

Differences between mobile and non-mobile buyers: comparing attitudinal, motive-related, and media behaviour

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Abstract: The aim of this study is to investigate the disparities between different types of consumers with respect to their mobile shopping (m-shopping) attitude, shopping motives, and media usage behaviour when practising online shopping. Thus, this study is the first to combine three different consumer viewpoints to provide an enhanced consumer picture. The findings are as follows. First, non-m-buyers' attitude towards m-shopping is crucially formed by function-orientated aspects, and they prefer to engage more in exploring stores than in certain m-buying activities when they use smartphones. In contrast, m-buyers strive for more flexibility in meeting their recreational needs, since they have a hedonically compelled attitude towards m-shopping. Second, both groups regard m-shopping convenience as a basic requirement that must be fulfilled; otherwise, m-shopping is not useful to them at all. Moreover, contrary to non-m-buyers, the empirical outcomes suggest that m-buyers are multi-device shoppers because they engage heavily in online shopping and use portable media to a large degree, meaning that they are not restricted to a local environment.

Keywords: mobile buying; mobile shopping; m-shopping; mobile buyer; non-mobile buyer; consumer discrepancy; digital natives; generation Z; consumer attitude; shopping motive; media usage behaviour; mobile commerce; electronic marketing; retailing.

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Biographical notes: Michael Groß received his PhD from the Brandenburg University of Technology Cottbus-Senftenberg (Germany), and currently works as a consultant for the IT and telecommunications industry. His research interests are focused on innovation themes, as well as the areas of electronic and mobile commerce with the focus on retailing. In the course of his career, he has gained enormous experience in the German retail industry and electronic commerce area.

1 Introduction and research motivation

“You can’t connect the dots looking forward; you can only connect them looking backwards. So you have to trust that the dots will somehow connect in your future.” (Steve Jobs)

Since the use of mobile devices is a daily habit for many people (e.g., digital natives and millennials who have grown up in the digital age), they like to have shopping practices at their fingertips too. Thus, digital consumers using smartphones and tablets are mobile-first shoppers for a variety of shopping practices, such as searching, comparing, and purchasing products and services on the go. Some like it more than others do (Forrester, 2015; Google, 2017; Flauds et al., 2018).

1.1 *The evolution of mobile shopping (m-shopping)*

In general, m-shopping describes the practice of browsing for goods or services using mobile devices connected to both retailers and marketers by mobile (wireless) network technologies. However, m-shopping engagement is not necessarily the same as m-buying (in terms of conducting monetary transactions), even for digital natives. To a certain extent, this relates to differences in consumers; hence, more research attention is required to unveil any discrepancies between them (Marriott et al., 2017; Groß, 2015a).

Furthermore, compared to mature areas like the online shopping ones, technological development is still ongoing, leading not only to a different dissemination level of m-shopping across the world, but also to an increasing body of research on the phenomenon of m-shopping. In this context, the central question is not whether digital natives are using smartphones and tablets for shopping; we already know that they use mobile devices more heavily for pre- and post-purchasing activities than they do for making mobile purchases (m-purchases) (Rodríguez-Torrico et al., 2017; Fuentes and Svingstedt, 2017; Huang et al., 2017; Singh and Swait, 2017; Holmes et al., 2014).

This is a relevant aspect that practitioners and academics alike must not ignore, because a complete penetration into this subject is not anticipated within the foreseeable future, even though with an increasing number of digital natives as mobile buyers (m-buyers) the market potential is far from being exhausted (Nielsen, 2016). This is of significance insofar as on the one hand, the number of m-shoppers and the consequent market potential around the world is still heavily increasing, whereas on the other hand, the revenue created from m-buying still accounts for a small percentage of the overall retailing sector because the number of active m-buyers is still small (Kim et al., 2017; Groß, 2016). According to a global snapshot study by Nielsen (2016) involving up to 63 countries, nearly 38% of all surveyed respondents¹ indicated that they had already made at least one m-purchase of a product or service, while the majority of people still hesitated to engage in m-buying tasks or even completely rejected any kind of on-the-go purchasing for a variety of reasons (e.g., Marriott and Williams, 2018; Gupta and Arora, 2017; Groß, 2016).

The knowledge of certain consumer differences would eventually enable practitioners to modify their (mobile) services not only to retain the loyalty of their current clientele of m-buyers, but also to attract undecided and reserved people and those who resist or even reject m-buying – namely, non-m-buyers. Thus, there is a growing need to understand the difference in reasoning between consumers who are already used to making m-purchases (m-buyers) and those who are not (non-m-buyers).

1.2 *Aspired contribution of the study*

It is interesting to note that to date, very little research has been conducted to explore such buyer differences to a greater extent. Prior studies have focused specifically on singular aspects like motivation (Yang and Kim, 2012), attitude (Bigné et al., 2007), or media experience (Agrebi and Jallais, 2015) to reveal m-shopper discrepancies. So far, no available research has provided an enhanced consumer picture by comparing m-buyers and non-m-buyers regarding more than one focal point over a specific time period. Hence, a general viewpoint on m-buyers and non-m-buyers is missing, but is necessary to bring practitioners into a position where they can create more tailored m-shopping services that lead to more m-purchases – or anything else, for that matter.

The aim of the present study is thus to provide an enhanced consumer picture for both practitioners and academics, and consequently to close the gap in the literature on digital natives. In more detail, this study explores the differences between m-buyers and non-m-buyers regarding their

- 1 attitudinal facets
- 2 shopping motives
- 3 media usage behaviour.

According to the study sequence, the paper starts with an *investigation of consumers' attitudes towards m-shopping*, since this construct is regarded as a key predictor of (behavioural) intention. Subsequently, *consumers' motivation for m-shopping* is investigated, as (shopping) motives represent energised driving forces of behaviour that bring consumers to the definite (mobile) marketplace or not. Finally, to complete the picture, the study analyses *consumers' multi-device media behaviour* to cope with the trend of multi-screen engagement among digital natives, by which they use more than one Internet-enabled device for shopping practices.

Considering these three viewpoints together, this study contributes to the existing literature by addressing the following gaps. First, there are several reasons for consumers' resistance to m-shopping, relating to functional and psychological factors alike (e.g., Gupta and Arora, 2017; Groß, 2016; San-Martín et al., 2013). Therefore, this study has more than one focal point when comparing m-buyers with non-m-buyers. Second, the core of the underlying research series is the so-called generation Z (also known as digital natives), for which there is currently limited research addressing and comparing m-buyers with non-m-buyers (Priporas et al., 2017). This calls for more attention to be paid to this group. For instance, in Germany, 83% of young adults between the ages of 18 and 29 made at least one m-purchase in 2016 using their smartphones, implying that 17% did not because they still rejected m-shopping (generally, 66% compared to 33% of the average population; BEVH and Boniversum, 2016). Finally, based on both aforementioned points, the outcomes of this study are relevant for practitioners and academics alike because little is known about digital natives as consumers, especially when one compares the impediments and drivers for m-buyers and non-m-buyers in equal measure. Hence, the study contributes to the general understanding of issues of consumer discrepancy regarding m-shopping themes and thus has valuable managerial implications for retailers, marketers, and researchers.

1.3 Outline

The remainder of this paper is organised as follows. First, Section 2 reviews the extensive literature on this topic and its scope. This includes the theoretical framework of the present study. Thereafter, Section 3 describes the research methodology and results for each study separately. Each part closes with a preliminary conclusion. Subsequently, the discussion in Section 4 presents the overall conclusions along with some relevant implications and limitations. Finally, some avenues for future research are suggested.

2 Theoretical background and conceptual framework

2.1 Current avenues of m-shopping research

Research on m-shopping is heavily fragmented, but activities so far can broadly be clustered around two main avenues of research (see Groß, 2015a; Marriott et al., 2017 for a literature review) that are further supported by various so-called ‘other emerging areas’.

2.1.1 Focus on adoption and acceptance exploration since 2002

Due to the novelty of m-shopping around the turn of the millennium, the first m-shopping research mostly concerned the theoretical and empirical exploration of drivers and barriers to explain why a consumer might engage in m-shopping or not (see e.g., Groß, 2015a). Here, consumer attitude is central to the research interest, with studies focusing more on prediction and exploration than on true behaviour patterns. An expression of this common practice is that consumer behavioural intention, willingness, and reaction are the key explanatory variables in this body of work (e.g., Fenech, 2002; Aldás-Manzano et al., 2009; Lu and Su, 2009; Ko et al., 2009; Yang, 2012; Schramm-Klein and Wagner, 2014; Agrebi and Jallais, 2015; Sohn, 2017). For these purposes, well-known theoretical models (e.g., the theory of reasoned action, theory of planned behaviour, technology acceptance model, and diffusion of innovations theory) have been used, modified, or extended with new factors and relationships. In addition, new research models have also been developed (Marriott et al., 2017; Groß, 2015a).

2.1.2 Focus on behaviour investigation since 2010

Due not only to the ongoing diffusion of m-shopping, but also to recording consumers’ m-shopping experiences across countries, an increasing amount of research has focused on consumers’ behavioural aspects when m-shopping (Lu et al., 2017). This is particularly evident in studies, for instances, that address the practices of m-shopping (e.g., Fuentes and Svingstedt, 2017; Cliquet et al., 2014) or m-buying activities (Kim et al., 2017; Hillman and Neustaedter, 2017; Rodríguez-Torrico et al., 2017; Kim et al., 2015; Wang et al., 2015), or that analyse theoretical frameworks like buyer cycles (Karaatli et al., 2010; Holmes et al., 2014) and confirmation/disconfirmation-paradigms (Hung et al., 2012; Schramm-Klein and Wagner, 2014; Shang and Wu, 2017). Because all of these approaches involve a certain degree of m-shopping experience, the focal point of these studies is behaviour investigation.

2.1.3 Various other emerging areas of research interest

Because m-shopping research is ongoing, there is a certain degree of overlap between both the above-mentioned research streams. Therefore, both streams have received emerging support from various other topics such as consumers' motivations for m-shopping (Ono et al., 2012; Yang and Kim, 2012), consumers' fear of and confidence in m-shopping (Marriott and Williams, 2018; Gupta and Arora, 2017; San-Martín and Jimenez, 2017; Groß, 2016; Gao et al., 2015), consumers' perceptions of m-shopping technology features and traits (Newman et al., 2018; Hubert et al., 2017; Sohn et al., 2017), or shopper typologies (San-Martín et al., 2013; Groß, 2018), to name just a few examples. Consequently, research on m-shopping is highly fragmented and only partially comparable now, which is unlikely to change in the future.

This is because mobile services and technology empower consumers to engage in seamless shopping by merging both online and offline shopping environment into an omni-channel (Faulds et al., 2018; Huré et al., 2017; Singha and Swait, 2017; Rodríguez-Torrico et al., 2017). To obtain a better understanding of the multi-channel phenomenon, it is logical that an increasing number of research topics are emerging. While trust, satisfaction, and motivation have so far been focal aspects in exploring consumers' acceptance and discrepancy (Marriott et al., 2017), due to the rising amount of available consumer data an upcoming topic is the seamless connection with customers through all available means, holistic experiences, data security, and protection across shopping channels (Faulds et al., 2018; Fritz et al., 2017). However, instead of exploring new topics, the focus of research should be on the under-investigated parts of the current m-shopping adoption literature, like consumer attitude or motivation; this would serve not only to elaborate current knowledge, but also to strengthen its theoretical foundation (Groß, 2015a).

Before specific research questions are formulated, the following subparts review prior studies relating to the present research interest. Then, evidence from these areas is used to formulate the research questions.

2.2 Consumers' attitude towards m-shopping

Consumers' m-shopping attitude is considered to be a multidimensional construct comprising three components: *affective aspects* (e.g., emotional), *cognitive aspects* (e.g., knowledge), and *conative aspects* (e.g., behavioural intention, willingness to purchase). The research of Kumar and Mukherjee (2013), for example, relates to affective components and the extent to which a consumer would like or dislike m-shopping activities (e.g., notices that m-shopping is fun and creates pleasurable purchasing experiences), while cognitive components concern what a consumer might know about m-shopping (e.g., knowing that m-shopping is a flexible, time-saving, or even convenient approach for purchasing items on the go). Finally, the *conative component* is determined by consumers' willingness to make m-purchases, which is influenced by the impact of both affective and cognitive attitudinal components.

Rooted in Fishbein and Ajzen's (1975) theory of reasoned action, it is assumed that consumers' attitude towards m-shopping influences their overall pattern of responses to the system. In accordance with the attitude-behaviour relationship presented by these authors, a favourable attitude is positively correlated with an intention to do something (e.g., engage in m-shopping), while an unfavourable attitude leads to the opposite effect

(e.g., the avoidance of m-shopping systems). However, this relationship is frequently confirmed for m-buyers but not by non-m-buyers (e.g., Marriott et al., 2017; Groß, 2015a), and thus requires more attention.

Considering the attitude-behaviour relationship, Zhang et al.'s (2012) meta-analysis shows that in general, consumers' attitude towards a mobile commerce service explains roughly 88% of the variance of (behavioural) intention and, moreover, determines the usage behaviour of that service. An attitude expresses a person's psychological tendency to evaluate a particular m-shopping entity with some degree of favour or disfavour. In the context of m-shopping technology acceptance research, an attitude is influenced by three core variables: *perceived usefulness*, *perceived enjoyment*, and *perceived ease of use* (e.g., Ko et al., 2009; Aldás-Manzano et al., 2009; Lu and Su, 2009; Yang, 2012; Schramm-Klein and Wagner, 2014; Agrebi and Jallais, 2015; Groß, 2015b; Gao et al., 2015).

Although a consumer's attitude towards m-shopping seems to be a relatively stable system of values, this situation might change gradually over time as the richness of experience grows, thereby affecting the consumer's m-shopping value perception with regard to both usefulness and enjoyment. While rational aspects initially seem to affect one's attitude much more strongly than emotional ones do, emotional impact on attitude rises as one gains more m-shopping experience (Marriott et al., 2017; Groß, 2015a).

However, previous research on m-shopping reveals that a positive (affective and cognitive) evaluation of m-marketing tools/instruments (Shankar et al., 2016), such as m-advertising (Jiménez and San-Martín, 2017) and m-coupons (Megdadi and Nusair, 2011), is a significant prerequisite for m-shopping acceptance everywhere (Groß, 2015a). Holmes et al. (2014) explored consumer attitudes to m-shopping in general, but also consumers' attitudes towards using mobile phones in different stages of their decision-making process in particular. Their study revealed differences in consumers' involvement in m-shopping activities, clearly demonstrating that consumers in the UK prefer to use mobile phones in the information search and evaluation process rather than to make an m-purchase. Similar results regarding differences in involvement in online and m-shopping activities have been found for digital Spanish shoppers (see e.g., Rodríguez-Torrico et al., 2017).

2.3 Consumers' motivations to engage in m-shopping

Sheth's (1983) theory of patronage preference and behaviour postulates that shopping motives are energised driving forces of behaviour that bring consumers to certain marketplaces to satisfy their internal needs. In other words, these forces attract consumers to make m-purchases or, alternatively, they fail to do so.

Based on the co-existence of different shopping motivations (see e.g., Westbrook and Black, 1985; Babin et al., 1994), previous research on m-shopping suggests that m-shoppers are simultaneously stimulated to varying degrees by both utilitarian and hedonic shopping motives. *Utilitarian shopping values* represent the idea that a shopping activity is a work assignment motivated by the conscious pursuit of intended results to obtain products in an efficient and timely manner. In contrast, *hedonic shopping values* represent the belief that shopping is associated with joyful reactions and can thus provide amusement and inner worth as well as emotional benefits, such as the enjoyment that one experiences (Kim et al., 2015; Ono et al., 2012; Yang and Kim, 2012; Groß, 2015a).

Against the background of multidimensional shopping motivation, prior research on m-shopping exposes significant differences between m-shopper and non-m-shopper. In one of the first studies of this kind, Fenech (2002) reports that consumers who have a high level of intention to engage in m-shopping tend to be more price conscious, look more for convenience and variety, and buy more impulsively than their counterparts with a low level of m-shopping use intention. Regarding the time required for adoption, Kim et al. (2015) classify m-shoppers as either ‘early adopters’ or ‘late adopters’: while early adopters rate the simplicity of m-shopping significantly higher than the late ones do, late adopters assess m-shopping’s personalisation settings as being much more relevant to them. Ono et al. (2012) compared consumer motivations for browsing in online stores using mobile devices and motivations for browsing in physical stores. Their results suggest that both adventure and value motivations are important for mobile-based online store browsing, whereas the gratification motivation is important for browsing in physical stores. In addition, Park et al.’s (2015) results show that the high interactivity offered by smartphone shopping increases m-shoppers’ ‘smart shopper feeling’, whereby impulse buying and price disregard are more likely.

Comparing m-buyers’ and non-m-buyers’ shopping motivations, Yang and Kim (2012) suggest that m-buyers are savvy and active shoppers since they utilise the benefits of the m-shopping approach in an efficient search for better shopping ideas and information, but at the same time, they enjoy the exploration of the innovative shopping services offered. In detail, m-buyers show a significantly higher level of idea, efficiency, adventure, and gratification motivations than non-m-buyers do. In addition, Agrebi and Jallais (2015) found that m-buyers look for hedonic factors more than do non-m-buyers, whose shopping actions seem to be more task-orientated (i.e., driven by utilitarian factors). Since consumer behaviour is stimulated by various needs and motives, differences between m-buyers and non-m-buyers can be expected. These differences stem from their central shopping orientation.

2.4 Consumers’ media usage behaviour for online shopping

Nowadays, consumers – particularly digital natives – have more than just a single Internet-access device in use. They tend to use different devices such as smartphones, tablet computers, laptops, desktop computers, and/or smart TVs to go online and engage in various shopping activities (Hritzuk and Jones, 2014; Huang et al., 2017). To keep pace and meet the ever-growing demands of multiple touchpoints, retailers have to act across each channel to establish a holistic online shopping experience. Multi-screen engagement is therefore expected to be the rule rather than the exception: shopping behaviour is still changing and shifting towards a multi-device usage (Wagner et al., 2013; Holmes et al., 2014; Rodríguez-Torrico et al., 2017; Singh and Swait, 2017; Huang et al., 2017).

In other words, omni-channel shopping is mainstream among digital natives, especially those who like to shop on their smartphone (Nielsen, 2016). In this context, Huang et al.’s (2016) study results emphasise that the mobile channel (comprising both smartphones and tablets) is cannibalising the web channel (using laptops or desktop computers), and that the mobile channel is decreasing the web channel’s monthly purchase frequency and amount. In contrast to web shopping, mobile device shopping promotes the purchase of fewer experimental items, and fewer items in each transaction. Wang et al.’s (2015) results are more or less similar: they suggest that m-buyers tend to

purchase habitual items that they have already purchased before, and they prefer to make m-purchases from retailers with whom they have previous experience. Since mobile and web shopping differ in their utility along the search dimensions, more and more consumers are switching their devices during shopping to omni-channel shopping. In this context, Singha and Swait's (2017) findings suggest that relative to other channel combinations, the choice of channel combinations that include mobile devices increases with an increase in perceived search convenience of mobile devices. While m-shopping increases due to search convenience (particularly for utilitarian products), web shopping is attractive due to the perceived advantage of a price comparison search.

Moreover, according to Holmes et al. (2014), the most frequent location of m-shopping is at home. This is in line with the finding that the highest level of mobile device use when m-shopping occurs in the information search and consideration stages, rather than in the purchase transaction stage. The use of mobiles for purchasing is significant, but remains lower than the use of computers in purchasing; this is because consumers' confidence in m-shopping in general has still not reached that of web shopping (Holmes et al., 2014). Focusing on the mobile channel only, Sohn et al. (2017) have proposed that tablet shoppers feel more satisfied than smartphone shoppers because they perceive mobile online shops as less visually complex, while the smartphone-based shop version is negatively affected by spatial crowding, thereby causing complexity. M-shopping is thus different from regular (web) shopping, as it involves a combination of different technologies, competencies, and meanings; shopping using mobile phones reconfigures not only the activities involved in shopping, but also the elements of the practice of shopping (Fuentes and Svingstedt, 2017).

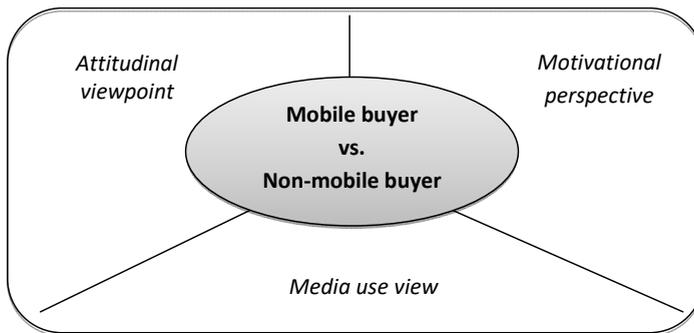
In contrast to the trend of multi-device usage, however, Ball-Rokeach and Defluer's (1976) media dependency theory emphasises that the more consumers are dependent on a certain medium, like the smartphone, to meet their needs (e.g., information, communication, and sharing), the more important that medium will be to these consumers for other activities, like shopping. Hence, it is expected that digital natives use different devices to go online, but some prefer one device to others for their online purchases or simply for entertainment purposes (e.g., Rippé et al., 2017; Akçayır et al., 2016). Nowadays, smartphones in particular are considered to be the first point for requesting and consuming information, communicating, and using location-based services (Fuentes and Svingstedt, 2017; Cliquet et al., 2014). This further suggests that the smartphone is becoming more prominent for digital consumers as a shopping companion that assists in pre- and post-purchase activities, and as a facilitator tool at the purchase stage of physical shopping.

2.5 Framework and research questions

To date, there is no complete diffusion of m-buyers across markets. While digital natives heavily engage in m-shopping for pre- and post-purchase activities, they do not make m-purchases in the same manner; thus, the market potential is far from being exhausted (Nielsen, 2016). This raises the question of *why* this is the case. This paper aims to provide an appropriate answer to this, focusing on consumers' differences. As the literature review has shown, limited research attention has been paid to investigating and explaining differences between m-buyers and non-m-buyers on a general basis. This gap will be better closed by the results of the present study. Figure 1 shows that the focal

point of research comprises three parts (attitude, motive, and media usage), each of which is considered for the following reasons:

Figure 1 Focal point of research regarding m-shopping



2.5.1 Attitudinal viewpoint on m-shopping

A consumer's attitude towards m-shopping is regarded as a key factor to determine his or her (behavioural) intention, and is therefore considered here as starting point. As described above, however, prior research has only focused on the positive (rather than on both the positive and negative) effects caused by attitude, thereby involving a pro-innovation bias to a certain degree (Groß, 2015a; Marriott et al., 2017). Thus, the most common m-shopping research practices so far imply that consumers have a generally positive attitude towards m-shopping and, consequently, that they will sooner or later engage in, rather than reject, m-shopping activities. However, in the present context, serious attitudinal differences between m-buyers and non-m-buyers are expected, since prior studies show mixed results. For instance, some show that particularly for novice m-shoppers (and thus for non-m-buyers too), attitudes towards m-shopping are more affected by affective aspects (like emotions and feelings) than by cognitive elements (like knowledge about advantages and benefits) (e.g., Lu and Su, 2009; Yang, 2012). By contrast, others contend that cognitive elements are more important for inducing a positive attitude in novice m-shoppers than in versed ones (Ko et al., 2009; Kumar and Mukherjee, 2013; Groß, 2015b). Finally, a third group of studies show that both affective and cognitive parts are highly important to affect the attitudes of m-shoppers, and more so than for those of non-m-shoppers (Bigné et al., 2007).

As a consequence, we do not know exactly what differences are common when it comes to digital natives, but we do expect dissimilarities, particularly when we compare the attitudes of m-buyers and non-m-buyers towards m-shopping in general. More precisely, differences regarding cognitive and affection elements might be significant and thus contribute to a better understanding of m-buyers and m-non-buyers, since this is still under-researched (see Section 2.2).

Therefore, in contrast to earlier research (e.g., Agrebi and Jallais, 2015; Bigné et al., 2007), we focus only on differences between m-buyers and non-m-buyers and compare their attitudes towards m-shopping to answer the following question:

- Research question #1: To what extent do m-buyers' and non-m-buyers' attitudes towards m-shopping differ from each other?

Based on the previous research on consumer attitude, a multidimensional construct of attitude is needed in which both affective and cognitive aspects form a conative component that, in turn, leads to understanding the differences in behavioural tendencies (Kumar and Mukherjee, 2013). Closely connected to the impact of both affective and cognitive attitudinal components as a predictor for behavioural tendency are consumer m-shopping perceptions regarding utilitarian and hedonic shopping values alike.

2.5.2 Motivational perspective of m-shopping

Consumers' motivation is another part of the research interest in this study, since the intention to engage (or not to engage) in m-shopping is triggered by certain driving forces. Compared to the mature environment of online shopping using a laptop or desktop computer, m-shopping via smartphone or tablet is less locally restricted and offers convenient and time-saving access to shopping activities (Wang et al., 2015). Moreover, according to Rodríguez-Torrico et al. (2017), m-shopping is characterised by impulsive interaction that suit to fit urgent needs on the go, whereas online shopping takes longer, entails higher cognitive engagement, and is done more for complex products about which more detailed information is needed in advance.

Motives, and especially consumers' preferred shopping orientation in this research context, can be regarded as energised driving forces of behaviour that bring consumers to the mobile marketplace to satisfy their internal needs (Sheth, 1983). Because consumer m-shopping behaviour is stimulated by different needs and motives, differences between m-buyers and non-m-buyers are expected (Yang and Kim, 2012; Shang and Wu, 2017) for the following five motives.

- *Flexibility*: one of the primary benefits of m-shopping is the ubiquitous shopping experience that is not restricted to any time or location. M-shopping is therefore predestined to fulfil consumers' desire for independence, in particular when it comes to a purchasing task. Moreover, the high level of mobility through the use of smartphones enables m-buyers to use mobile-based shopping tools and services along the whole path-to-purchase at their pleasure (Hubert et al., 2017; Kim et al., 2015). Thus, the users' value perception of m-shopping mobility might be one reason why m-buyers and non-m-buyers differ. In other words, the desire for more flexibility in shopping is probably higher for m-buyers than for non-m-buyers.
- *Convenience*: closely linked to the flexibility aspect, shopping convenience is another central benefit of m-shopping over traditional shopping (e.g., in-store shopping). With m-shopping, the convenient access to the Internet via a mobile device reduces both the physical and mental effort involved in shopping activities (Thakur, 2016; Fenech, 2002). Thus, the mobile channel provides m-buyers with convenient and time-saving access to endless consumption possibilities that best fit their daily shopping habits (e.g., when searching for information or when comparing and evaluating alternatives on the spot) and purchase patterns. Both the information richness and time convenience aspects of the mobile channel simplify the shopping experience (Kim et al., 2015). This makes shopping more efficient and can be considered as a plausible reason why certain types of people – those who value this convenience – are so attracted to buying online, and therefore become regular m-buyers.

- *Price*: among other things, the desire to economise on shopping expenditures is a further critical driver for m-shopping (Fenech, 2002; Aldás-Manzano et al., 2009). Having a smartphone at hand anywhere, m-buyers may like the idea of checking and comparing prices on the spot whenever they need price information more than non-m-buyers do. Once they identify a price difference, m-shoppers can easily switch between shopping options (e.g., brick-and-mortar stores or online shops) to secure the best deal. Moreover, price benefits can also be realised in situations where retailers promote special pricing or coupons for mobile users only based on their identified current location (Thakur, 2016; Natarajan et al., 2017). By allowing users to obtain the best value for money while on the move, the use of smartphones stimulates consumers to become smart m-buyers whose motivations are not only monetary savings but are also saving time and effort (Park et al., 2015). Thus, it seems that many more m-buyers than non-m-buyers are sensitive to price.
- *Enjoyment experience*: m-shopping also involves a broad range of enjoyable shopping experiences (e.g., Yang and Kim, 2012), and one shopper may like to engage in m-shopping activities more heavily than another. Having emotional experiences when using a smartphone can induce a customer to engage in m-shopping more extensively. Customers, and in particular m-buyers, may thus use their mobile device in certain shopping situations to satisfy different motives, since the creation of higher emotional value is expected (Thakur, 2016). When on the move, m-buyers may prefer to use their smartphone to make a purchase directly, while non-m-buyers prefer to spend more time browsing online for goods to kill time, to have fun, and to be entertained (Hillman and Neustaedter, 2017). However, the more time a mobile consumer spends m-shopping, the higher the likelihood of an m-purchase is. All in all, conducting buying tasks on a smartphone creates more pleasure for m-buyers than for non-m-buyers.
- *Variety-seeking*: m-shopping paves the way for permanently informed consumers and, at the same time, offers various possibilities for purchasing and thus stimulates variety-seeking behaviour. Compared to non-m-buyers, however, m-buyers might enjoy browsing the Internet and mobile-optimised online stores more to obtain new (product and service) information and to stay up to date about the latest fashion trends (Yang and Kim, 2012; Fenech, 2002). Consequently, consumers with a high variety-seeking propensity tend to more often be m-buyers than non-m-buyers (Yang and Kim, 2012).

Considering all five motives together for our analysis not only respects consumers' multi-optionality of shopping behaviour, but also helps to differentiate m-buyers and non-m-buyers from each other to a greater extent (e.g., Shang and Wu, 2017; Yang and Kim, 2012; Kim et al., 2015). This leads to the second research question:

- Research question #2: To what extent do m-buyers and non-m-buyers differ from each other in terms of their central shopping motives?

2.5.3 Media usage behaviour for online shopping

Various studies on consumers' media usage behaviour suggest further differences between m-buyers and non-m-buyers. Nowadays, the use of more than one internet-enabled device for engaging in online shopping is a widespread practice among many consumers, and particularly among digital natives (Holmes et al., 2014; Nielsen,

2016; Singh and Swait, 2017; Newman et al., 2018). The media dependency theory underlines that the more consumers are dependent on a certain medium, like a smartphone, to meet their needs (e.g., information, communication, and sharing), the more important that medium will be to these consumers for other activities, like shopping (Ball-Rokeach and Defluer, 1976). While some consumers prefer smartphones for that reason, others may like tablets or laptops more for their buying tasks (e.g., to consume information that facilitates their shopping efforts and helps them to make a purchase). However, particularly between m-buyers and non-m-buyers, some disparities in their media shopping behaviour can be expected since the differentiation between them is caused by their relationship with their smartphone (Yang and Kim, 2012; Huang et al., 2017).

Consequently, contrary to non-m-buyers, m-buyers might prefer to complete an m-purchase using a device such as a smartphone or a tablet because it can be used with practically no restrictions on location, thus allowing for shopping on the move. According to Table 1, this can be expected because each device differs more or less from the others as far as feature characteristics are concerned, of which the most important aspect is the mobility constraint. Moreover, because the consumer perceives different advantages and disadvantages conditioned by each device and its central attributes (e.g., screen size, utilisation, location use, touchpoints, etc.) and capabilities (e.g., mobility, availability, functionalities, etc.) for shopping tasks, we expect further discrepancies between m-buyers and non-m-buyers.

Table 1 Characteristics of internet-enabled devices

Device characteristics	 Desktop computer	 Laptop	 Tablet	 Smartphone
Display size (diagonal)	15–30"	11–17"	7–10"	3–5"
Location level restriction for shopping engagement	Highly restricted to location		Low restrictions to location (ubiquitous)	
Preferred handling	Keyboard, mouse	Keyboard, mouse, touchpad	Touchscreen	Touchscreen
Mainly utilisation	Work, leisure	Work, leisure	Leisure	Leisure
Shopping touchpoints	Websites (regular)	Websites (regular)	App, websites (regular, mobile optimised)	App, websites (regular, mobile optimised)
Shopping usage time	Some minutes up to hours, for specific tasks	Some minutes up to hours, for specific tasks	Several minutes, mostly in the evening	Few minutes, frequently during the day
Shopping usage modus	Tend to be more lean-back		Tend to be more lean-forward	

Source: Modified by Wagner (2015)

Thus, the third research question addresses this aspect and extends the viewpoint of existing studies (see e.g., Singh and Swait, 2017; Rodríguez-Torrico, et al., 2017; Wang et al., 2015; Holmes et al., 2014):

- Research question #3: To what extent do m-buyers and non-m-buyers differ from each other regarding their media usage behaviour?

3 Research methodology and results

3.1 Data sample choice and description – generation Z

Given the nature of the different areas of research interest, three studies have been conducted as part of an omnibus survey. The required participants were recruited by using three convenience samples that focused solely on undergraduate students in Germany. Particular emphasis was placed on addressing both *m-buyers* (people who are accustomed to using their smartphone to conduct m-purchases) and *non-m-buyers* (people who use smartphones for a variety of shopping activities to assist their shopping trips but who have not made a purchase online via smartphone at all). Therefore, each study involved a certain participant screening procedure to guarantee sample differences. More specifically, smartphone users were asked a screening question intended to determine whether they had ever purchased an item online using their mobile devices. Based on their response, consumers were then divided into two groups: m-buyers and non-m-buyers.

Although studies #1 and #2 use a relatively old data set, the results of both considered constructs relating to ‘attitude’ and ‘motive’ are regarded as time-stable personal traits (Zaichkowsky, 1994; Gatignon and Robertson, 1985). Therefore, all three data sets offer valuable insights for academics and practitioners due to the way in which the data are used and analysed in this study to obtain consumer insights (see Table 2).

Table 2 Sample characteristics of each study ($n = 807$)

	<i>Study #1</i>	<i>Study #2</i>	<i>Study #3</i>
Data collection	Summer 2015	Summer 2015	Summer 2016
Survey kind	Paper-based	Paper-based	Online-based
Sample size	$n = 263$	$n = 153$	$n = 391$
M-buyers	($n = 128$)	($n = 84$)	($n = 189$)
Non-m-buyers	($n = 135$)	($n = 69$)	($n = 202$)
Gender proportion	51.5% male 48.5% female	41.8% male 58.2% female	37% male 63% female
Age (mean value)	Ø 22.33 (S.D. 2.62) (18–25: 90.4%)	Ø 21.90 (S.D. 1.12) (18–25: 92.1%)	Ø 22.16 (S.D. 2.93) (18–25: 88.3%)

Table 2 presents the sample characteristics. These show that each study can be assigned to the population of the so-called ‘generation Z’, since across every sample no respondents were older than 27 years and approximately 90% of them were 25 or

younger when the survey took place. According to the literature, generation Z describes a young generation of adults who were born in 1995 or later (Priporas et al., 2017; Akçayır et al., 2016; Selwyn, 2009).

In contrast to any previous cohorts, like the millennials ('generation Y'), members of generation Z are the first to be born into the digital world and to live online, sharing every detail of their personal lives across dozens of social platforms by using multiple connected Internet devices. Thus, generation Z, also referred to as digital natives (Selwyn, 2009; Bernstein, 2015; Priporas et al., 2017), is not to be confused with digital immigrants, who have had to acquire the proper use of digital technology (such as the use of a smartphone) in adulthood (Prensky, 2001).

Digital natives are not just full-fledged, technologically savvy people who are opened-minded when it comes to new trends and innovations, but they are also multi-tasking, versatile, and respond to a variety of digital interactions, since they see technology as an instrument for their use (Bernstein, 2015; Priporas et al., 2017; Akçayır et al., 2016). Moreover, digital natives socialise differently than earlier generations: they are less loyal to retailers and care more about their shopping experience. They also strive for instant gratification and frequent rewards due to their voracious appetite for technology use (Richard and Meuli, 2013).

This study exclusively uses data from the same generational cohort (generation Z) to identify differences between m-buyers and non-m-buyers. Therefore, the results should not be greatly influenced by external aspects that might cause differences in the access to information and communication technologies between m-buyers and non-m-buyers, such as the so-called 'digital divide' (Lissitsa and Kol, 2016; Lee et al., 2015) or gaps in consumers' knowledge about how to utilise media for shopping (Nielsen, 2016), since these aspects cause diverse media consumption patterns across different generational cohorts. Gaps seem to be marginal between digital natives and millennials, but are much greater when comparing the former to other generations, like the baby boomers. However, while this might be true on a cohort level, it does not count on an individual level since exception proves the rule.

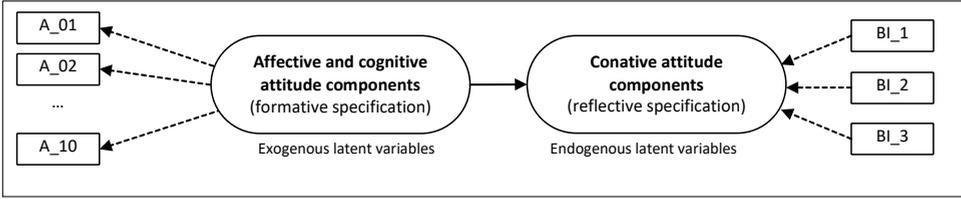
To answer the research questions, three empirical studies have been conducted. The selected methodological approaches are first presented separately, before discussing the results together.

3.2 Study #1 – attitudinal viewpoint on m-shopping

3.2.1 Measures

Because a multidimensional attitudinal construct with all relevant attitude facts (i.e., affective, cognitive, and conative components) is preferred here, a measurement approach based on the so-called 'two-component model' is used (see Figure 2). This approach not only makes it possible to combine both affective and cognitive attitudinal components with the conative component, but also provides more realistic insight to help predict behavioural intentions of m-buyers and non-m-buyers and the differences between their intentions. While the construct-level analysis refers to the two-component model, the item-level responses to a more psychometric analysis (Gottschall et al., 2012). Furthermore, to respect the content validity of the multidimensional construct, this study applies measures using multiple items adapted from previous studies.

Figure 2 Multidimensional attitudinal construct

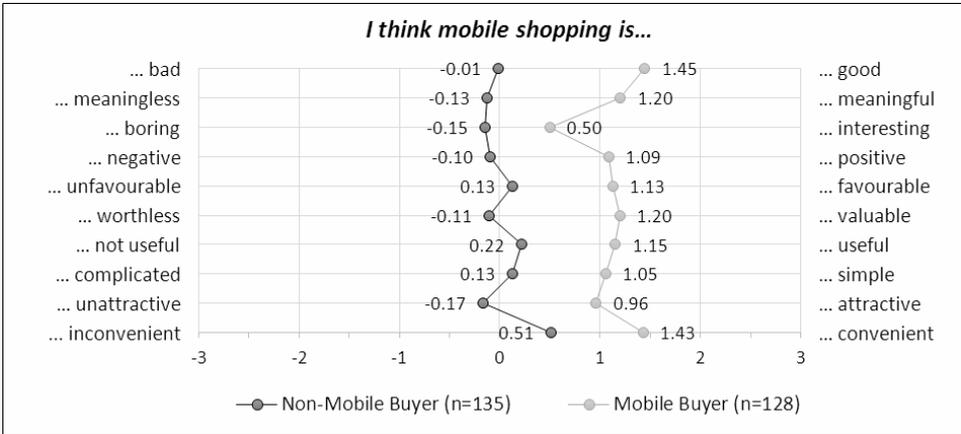


As is depicted in Figure 2, the exogenous latent variable that evaluates affective and cognitive attitude facets uses Zaichkowsky’s (1994) personal involvement inventory scale (see also Bigné et al., 2007; Aldás-Manzano et al., 2009) for a similar measurement approach). The conative attitude component, which refers to the consumers’ behavioural intention as the endogenous latent variable, is based on the measurements developed by Lu and Su (2009) and Yang (2012). Embedded in the two-component model, Zaichkowsky’s (1994) measurement approach suggests a formative specification of the considered measures that uses a seven-point semantic differential scale with bipolar labels ranging from –3 to 3 (e.g., bad-good, unattractive-attractive), while the construct ‘behavioural intention’ is specified in a reflective way and is based on a seven-point Likert scale ranging from 1 (‘strongly disagree’) to 7 (‘strongly agree’). Therefore, the measurement errors in a formative construct are based on the items, whereas in a reflective approach, the measurement errors are related to the construct (Diamantopoulos and Winklhofer, 2001).

3.2.2 Analytical approach

To make the small but fine differences visible between m-buyers and non-m-buyers, the psychometric analysis focuses first on the item level using semantic differentials (Gottschall et al., 2012). The analysis step is done separately for the affective and cognitive attitudinal components, using IBM Statistics SPSS 17.

Figure 3 Semantic differentials of affective and cognitive attitudinal components



According to Figure 3, the non-m-buyers’ attitude towards m-purchasing is neither positive nor negative. While non-m-buyers’ values therefore tend to be a middle

(‘neutral’) evaluation, the m-buyers seem to have a thoroughly favourable attitude. In this case, it is notable that both group’s profile structure is different, since a series of t-tests reveal significant differences at least at a p -value of 5% for each pair of indicators (e.g., bad-good), as listed in Figure 3.

With respect to two-component model approach, however, combining both the affective and cognitive attitudinal components with the conative component using the structural equation modelling (SEM) technique yields a different picture. Considering that the structure model composes a formative-specified construct (comprising the affective and cognitive aspects) and a reflective-specified construct (reflecting the conative aspects), a two-step approach is recommended to assess the results as follows: in the first step, each measurement model is examined to test its validity; then, in the second step, the structure model is examined to test the research model and its underlying hypothesis (Wong, 2013).

Table 3 Verification of the reflective measurement model

Behavioural intention to use	Mobile buyer (n = 128)				Non-mobile buyer (n = 135)				MGA ⁵
	Factor loading (t-value ¹)	CR ²	α^3	AVE ⁴	Factor loading (t-value ¹)	CR ²	α^3	AVE ⁴	
BI1	0.785 (12.477)	0.907	0.845	0.764	0.758 (7.462)	0.915	0.860	0.781	0.689
BI2	0.795 (14.216)				0.792 (9.966)				0.308
BI3	0.825 (12.571)				0.898 (10.769)				0.724

Notes: ¹Based on the bootstrap re-sampling procedure with 5000 samples; items wording is as follows: BI1: given the chance, I intend to shop with my mobile phone; BI₂: assuming that I had access to mobile shopping services, I intend to shop via my mobile phone; BI3: I intend to make mobile purchases in the future.

²CR = Composite reliability

³ α = Cronbach’s alpha

⁴AVE = Average variance extracted

⁵MGA = Multi-group analysis.

Using SmartPLS (version 3.2.5), the verification assessment of the reflective-specified measurement model supports sufficient statistical power regarding reliability and validity (see Table 3 for composite reliability, Cronbach’s alpha, and average variance extracted). The same applies to the validation assessment of the formative-specified measurement models, since neither of the two data samples is significantly affected by multicollinearity problems (see e.g., the variance influence factor; VIF < 5).

Moreover, the model’s outer weights indicate that different attitudinal indicators are significant across both samples (see Table 4). While m-buyers’ attitude towards m-shopping is strongly associated with affective aspects [e.g., m-shopping seems to be ‘good’ ($\omega = 0.755$, p -value < 0.01) and ‘interesting’ ($\omega = 0.394$, p -value < 0.05)], non-m-buyers’ attitude is influenced by cognitive value associations [e.g., m-shopping is ‘simple’ ($\omega = 0.681$, p -value < 0.01), ‘not useful’ ($\omega = -0.482$, p -value < 0.1), ‘valuable’, ($\omega = 0.414$, p -value < 0.1), and, of course, ‘good’ ($\omega = 0.351$, p -value < 0.1)].

Table 4 Verification of the formative measurement model

<i>Attitude construct indicates</i>	<i>Mobile buyer (n = 128)</i>			<i>Non-mobile buyer (n = 135)</i>			<i>MGA³</i>
	<i>Indicator weights</i>	<i>t-value¹</i>	<i>VIF²</i>	<i>Indicator weights</i>	<i>t-value¹</i>	<i>VIF²</i>	<i>P</i>
bad – good	0.755***	4.910	1.831	0.351*	1.617	2.024	0.065*
meaningless – meaningful	–0.013	0.063	2.599	–0.289	0.881	3.316	0.245
boring – interesting	0.394**	2.231	2.075	0.114	0.482	2.230	0.173
negative – positive	0.199	1.010	2.919	0.247	1.003	2.259	0.561
unfavourable – favourable	–0.010	0.051	2.791	0.077	0.313	3.008	0.609
worthless – valuable	–0.135	0.586	2.884	0.414*	1.382	4.359	0.925*
not useful – useful	–0.076	0.370	2.906	–0.482*	1.616	3.405	0.133
complicated – simple	0.059	0.347	2.218	0.681***	3.873	1.844	0.994***
unattractive – attractive	0.038	0.216	2.479	0.203	1.041	1.905	0.735
inconvenient – convenient	–0.027	0.144	2.603	–0.144	0.631	2.237	0.351

Notes: ¹Results based on the bootstrap re-sampling procedure with 5,000 samples:

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (one-sided).

²VIF = Variance inflation factor; condition index (CI) for m-buyer (CI = 7.992) and non-m-buyer (CI = 6.257).

³MGA = Multi-group analysis.

Table 5 Two-component model and its convergent validity

<i>Path relationship and construct specification</i>	<i>Mobile buyer (n = 128)</i>			<i>Non-mobile buyer (n = 135)</i>			<i>MGA²</i>
	<i>Path coefficient</i>	<i>t-value¹</i>	<i>R² (f²)</i>	<i>Path coefficient</i>	<i>t-value¹</i>	<i>R² (f²)</i>	<i>P</i>
Attitude (formative) → BI (reflective)	0.644***	12.965	0.415 (0.762)	0.448***	6.533	0.201 (0.416)	0.007

Note: ¹Results based on the bootstrap re-sampling procedure with 5,000 samples:

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (one-sided); ²MGA = Multi-group analysis.

Table 5 shows the convergent validity of both attitudinal constructs, since the correlation (path coefficient) between the latent variables within the model approach consists of highly significant correlations ($\beta_{\text{M-buyer}} = 0.644$, p -value < 0.001 vs. $\beta_{\text{Non-m-buyer}} = 0.448$, p -value < 0.001) and causes an R^2 above 0.4 and 0.2, respectively, in the sample cases, finally providing satisfactory criteria for the measurement approach.

3.2.3 Results

The empirical results support the underlying assumption that m-buyers and non-m-buyers differ in terms of their attitudinal pattern. In particular with regard to the MGA results obtained using the PLS-MGA² approach, several statistically significant differences across the two data samples exist in the construct weights and in the path coefficient comparisons (see Table 4 and 5 again).

While m-buyers think m-shopping is a very ‘good’ approach to purchasing (MGA, p -value = 0.065), non-m-buyers perceived it as a ‘simple’ (MGA, p -value = 0.994) and ‘valuable’ (MGA, p -value = 0.925) shopping alternative. Thus, m-buyers’ attitude

towards m-shopping is more stimulated by affective rather than cognitive elements. Furthermore, the two-component model approach reveals an important difference: an m-buyer's intention to engage in m-shopping (conative perspective) is stronger than that of a non-m-buyer. This is not a surprising result, since the data sample is based on m-buyers and non-m-buyers; anything else would imply a bias.

However, this outcome is different to previous results by Bigné et al. (2007) and Yang (2012), for instance, who found that m-shoppers generally show a more positive attitude towards purchasing through the m-channel than non-m-shoppers do regardless of cognitive, affective, or conative attitudinal components. Therefore, the present result helps to explain m-shopper differences to a greater extent.

More specifically, to convince a non-m-buyer to become an active m-buyer, both marketers and retailers should focus on marketing practices that improve the apparent usefulness of m-shopping and m-purchasing – especially consumers' perception of their usefulness, value, and simplicity (in terms of usability). In particular, the importance of usefulness as a key driver of positive m-buyer attitudes towards the m-shopping environment has previously been supported (see e.g., Pantano and Priporas, 2016; Ko et al., 2009).

For the aforementioned purpose, both marketers and retailers may communicate with more emphasis on the comparative advantages of m-shopping to promote this option as a viable shopping alternative in for non-m-buyers the future. Once consumers become convinced m-buyers, however, marketing practices have to improve the m-shopping experience. This should involve activities not limited to rational aspects: the emotional side must also be addressed if the consumers' interests are to be captivated at all. These suggestions are in accordance with those of Agrebi and Jallais (2015); they claim that m-buyers look more for hedonic factors than non-m-buyers do, whose actions are task-orientated and based more on utilitarian factors (the perceived usefulness of m-shopping).

3.3 Study #2 – motive-based perspective of m-shopping

3.3.1 Measures

This analysis involves five shopping motives that are considered to be relevant stimuli of engaging in m-shopping (see Section 2.5 again for a theoretical discussion). All shopping motive constructs have been adopted from previous literature to ensure content validity (Fenech, 2002; Schröder and Zaharia, 2008). Apart from consumers' flexibility orientation (based on a single-item approach), each construct is measured reflectively with multiple items based on a seven-point Likert-type scale ranging from 1 ('strongly disagree') to 7 ('strongly agree'). As presented in Table 6, consumers' orientation in relation to price, convenience, and experience is measured with a scale previously used by Fenech (2002), while both variety-seeking propensity and flexibility orientation are measured using the scale proposed by Schröder and Zaharia (2008). Thus, the motives have the following meaning: *price-orientated* relates to consumers' price-consciousness, *experience-orientated* covers hedonic consumers' wishes, and *variety-seeking* refers to consumers' desire for alternative consumption possibilities. Moreover, *convenience-orientated* characterises consumers' wish for convenient access to the online shopping environment, while *flexibility-orientated* refers to the desire for shopping with no time or location constraints via mobile devices.

Table 6 Measures assessment of m-shopping motivation ($n = 153$)

<i>Construct and items used for measuring shopping motivation</i>	<i>Mean (S.D.)</i>	<i>Factor loadings</i>	<i>Variance explained</i>	<i>Cronbach's alpha (α)</i>
<i>Price-orientated (Fenech, 2002)</i>				
PO1: I usually purchase the least expensive item.	3.62 (1.64)	0.577	66.661%	0.500
PO2: I usually compare prices to get optimal value for money.	4.68 (1.70)	0.577		
<i>Convenience-orientated (Fenech, 2002)</i>				
CO1: I try to complete my purchasing tasks as quickly as possible.	4.57 (1.94)	0.752	78.315%	0.718
CO2: I always want to make many purchases in a short amount of time.	3.88 (1.68)	0,752		
<i>Experience-orientated (Schröder and Zaharia, 2008)</i>				
EO1: Shopping is a kind of leisure activity for me.	3.84 (2.12)	0.682	82.579%	0.783
EO2: I make purchases to experience something.	3.59 (1.80)	0.682		
<i>Variety-seeking propensity (Fenech, 2002)</i>				
VP1: I always like to try new products.	4.16 (1.59)	0.807	82.579%	0.783
VP2: Variety is important for my purchase.	4.17 (1.61)	0.807		
<i>Flexibility-orientated (Schröder and Zaharia, 2008)</i>				
FO1: I prefer purchasing without location and time restrictions.	4.59 (1.90)	Single-items construct		

Consequently, contrary to study #1, study #2 applies generally formulated shopping motives (for m-shopping stimuli) that can also be used to the context of in-store shopping or online shopping alike. The shopping motives are therefore not directly related to m-shopping (as it is the case for study #1), but to consumers' general shopping orientation.

3.3.2 Analytic approach

To analyse any motive-related differences between m-buyers and non-m-buyers, a multi-step approach is applied. First, reliability and validity tests are conducted followed by a series of t-tests (Fenech, 2002) for a separate assessment of each motive, and a multi-discriminant analysis to differentiate between m-buyers and non-m-buyers. For this purpose, consumers' classification ('m-buyers' and 'non-m-buyers') is used here as a dependent variable, since consumers' initial perceptions and motivation for m-shopping adoption may vary depending on their level of experience (Yang and Kim, 2012). Hence, the shopping motives represent the independent variables.

All analytical steps are conducted using IBM Statistics SPSS 17. The statistical results presented in Table 6 demonstrate that for each construct, all relevant reliability and validity criteria of fit are nearly met (i.e., factor loadings, Cronbach's alpha, and the

explained variance), thus suggesting satisfied measurement models for all five shopping motives (Hair et al., 2010).

Table 7 Factor structure of shopping motives

<i>Constructs/ items</i>	<i>Convenience- orientated</i>	<i>Variety- seeking propensity</i>	<i>Experience- orientated</i>	<i>Price- orientated</i>	<i>Flexibility- orientated</i>	<i>Communalities</i>
CO2	0.921	0.102	0.192	-0.002	0.247	0.864
CO1	0.874	0.130	-0.259	0.141	0.222	0.790
VP1	0.242	0.815	0.248	-0.366	0.189	0.922
VP2	0.281	0.810	0.151	-0.059	0.046	0.760
EO1	0.231	0.187	0.750	0.002	0.063	0.805
EO2	-0.041	0.022	0.726	-0.179	0.194	0.752
PO2	0.188	0.248	-0.209	0.735	0.106	0.904
PO1	0.238	0.101	-0.148	0.719	0.260	0.764
FO1	0.301	0.116	-0.053	-0.114	0.662	0.748
Eigen value	2.767	1.781	1.192	1.104	1.041	
Explanation of variance (cumulative)	30.748% (30.748%)	19.792% (50.540%)	13.249% (63.789%)	9.983% (73.773%)	7.491% (81.268%)	

Notes: Extraction method based on principal component analysis with varimax rotation in which the rotation is converged in five iterations; Kaiser-Meyer-Olkin measure of sampling adequacy is 0.665. Bartlett's Test of Sphericity is significant $\chi^2 = 336.972$, $df = 36$, $p \leq 0.001$.

Furthermore, an exploration factor analysis confirmed the results of a one-dimensional factor structure with relatively low cross-loadings (see Table 7). Therefore, discriminate validity was also established: all five shopping motives were accountable for approximately 81% of the variance, and thus have sufficient statistical power.

Table 8 Paired sample *t*-tests for equality buyer characteristics

<i>M-shopping motivation</i>	<i>Mobile buyer (n = 84) Mean (S.D.)</i>	<i>Non-mobile buyer (n = 69) Mean (S.D.)</i>	<i>t-value¹ (two-tailed)</i>
Price	4.27 (1.40)	4.00 (1.32)	1.244 (p = 0.218) n.s.
Convenience	4.34 (1.59)	4.08 (1.61)	0.988 (p = 0.320) n.s.
Variety-seeking	4.32 (1.45)	3.98 (1.23)	1.561 (p = 0.151) n.s.
Experience	4.02 (1.71)	3.34 (1.81)	2.396 (p = 0.018)*
Flexibility	4.92 (1.81)	4.15 (1.94)	2.519 (p = 0.013)*

Note: ¹ $p < 0.05$; n.s. not significant.

Considering the results in Table 8, m-buyers tend to be more highly motivated to m-shop since their shopping level shows the highest value across all motives. Analogous to previous studies (e.g., Fenech, 2002; Agrebi and Jallais, 2015), however, a series of *t*-tests using the mean value of each shopping motive suggests that significant differences

between m-buyers' and non-m-buyers' motivations only exist in terms of experience and flexibility.

Extending the meaningfulness of the results by considering shopping motives in greater detail, a discriminant analysis is conducted. The results listed in Table 9 indicate a significant discriminant function (i.e., Wilks' Lamda: 0.920 and χ^2 : 12.442 ($df = 5$) at p -value = 0.029). Consumers' classification (m-buyers vs. non-m-buyers) is used as the dependent variable, while shopping motives act as independent variables. The canonical correlation is 0.283; the five shopping motives explain 8.7% of the variance in the dependent variable (see e.g., Yang and Kim, 2012).

Table 9 Results of discriminant analysis

<i>Shopping motivation orientation</i>	<i>Standardised canonical coefficient</i>	<i>Discriminant loading (structure loadings)</i>
Flexibility	0.665	0.693
Experience	0.804	0.660
Variety-seeking	-0.225	0.430
Price	0.196	0.341
Convenience	0.138	0.275

Note: Wilks' Lamda: 0.920 and χ^2 : 12.442 ($df = 5$) at p -value = 0.029.

Both the canonical discriminant function coefficients and the discriminant function loadings support the results presented in Table 9, in which the flexibility and experience motives are the most important to discriminate between m-buyers and non-m-buyers. Nonetheless, since loadings are more valid than canonical coefficients in prediction, both variety-seeking and price motives are also relatively important for discriminating purposes. In these four cases, the discriminant loadings are above the threshold value of 0.30, which implies sufficient discriminant power (Yang and Kim, 2012). As a consequence, convenience can be considered as a less important predictor variable to differentiate m-buyers and non-m-buyers from each other. In other words, convenience aspects seem to be relevant for both groups.

3.3.3 Results

The results suggest that four out of five motives are significant for discriminating between m-buyers and non-m-buyers, and that both flexibility and experience motives are by far the most important ones. Furthermore, the results of the multiple discriminant analysis show that m-buyers are ubiquity- and hedonism-driven because they enjoy the independent shopping options provided by mobile devices while on the move. In addition, contrary to non-m-buyers, m-buyers are also price sensitive, but they do not seek variety when engaging in m-shopping.

While this outcome is in line with the results of Shang and Wu (2017), differences compared to Yang and Kim's (2012) study findings are also detected. The latter found that for food m-shoppers, value for money is the most important factor in shopper satisfaction and strengthens the m-channel, in contrast to non-food m-shoppers (Shang and Wu, 2017). However, Yang and Kim (2012) stress that m-shoppers are stimulated by the idea of m-shopping, its efficiency, adventure, and gratification shopping elements more so than by achievement, social, role, and value shopping motives.

Finally, the results of this study further suggest that m-buyers do not rate the convenience aspect of their purchasing tasks more highly than non-m-buyers do. Differently put, convenient access to m-shopping with no time and location constraints seems to be a basic requirement for both m-buyers and non-m-buyers, as otherwise m-shopping would not be so useful. This is because no differences are found between the underlying convenience driving forces for m-buyers and non-m-buyers. Moreover, this is interesting because it confirms Kim et al.'s (2015) finding that there is no significant difference between early and late adopters, suggesting that the convenience value aspects remain stable before and after m-shopping adoption. All in all, each m-shopping motive provides useful insight into the understanding of m-buyers.

3.4 Study #3 – media usage view for online shopping

3.4.1 Measures

To investigate empirical consumer differences with regard to consumers' underlying media usage for online shopping, four common Internet-access devices are considered (i.e., smartphones, tablets, laptops, and desktop computers). It is not just consumers' media property that is of interest, but also their media usage behaviour when conducting online transactions. To obtain the desired data, a schema with yes-or-no answers was applied.

3.4.2 Analytic approach

A series of chi-square tests are performed with the use of IBM Statistics SPSS 17 again. Apart from the smartphone perspective, which is used here to differentiate between m-buyers and non-m-buyers, Table 10 shows the results of the chi-square tests between consumers' media property and media purchase behaviour. These suggest the following empirical outcomes.

Table 10 Media usages differences

Media	Mobile buyer (n = 189)		Non-mobile buyer (n = 202)		Media property ¹	Media purchase behaviour ¹
	Property	Purchase behaviour	Property	Purchase behaviour		
Smartphone	189	189	202	0	Not relevant due to sample choice	
Tablet	85	71	76	31	$\chi^2 = 2.178$; (p = 0.140) n.s.	$\chi^2 = 31.570$; (p ≤ 0.001)
Laptop	163	158	163	139	$\chi^2 = 2.358$; (p = 0.125) n.s.	$\chi^2 = 13.664$; (p ≤ 0.001)
Desktop computer	122	119	145	136	$\chi^2 = 2.170$; (p = 0.141) n.s.	$\chi^2 = 2.168$; (p = 0.141) n.s.

Note: ¹n.s. = not significant.

First, the media property comparison between m-buyers and non-n-buyers displays both sample distributions fairly uniformly in terms of tablets ($\chi^2 = 2.178$; p-value = 0.140), laptops ($\chi^2 = 2.358$; p-value = 0.125), and desktop computers ($\chi^2 = 2.170$; p-value =

0.141), as confirmed by the values obtained in the chi-square analysis. Second, the comparison of media usage for online shopping between m-buyers and non-m-buyers involves significant differences regarding tablets ($\chi^2 = 31.570$; p -value ≤ 0.001) and laptops ($\chi^2 = 2.358$; p -value ≤ 13.664) but not desktop computers ($\chi^2 = 2.168$; p -value = 0.141). In addition to smartphones, these results suggest that m-buyers use tablets and laptops significantly more than non-m-buyers do to engage in online shopping, implying that a high value emphasis is placed on flexibility and mobility.

3.4.3 Results

Although no differences are found between m-buyers and non-m-buyers in terms of their media propensity, there are significant differences regarding their media usage behaviour for online shopping: namely, between shopping on smartphones, tablets, and laptops. This outcome supports previous findings on the topic to a certain degree (see e.g., Rodríguez-Torrico et al., 2017; Singha and Swait, 2017; Huang et al., 2017; Wang et al., 2015; Holmes et al., 2014).

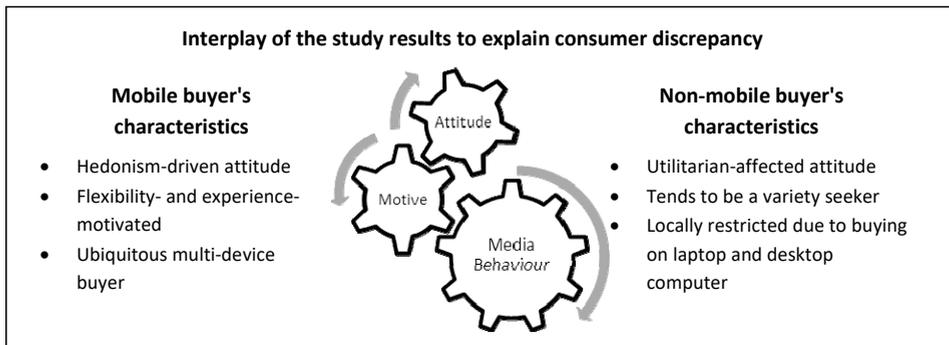
Examining our results in more detail, the empirical outcomes suggest that m-buyers are multi-device shoppers; they engage heavily in online shopping using media that are portable to a certain degree, so they are not restricted to a local environment. In other words, online shopping converts to m-shopping for digital natives. This is in line with Huang et al.'s (2017) finding that locally restricted devices like laptops or desktop computers are being replaced by smartphones as the preferred online shopping devices for young m-shoppers, but this does not indicate anything about the current non-m-shopper population.

Therefore, marketers and retailers should focus on multi-device strategies, implying an omni-channel approach that covers mobile and stationary devices to the same extent for m-buyers. Particularly to push non-m-buyers to m-shop, the marketing strategy should first focus on stationary devices.

4 Discussion

4.1 Conclusions and implications

Although the population of m-buyers is ever growing, a portion of consumers may still resist or even reject buying online using a smartphone. Because this reaction could be caused by many different factors and could hinder the marketing diffusion, this study not only sheds light on three aspects (attitude, shopping motive, and media usage behaviour) to obtain a better understanding of existing discrepancies between m-buyers and non-m-buyers, but it also aims to help marketers and retailers overcome the bias against innovation and to provide useful insights to help them push m-shopping acceptance. Comparing m-buyers with non-m-buyers (see Figure 4), the study results lead to different outcomes and implications.

Figure 4 Overview of study results

- *Attitudinal viewpoint:* Based on their m-shopping experience, m-buyer attitudes are more affected by emotional appeals, while the attitude of non-m-buyers towards m-shopping is mainly formed by rational and cognitive value perceptions. Thus, and in accordance with previous work (e.g., Agrebi and Jallais, 2015; Bigné et al., 2007), the distinction between m-buyers and non-m-buyers can be explained by missing experiences. Retailers and marketers should convince non-m-buyers to engage in m-shopping by highlighting functional comparative advantages that mobile media offer over traditional web shopping media, like the laptop and desktop. For m-buyers, marketing practices should cover emotional aspects to achieve valuable improvements (for more details, see Section 3.2).
- *Motive-based perspective:* M-buyers are most highly motivated by mobility and recreational experience aspects, and are clearly somewhat motivated by price-consciousness and habitual item purchases (this is similar to the outcomes of Shang and Wu (2017) and Yang and Kim (2012), as mentioned above). In contrast, due to their high variety-seeking trait, non-m-buyers seem to enjoy exploring new things, but they do not eventually make any m-purchases. Furthermore, since there are no differences between m-buyers' and non-m-buyers' convenience value perceptions, especially convenient access to m-shopping with no time and location constraints through mobile devices appears to be considered a basic requirement (for more details, see Section 3.3). Given these reasons for consumers' attitudinal dichotomy, retailers and marketers must focus on utilitarian and hedonic value aspects in the same vein to attract mobile natives. Providing a flexible and convenient user access across media, by which each media frontier supports both usefulness and enjoyment facets, m-buyers and non-m-buyers can both be stimulated to m-shop more since improvements for the two groups go hand in hand.
- *Media behaviour:* M-buyers are multi-device buyers. Apart from smartphone shopping, they also often use tablets and laptops for online purchases compared to non-m-buyers (see also Huang et al., 2017; Wang et al., 2015; Holmes et al., 2014). Therefore, retailers and marketers are strongly encouraged to run several touch points across mobile and stationary devices to reach m-buyers everywhere along

their shopping journey, while for non-m-buyers, the focal point should be stationary devices like laptops and desktop computers (for more details, see Section 3.4).

Otherwise, retailers will not reach the non-m-buyers or m-buyers, and they will not keep their customers on their own shopping platforms since channel and brand switching is a highly common behavioural trait of digital natives.

Considering the results of all three studies together as an integrated part of a research stream (see Figure 4), a holistic conceptual approach can now be implemented by any (mobile) marketer and retailer not only to encourage non-m-buyers to become regular m-buyers, but also to make new and existing customers enthusiastic and thereby increase their retention. While non-m-buyers are stimulated by function-orientated aspects and prefer to engage more in exploring than buying activities when using smartphones, m-buyers strive for flexibility and have hedonically compelled attitudes towards m-shopping.

This should be done across all media to stimulate multi-device shopping, even though it implies the cannibalisation effect to a certain degree (Huang et al., 2016). Each medium provides different appealing features to customers, and each medium is therefore considered to be a separate channel for shopping and purchases, for which retailers need different tactics to win the custom of digital natives. Considering potential synergy effects, a comprehensive strategy is also necessary to generate device-specific values, since customers undertake different buying strategies when shopping in a mobile environment than when they use the traditional web channel (e.g., Rodríguez-Torrico et al., 2017; Singha and Swait, 2017; Holmes et al., 2014).

Both marketers and retailers can easily benefit from the synergy effects by utilising the advantages of the ubiquitous, convenient, and fast Internet access of m-commerce to reach non-m-buyers and m-buyers alike. Moreover, marketers and retailers might improve the connections between the stationary and mobile channels so that their consumers can seamlessly switch between the offline and online shopping environments to fully leverage the synergy effect of both parts. For instance, mobile devices like smartphones can easily be connected to in-store shopping activities as a way of utilising (mobile) marketing tools to attract more traffic from the traditional brick-and-mortar environment. In other words, marketers and retailers should enable consumers to complete the path-to-purchase within a single channel or allow them to switch back and forth between channels (such as smartphones, tablets, laptops, and desktop computers) and across all dimensions (like offline vs. online shops). Thus, non-m-buyers might be stimulated to explore new channels and shopping options across diverse dimensions with just a few finger swipes, while m-buyers can be encouraged to continue shopping at the company's (mobile) store in the future once more relevant touchpoints pave the way along the m-buyers' paths to m-purchase.

4.2 Limitations and areas for future research

As is common for any empirical research, this study has several limitations, thus implying room for improvement. First, the focal research is limited to three facets: namely, attitude, shopping motive, and media usage behaviour. However, other relevant parts of research on consumer differences have a valuable theoretical and practical power to explain discrepancies between both non-m-buyers and m-buyers. Knowing the discrepancies in consumers' shopping journey, follow-up studies should focus on the

various different touchpoints across media along the path-to-purchase to reveal more differences and areas for improvement (see e.g., Holmes et al., 2014; Rodríguez-Torrico et al., 2017). Moreover, for that purpose, not only empirical data but more real data obtained through mobile device usage tracking systems should be used (e.g., Wang et al., 2015), as this would provide valuable insight.

Second, this study presents the viewpoint of digital natives. Although this generation's m-buying power is ever growing, the generalisability of the research findings to other consumer generations (such as the baby boomers or generation X) is not possible. However, these consumer generations represent the most significant challenge for any retailer nowadays, as it is difficult to attract non-m-buyers and, moreover, to win them as m-buyers who actively m-shop across different channels. In this context, it might also be worth further examining the digital divide, not only across different cohort levels, but also on an individual level for certain cohorts like the digital natives.

Third, this study uses a self-administered survey and the results might be biased to a certain degree. In addition, generalisability may be limited due to data collection from university students in Germany. Follow-up studies should therefore use samples that are not only restricted to students, and, moreover, should collect and apply more up to date datasets due to the high development speed in the domain of m-shopping. This is why the underlying study data seem to be almost too old and requires more research attention.

Finally, the study results reflect just a momentary insight into potential differences between m-buyers and non-m-buyers. However, long-term research efforts might yield useful insight into media usage behaviour and show how consumer's m-shopping discrepancies will change over time as they gain more experience with the practice. Moreover, the aim of this study was to answer all three research questions; however, follow-up studies might convert these questions into hypotheses. This would lead to a gentler transition from exploratory to confirmatory research.

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Notes

- 1 The average rates per region are 46% in Asia-Pacific, 32% in Europe, 28% in North America, 27% in Latin America, and 25% in Africa/the Middle East (Nielsen, 2016).
- 2 For reasons of comprehensibility, it is notable that Henseler et al.'s (2009) PLS-SEM approach is a non-parametric significance test based on the bootstrap output, with which the bootstrap estimates of the m-buyer group sample are compared with each bootstrap estimate of the non-m-buyer group sample. Following the one-sided hypothesis testing method, the result is at least marginally significant at the 10% level ($p < 0.10$ or $p > 0.90$) (Sarstedt et al., 2011).