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A typology of personalisation practices in marketing in the digital age

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ABSTRACT

One reflection of the digital age is creating personalised experiences in different ways by collecting and processing personal level information about individuals. Understanding and explaining this process can be beneficial both for marketing researchers and practitioners. This study aims to review and integrate decades of research on personalisation and practical applications in marketing to provide a comprehensive classification system for such personalisation. In this context, personalisation studies and practices are examined using two different approaches: the first based on the methods and modes of communication and the second based on the type of information being presented. Determined methods and modes of communication include self-reference, anthropomorphism, and system characteristics. The types of information presented in this study are individual-level, social-level, and situation-based. Based on our typology of personalisation, we discuss the topic using the extant literature and offer contributions, limitations, and suggestions for further research.

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Personalisation; individual-level information; social-level information; situation-based information

Introduction

The concept of 'personalisation', that is, presenting and using personal-level information in the interactions and transactions with customers to individualise customer experience and enhance marketing effectiveness, is indeed deemed crucial for attaining competitive advantage in today's predominantly knowledge-driven business environment (e.g., Aguirre et al., 2015; Constantinides, 2006; Ho et al., 2007; Kwon et al., 2009; Kwon & Kim, 2012). While it is well known that personalisation has been a central issue in marketing applications since the very early applications of modern marketing philosophy, ongoing developments in information technology and artificial intelligence have more recently moved this phenomenon to a much more critical level for all forms of marketing initiatives (Salonen & Karjaluoto, 2016).

Just a brief review of the extant literature reveals that the practice of personalisation has been addressed at various levels as several conceptualisations and theoretical approaches to marketing, such as customer relationship management, customisation, one-to-one marketing, individual marketing, interactive marketing, intelligent agents,

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recommendation agents, interactive decision aids, adaptation, and personification (Fan & Poole, 2006; Li & Karahanna, 2015). However, the concept does differ from these constructs in some of its features, such as ownership of the control and the comprehensiveness of the concept. For instance, personalisation is seen as a company-initiated concept, while customisation, on the other hand, is seen as a customer-initiated concept (Allen et al., 2001; Montgomery & Smith, 2009). Further, personalisation is an umbrella term, and customisation is seen as a subfield to implement personalisation (Fan & Poole, 2006; Sunikka & Bragge, 2008). Adaptation is a concept for the implementation of personalisation or one of the current forms of personalisation based on ongoing developments in technology (e.g., Chung et al., 2016; Rubini, 2001). Recommendation agents, and a recommendation system are web-based technologies to create a personalised experience (Li & Karahanna, 2015; Wang & Benbasat, 2005). This is made through suggestions in a recommendation system and through a more humane tool in a recommendation agent. In essence, personalisation highlights a clear focus in marketing, namely putting the customer first. Personalisation wants to present 'the right content in the right format to the right person at the right time' (Tam & Ho, 2006, p. 867). As such, this concept enables an automated and interactive process for presenting specific and tailored designs to each customer (Ho & Bodoff, 2014; S. Li & Karahanna, 2012; Liang et al., 2009).

It is indeed no surprise that, due to its tremendous potential to influence the human choice, the topic of personalisation has been an area of interest for a multitude of disciplines, including economics (e.g., Barros, 2001; Pushkar et al., 2017), management (e.g., Dallinger & Hample, 1995; DiBenigno, 2018), business (e.g., Choi et al., 2017; Surprenant & Solomon, 1987), sociology (e.g., Farberman & Weinstein, 1970; Toepfl, 2018), psychology (e.g., Czarkowski, 1976; Savulich et al., 2018), education (e.g., Assami et al., 2018; Fleming, 1973), health care (e.g., Jouffre et al., 2018; Noris et al., 1992), information systems (e.g., Alharthi et al., 2018; Kamba et al., 1995), computer science (e.g., Afzal et al., 2018; Hammerbacher & Yager, 1981), and consumer behaviour (Houston & Jefferson, 1975; Huang & Zhou, 2018).

The purpose of the present study is to review and integrate these decades of research as well as practical experiences on this critical topic and develop a comprehensive classification system for framing different types and forms of personalisation practices. In doing so, we not only review the past research and practices and attempt to systematically integrate them, but we also take ongoing developments in information technologies into account and expand the proposed classification to capture the expected developments and advances in this practice. This comprehensive typology will enable marketers to understand, study, and manage personalisation processes more effectively, and predict future trends in this practice more confidently.

The proposed framework offered here approaches the personalisation phenomenon from two different perspectives: (1) in terms of how information is presented to the customer (i.e., self-reference, anthropomorphism, and system characteristics); and (2) in terms of the information type being emphasised (i.e., individual-level, social-level, and situation-based). Specific examples for each form and type of personalisation practice is offered, and the importance of each for its marketing effectiveness is discussed. We start by offering a brief review of the extant research on personalisation practices and then continue with specifics of the proposed typology.

Background

In reviewing different personalisation approaches (types) in the literature, we systematically integrated the existing literature and combined it with our knowledge of the developments and advances in this practice. In doing so, we elaborate on the pool of sources (journals, book chapters, books, etc.) and the different related studies selected to analyse the extant approaches on personalisation based on specific criteria, while also showing the methodology used to investigate the studies, and present a literature review of personalisation. First, we focus on business-oriented practices rather than other scientific approaches or practices related to personalisation (i.e., education, health care). In doing so, we excluded such concepts as personalised learning, personalised teaching, and personalised health care systems since these do not give us business insight, they only show the forms of application of personalisation based on related contexts. Second, we view personalisation studies holistically. Rather than focusing on one specific subcategory (i.e., recommendation systems, recommendation agents, etc.), we include personalisation research or practices that cover the concept of 'personalisation' as a whole. Third, we do not include the studies that hold personalisation only as a dimension of their separate research models without focusing on the type, how each is applied, and how such a multi-dimensional concept can be explained. However, in the analysis section of our study, we do investigate these studies to understand the topic better. Fourth, the studies that we discuss are those that helped us explain the different personalisation practices in the business world from a multi-dimensional approach and not considering personalisation as a one-dimensional construct. Thus, the approaches examined do mostly derive from studies that have tried to explain the concept of personalisation through their several different dimensions, or highlight and explain the importance of one or more types. The observed personalisation types in the extant literature using this elaboration process are shown in Table 1.

Link personalisation focuses on building ties between users' past ratings, opinions, purchase histories, and the present time (Arora & Kant, 2012; Germanakos & Mourlas, 2009; Germanakos et al., 2005; Nah et al., 2005; Rossi et al., 2001; Sugiyama et al., 2004; Wu et al., 2003). The system perceives the similar approaches of these users, as they have similar preferences, and that similarity leads to providing them with similar personalised experiences. When different information on different users is required, content personalisation is observed, where much more information is personalised and compared to the link personalisation (Arora & Kant, 2012; Germanakos & Mourlas, 2009; Germanakos et al., 2005; Kunert & Thurman, 2019; Nah et al., 2005; Rossi et al., 2001; Sugiyama et al., 2004; Wu et al., 2003; Zanker et al., 2019). There are two sub-categories for content personalisation, namely node structure customisation, and node content customisation. The first refers to showing only related information to the user as is done on many e-commerce sites. People can choose their interests like music, news, etc. on these sites, and then they will only see that related information. The second sub-category focuses on different values that people have for the same situation, as in attitude differentiations regarding discounts (i.e., providing special discounts for these individuals). Context personalisation (Germanakos & Mourlas, 2009; Germanakos et al., 2005; Nah et al., 2005) includes real-time differences in the preferences of individuals towards the personalisation process, that is adaptations based on each session and the current environment of the individual.

Table 1. The classification of *personalisation*.

Personalisation Types	Definition	Related Studies
Link personalisation	Building ties between users' past ratings, opinions, purchase histories, and the present time	Rossi et al., 2001; Wu et al., 2003; Sugiyama et al., 2004; Germanakos et al., 2005; Nah et al., 2005; Germanakos & Mourlas, 2009; Gbashi, 2010; Arora & Kant, 2012
Content personalisation	Personalising different information for different users	Rossi et al., 2001; Wu et al., 2003; Sugiyama et al., 2004; Germanakos et al., 2005; Nah et al., 2005; Fan & Poole, 2006; Germanakos & Mourlas, 2009; Gbashi, 2010; Arora & Kant, 2012; Kunert & Thurman, 2019; Zanker et al., 2019
Control personalisation	Providing control to users in different forms	Wu et al., 2003
Customised screen design personalisation	Allowing users to create the look of the website or establish additional personal interfaces	
Anthropomorphic personalisation	Acting like a human when providing personalised information	
Context personalisation	Offering adaptations based on each session and the current environment of the individual	Germanakos et al., 2005; Nah et al., 2005; Germanakos & Mourlas, 2009
Authorised personalisation	Indicating changeability based on different access authorisations	Georgiadis et al., 2005; Germanakos et al., 2005; Germanakos & Mourlas, 2009
Humanised personalisation	No precise definition exists, but the use of personalisation is associated with artificial intelligence technologies and human-machine interaction	Georgiadis et al., 2005; Germanakos et al., 2005; Nah et al., 2005; Germanakos & Mourlas, 2009
User interface-based personalisation	Personalisation of the presentation	Fan & Poole, 2006; Zanker et al., 2019
Functionality-based personalisation	Personalisation of the function	Fan & Poole, 2006
Channel/information access-based personalisation	Personalisation of the delivering channel	
User-driven personalisation	Offering opportunity to select content and providing an interface to the users	Tam & Ho, 2006; Noll & Meinel, 2007; Ho, 2009
Transaction-driven personalisation	Making personalisation that is based on previous user transactions	Tam & Ho, 2006; Ho et al., 2007; Ho, 2009
Context-driven personalisation	Personalising the content and layout through the use of advance technologies like clickstream analysis and web mining	Tam & Ho, 2006; Ho, 2009
Implicit personalisation	Making personalisation work automatically by the system	Fan & Poole, 2006; Sunikka & Bragge, 2008; Kwon & Kim, 2012; Thurman & Schifferes, 2012; Kaptein et al., 2015; Haim et al., 2018; Kunert & Thurman, 2019
Explicit personalisation	Getting information from users by making choices	
Content-based personalisation	Offering personalisation to individuals in light of their rankings based directly or past behaviours	Serino et al., 2005; Bieliková et al., 2012
Collaborative personalisation	Creating personalisation based on a correlation between users' past behaviours	Potonniée, 2004; Caicedo et al., 2011; Bieliková et al., 2012; S. Li & Karahanna, 2012

(*Continued*)

Table 1. (Continued).

Personalisation Types	Definition	Related Studies
Overt personalisation	Collecting data about the consumers by informing them about the process	Xu et al., 2009; Xu et al., 2011; Chua et al., 2014; Aguirre et al., 2015
Covert personalisation	Observing the users and acquiring data about these users without their awareness	
Adaptive personalisation	Active, changeable personalisation based on each situation	Rubini, 2001; Ulbrich et al., 2003; Kazienko & Adamski, 2007; Chung et al., 2009; Ho et al., 2011; Bui et al., 2012; Cheng & Shen, 2014; Chung & Wedel, 2014; Chung et al., 2016
Non-adaptive/static personalisation	Static, unchanging personalisation	
Social network-based personalisation	Providing content to the user using a comparison with others	Carmel et al., 2009; S. Li & Karahanna, 2012; Sharif et al., 2013
User-initiated personalisation	Collecting data directly from individuals by asking them for their preferences	Sundar & Marathe, 2010; Kwon & Kim, 2012; Sun et al., 2016
System-initiated personalisation	Collecting data continuously using the system	
Location personalisation	Adapting the services based on user location	Ho & Bull, 2010; Ho, 2012; Ho & Chau, 2013; Kliman-Silver et al., 2015
Information personalisation	Providing information in line with individuals' implicit or explicit requirements	Desai, 2019
Presentation personalisation	Adapting presentations in line with individuals' implicit or explicit requirements	
Navigation personalisation	Modifying navigation in line with individuals' implicit or explicit requirements	
User-defined personalisation	Personalisation based on collected information about individuals that they provided	Kingsnorth, 2019
Behavioural personalisation	Personalisation based on individuals' behaviours generated using emerging technologies (i.e., big data)	
Proactive personalisation	Personalisation presented to the customer automatically without any interposition by the user	Zhang & Sundar, 2019
Reactive personalisation	Personalisation that allows individuals to explain their preferences before personalised content is presented	
Interaction process-based personalisation	Creating personalised interactions with customers based on algorithms that the Web 3.0 era has provided	Zanker et al., 2019

Control personalisation is seen as a meta-level form of personalisation, where the system provides control to the users in different forms, such as skipping requests, stopping recommendations, etc. (Wu et al., 2003). Customised screen design personalisation focuses on allowing users to create the look of the website or establish additional personal interfaces like setting up a calendar, creating a social group that can see this calendar, etc. (Wu et al., 2003).

In anthropomorphic personalisation, the system acts like a human, including greeting the user by name or asking after them (Wu et al., 2003). Authorised personalisation indicates changeability that is based on different access authorisations, like different interfaces for instructors and students in academic applications (Georgiadis et al., 2005; Germanakos & Mourlas, 2009; Germanakos et al., 2005). Although there is no clear definition of humanised personalisation (Georgiadis et al., 2005; Germanakos & Mourlas, 2009; Germanakos et al., 2005; Nah et al., 2005), this type of personalisation is still associated with artificial intelligence-based technologies and human-computer interaction. With the technologies offered in today's digital world, a similar dimension of personalisation is observed (*interaction process*) that can determine how and when individuals can be approached, by simply using several different algorithms and bringing new interaction processes and methods to the communication (Zanker et al., 2019).

Some researchers (e.g., Desai, 2019; Fan & Poole, 2006; Kwon & Kim, 2012; Sunikka & Bragge, 2008) have highlighted and defined their different focuses on personalisation, the target, the aspect of information, the automation, the presentation, and the navigation. Based on the target, the decision is in question: for whom personalisation will be made for a category of individuals or a specific individual (Fan & Poole, 2006; Sunikka & Bragge, 2008). Based on information aspect, what is personalised is determined: the content (to use to personalise the information), the user interface (to personalise the presentation), the channel/information access (to personalise the delivering channel), or functionality (to personalise the function) (Fan & Poole, 2006; Zanker et al., 2019). Based on automation, the question is: who does the personalisation (Fan & Poole, 2006; Haim et al., 2018; Kaptein et al., 2015; Kunert & Thurman, 2019; Kwon & Kim, 2012; Sunikka & Bragge, 2008; Thurman & Schifferes, 2012). If the user provides information to the system by making choices, that is explicit personalisation, and if personalisation is made automatically by the system, it is called implicit personalisation. Kingsnorth (2019) highlights the same issue, offering two categories: user-defined personalisation, in which individuals present information about their demographics, interests, routines, wants, etc.; and behavioural personalisation, in which firms collect information about individuals through their behaviours (i.e., visiting a website, opening an email, etc.) by using emerging technologies, such as big data. The author emphasises that these two approaches could be used together or separately, and argues that some tactical personalisation practices (i.e., giving the option to design the product or change the background on the app offered to the customer) could also be implemented that do not offer a significant insight, but instead create value for customers. Likewise, in overt vs. covert personalisation, the focus is to observe the users and acquire data about them without them knowing (covert) or to collect data about the customers by informing them (overt) (Aguirre et al., 2015; Chua et al., 2014; Xu et al., 2011, 2009). Desai (2019) addresses personalisation in its original classification using categories of information, presentation, and navigation. Desai's approach is based on the ability to personalise information (the content), presentation

(colour, layout, background, theme, etc.), and the website structure (reorganising the website structure via new tabs or elements), explicitly or implicitly. Zhang and Sundar (2019) also focus on the presentation while bridging the personalisation categories, and also including reactive personalisation (if personalised content is allowed to convey users' preferences before being presented to them), and proactive personalisation (offered automatically to the user, but without any user intervention).

Some of the research focuses on using filtering methods to collect data about individuals. One of the examples of this approach, content-based personalisation, considers individuals' rankings or their past behaviours to filter data about them. Collaborative personalisation, on the other hand, focuses on finding a clear correlation between users' past behaviours (Bieliková et al., 2012; Caicedo et al., 2011; Li & Karahanna, 2012; Potonniée, 2004; Serino et al., 2005). Another focus in the existing literature is on the method for gathering information from individuals. In user-driven personalisation, the opportunity to select content and interface is provided to the user (Noll & Meinel, 2007; Tam & Ho, 2006). In the transaction-driven method, personalisation is created based on the previous transactions of users (Ho et al., 2007; Tam & Ho, 2006). Context-driven personalisation is more adaptive than the other two categories (Tam & Ho, 2006). Here, content and layout are chosen for each individual, specifically through advance technologies like clickstream analysis, web mining, etc., and the content is changed continuously in a very sensitive way. In parallel with this method, the activeness level of personalisation is also considered in the extant literature, representing 'adaptivity' – adaptive or static personalisation – (Bui et al., 2012; Cheng & Shen, 2014; Chung et al., 2009; Chung & Wedel, 2014; Chung et al., 2016; Ho et al., 2011; Kazienko & Adamski, 2007; Rubini, 2001; Ulbrich et al., 2003). Discrimination between user-initiated personalisation and system initiated-personalisation derives from a similar approach, namely collecting data by asking the individual (user-initiated) or automatically collecting the data via the system (system-initiated) (Kwon & Kim, 2012; Sun et al., 2016; Sundar & Marathe, 2010).

The similarities of users and the concept of social influence are also noted in the extant personalisation research (Carmel et al., 2009; Li & Karahanna, 2012; Sharif et al., 2013). In social network-based personalisation, the information is gathered from people who are on the same social network with the user. Based on similar purchases, similar ratings, etc., personalisation is provided to the user through the sentences 'Consumers who bought this item also bought … ' (Li & Karahanna, 2012) like in e-commerce sites. Location refers to another personalisation concern (Ho, 2012; Ho & Bull, 2010; Ho & Chau, 2013; Kliman-Silver et al., 2015). The researchers explain location personalisation as adapting the services based on the user's location, as in the case with mobile merchants who may offer their specific products, services, and promotions to users based on their current locations.

Two interrelated classification frameworks used for personalisation

Based on the exhaustive examination of the conceptualisations mentioned earlier, which the current research on personalisation provided, the personalisation phenomenon can be categorised and explained by using several different criteria, such as: (1) what is personalised, i.e., *what aspects of the individual are utilised for personalisation*; (2) how the personalised design is communicated to the customer, e.g., *direct messages, choice*

lists, avatars, etc.; (3) who does the personalisation, e.g., *the customer, the firm, third parties, etc.*; (4) what kinds of data are used, e.g., *voluntary/involuntary, explicit/implicit, overt/covert, etc.*; (5) where the data comes from, e.g., *the customer, the firm, third sources, etc.*; and (6) how it is personalised, i.e., *what specific technologies and processes are used.*

The studies reviewed here in the background section consisted of these categories but in an unorganised way. Some authors conceptualise and explain personalisation by focusing on one of these criteria (e.g., implicit vs. explicit, Sunikka & Bragge, 2008), while others provide a classification system with personalisation dimensions used to cover the different criteria presented in this study (e.g., user interface, content, and the interaction process, Zanker et al., 2019). On the other hand, a lack of a clear typology of personalisation also leads to naming and mentioning constructs with very close meanings in different ways (e.g., implicit vs. explicit, overt vs. covert, user-driven vs. transaction-driven personalisation). Likewise, this situation causes some personalisation approaches that have different meanings to be named similarly (e.g., content personalisation – the effort to use individual information to personalise, and content-based personalisation – personalising content based on individuals' expressed or past behaviours).

Each criterion is important and provides meaningful data to help develop a personalisation classification. However, considering that the focus of our research is on personalisation practices in marketing, the first criterion, i.e., what is personalised, is the most relevant issue for understanding the nature of personalisation and its structure, that can change rapidly and always leads to the future of personalisation practices. Rapidly developing information technologies offer marketers new ways to develop personalisation practices, and each criterion presented here can be expected to be affected from this change.

The first criterion (*what is personalised*) is the only criterion that will remain unchanged due to its structure (e.g., dimensionalisation), and is only renewed in terms of its scope and the extent of its content. Through new technological developments, however, more information will be accessible for this category so as to personalise the contents, and any other changes shall not then be observed. The second criterion, on the other hand, best reflects the focus of marketing, although it is one of the criteria that remains open to development via future technologies. The focus here is on showing how personalisation is communicated to individuals, a factor that is imperative for businesses to be able to introduce their personalisation practices and reach their customers.

The other four criteria are mostly observed as information technologies- and data management-based approaches. We therefore based our typology of personalisation practices on the first two criteria. Specifically, the literature review in the previous section essentially revealed that personalisation practices can be analysed and classified using at least two different approaches based on the selected criteria. One way to study personalisation practices is to adopt a technical perspective and focus on the methods and modes through which personalised designs are actually communicated to customers. We posit, therefore, that at the most fundamental level, personalisation methods as such can be reduced to three major forms, namely (1) the self-reference method, (2) the anthropomorphism method, and (3) the system characteristics method.

The self-reference method provides personalisation to the individual through the communication by prioritising that person. Personalised experiences are presented to the individuals, emphasising that the system knows these people closely (i.e., their

personal information). The anthropomorphism method creates a humanoid system while still communicating personalisation. Individuals are reached by using a tool that looks like them and has similar characteristics to them (i.e., look, speech). System characteristics is a communication method where personalisation is performed entirely by the system automatically. The system already knows the individual and can decide on behalf of its user. Although it is possible to use each method/mode separately or together based on the strategy of the firm, the two are unexplored through the extant research enough on personalisation and their benefits and specific features cannot be revealed.

Similarly, another more critical way to study personalisation processes would be to adopt a more business-oriented approach and focus on the specific types of information being emphasised. When the types and levels of information used are the main concern, the several forms of personalisation practices summarised in Table 1 can be grouped into three main categories: (1) those that emphasise individual-level personal information; (2) those that emphasise social-level personal information; and (3) those that emphasise situation-based personal information. Indeed, personal information can be obtained by taking these three different focuses into account when creating personalisation, and depending on the results desired by the companies, it is possible to use them separately or together.

Certain dimensions that are found in the literature in an unorganised way constitute the sub-categories in our study. A clearer distinction is achieved by classifying these dimensions. The tenet of our approach, namely personalisation created through the information that considers individuals' behaviours or statements (past or present digital behaviours, or statements about their characteristics, attitudes, and preferences), is basically individual-level personalisation. This category appears in the extant literature in different ways. For example, as mentioned earlier, Kingsnorth (2019) suggests two types of personalisation: behavioural personalisation and user-defined personalisation. However, these constitute only one category in our current approach and are discussed as sub-categories in this paper in more detail. Social-level personalisation, on the other hand, is achieved by adapting the social impact found in consumer behaviour research to today's digital world, and the processing of the information obtained by considering that the environment of the individual is essential in this particular personalisation. We are relatively less confronted with it in the personalisation literature (i.e., social network-based personalisation), but we still believe that its growing existence through today's emerging technologies is undeniable. Therefore, it needs to be conceptualised and comprehensively explained.

Situation-based personalisation is created by obtaining personal information, not through the behaviour or statements of the individual but through information that is based on the situation they live in. Time and location information appear in different ways in the literature, with the belief that they should be in the same category and serve the same approach (Abowd, 1999; Dey, 1998). Thus, this third category is created. We therefore propose a two-way classification system for personalisation practices that involve the methods/modes of communication and types of information being used (see Figure 1). We argue that each classification approach meets the basic requirements of a sound typology to provide mutually exclusive and totally exhaustive categories of the phenomenon of interest, independently from each other.

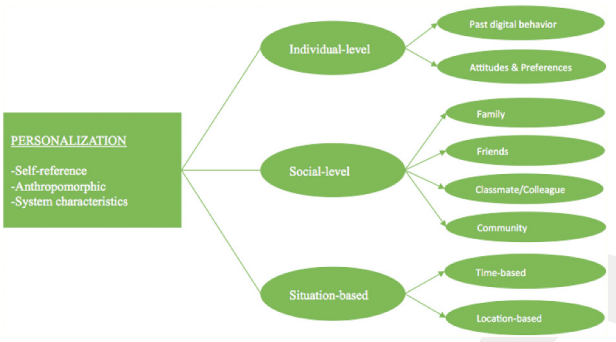

Figure 1. A proposed classification framework for personalisation.

Yet the two approaches are also intertwined in the sense that if a personalisation practice can be placed in one category in one of these two approaches, it could hold a unique place in any one of the three alternatives for the other approach. Moreover, it is also plausible to argue that each classification could be advanced into more detailed levels involving sub-categories of identified groups. Considering its business-oriented approach, we focus on a framework based on the types of information emphasised, and further provide second-order, more detailed categorisations of these personalisation practices based on this typology. The typology presented in our study comes from an approach that summarises the literature, separates the literature based on two prominent criteria, strives to classify this wide and unexplored area, and aims to expand the scope of each dimension and reveal its importance. This effort shows the novelty that this study brings, i.e., creating a comprehensive and meticulous taxonomy that goes beyond mere classification. We next discuss each approach in further detail.

Classifying personalisation practices using methods and modes of communication

The self-reference method

Decades of research in cognitive psychology suggest that if individuals know something relevant to the self or even to someone close to the self, they can recall that specific information more easily and more accurately (Sottilare et al., 2016). The self is a cognitive scheme in this context and represents a well-developed structure and a natural cognitive anchor in the human brain (Rogers et al., 1977). Accordingly, the processing and encoding of personally relevant information produces more beneficial outputs for communication processes both for the sender and the receiver (Kircher et al., 2000).

In personalisation, self-reference type messages inform the individual by highlighting relevance to the self and establishing an interaction with the individual through more specific wording (Debevec et al., 1987; Sottilare et al., 2016; Tam & Ho, 2006). In this interaction, information is often provided, as through this, the provider is speaking directly with the individual; and pronouns such as 'you' or 'I' can be used frequently (Debevec et al., 1987; Sottilare et al., 2016). Another way to apply the self-reference concept is to create an interactive dialogue, such as greeting individuals directly using their names and presenting interactive content to them using actual personalisation elements (Krishnaraju et al., 2016; Sinatra, 2015; Tam & Ho, 2006). In web design, for

instance, when individuals enter a website, they can be greeted with their name, e.g., 'Hi, Alex!'. Individual presentations can also be done based on their name, e.g., 'Alex, special offers for you!'. Or, sentences can confirm the individual's preferences and can be presented during the person's current experience on the website, e.g., 'Good idea Alex!'.

The anthropomorphism method

The anthropomorphism (or humanisation) method refers to the use of human-like mechanisms as the mode of communication, and these can include mimics, gestures, voice, or even emotional reactions (Epley et al., 2007; Puzakova et al., 2013; Razmerita et al., 2012; Wu et al., 2003). The process of making these systems more humane can be done by transferring many features already perceived as humanoid to machines or systems (Nass & Moon, 2000), such as (1) a human silhouette through a picture or video, (2) a humanoid voice with similar wording, interaction type, accent, etc., or (3) humanoid behaviour, such as answering questions, making conversation, discussing a topic, etc. Personalised approaches through the humanisation of technological mechanisms may capture people based on their various aspects, including socialising needs and feelings (Spiekermann et al., 2001; Van De Garde-Perik et al., 2008). Epley et al. (2007) further highlight the view that anthropomorphism applications, such as chat robots/chatbots, built-in voices, and text- and speech-based interfaces, may also address the customers' need to understand and control their environment. Google Assistant's Duplex, for instance, uses a human language that goes far beyond a mechanical language and creates a 'thinking' process in a human-like way with sounds like 'mm-hmm' (Pierantoni, 2019). While anthropomorphic personalisation is not yet adequately developed due to challenges in the development phase of artificial intelligence technologies, it clearly could become much more advanced in the future (Germanakos et al., 2005; Sivaramakrishnan et al., 2007; Wu et al., 2003).

The system characteristics method

It may not be possible to have a person being 'always' present next to an individual, but today, a technology-based personal assistant may always be with you whenever needed. Personalised information could be generated and presented to individuals via intelligent systems. Such algorithms could make decisions for the individual and/or act as a personal assistant. The individual is at the forefront here, and the goal is to develop a professional system that creates value for that person. These applications could simply process data from customer credit cards or loyalty cards and analyse consumption patterns, or advance to much more complicated sources and processing methods for comprehensive customer data.

There is no doubt that big data analyses are becoming a more powerful means for creating personalisation models (Akter & Wamba, 2016). The many examples range from basic association applications used by many companies, such as *Customers who bought these also bought* . . . sentences or Yahoo's broad segmentation analyses (Zhao, 2013). The smart shopping cart of a grocery store in Germany, which can collect and store information, answer questions, and receive payments without you waiting in line, and interactive screens filled with sensors that provide additional information about the products in a jewellery store are common examples of this form of personalisation (Balaji & Roy, 2017).

Classifying personalisation practices based on type of information presented

Individual-level personalisation

When personalising a product, service, idea, or system, the *person* represents the main focus. In this regard, understanding critical points about what the individual gives importance to and what is valuable to the individual would be essential issues for producing successful personalisation practices (Li, 2019). Accordingly, individual-level personalisation focuses on individual-level information, such as past digital behaviours, consumption patterns, attitudes, and preferences of individuals obtained both from the digital environment and real settings. The *past digital behaviour* types of individual-level data focuses on the digital behaviours of individuals (e.g., purchases, reviews, sites visited, social media posts, likes, etc.). This type of personalisation is referred to as link personalisation in Rossi et al. (2001), as transaction-driven personalisation in Tam and Ho (2006), and behavioural personalisation in Kingsnorth (2019). Rossi et al. (2001) emphasise that e-commerce sites, including Amazon.com and Dell.com, frequently use such personalisation. Likewise, Unver (2017) highlights the point that the interactions that take place in social media, including likes, comments, and posts, are examples of past behaviours from the digital world. Further, data obtained from locational searches called geodata could also be used for this sort of personalisation.

Abernathy (2016) exemplifies this point with the use of data from Google Maps. The restaurant reviews of the user, and the routes/directions explored involve valuable information about consumption patterns. In this regard, people continuously provide information as they use any service, e-commerce site, mobile app, etc. Netflix, as a new generation media-services provider, uses personalisation practices effectively by offering recommendation options to clients based on past choices. For example, if you have watched *La Casa de Papel* before, you will be presented with new suggestions under the heading of 'Suggestions for you since you watched the series *La Casa de Papel*'.

Understanding the current attitudes, preferences, and behaviours of individuals in the digital age is as important as understanding their past digital behaviours. The focus on the 'past' in the previous section becomes a 'present' in this sub-category. These applications, also called real-time personalisation systems, focus on the user's clickstreams and actions during a session (Ho et al., 2007). Clickstream data is collected based on the digital movements/actions of the individuals (Moe & Fader, 2004). In this regard, clickstream data examines the current behaviours of individuals and creates a source of that 'past behaviour' for the future. However, progressing from 'today' requires a review of the topic under a separate heading (Olbrich & Holsing, 2011). For example, individuals' search in the past has been recorded, but what they think of that search could be ambiguous. That person may like the product and then leave the site to buy the product from somewhere else, may find the product excellent but expensive, may not like the product, etc. The fact that individuals bought a product in the past may not mean that they will buy a product from the same product category or the same brand in the future.

In this respect, it is essential to understand the current attitudes, preferences, and behaviours of individuals. Chatbots as shopping assistants are an important example of the use of the anthropomorphic approach in individual-level personalisation that enhances the 'current' shopping experiences of customers (Spiekermann et al., 2001; Van De Garde-Perik et al., 2008). On the other hand, as illustrated in Kwon and Kim

(2012), user-initiated personalisation processes can also be formed through data collected directly from individuals by asking for their preferences. As a holistic example, new generation smart products or services create personalisation by utilising both past and present preferences, attitudes, and behaviours of individuals.

Social-level personalisation

All individuals live in a social environment and are influenced by other individuals and events that take place in that social environment. In the case of recommendation systems, Arazy et al. (2010), highlighted the importance of social networks in the creation of personalised recommendations. Walls et al. (1992) asserted that cognitively similar individuals communicate more often, feel close to each other, and establish relationships that last longer. The strength of the tie between them is thus stronger in terms of duration, frequency, and closeness. Accordingly, Ochi et al. (2010) stressed the importance of collaborative-based recommendation approaches that identify similar users and present new suggestions based on the preferences of these similar users. Choi et al. (2011) emphasised the importance of interaction in social presence by showing the users who also preferred the same product, including close friends and other 'similar users'. Li and Karahanna (2012) argued that the rapid diffusion of social networking platforms is also reflected in the business world as a vital source for applying a personalisation. They argue that businesses, particularly e-vendors, collect information from users in social networks that are close to their target audience and use this information to apply successful personalised suggestions. Thus, the authors compare the traditional peer-based personalisation approach of collaborative personalisation and social-network-based personalisation. Their findings show that in most cases, social network-based personalisation delivers higher recommendation accuracy than collaborative personalisation does.

Similarly, Chung et al. (2016) found that adaptive personalisation based on information obtained from social networks works much more effectively than the alternatives. In the big data applications seen in the system characteristics-based personalisation method, the social environment is taken into account as the main focus (Schroeder, 2014; Zhao, 2013). Examples of sentences like 'Customer who bought these also bought ….' from many e-commerce sites are applications where the social environment is also emphasised. Similarly, the 'explore' feature of Instagram offers its users suggestions from other users that they interact with on Instagram. It utilises the benefits of being in a social environment by offering suggestions to its users based on their likes, comments, friends, etc.

Situation-based personalisation

While presenting personalised information, the surrounding environment of the individuals, particularly the location and the time they are in (Wang et al., 2010), can also be of critical importance. Hence, situation-based personalisation focuses on location-based and time-based personalisation.

Location is representative of the current situation (Choi et al., 2017; Fan & Poole, 2006), and a prominent environmental element that provides relevant and immediate information. Schilke et al. (2004) note that individuals can live in both online and

offline environments simultaneously, and therefore both worlds should be taken into account when applying any personalisation. Germanakos et al. (2005) noted that in some informing services for local events, such as sports events, personalised offerings can be presented to individuals by using location information via current zip codes.

In location-based personalisation, the location of the individual is identified, and that individual is provided with personalised information starting with current locations. In its simplest form, short message service notifications are sent to individuals by the firms. For instance, Xu et al. (2011) used location-aware mobile coupons in their research and highlighted the importance of location-aware marketing. As another example, when people pass near a particular store, a message is sent from that store to them, including unique information for them (Ho & Chau, 2013). Many applications on smartphones monitor the locations of the users, and this location information then becomes data for businesses.

Cheng and Shen (2014) developed a system for a kind of adaptive personalisation called Just-for-Me. The components of this system are again a combination, including music popularity detection, user contextual listening history collection, a music content analysis module, and a unified recommendation model. In that study, which was conducted in the context of location-aware music recommendations, the two important points that the authors took into account were music popularity and the location information of the users. Both the users' physical locations and the local music preferences in those locations were found to be relevant in their study.

Another essential environmental element (Fan & Poole, 2006), which is also considered an important personalisation dimension (Schilke et al., 2004), is time. People have a certain routine during the day, and they also experience non-routine and differentiating moments in every day. In this case, presenting personalised content to individuals based on their calendars becomes possible. Schilke et al. (2004) offered an example where the systems were able to present event suggestions for individuals from the future according to their daily schedule. Besides, once an individual's daily routine is known, providing adaptive personalised recommendations is also possible. For example, if there is an event between the time the person is leaving work and going home, this activity can be offered as a suggestion to that person. In this respect, Schilke et al. (2004) presented an example for a combination of time, location, and preference-based personalisation.

Informational text messages or emails from some companies can be examined as another example in this sub-category. For example, *Rentalcars.com* sends personalised emails to customers who have rented a car from their company, phrased like 'On this day last year, you were in the city of Rome'. The company reminds people of their past travel experiences. This type of personalisation can be fed by the past experiences of individuals. Individuals' movements in the present can also be used as a source of personalisation. For example, when an individual follows a series on Netflix, and an episode finishes, Netflix proposes watching the next episode to the individual. Further, Netflix continues to remind the viewers of the next episode of the series when they open up Netflix. Google Assistant's Duplex feature as a representative of both anthropomorphic and system characteristics-based personalisation also uses data from the users' calendar. In this respect, the system can offer a personalised service using the current calendar of the user. Thus, both time and location focal points are important here. Knowing when and where the user will be, the system can offer personalised recommendations to that user and even record new events on the individual's calendar.

Summary and discussion

To develop a comprehensive classification system, the extant research on personalisation was reviewed, prominent criteria are revealed, and practical applications are investigated in this study. This revealed the existence of three prominent methods and modes: self-reference, anthropomorphism, and system characteristics. The business-oriented approach of this study and its conspicuous focus in the extant literature also lead to recognising the occurrence of three forms of personalisation, namely individual-level, social-level, and situation-based. Handling the strategy through two approaches, the methods and modes of communication, and the type of information presented, a comprehensive classification system is determined, reflecting the business perspective and a leaner approach than the perspectives offer in the studies that focus more on the technical levels of the topic (e.g., Aguirre et al., 2015; Chung et al., 2016; Kwon & Kim, 2012; Lavie et al., 2010; Rossi et al., 2001).

Among the personalisation approaches, one approach focuses on three main methods/modes that meet the requirements of the digital age and reflect the technical perspective. *Self-reference* is an important focus in this study, given the belief that for personalisation to be presented, it should be directly addressed to the individual. The coding, processing, and encoding of the information presented for this method can be more beneficial than other information for firms using it (Kircher et al., 2000) since they can be more easily processed, remembered, and retained (Rogers et al., 1977; Sottilare et al., 2016; Symons & Johnson, 1997; Tam & Ho, 2006). Positioning self-reference as the main personalisation method supports the use of it for personalisation (e.g., Tam & Ho, 2006) in a more specific way and to highlight its power in terms of information processing for personalised experiences.

In terms of the focus of anthropomorphism, adding a humanoid form to technology draws attention. Technology represents a series of developments that involve mechanical structures and people who are the receivers of those structures as social creatures. To bring especially advanced technologies closer to people, the technology should be perceived by humans through their social side rather than the mechanics. That connection arises from the necessity that every technological development ultimately reaches a human, even if it is mostly based on information technology and mechanical infrastructures (Alter, 2013). Further, the inclusion of anthropomorphic personalisation in the framework advocates the approaches chosen by researchers, who use it as a form of personalisation, and highlight its ever-growing importance through the use of artificial intelligence-based technologies (Germanakos et al., 2005; Wu et al., 2003).

The tenet of system characteristics-based personalisation shows that big data and other artificial intelligence-based technologies play a crucial role in presenting personalised experiences to consumers. Thus, firms are gaining financial and time benefits by using this strategy. Additionally, customers who have created benefits for themselves can have a unique and personalised experience. This value exchange derives from of the fact that individuals gain a personal assistant that can always help them (Verstockt et al., 2009). The mechanisms serve as a planner, organiser, and even decision-maker for individuals, and offer a full-featured assistant. At a higher level of artificial intelligence, new technologies make such improvements easier. Accordingly, system characteristics-based personalisation represents an advanced version of other personalisation types in the literature, which thus enable the system to apply personalisation very implicitly.

The personalisation forms in this study provide insight to help us better understand the importance of the multidimensional nature of personalisation for the business world. Individual-level personalisation supports these studies, which focus on the behaviours of the consumers – past, present, online, or offline – (e.g., Chung et al., 2016; Rossi et al., 2001). For social-level personalisation, the studies that have focused on social influence and social network are of particular importance (e.g., Li & Karahanna, 2012; Wu et al., 2003). Situation-based personalisation, on the other hand, creates a new point of view by improving the approaches of some of the studies, which use location and time better to explain and apply personalisation more effectively (e.g., Fan & Poole, 2006; Schilke et al., 2004).

Contributions, future research agenda, and conclusions

Practical contributions

For individual-level personalisation, two main focuses can be pursued for a more effective use of preferences, attitudes, and behaviours of individuals in the past and the present, both online and offline. First, creating customer segments by disclosing the patterns of customer digital behaviours is possible. The basic principle of this choice is to realise that each movement by individuals in the digital environment offers a unique clue; for example, when an individual has searched for a product or service. Specific questions can be asked, such as whether individuals perform the buying behaviour as a result of the search or does not, whether the individual has made the purchase for themselves or for someone else, if it is a one-off or infrequent purchase. When individuals visit the site, when they buy the product, is there a difference worthy of note between the search and purchase time? In which season does the individual make the purchase, how long is it since the person last visited the site, and is the site revisited? These data reflect the individual's preferences, attitudes, and behaviours in the present. At the same time, that data will be beneficial for addressing the self, providing a human touch to the technology, and enabling the system to assist the individual. Thus, it can be concluded that 'digital behaviour' patterns should be analysed in a better way to provide differentiated value.

In the digital world, unlike traditional consumer behaviour analysis methods, it is possible to monitor consumer behaviour in different ways, and each behaviour that is observed through these different ways needs to be taken into account to provide customer-specific content. For example, when the purchasing behaviour of the customer is analysed, is there any accumulation in a certain product category or a certain channel? Is it possible to make estimates that show the customer is making different searches, or purchases for others (e.g., family, friends)? After getting the answers to these questions, it is possible to create specific types of customer segments and then carry out specific communication campaigns to reach them. For instance, it may be possible to highlight 'the fashion' emphasis of any product or service communicated to a person who frequently searches or purchases clothes. Even in promotions for a city's branding activities, it may be possible to reach this person with an emphasis on 'fashion'. Further, on a service platform from the digital entertainment industry, it can be beneficial to include different fashion-related elements in the communication efforts while also offering movie, music, or game recommendations.

Second, small user surveys can be implemented to analyse the current preferences, attitudes, and behaviours of individuals. For example, sending emails may be sufficient after a customer has made the purchase, searched, or consumed something. This kind of 'Your feedback is precious' email can help both the user rate their experiences and the firm offer suggestions about its customers' own experiences by utilising the power of personalisation in email marketing (Ellis-Chadwick & Doherty, 2012). As important as market research is, it is also crucial to go beyond analysing the temporary situations of individuals for marketing research. Investigating participants and establishing interactive dialogues will contribute to understanding the behaviours of those users holistically. In this respect, user-initiated information will be collected, ant it is known to provide more benefits in some cases. The point to be noted here is to make the process easier and more enjoyable when collecting information about the customer directly from that individual. In this regard, it is possible to create the easiest (i.e., user-friendly interface, one-click selection options) and the most enjoyable (i.e., gamification, visualisation, no more information overload) customer feedback system.

In personalisation practices at the social level, two issues are of particular importance. First, social networks can be seen as a new generation of the social environment. The use of social networks, in particular the feature of sharing personal information, is an important source for social interaction in today's digital environment. In this regard, personalising the contents according to the information obtained from social networks will be possible. For example, Instagram makes these implementations with offerings like 'The people you follow do that'. However, it is necessary to take customer segmentation to a more advanced level. Supporting 'following' and 'followers' data in social media with 'interaction' data is of vital importance here. Creating personalisation practices based on the people with whom the account owner interacts and communicates with often through the features of such platforms (i.e., comment, like, share) will be more effective.

Secondly, applying a human touch to advanced technologies also provides an opportunity to offer the effect of sociability. Particularly in anthropomorphic applications, it may be possible for mechanisms, which take a humanoid form, to provide information using the social environment of the individuals. For instance, they can inform individuals about the activities of the people around them. Similarly, when system characteristics are considered, shared calendar usage or public information sharing makes it possible for the system to conduct a self-selection of an option or to eliminate the others and present the option that is most prominent in a particular context to the user; for example, an event in the users' social environment that is marked on their calendar can be recommended by the system, or a restaurant where they or other people did check-in there before can be recommended as a strong option for them. On the other hand, the power of numbers can be utilised to go beyond the practices of 'Customer who bought these also bought … ' or 'Currently, X people look at this product'. At this point, the knowledge of how many people bought that product or gave positive feedback about that project can be valuable for the customer.

The first step to improvement in the context of location can be to combine the location information with the preferences of individuals. For example, if I get a message from a store that I passed by in a mall, receiving messages from a brand in this mall that I am not interested in will not affect me. However, if the system can match the information, which shows my place in this shopping mall, to my other map searches or my general

preferences, appropriate recommendations can be created. For instance, if a dress that I had examined before online came into a store near my home, or if a concert that I searched for online is to take place in my city again, gaining information about these products or services will be valuable for me. Similarly, individuals' buying behaviours in digital channels can also help when obtaining location information. Thus, showing them the most preferred options for people in the same location becomes possible. For global brands, for instance, a local preferences map based on countries can be created. As a result, when individuals go to a new country, appropriate personalisation can be offered to them, or brands can apply appropriate personalisation when they enter a new market. On the other hand, as a suggestion for time-based personalisation, being able to follow their calendars makes the customer feel valuable (Schilke et al., 2004). For example, the journey that individuals made on the same date last year will remind them of both the past experiences and the current need to take a vacation. Classifying the action and making the next personalisation suitable can show another approach, a mixed-method approach.

Considering the activities of individuals at a certain time makes creating customer groups possible, and personalisation can thus be created for these special groups. For example, it is possible to create customer segments, such as for those who love a winter vacation, those who love a summer vacation, those who love a ski vacation, etc.

Theoretical contributions

Personalisation has a rising importance for the different fields of today's business environment (Baldissera & Camarinha-Matos, 2016; Trivedi & Trivedi, 2018; Van Aelst et al., 2012; Wirtz et al., 2010). Personalisation is now critically important. Thus, it is vital for marketers to understand, study, and manage personalisation and predict the future trends of its practice (Constantinides, 2006; Valos et al., 2010). Having a comprehensive classification system can indeed be beneficial for effective marketing applications and communications, which can then be conducted through the collaboration of clear personalisation with the emerging technologies. Starting with this point of view, this study offers a typology of personalisation, including two approaches using the most prominent methods/modes to implement personalisation and its forms in order to represent the best options for choosing the right information to personalise.

Although the methods/modes and forms of personalisation in this study are currently found in an unorganised way in the literature, the critical importance of each dimension has still been emphasised. In this regard, this study considers these prominent methods/modes and forms and highlights their importance for better marketing knowledge and practice. The studies in the literature address the issue from certain perspectives and present different types of personalisation. For instance, Tam and Ho (2006) hold to two types of personalisation in their study. In our study, however, one of these is the method of communication and the other is the type of information. As another example, Kingsnorth (2019) explained personalisation using two dimensions (behavioural and user-defined), which also represents two sub-categories of individual-level personalisation in our typology (past digital behaviour, and attitudes and preferences). To avoid this complexity, it is first necessary to recognise that each method/mode and form presented in this study makes an important contribution. However, examining each personalisation

dimension individually falls short of explaining the multidimensionality of personalisation practices overall. There is a need for the typology of personalisation in the literature to move from the existence of a construct that is unexplored throughout the literature via several different dimensions and not simply be grouped within itself, thereby making more than a limited contribution to the understanding and development of personalisation practices.

Thus, the main theoretical contribution of our study to the development of marketing knowledge is to provide a clear typology of personalisation. In doing so, we first determined the main criteria, which the current research on personalisation reflects by examining the dimensions currently found in the personalisation literature in an unorganised way, then focus on two of these criteria that best symbolise personalisation practices and thus are vital for the further development of the concept and its use. We hereby reveal the multidimensionality of personalisation in a sophisticated, clean, and comprehensive manner. In this way, the personalisation literature is expanded and also regulated based on the business applications that draw attention to its versatility and reach an advanced level with the emerging technologies. We then discuss specific contributions of each method/mode and form of personalisation in further detail.

The self-reference method, for instance, adapts the importance of the strategy, in terms of information processing (Rogers et al., 1977; Sottilare et al., 2016; Symons & Johnson, 1997; Tam & Ho, 2006), to the personalisation literature. The method highlights its power to receive, process, store, and recall the information easily and supports its usage for personalised information so that people can adopt this kind of information better. For the anthropomorphic method, an ever-evolving type with emerging technologies draws our attention (Germanakos et al., 2005; Wu et al., 2003). Since a consumption product in mechanical forms (i.e., technology) should be close to the human, who is its receiver (Alter, 2013), personalisation can also be created by using humanised forms. System characteristics-based personalisation, on the other hand, focuses on the constant need to have someone help the individual, i.e., the need for a personal assistant (Verstockt et al., 2009). Such mechanisms within different product groups are examples of personalisation (i.e., smart home, smart shopping baskets, etc.), and this approach can be used effectively for any personalisation application.

The forms in the classification system that provide useful insight about what kind of information is personalised also make various contributions. At the individual level, for instance, continuity is a question. Individuals exhibit certain behaviours (in the past or present, online or offline) in their lives, and each behaviour becomes a source to use to create personalisation. Here, the process of creating value goes beyond just 'loyalty'. Focus is more than just saying to an individual, 'You did this, do it again'; the focus should be saying, 'Do this because it's special for you'. At the social level, the focus is that people are social entities and knowing that others in their social environment do influence them in some ways. Social impacts have always been important for people to be able to both accept and use a new kind of technology (Fishbein & Ajzen, 1975; Venkatesh et al., 2012). Moreover, individuals' social presence is becoming stronger giving the growing interaction in digital environments (Choi et al., 2011). When the topic is 'personalisation in the digital age', the basic question is about what the social impact will be in the process of personalisation that is dominated by artificial intelligence technologies, and it becomes a matter of learning whether the existence of social effects will disappear completely. However, theoretically, this

may not be uncommon because almost every innovation in the business world has been investigated through its impact for many years (e.g., Fishbein & Ajzen, 1975; Gao & Bai, 2014; Peng et al., 2016; Venkatesh et al., 2012). Furthermore, the location of consumers and the times they live in can provide valuable insights for reaching them easily and simultaneously. The reason why this information is valuable is that reaching customers is indeed possible, regardless of their past behaviours or general preferences and attitudes.

From past to present, consumer behaviour is difficult to understand, and also complicated (Jiang & Jones, 2016). In the digital age, consumers are living in a mobile way, and they can exist in different situations. Today, a new generation of consumer representation is dominant, including consumers who are not always at home, and not always accessible through traditional channels. This level of personalisation promises the ability to reach the consumer by understanding his/her situation.

Future research agenda on the concept of personalisation

Starting with the previously mentioned theoretical advancement effort of the current study, future studies can examine the issue of personalisation within the framework presented in this study and should focus on aspects of personalisation that are still open to discovery. The proper development of personalisation research by marketing researchers and, as a result, correct implementations by marketers, will contribute to the formation of successful personalisation practices and advancement of the marketing knowledge for personalisation. In this regard, the typology of personalisation and the framework presented in the current study constitute a call for the investigation of the concept of personalisation from various aspects. We propose five aspects that show the areas of future research need, namely the design of personalisation, marketing communication, the power of personalisation, contextual discoveries, and technological developments. We now explain each aspect in further detail with their proposed research questions.

The design of personalisation

Although a main framework on how to apply personalisation at different levels is presented in our study, each level is open to more in-depth scrutiny and design effective personalisation practices. The implementation of different forms of personalisation, and seeing the effects of each level or beneficial match-ups will evolve and indeed dominate the practice of personalisation. There is no single type of digital behaviour, and no single response that matches individuals' attitudes and preferences. Individuals will be in different social environments and will experience different effects of those environments on their lives. Individuals can also find themselves in different situations in their lives (Bellman et al., 2006; Reynolds & Olson, 2001).

Exploring such information offers a design tool for personalisation, including different levels and forms of personalisation. For instance, individuals may have exhibited different behaviours in the past and during the digital era. Such behaviours can be displayed by using any button or key in the digital environment (like a button on social media platforms), commenting/supporting word-of-mouth communication (comment button), engaging with the content (sharing button), searching for any topic on the web (search using search engines), buying a product or service through digital channels (buy through

mobile applications, web sites, etc.), even adding and keeping the product in the shopping basket, without buying it. Furthermore, for a consumer who uses digital channels, adding a product to a shopping basket, and keeping it there without buying it also indicates a type of digital behaviour, a behaviour worth researching further. Analysing the preferences, attitudes, behaviours, social environments of individuals, and situations they are in are also important information sources. The use of all of these, as singular or in different combinations, exposes different personalisation designs, and the perceptions of consumers about these designs is the key factor for the success of personalisation implications. In this regard, studies are needed that can answer the following research questions about what should be personalised and when:

- Which digital behaviours can be used to develop a successful personalisation practice?
- How can this information be incorporated into personalisation practices by monitoring the attitudes and preferences of individuals, and which attitudes and preferences are critical for successful implementation of personalisation?
- How does a reflection of the social environment in the digital environment, or the social environment formed in the digital environment shape personalisation practices? Which social environment reflections should be particularly considered when designing personalisation practices?
- Which information is available to individuals regarding the time? How can routine and non-routine situations that individuals are currently in successfully shape personalisation practices?
- How can location information be obtained for use in personalisation practices? Which location information is particularly important for the positive perception of personalisation?
- Which information levels and forms can be used together to produce a strategic advantage for creating successful designs for personalisation?

Marketing communication

In today's business world, there are many communication options. Therefore, communicating brands with a set of communication options is becoming more complicated for businesses (Keller, 2001). The personalisation of communication and showing individuals that a marketing communication has been created that is unique to them poses various challenges. In our context, personalisation methods/modes have three categories. Managing the effects of these categories is also difficult since these categories can have different impacts on different consumers. For example, system characteristics-based personalisation, in which a system can sometimes be self-determined and take an important action by itself, cannot be accepted for each consumer. Thus, comparing individuals who like to seek information by themselves and have strong decision-making reflexes to individuals who make consumption decisions very quickly and experience time pressure may reveal this distinction clearly. Further, the response of individuals to self-reference and anthropomorphic messages may be different. More importantly, an evaluation of the functioning of personalisation along with traditional marketing communication methods and channels has critical importance. Indeed, understanding the differences in how different types of consumers perceive the communication of

personalisation is essential. For instance, individuals can have different personality traits and thus may perceive the communication of personalisation differently (i.e., neuroticism, extraversion, openness, agreeableness, conscientiousness; Costa & McCrae, 1992a, 1992b). The following research questions for how personalised design is communicated to the customer should be addressed and answered in any future research:

- For which customer group is the use of the self-reference method most conformable for the communication of personalisation? Which customer group perceives such messages positively?
- For which customer group is the use of the anthropomorphic method the right choice in the communication of personalisation so it is perceived positively by consumers?
- Which customer group perceives the system-characteristics method positively and finds it most appropriate in the communication of personalisation?
- Which methods/modes when used together bring a strategic advantage for the successful marketing communication of a personalised design?
- Which marketing communication methods and channels are most appropriate to use with personalisation? Which communication methods can be combined with personalisation? Which communication channels are most effective for personalisation use?
- Can personalisation have different effects on individuals with different personality traits? Which individuals perceive personalisation more positively? Which individuals may be uncomfortable with personalisation (i.e., technophobics)?

The power of personalisation

When following the importance of personalisation in the marketing world, the role of this construct is a vital strategic tool for businesses (Salonen & Karjaluoto, 2016), and the formation of desired consumer behaviours and behavioural changes is indispensable. Businesses that want to create value for their customers in the digital world offer personalised designs, and that choice leads to positive emotions in individuals, thereby creating satisfied customers. Observing the formation and increase of such desired outcomes is important (e.g., Kim, 2019; Wang et al., 2011). Since marketing research mostly ignores the multidimensional nature of personalisation and sees it as a one-dimensional construct, it was necessary to demonstrate the power of personalisation for creating and increasing desired consumer behaviours by focusing on the different personalisation forms and methods/modes in the current study singularly, or in different combinations in future studies. The related research questions are presented next, indicating the key areas where more research is needed regarding the power of personalisation to influence consumer behaviour:

- What kind of consumer behaviour can be exposed from personalisation that is prepared by considering the digital behaviours of consumers, the personal information they provided voluntarily about their attitudes and preferences, their social environments, and/or their current location or the time?
- When considering a desired consumer behaviour (i.e., satisfaction, loyalty, positive attitude, intention, purchase), which forms of personalisation or communication

methods for this specific personalised design are more effective in forming such behaviours?
- Is personalisation effective in building long-term customer relationships? In what ways can marketers achieve this goal best?
- Is it possible to perceive personalisation negatively? In what situation(s) do individuals develop negative attitudes towards personalisation and therefore display negative behaviours?

Contextual discoveries

The framework presented in this current study, including different methods/modes and forms of personalisation practices, can be compared for different products, services, and/or experiences. Thus, it can be determined whether certain methods/modes and forms of personalisation practice can be more influential for different products, services, and experience types. For example, Bozdag (2013) compares food and computer searches of individuals by using location information and supports that providing regional personalisation for a computer may not be as influential as for the food-related choices. Likewise, comparing various services, such as events like concerts, or restaurants; comparing different services in a specific category, like restaurants in a mall and fast-food restaurants; and comparing product categories, like hedonic versus utilitarian products, is possible. In doing so, future research can test the typology of personalisation developed in this current study and highlight the multidimensionality of this construct. Each form and/or method/mode of personalisation may not be equally important for each context. Using this point of view, more contextual investigations about the existence of personalisation in marketing and the contextual extensions in our framework towards several different marketing- and/or business-related topics – are still needed. The following research questions present these contexts, which do require more research:

- Which forms of personalisation can be the most effective for different businesses (B2C, B2B, C2C, P2P, etc.)?
- How can personalised designs be communicated in the context of different sectors? What methods/modes can be used based on a sector-specific way and focus?
- Do personalisation forms and methods/modes differ in different product and service settings?
- How can personalisation forms and methods/modes be effectively used in different categories (fashion, furniture, cars, appliances, jewellery, foods, etc.)?
- How can personalisation forms and methods/modes be effectively used for different product types (hedonic, utilitarian, experience, search, durable, nondurable, etc.)?
- How can personalised designs be adapted for different products/services in various marketing sub-branches (destination marketing, green marketing, mobile marketing, etc.)? Which communication methods should be focused on even more in a specific branch?

Technological developments for personalisation

As new technologies arise in the future, different and novel forms of personalisation can also emerge. Thus, personalisation studies should continue, so new classification methods, modes, forms, or even systems can be developed. Today, different products and

services are continually released into various business environments. As an example, 3D printers have come into our lives and have enabled individuals to produce different products on their own. This situation may lead to the creation of new personalisation practices. Individuals who become content creators, influencers, prosumers in the digital age may also have the power to create their own personalised products, services, experiences, or ideas. Hence, each technology that offers new insight into the consumption literature and business world is worth exploring in terms of its contributions to or challenges for the personalisation literature. The research questions presented next still await more clarification in this regard:

- How do emerging technologies affect the personalisation framework presented in this study? How do technological advances affect personalisation forms and/or methods/modes? What changes in the importance of each of them will occur?
- How will the fact that individuals have become producers, using technologies such as 3D printers, affect the importance and strategic role of personalisation? Can individuals create personalised experiences for themselves? What role will the marketers play in this case?
- How will individuals, by increasing their interactions with advanced technologies, affect the role and importance of personalisation? Does personalisation become a necessity, and indeed a prior expectation, for consumers to have and to use in order to evaluate a technological product (i.e., smart products)?

Conclusions

This study addresses an important gap that remains in the research on personalisation, namely a need for a comprehensive classification system for understanding the power of personalisation in order to manage personalisation practices better and utilise its power better and thereby create more successful marketing applications and communications. Through this effort, the typology developed in the current study offers a new insight into personalisation research that can reduce the complexity in the literature. This framework can play an important role in the marketing world since current efforts have not holistically reviewed all of the personalisation literature. Applications based on this classification system can be beneficial both for knowledge generation efforts and actual personalisation practices, producing full implementation of a strong tool to use in marketing.

Disclosure statement

No potential conflict of interest was reported by the authors.

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