
Univariate						
Showrooming	-	2.186	1	.009	.140	
Offline purchase	-	3.811	1	.015	.052	

Note: h = high service quality; l = low service quality; </> reflects significant differences at $p < .05$.

Table 14. Mean values and standard deviation of price difference levels and service usage and non-usage (study B).

	Showrooming behavior			**Offline purchase behavior**		
	High service quality	Low service quality	Total	High service quality	Low service quality	Total
After 5 min (fast) service availability	3.26 (1.81)	5.62 (1.65)	4.33 (2.09)	5.15 (1.65)	2.18 (1.19)	3.81 (2.08)
After 15 min (slow) service availability	3.60 (2.04)	5.52 (1.75)	4.61 (2.12)	4.58 (1.84)	2.19 (1.53)	3.32 (2.06)
Total	3.41 (1.91)	5.57 (1.70)	4.47 (2.11)	4.90 (1.75)	2.19 (1.37)	3.57 (2.08)

Note: Standard deviation in parentheses.

The model explains 35.5% of showrooming behavior. Results show a significant effect of service quality on showrooming behavior [$F(1,252) = 93.918$, $p < .001$, $\eta^2=.272$], but no effect of service availability [$F(1,252) = .227$, $p = .634$, $\eta^2=.001$]. More precisely, high service quality reduces the probability to showroom whereas low service quality increases it significantly. These results support H2c but not H2b. Simultaneously, in the absence of a significant main effect of service availability we can conclude that service quality has a stronger effect on showrooming behavior than service availability. Hence, H2d is supported. Furthermore, a marginally significant interaction effect exists between service availability and quality [$F(2,251) = 3.811$, $p = .052$, $\eta^2=.015$] on offline purchase intention (but not on showrooming behavior). Mean values presented in Table 14 indicate that with high service quality, a short waiting time increases offline purchase intention, while this effect does not exist in low service quality conditions. Moreover, for the high service quality condition mean values for showrooming behavior show a non-significant but nevertheless similar trend in the opposite direction (fast service availability reduces showrooming probability at high service levels). So, although results cannot confirm H2e, they indicate a trend in the assumed direction.

In a next step, we tested whether price fairness mediates the effect of service quality on purchase intention using Hayes' (2018) process macro (model 4). We did not test the mediation for service availability, as the main effect was not significant. Results indicate that price fairness partially mediates the indirect effect of service quality on showrooming ($\beta = -.223$, CI = -.448 to -.008). The direct effect is also significant, indicating partial mediation ($\beta = -1.854$, CI = -2.346 to -1.362). Consequently, H2h is confirmed whereas H2g is not. Table 15 summarizes the results of the hypotheses tests from both studies.

We further conducted an additional MANOVA analysis to compare the four service scenarios with no service availability. Results show a main effect of scenarios on the probability for showrooming [$F(4,319) = 22.712$, $p < .001$, $\eta^2=.222$]. Games Howell post hoc comparisons show that offering no service at all results in significantly lower showrooming behavior (M: 4.68, SD: 2.01) than offering service of low quality after 5 min (M: 5.62, SD: 1.65; $p = .040$) and marginal significantly lower showrooming behavior than offering service of low quality after 15 min (M: 5.52, SD: 1.75; $p = .090$). In contrast, offering high service quality reduces showrooming behavior compared to a situation with no service (5 min: M: 3.26, SD: 1.81; $p < .001$; 15 min: M: 3.60, SD: 2.04; $p = .032$).

Table 15. Results of hypotheses tests.

Antecedents	Hypotheses		Studies	Results
Price	H1a	The cheaper the online price, the more likely showrooming behavior occurs.	A	✓
	H1b	The effect of price differences on showrooming behavior is mediated through price fairness perception.	A	✓
Service	H2a	If Service is used, then showrooming behavior is less likely than when it is not used.	A	✓
	H2b	Fast service availability reduces and slow service availability increases the probability for showrooming behavior.	B	×
	H2c	High service quality reduces and low service quality increases the probability for showrooming behavior.		✓
	H2d	The effect of service quality on showrooming behavior is stronger than the effect of service availability.	B	✓
	H2e	The effect of fast service availability on showrooming behavior is weaker when service quality is low compared to high service quality.	B	×
	H2f/g/h	The effect of (f) service usage, (g) availability and (h) quality on showrooming behavior is mediated through price fairness perception.	A and B	✓/×/✓
Price x Service	H3	In the absence of a price difference, service usage compared to non-usage had no effect on showrooming behavior, whereas in the presence of a price difference service usage compared to non-usage has a mitigating effect on showrooming behavior.	A	✓

Results of study B indicate that high service quality reduces the probability for showrooming and the effect is mediated through price fairness perception. Besides, service availability does not show significant effects. However, there is a marginally significant interaction effect between service quality and availability on offline purchase intention. This interaction indicates that service availability is at least relevant when service quality is high. An analysis of the interaction effect on the probability to showroom shows similar tendencies (in reversed direction). Further, no sales staff increases the probability of showrooming less than low quality service.

4.5 Study C: price differences with fast service availability and high service quality

While study B indicated that offline retailers can reduce showrooming by offering service of high quality and fast availability, study C analyzes how such service can compensate effects of different offline price disadvantages.

4.5.1 Research design and sample description

Besides examining the hypotheses, we additionally conducted study C to test whether high service quality and fast availability reduce the increasing effect of price differences on showrooming behavior stronger than service usage online (study A). Therefore, study C replicates study A in terms

of study design, data collection, questionnaire design and measures (see Appendix F). However, instead of manipulating service usage, all scenarios describe service usage of high quality (knowledge and friendliness) and fast availability (after 5 min). Price differences between the online and offline retailer were manipulated as in study A (0%, 5%, 10% and 20%; see Appendix D). In this study, we only included showrooming intention as a dependent variable. The final sample contains 113 participants, including 62% women. The average age is 38 years (see Appendix E for more details).

4.5.2 Analysis and results

We firstly conducted an ANOVA analyzing the impact of price differences under high service quality and fast service availability on showrooming behavior. As Levene's indicates variance heterogeneity (p =.001) and group sizes are smaller than in studies A and B, we rely on the more robust Brown-Forsythe and Welch test (see Table 16 for ANOVA results and Table 17 for mean values of dependent variables in the four scenarios). As in study A, results show a significant main effect of price differences (Brown-Forsythe: $F(3,109) = 4.350$, $p = .006$; Welch test: $F(3,109) = 3.760$, $p = .016$). Price differences explain 8.4% of the variance in the model. Games-Howell post hoc comparisons show that no price difference (0%) and 5% significantly result in a lower showrooming probability than 20% price differences ($p = .015$ and $p = .030$). Compared to study A, all tendencies are the same but fewer group differences are significant.

Table 16. Results of ANOVA with price differences as independent variable and showrooming behavior as dependent variable (study C).

Price differences					
Dependent variables	F-value	df	Effect size (η^2)	$p <$	Post hoc comparison by Games-Howell
Showrooming	4.403	3	.108	.006	0 < 20 5 < 20

Note: 0 = 0% price differences; 5 = 5% price differences; 10 = 10% price differences; 20 = 20% price differences; < reflects significant differences at $p < .05$.

Table 17. Differences of mean values of price difference levels and different service levels of study A and study C.

	Showrooming behavior			
	Service usage (study A)	High service quality and fast service availability (study C)	Differences (study C – study A)	T-test (*p*-values)
	n = 385	n = 113		
0% price differences	2.21 (1.58)	2.24 (1.46)	+.03	.857
5% price differences	2.63 (1.63)	2.28 (1.57)	-.35	.043
10% price differences	3.41 (2.03)	2.92 (2.06)	-.49	.025
20 % price differences	4.20 (2.06)	3.79 (2.29)	-.41	.070
Total	3.09 (1.97)	2.81 (1.95)	-.28	.184

Next, we compare the impact of price differences for a high service quality and fast availability condition (study C) with service usage only (study A) using t-tests (see Table 17). *P*-values show significant differences at 5% ($p = .043$) and 10% ($p = .025$) offline price disadvantage and marginal significant differences at 20% level ($p = .070$). No price difference (0%) shows more or less the same showrooming intention for both service conditions (M_A: 2.21 und M_C: 2.24). Hence, when a price disadvantage exists, high service quality and fast service availability compensate its effect on showrooming better than mere service usage. Figure 15 shows this result graphically.

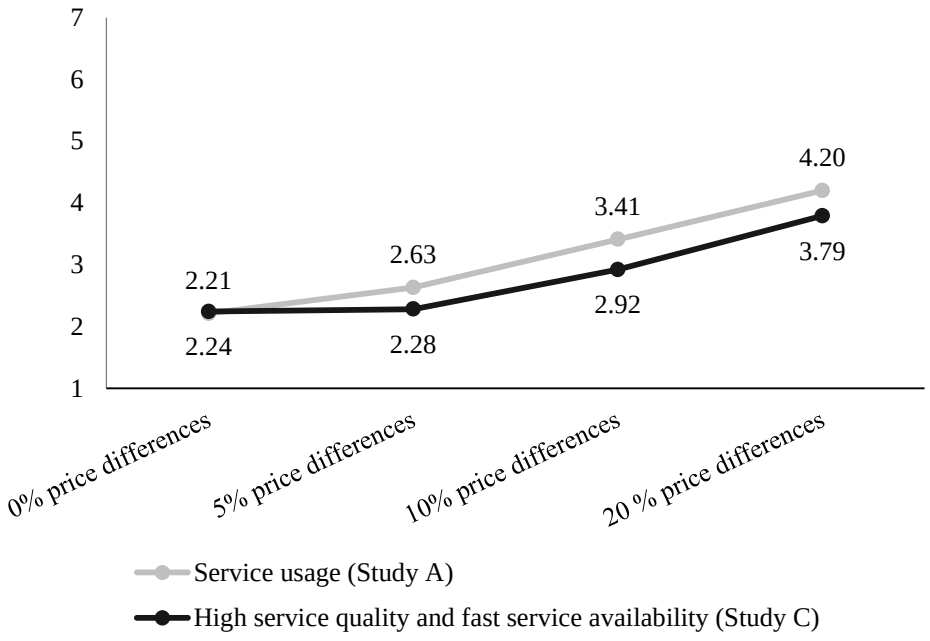

Figure 15. Mean values of showrooming behavior according to price differences and different service levels (study A and C).

To sum up, study C confirms the results of study A regarding an increasing showrooming probability with increasing price disadvantage of the offline channel. Further, a comparison of study C with results of study A reveals that at all price disadvantage levels (price difference of 5%, 10% and 20%), the probability of showrooming is lower under high service quality and fast service availability compared to service usage only. Thus, offering service of high quality and fast availability is a promising strategy for reducing showrooming behavior.

4.6 General discussion

This study contributes to the literature by analyzing the effect of different price and service levels on showrooming behavior. In two studies, we found that the probability of showrooming increases with the price disadvantage in the offline channel. Vice versa the probability of offline purchases decreases. Considering service, we can state that service usage is better than non-usage to counteract showrooming behavior. Without a price disadvantage, service usage has no effect. However, in situations with price disadvantage, service usage can compensate its negative effects of price disadvantage to a large extent. For example, the probability of an offline purchase is higher at a price difference level of 10% when service is used compared to a price disadvantage of 5% when service is not used (also applies for 20% when service is used vs. 10% when service is not used). Similarly, the probability of an offline purchase is higher at a price difference level of 20% when service is used compared to a disadvantage of 10% when service is not used. Results also show that not only service usage, but also the service level plays a crucial role in showrooming contexts. High service quality is important to reduce showrooming and vice versa to increase offline purchase behavior. Additional analyses find that offering untrained and unfriendly sales staff enhances the probability of showrooming more than offering no sales staff at all. Another interesting result is that service availability (5 min vs. 15 min) has no general (main) effect on purchase intention. This result contrasts with previous findings that the availability but not the quality of service personnel on the sales floor reduces showrooming (Gensler et al., 2017). However, a more detailed examination of the data with regard to interacting effects indicates that service availability is definitely relevant for purchase behavior when good quality service is offered. In this case, the probability of offline purchases increases for shorter compared to longer waiting times (marginally significant) and the probability of showrooming decreases (only tendency). Comparing mere service usage with service usage of high quality and fast availability, analyses show that the latter reduces the probability of showrooming at all levels of offline price disadvantage, but not at matching price levels.

Price fairness partially mediates effects of price (input) and service (output) on showrooming be-

havior (supporting our arguments based on equity theory). The partial mediation shows that price fairness plays a role in understanding showrooming, but it does not explain it completely. Apparently, service can compensate effects of a price disadvantage of showrooming though higher fairness perception (mediation) while direct effects indicate also some opportunistic behavior beyond price fairness. This partial mediation result may also indicate the existence of different showrooming segments (Schneider & Zielke, 2020): showroomers who are mainly characterized by opportunistic thinking and behavior and showroomers for whom the consideration of inputs (contribution) and outputs (rewards) is relevant for their purchasing decision. In particular, customers who evaluate price and service to decide whether a price is fair base their purchase decision on this perception and are an important segment. Here, brick-and-mortar retailers with a high service level (concerning quality and availability) have a good and realistic chance to sell products at a higher price compared to the online channel.

All in all, the three studies reveal that price and service are important aspects in the showrooming context and price fairness perception mediates these effects. Although, service cannot fully compensate all offline price disadvantages, we observe significant reductions of the probability to showroom. Additionally, we see that service increases the probability of offline purchases which indicates loyalty tendencies to the offline retailer.

4.7 Management implications

Based on the findings of this study, retailers have to encourage customers to use the services offered. This requires sufficient sales staff on the sales floor, so that customers do not have to wait long or alternatively, as McGuire et al. (2010) suggest, the creation of a special customer experience, so that customers are not bored while waiting. Moreover, it is even more important to offer knowledgeable and friendly service personnel. Hence, retailers should firstly invest in service quality and then, secondly in service availability (as availability has only an effect when quality is high). Although investments in service quality might be expensive, they can keep customers in the offline channel. Furthermore, results are highly interesting for offline retailers since they suggest to either offer well trained and sufficiently available personnel or if this is not feasible, better offering no sales staff at all than low quality service. Regarding price differences, our findings provide clear evidence of keeping the price difference to the internet as small as possible. Retailers should also address customers' price fairness perceptions. The best way for retailers to do this is to increase in-store rewards for customers. The more valuable these rewards are, the fairer the offline price is perceived. In addition to sales personnel in-store, after sales services could be offered as well as dis-

counts and coupons for future purchases or for complementary products (e.g. for special sports shoes care or cleaning products or – more innovative – a free month for a paid fitness app). Further, customer experience should increase perceived rewards (for sports shoes, stores could offer opportunities to test shoes on different floors or at various temperatures; they could offer individual running coaching by experts in-store or other creative marketing activities). In this way, more valuable outputs increase customers' perceived price fairness and finally, the probability for offline purchases. To sum up, brick-and-mortar retailers can compensate price disadvantages by a focus on service and further in-store rewards for customers to increase perceived price fairness. Hence, especially service can act as a competitive advantage of offline retailers.

4.8 Limitations and future research

We conducted scenario experiments because of their easy feasibility and to ensure comparability. However, results should be confirmed by further experiments in real retail settings. These could also include further price differences. Additional work is also required to explore the role of service availability in the showrooming context, for example by adding scenarios with a larger variation in waiting time (with immediate availability as fastest option). Furthermore, while we described waiting time only in the scenarios, future studies may manipulate actual waiting times.

5 General conclusions

5.1 Summary of results

This dissertation focuses on the highly relevant showrooming phenomenon. Showrooming is a new type of consumer behavior based on the use of different channels within the so called customer journey (Lemon & Verhoef, 2016). Generally speaking, it comprises a search for information in the offline channel and a subsequent online purchase (Balakrishnan et al., 2014). In recent years, this behavior has developed through the emergence and usage of a multitude of distribution channels. Customers in today's world switch channels in order to be able to obtain an optimum benefit for themselves at every stage of the purchasing process (Verhoef et al., 2007).

Most existing studies describe showrooming as a threat to stationary retail. Although, brick-and-mortar stores invest in service and offer in-store service personnel, they lose sales because customers finalize their purchase cheaper at competing online sellers (Kalyanam & Tsay, 2013; Teixeira & Gupta, 2015). At the same time, current developments show increasing vacancies of retail properties that reduce the attractiveness of city centers (Spiegel.de, 2020). Showrooming behavior can either cause or strengthen this development. This raises the question of how stationary retail can survive or even be profitable under these changed and further changing environmental conditions. Hence, the showrooming topic has a high degree of relevance for retailing and research. Therefore, the aim of this work was to make a major contribution to a differentiated understanding of the showrooming phenomenon in order to derive appropriate and helpful management implications. Accordingly, the following central research question was raised in the introduction and served as a common thread:

How can stationary retailers successfully encounter the showrooming phenomenon or possibly even benefit from showrooming customers?

We conducted three independent research projects, each with a different focus on the showrooming phenomenon: Research project 1 concentrates on different forms of showrooming behavior and on showrooming customers; research project 2 focusses on online search behavior (showrooming potentials) that precedes showrooming (purchase) behavior and research project 3 investigates managerial antecedents of showrooming (price vs. service). However, all three research areas are considered to a certain extent in each project. This is due to the complexity of showrooming and simultaneously, it enables a broader understanding of the phenomenon.

The *first research project* addresses two research gaps. Firstly, until now, research concentrates on competitive showrooming and does usually not consider loyal showrooming tendencies or any further facets of the phenomenon. Secondly, existing studies do not examine types of showrooming customers in particular. Hence, there is no segmentation of showrooming customers so far. This generates the following research questions:

(1) Which factors characterize different forms of showrooming behavior?

(2) How can we use these factors to identify different showrooming segments?

(3) How can we characterize these segments based on psychographic variables?

The first research project extended our knowledge by exploring five different characterizing forms of showrooming behavior. As already explained in the introductory chapter, a multi-stage process derived factors that result from these forms. These five forms and their corresponding factors are: (1) "options for information in-store before purchase". This form comprises mediated, personal and mobile information search in-store (three factors), (2) "device used for purchase" – divided into stationary or mobile device used for purchase (two factors), (3) "place of purchase" – broken down into mobile place or home purchase (two factors), (4) "time of purchase" – divided into prompt, mean or late time of purchase (three factors) and finally, (5) "retailer for purchase" which distinguishes between purchasing online from the same or from a competing online retailer (two factors) (question 1).

Using cluster analyses based on the twelve characterizing factors, the study answers the second research question and suggests four different showrooming segments: (1) comfort-oriented economic showroomers, (2) loyal showroomers, (3) mobile economic showroomers and (4) conservative showroomers (question 2). Besides demographical differences, the segments also show differences in psychographic variables. The comfort-oriented and mobile economic segments show a significantly higher price consciousness than the two remaining segments. Further, on a loyalty scale (probability to purchase from the same retailer online), the loyal showroomers lead the ranking before the conservative showroomers, followed by the mobile economic segment and finally, the comfort-oriented economic showroomers. Moreover, retailer loyal clusters show higher values in bad conscience during showrooming and the desire for social contact is stronger for the loyal and conservative segment than for the remaining ones (question 3).

The project's most important contribution for retailers is that not all showrooming customers pose a threat to stationary retail. In contrast, there are four different showrooming segments characterized by different patterns of showrooming, differing in psychographics and showing either rather loyal

or disloyal behavioral tendencies. These insights enable retailers to develop segment specific marketing actions and strategies to retain potential showroomers in their own channels.

An important contribution for showrooming research is that showrooming behavior differs not only in terms of loyalty but also in terms of various situational factors, such as device, time and place of the online purchase as well as the usage of available in-store information. Hence, showrooming behavior is multifaceted. Furthermore, results proof the existence of different showrooming segments.

To successfully face showrooming it is important for retailers to know who showroomers are and if and how they differ in terms of demographical, psychological and behavioral aspects. Hence, the first project contributes to the overall research question of this dissertation by identifying four different showrooming segments. Some of them show valuable potential for the stationary channel of multi-channel retailers because they show an increased sense of loyalty, a high desire of social contact and a slightly lower degree of price consciousness. Results state that searching with a mobile device in-store does not necessarily lead to a purchase at a competing retailer (see mobile economic / loyal showroomers). Referring to the overall research question, the retailers' goal must be to prevent competitive showrooming and to strengthen loyal showrooming behavior. With this knowledge, retail managers need to train their sales staff to identify different showrooming segments either through a personal conversation or through detailed observations in-store (e.g. demographics, behavior). Then, sales personnel can address each showrooming segment individually with segment specific strategies and marketing activities to keep them in their own channels.

The *second research project* responds to a lack in research considering a systematic analysis of the showrooming phenomenon. This is due to the fact that previous research does not consider online search behavior as an important sub-process between offline search and online purchase within showrooming. More precisely, there are different online search behaviors, such as mobile (in-store via mobile device) vs. later online search (after leaving a store via any device) or product vs. price information search. So, until now, no common showrooming conceptualization includes offline search behavior, various online search behaviors (showrooming potentials) and online purchase behavior (showrooming behavior) as three steps of the showrooming phenomenon. For this reason, project 2 focuses on the following research questions:

(4) Which forms of online search behavior (showrooming potentials) exist in showrooming contexts?

(5) How are different forms of online search behavior related and how do they influence showrooming behavior?

(6) How do choice confusion and search convenience affect the relationships between showrooming potentials?

(7) Can multi-channel technologies such as QR codes keep customers in retailers' own channels?

The project identified four different showrooming potentials that complement or follow customers' search behavior in-store and which necessarily precede, but not necessarily lead to showrooming behavior. These showrooming potentials comprise mobile vs. later online search as well as product vs. price search (question 4). An empirically tested model of relationships confirmed that online product search enhances online price search and that mobile online search precedes later online search outside the store. Besides, results show that online price search is the last step before purchasing online and that later price search has a significantly higher impact on online purchase behavior than mobile price search (question 5). As theoretically assumed, starting with mobile online-search, choice confusion arises and increases due to new and further options and information. This, in turn, leads to an increasing desire for search convenience (e.g. a quiet place or more time for search). Hence, this perceived later search convenience increases later online search (question 6). Results of a laboratory experiment show that customers using a QR code with a link to the retailers' website are less likely to search in other retailers' channels, visit less additional websites, but search longer overall (question 7).

The second research project enables retailers to gain a deeper understanding of each behavioral step in the showrooming process and its associated psychographic constructs. Results provide clear strategies for action, such as simplifying the search for product information online in retailers' own channels. In this way, it is possible to prevent customers from accidentally coming across cheaper offers from online competitors and then switching both, the channel and the retailer.

An essential contribution for research is that previous showrooming definitions might be insufficient to explain and predict consumer behavior because they neglect online search behavior within the showrooming process. Showrooming research should consider offline search, various online search behaviors and online purchase behavior when examining the showrooming phenomenon.

The second project contributes to the overall research question of this dissertation by providing a new showrooming conceptualization considering various online search behaviors (product vs. price and mobile vs. later online search) that precede online purchase behavior. The knowledge of these consecutive behaviors in the showrooming context provides valuable insights for retailers. Research project 2 can built upon prior findings of project 1, since a customer who searches for information in-store via a mobile device is not yet lost, on the contrary, he or she just needs to be addressed in a

different way than a customer who proactively contacts sales personnel. Moreover, results confirm that in a showrooming process offline information search and online information search in-store precede the actual online purchase. This, in turn, shows two options, in which retailers can intervene and possibly convince customers to purchase in retailers' own channels. The knowledge of psychological variables influencing this relationship enables the deduction of concrete strategies: Retailers need to simplify product information search in-store and/or guide customers to their own channels and touchpoints. This can prevent customers from accidentally coming across cheaper prices in the online channel.

To briefly summarize the research gap underlying the *third research project*, literature examining the impact of the most important showrooming antecedents, namely price and service, is scarce. More precisely, until now, there is no study examining the impact of various price differences and various service levels (i.e. usage, quality and availability) together. To close this research gap, the project answers the following research questions:

(8) Can service compensate for the disadvantage of price differences in the offline channel in terms of showrooming behavior?
(9) What should this service look like?
(10) Do availability and quality of service personnel have a different impact on showrooming?
(11) What effect does the level of price difference have on showrooming?
(12) And up to what price difference is a compensation possible at all?

Results show that mere service usage by customers can partly compensate price differences in the offline channel in terms of showrooming behavior. This means for example that customers' showrooming tendency is lower with a price difference of 20% and service usage compared to a 10% price disadvantage in the offline channel without service usage (question 8). With regard to the organization of service, a differentiated examination of service quality and service availability is necessary. Although, Gensler et al. (2017) state that only service availability influences showrooming, this project shows that whereas service quality reduces the probability to showroom, service availability is only relevant when service quality is high. Results further show that low quality service on the sales floor results in higher showrooming tendencies than no service usage at all and when retailers combine high quality with fast availability of service personnel this can compensate price difference levels better than mere service usage. Hence, for retailers it is important to first invest in sales personnel's quality and in a next step in its availability (question 9 and 10). Furthermore, the price difference level is extremely important. The higher the price difference level, the higher the probability to showroom (question 11). Price fairness mediates several effects. Thus,

retailers need to increase and multiply customers' rewards in-store to increase perceived price fairness and finally, to prevent or at least to reduce the probability to showroom (question 12).

A central practical contribution for retailers of this research project is that brick-and-mortar retailers must keep the price difference to the online channel as small as possible even though service usage by customers can compensate the negative effects of price disadvantages to a large extent. Additionally, offered sales staff should act at a high quality level. When service quality is high, retailers should also keep waiting times for service staff as short as possible. However, if retailers' resources are limited, retailers should not provide service personnel at all, rather than low quality service. Results further show that retailers need to address customers' price fairness perceptions. The fairer customers perceive the price, the lower the probability to showroom. Retailers have to increase in-store rewards to increase price fairness perception and thus reduce showrooming probability.

The project also offers two essential contributions for research. Firstly, it is important for research to differentiate between various service strategies (i.e. mere service usage, service quality and service availability) as well as between various price differences between the online and offline channel as antecedents of showrooming behavior. Secondly, research should consider both factors simultaneously. Whereas offline retailers can influence service strategies to a large extent, they can adjust price differences only hardly. However, different combinations of price differences and service strategies show varying compensating effects of both variables.

Research project 3 answers the overall research question by examining price and service as two main managerial antecedents of the showrooming phenomenon. Brick-and-mortar retailers can influence price or price structures to a small extent but more importantly, they can fully influence service and service offerings in their stores. The personal service variable distinguishes offline stores from mere online retailers (Verhoef et al., 2007). Hence, getting information on how both variables compensate each other offers important insights for retailers. They need to change their focus on customer interaction. This can be done primarily via service, which is expected and valued by customers. If a high service level is offered, then price differences are accepted to a certain extent.

5.2 Implications for research

The present work expands showrooming research demonstrably. Numerous results show this: (1) In contrast to recent research (Arora & Sahney, 2018; Basak et al., 2017; Flavián et al., 2019; Wu et al., 2015), this work shows that showrooming is a behavioral phenomenon which, on closer exami-

nation, is again composed of several behaviors. It consists of information search behavior and online purchasing behavior, of which the former has to be divided into in-store search behavior and online search behavior. To make this distinction clear, we refer to different forms of online search behavior as showrooming potentials, because these are a precondition for the actual online purchase, which we call showrooming behavior. In this way, the present work offers the first coherent conceptualization of a differentiated view of the phenomenon and empirically confirms its existence. Future research should build on this new conceptualization. (2) A closer examination of showrooming behavior shows that it can occur with retailer disloyalty as well as loyalty tendencies. Further, showrooming behavior can vary in terms of various situational factors, e.g. device, time and place of the online purchase. (3) Whereas most existing customer segmentation studies focus on offline or online shoppers (Ganesh et al., 2010; Rohm & Swaminathan, 2004), few recent papers also bring multi-channel customers to the fore (Frasquet et al., 2015; Konuş et al., 2008; Sands et al., 2016). However, the latter do this at a very general level, while this dissertation focusses on different showrooming segments in particular. (4) This work reveals that service is a highly interesting variable in showrooming research and that it is not sufficient to analyze service in general. This dissertation shows that it matters to differentiate between mere service usage, service quality level and service availability (in the case of waiting times). These are probably not the only facets of the service variable, so that future research should address this issue. (5) This work considers compensation effects of the most important managerial antecedents – price and service – in competitive showrooming contexts.

Another general implication for research results from the methodological diversity in the investigation of the showrooming phenomenon within the present dissertation. In addition to several qualitative studies, this work includes numerous online survey studies and a laboratory experiment. The variety of methods and/or studies within each research project allows the compilation of a more comprehensive picture of the showrooming phenomenon and encourages future studies to continue this approach.

5.3 Implications for business practice

Each of the three research projects offers specific management implications derived from the respective study results. Beyond that, there are some general implications for business practice considering the dissertation as a whole. These are closely linked to the aspects already mentioned to answer the overall research question (5.1). Nevertheless, due to their outstanding relevance, this chapter will bring them together and discuss them in a more general way.

Recent literature states that showroomers come to the offline store to touch and feel products and in this way to get product specific information they cannot get online (Levin et al., 2003). To become a showroomer, this work proves that at first, these customers have to search for further information online either in-store or later after leaving the store and afterwards, they will have to purchase online. Consequently, watching customers using their smartphones in-store is not a proof that customers want to or will finalize their purchase online. Instead, mobile online search in-store has become daily business and smartphones have become everyday shopping assistants (Fuentes et al., 2017; Fuentes & Svingstedt, 2017; Grewal et al., 2018).

Watching potential showroomers using their smartphone in-store enables sales personnel to intervene in a possible showrooming process. Sales personnel has the unique opportunity to use strategies to either encourage customers to purchase offline or – particularly for multi-channel retailers – to purchase online in the retailers' own online shops. To do this successfully, it is important for retailers to identify different segments with the help of qualified sales personnel and in a next step, to address these customer groups individually. A specific approach considering personal needs when shopping, as well as individual service and price offers can retain potential showroomers in retailers' own channels. Considering price offers, it is important for offline retailers to keep the price difference to the online channel as small as possible. However, this is not easy due to fixed costs, e.g. for shop rent or sales personnel. Considering service, retailers must be aware of the following: On the one hand showrooming is highly contextual and showroomers differ and on the other hand brick-and-mortar stores can easily influence service aspects, but prices only to a limited extent. Offline retailers therefore have to focus on service encounters in-store. This contributes to a specific and unique shopping experience for customers (McGuire et al., 2010) and enables offline stores to sharpen their profile and to justify and to secure their existence.

Taken together, the three research projects included in this dissertation confirm that the key to economic viability of brick-and-mortar stores is service. It distinguishes offline from online retailing (Verhoef et al., 2007). It is a multifaceted variable (mere usage, quality, availability etc.) resulting in numerous possibilities for action and moreover, offline retailers can fully influence it. Good service has a positive impact on perceived price fairness and can compensate the negative impact of price differences to a certain extent. In the end, the fairer customers perceive the price, the lower the probability to showroom. But care must be taken. If shops are unable to offer high quality service, results show that no service at all is better than service of low quality.

5.4 Limitations and future research

Beyond the respective limitations of each research project, there are three general limitations of this work that call for further research. Firstly, for feasibility reasons and due to the limited research in showrooming, each study was limited to certain products or to one certain product. Although, similar results can be assumed for products in the same category or with similar characteristics, this is a restriction of results. Especially showrooming situations and hence, showrooming segments are not stable. The showrooming phenomenon is extremely contextual and therefore, dependent on various situational variables, not only product categories, but also service encounters, weather, time restrictions, level of retailer competition or shopping intentions etc. Further research should include the impact of situational variables, because each shopping situation is unique. The second limitation of this work is its usage of scenario-based survey studies. However, this work also considered other research methods to work on the topic from different perspectives. Nevertheless, studies in real environment are missing. Therefore, future studies should be conducted in real shopping environments comprising, inter alia, field experiments. Field experiments could test the impact of specific marketing strategies that were explored and identified in this dissertation. The third general limitation is the low consideration of non-showroomers or comparisons between showroomers and non-showroomers. Only research project 1 allows this to a limited extent. Due to study designs, scenario based survey studies only asked for showrooming probabilities. For this reason, online purchase and offline purchase were not mutually exclusive so that non-showroomers could hardly be identified. Studies in real shopping contexts could compare showroomers and non-showroomers in specific situations. Such comparisons might relate to demographics, psychological variables and processes affecting relationships between showrooming potentials.

5.5 Personal conclusion

Retailing is developing rapidly. Digitalization and automation processes have already changed customer behavior and will continue to. Customers' expectations and needs are becoming increasingly individualized. So, customer segments become more and more diverse. While pure online shopping segments will increase, the segment of pure offline shoppers will continue to decline. However, there are more and more customers who use different channels (multi-channel customers). Since purchase behavior does not have to follow immediately after search, most customers are hardly aware of switching channels in purchase processes. Especially with showrooming, there can be a certain amount of time between the offline search and the online purchase. Hence, showrooming

behavior often occurs unconsciously and already has become part of everyday purchase behavior of most multi-channel customers.

Hence, showrooming is a main challenge for retailers and will continue to be. In the future, other diversified forms of this behavior may occur. Nevertheless, present research and current developments clearly prove that stationary retail continues to have a raison d'être. One current development is the corona pandemic that has shown that online retailing is losing sales when offline retailing is not available (Bevh, 2020). So, perhaps the focus of offline shops will have to change in the future – the focus needs to be less on the lowest price or less on the competition with big online shops. What drives customers to offline shops and city centers seem to be primarily social needs in connection with a touch and feel experience and an immediate product receipt, or simply the freedom to walk into a store, interact with others, experience a unique shopping experience and simply to have a good time outside.

For pure brick-and-mortar stores that do not offer exclusive products, that are not willing to explore new ways and that do not have the personal and/or financial options to develop further, the showrooming phenomenon is a serious *threat*. These retailers will probably have to close their stores in foreseeable future.

However, showrooming can also be an *opportunity* for retailers. To be successful under these changing circumstances, retail should clearly focus on service. Customers have to feel comfortable in-store and especially in service encounters. Retailers have to select and train their sales staff specifically. In addition, sales personnel must be given the freedom to act in order to be able to respond individually to customers' needs. This can include price offers or even price guarantees as well as additional service offers or simply coupons for future purchases – in such a way that it offers the greatest added value for the individual customer. This approach is not easy and certainly not cheap. Instead, it is an opportunity for all retailers who are willing to develop themselves and for all that want to adapt to new customer behavior to work on their competences and unique selling points.

Nevertheless, the showrooming phenomenon is and remains a *challenge* for every retailer. Retailers need creativity, staying power, flexibility, the ability to develop new sales concepts (thinking of customer experience) and above all, the courage to try something new. They must sell their products and have to find out what customers are willing to pay for in-store. Therefore, the showrooming phenomenon can be anything: a threat, an opportunity and a challenge. It depends on what each retailer makes out of it.

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Appendix

Research project 1:

Research project 2:

Research project 3:

Appendix A. Survey items, reliability measures, results of factor analysis and confirmatory factor analysis of multi-item constructs (n = 564).

Construct	**Cronbach's alpha**	**Lambda loadings** (CFA)	**AVE** (CFA)	**Literature for scale items**
Price consciousness				
It is important for me to get the best price for the products I buy.	.82	.78	.53	Konuș et al. (2008), Lichtenstein et al. (1993), Voelckner (2008)
I am very concerned about low prices when I buy products.		.74		
I will shop at more than one store to take advantage of low prices.		.70		
The time it takes to find low prices is usually worth the effort.		.69		
Desire for social contact				
It bothers me if I have to use a piece of technology when I could interact with a person instead.	.86	.74	.62	Dabholkar (1996), Koenigstorfer and Groeppel-Klein (2012)
I prefer personal contact to communicating with technological devices.		.88		
If I have to choose, I prefer a personal conversation to an electronic alternative.		.70		
In a personal conversation I feel more comfortable than in using technologies.		.81		
Motivation to conform				
It bothers me if other people disapprove of my choices.	.83	.64	.56	Voelckner (2008)
My behavior often depends on how I feel others wish me to behave.		.71		
A sense of belonging is important for me.		.76		
It is important to me to fit in.		.87		
Bad conscience during showrooming				
I have a bad conscience when I buy the product on the internet.	.91	.92	.72	Zielke (2011)
I feel irresponsible when I buy the product on the internet.		.83		
It is not correct to buy the product on the internet.		.79		
I have a clear conscience buying the product on the internet. (recoded)		-.84		
General showrooming tendency				
Often I purchase products on the internet which I have seen in a store.	.80	.82	.59	—
Seeing products in-store, I often compare the prices on the internet.		.62		
I often search for information in stores to buy on the internet afterwards.		.85		

Note: All items were measured on a seven-point scale (1 = "I do not agree at all" and 7 = "I totally agree").

Appendix B. Item scales.

Construct	Item
Price information search online via mobile devices in-store	In-store I use my smartphone to make sure that the product is not cheaper online. In-store I take a look at the product and use my smartphone to search for better deals online. In-store I use my mobile device to compare prices online for the product. While I am in the store I consult a mobile device to look for prices for the product online.
Price information search online after leaving the store	I have a look at the product in-store and later search for better deals on the internet. After visiting the store I search for better prices online. After having informed myself about the product in-store I check online whether the product is cheaper there. After having a look at the product in-store I compare its price calmly later on the internet.
Product information search online via mobile devices in-store	I use a mobile device in-store, to find out more about the product. In-store I search for more product information with my smartphone. While I am in the store, I use my smartphone to get more information about the product. In-store I led myself be inspired and use my mobile device to get better information about the product in that moment.
Product information search online after leaving the store	I check the product in-store and later, search for more information about the product online. After I become familiar with the product in-store, I later, take the opportunity to find out more about the product. In-store I led myself be inspired and later, use the internet to get better information about the product. I have a look at the product in-store and later search for more information online calmly.
Search in-store and purchase online (showrooming behavior)**	I take a look at the product in-store and next order it online. I become familiar with the product in-store and purchase it on the internet later. I use the advisory service of the brick-and-mortar store and then, buy the product online. I gather information about the product in-store and purchase it on the internet.
Choice confusion* *(following Diehl & Poynor, 2010; Heitmann, Lehmann, & Herrmann, 2007)*	In-store I feel overwhelmed at the time of decision making for [a product]. In-store I feel confused at the time of decision making for [a product]. In-store the decision for [a product] is difficult to make. It takes me time and effort to choose the right [product]. In-store I cannot afford the time to choose the right [product]. It is difficult to compare the different offerings in-store.
Perceived later online search convenience *(following Forsythe, Liu, Shannon, & Gardner, 2006)*	I can search for later information online in privacy of home. When searching for information online later I have no hassles. Searching via a smartphone in-store is a big effort.

Note: All items measured on a seven-point scale (1 = "I do not agree at all" and 7 = "I totally agree"). / *Insert respective product (sports shoes vs. TV sets) / **Offline purchase behavior was measured with adjusted items.

Appendix C. Scenario of survey and complementary study.

Please imagine you need a pair of new sports shoes. For this reason, you go to the store that you have mentioned earlier*. You look at the assortment to find out about the latest models and trends. After all, you have found a pair of sports shoes that you really like. You look at it in detail, try on the shoes and interview the sales staff. In this way, you feel the need to own this pair of sports shoes. In-store, the shoes are available in your size.

* Assume that this store also has an online store, although in reality this might not be the case.

Note: In the survey study, we also had a separate scenario for browsing. But since results did not show differences, we only report the buying scenario that we also used for the complementary study.

Appendix D. Scenarios of each research study.

Study A:

With service usage in-store:
I: 0% price difference (130 EUR), n = 96
II: 5% price difference (123.50 EUR), n = 101
III: 10% price difference (117 EUR), n = 99
IV: 20% price difference (104 EUR), n = 90

Without service usage in-store:
V: 0% price difference (130 EUR), n = 82
VI: 5% price difference (123.50 EUR), n = 75
VII: 10% price difference (117 EUR), n = 72
VIII: 20% price difference (104 EUR), n = 84

Please imagine that you need some new sports shoes. This includes running and functional shoes as well as fashionable sports shoes. You have already informed yourself about sports shoes on the website of various retailers and found a favorite. You have found the best offer for your favorite sports shoes on the sportdreamz.de website.
There you saw the sports shoes for I+V: 130 EUR (II+VI: 123.50 EUR; III+VII: 117 EUR; IV+VII: 104 EUR). Delivery is free of charge. To have a look at these sports shoes, you decide to visit the Run4Fun store near you.

I-IV: At Run4Fun you can examine the sports shoes in detail, try them on and get advice from the sales staff. The salesperson measures your feet and makes a fit analysis to determine the right size of your favorite sports shoes. The right size is available in the store and costs 130 EUR.

V-VIII: At Run4Fun you examine the sports shoes in detail and try them on. You dispense on a measuring of your feet and on a fit analysis by the sales staff, because you are already sure in your decision. The right size is available in the store and costs 130 EUR.

Study B:

I: No sales staff available, n = 62
II: Sales staff available after 5 min with high quality service, n = 74
III: Sales staff available after 5 min with low service quality, n = 61
IV: Sales staff available after 15 min with high quality service, n = 60
V: Sales staff available after 15 min with low service quality, n = 67

Please imagine that you need some new sports shoes. This includes running and functional shoes as well as fashionable sports shoes. You have already informed yourself about sports shoes on the website of various retailers and found a favorite. You have found the best offer for your favorite sports shoes on the sportdreamz.de website.
There you saw the sports shoes for 117 EUR. Delivery is free of charge. To have a look at these sports shoes, you decide to visit the Run4Fun store near you. At Run4Fun you can examine the sports shoes in detail and try them on. You would like to take advantage of a consultation.

I: There is no sales staff on the sales floor. II-V: There are several sales assistants on the sales floor. After II+III: five (IV + V: 15) minutes someone is there for you.

II + IV: Sales staff makes a friendly and professional impression on you. The salesperson is motivated and asks you questions to understand what is important to you. All in all, you perceive the service quality as high.

III+V: Sales staff makes an unfriendly and unprofessional impression on you. The salesperson does not ask you any questions to find out your needs and seems unmotivated. Overall, you perceive the service quality as low.

Your favorite sports shoes are available in-store in the right size and cost 130 EUR.

Study C:

Service staff available after 5 min with high service quality and fast service availability:
I: 0% price difference (130 EUR), n = 33
II: 5% price difference (123.50 EUR), n = 25
III: 10% price difference (117 EUR), n = 26
IV: 20% price difference (104 EUR), n = 29

Please imagine that you need some new sports shoes. This includes running and functional shoes as well as fashionable sports shoes. You have already informed yourself about sports shoes on the website of various retailers and found a favorite. You have found the best offer for your favorite sports shoes on the sportdreamz.de website.
There you saw the sports shoes for I: 130 EUR (II: 123.50 EUR; III: 117 EUR; IV: 104 EUR). Delivery is free of charge. To have a look at these sports shoes, you decide to visit the Run4Fun store near you. At Run4Fun you can examine the sports shoes in detail and try them on. You would like to take advantage of a consultation. There are several sales assistants on the sales floor. After five minutes someone is there for you.

Sales staff makes a friendly and professional impression on you. The salesperson is motivated and asks you questions to understand what is important to you. All in all, you perceive the service quality as high. Your favorite sports shoes are available in-store in the right size and cost 130 EUR.

Appendix E. Sample characteristics of each study.

Variable	**Study A** (n = 699)		**Study B** (n = 324)		**Study C** (n = 113)	
	n	%	n	%	n	%
Gender						
Female	375	53.6	187	57.7	70	61.9
Male	324	46.4	137	42.3	43	38.1
Age						
Ø	32.29		30.80		37.72	
(σ)	(13.24)		(10.72)		(15.04)	
Education Level						
High school	660	94.4	314	96.1	106	93.8
Low level education	15	2.1	7	2.2	6	5.3
Fulltime student	12	1.7	1	.3	0	.
Other	5	.7	1	.3	1	.9
No answer	7	1.0	1	.3	0	.
University student	254	36.3	125	38.6	38	33.6
Professional stage						
Full-time	381	54.5	190	58.6	68	60.2
Part-time	91	13	41	12.7	13	11.5
Marginally employed	125	17.9	49	15.1	23	20.4
Unemployed	78	11.2	36	11.1	5	4.4
Other	11	1.6	5	1.5	3	2.7
No answer	13	1.9	3	.9	1	.9
Income						
< 1000 EUR	142	20.4	64	19.7	18	15.9
1000 < 2000 EUR	118	16.9	43	13.2	15	13.3
2000 < 3000 EUR	124	17.8	53	16.4	20	17.7
3000 < 4000 EUR	97	13.8	55	17.0	14	12.4
4000 < 5000 EUR	67	9.6	38	11.8	14	12.4
5000 EUR and more	67	9.6	33	10.2	23	20.4
Do not know / No answer	84	12.0	38	11.7	9	8.0
Additional values						
Showroomers* (%)	462	66.1	235	72.5	74	65.5
Owning a smartphone	685	98	320	98.8	112	99.1
Owning a tablet	390	55.8	173	53.4	67	59.3
Service use when purchase sports shoes (mean value (σ))	4.01 (1.810)		4.09 (1.707)		4.41 (1.826)	

*Already searched offline and purchased online.

Appendix F. Survey items for price fairness, reliability measures and results of factor analysis.

	Study A (n=699)		**Study B** (n=324)		**Study C** (n=113)	
Items	Cronbach's alpha	Lambda loadings (CFA*)	Cronbach's alpha	Lambda loadings (CFA*)	Cronbach's alpha	Lambda loadings (CFA*)
acceptable	.939	.890	.929	.885	.924	.905
fair		.922		.921		.920
justified		.926		.910		.898
reasonable		.938		.918		.891

Note: All items were measured on a seven-point scale (1 = "I do not agree at all" and 7 = "I totally agree"). Literature for price fairness scale: Fassnacht and Unterhuber (2016); Malc et al. (2016) / *in each study price fairness items loaded clearly on one single factor.