Let’s get personal: Which elements elicit perceived personalization in social media advertising?

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\section*{A R T I C L E I N F O}

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\section*{A B S T R A C T}

On social networking sites, consumers disclose information about themselves which advertisers use to personalize advertisements. The underlying assumption is that personalized advertisements are more persuasive. However, it is not clear to what extent actual personalization elements (as intended by advertisers) determine consumers’ perceptions of the extent to which an ad is personalized, and it is the latter that drives responses. The current study investigates the relative weight of different actual personalization elements (age, gender, location, life events, interests, and friend referrals) in Facebook ads in eliciting perceived advertising personalization. We conduct conjoint analyses for six products (a bank, a smartphone, tableware, furniture, a restaurant, a fashion retailer) with 595 consumers from the United States. The findings show that the most important elements in eliciting perceived personalization are (in order of importance) a person’s interests, location, and age. This result remains stable across different product perceptions (product category involvement, product qualities, and buying motivations) and across different socio-demographic characteristics (gender, age, and education). In sum, to evoke the perception of personalization, advertisers should primarily target consumers based on their interests.

\section*{1. Introduction}

In 2021, there were 4.62 billion social media users, which was 58.4 \% of the total world population (Kemp, 2022). Facebook, the world’s most popular social networking site, now has 2.91 billion monthly active users (Meta Platforms Inc., 2022a). The increased use of social networking sites (SNSs) has also caught advertisers’ attention (De Keyzer et al., 2015). SNSs are increasingly considered as an interesting platform for firms to reach their target groups because it is faster than traditional media (Lee et al., 2015; Saxena and Khanna, 2013), and specific target groups can be efficiently reached (Kelly et al., 2010; Sundar and Marathe, 2010). For instance, Meta Platforms Inc. (2022b) reports that its advertising revenue rose from just over $69 billion in 2017 to almost $115 billion in 2021.

People disclose a lot of personal information, such as their location, interests, and demographic characteristics, on SNSs. Advertisers can use this information to tailor their messages to specific targets (De Keyzer et al., 2021; Kelly et al., 2010; Sundar and Marathe, 2010). Advertising tailored to one’s characteristics and/or interests is called personalized advertising (Grubbs Hoy and Milne, 2010; Kelly et al., 2010; Sundar and Marathe, 2010). Personalization can result in a more positive brand attitude and higher behavioral intentions (De Keyzer et al., 2021; Kim and Han, 2014). Consumers are 5 times more likely to click-through on personalized advertising than on non-personalized advertising (Mueller and Castro, 2021). At the same time, there is evidence that personalized advertising may also lead to negative feelings (De Keyzer et al., 2022; Pfiffelmann et al., 2020), which in turn could result in less positive brand responses.

In a recent survey in the United Kingdom and the United States (US), 33 \% of marketers declared to direct more than half of their online marketing budget toward personalization efforts, and this number is only expected to go up (Guttmann, 2021). However, personalization attempts may fail when consumers do not perceive these messages as being tailored to their needs and preferences (Kramer, 2007). Marketers can use many types of data (e.g., location, interests, search behavior - hereafter referred to as “personalization elements”) to personalize ads, so they should determine what data variables will be the most impactful to collect (Gordon, 2021). At present, little is known about the extent to

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which different personalization elements contribute to consumers’ perceptions of personalization (the extent to which consumers perceive a message to fit their personal profile). In other words, is an ad personalized based on gender perceived as equally personalized as an ad based on a person’s interests? What elements trigger perceived personalization is a crucial question, as perceived personalization is a necessary condition for any effect of personalization to take place (Li, 2016). Therefore, the first research purpose of the present study is to explore to what extent six frequently used personalization elements (location, age, gender, life events, interests, and friend referrals) trigger perceived advertising personalization (RQ1).

Prior research has manipulated personalization in different ways, based on a variety of elements such as gender (De Keyzer et al., 2015), location (Ketelaar et al., 2017), or various combinations (e.g., interests, age, gender and location, Aguirre et al. (2015)). However, many studies fail to report whether their manipulations successfully resulted in a greater degree of perceived personalization (e.g., Kaspar et al., 2019; Windels et al., 2018). Those that do, often find that manipulated or actual (intended) personalization does not always enhance perceived personalization compared to a non-personalized ad (Li, 2016; Maslowska et al., 2016). In studies that combine different personalization elements in a single ad, it is also impossible to disentangle the effect of individual elements. Using a message in research and advertising practice that is actually personalized but not perceived as personalized might result in biased results and conclusions (Li, 2016). Therefore, it is important to understand to what extent personalization elements lead to the perception of more personalization in order to draw clear conclusions on the effects of personalization. The theoretical contribution of the research is therefore that it provides concrete guidelines for researchers studying personalization effects on how to design the advertisements to maximize the chances of successful manipulations.

The extent to which personalization elements contribute to perceived personalization may also depend on the product or person. For example, targeting on location may be highly relevant for a restaurant or bar, but much less so for an online retailer. Targeting based on age may be perceived as more personalized by older than for younger people, as most ads will standardly feature younger people. In this research, we distinguish between low and high product category involvement, search vs experience qualities, and hedonic vs utilitarian buying motivations as perceived product characteristics and men vs women, younger vs older, and lower vs higher education as sociodemographic characteristics. As such, we aim to examine the moderating effect of product characteristics and users’ demographic characteristics on the relative weight of the six personalization elements in an advertisement on a social networking site in evoking perceived personalization? (RQ2).

To investigate these research questions, we conduct a conjoint experiment with U.S. consumers (n = 595), in which the relative importance of six personalization elements (location, age, gender, life events, interests, and friend referrals) for perceived personalization is explored across six different products and services (a fashion retailer, a restaurant, a smartphone, a bank, tableware, and furniture). We use full-profile conjoint analysis, which involves exposing respondents to a set of advertisements that systematically vary in combinations of levels of personalization elements. Based on the perceived personalization score for each advertisement, the relative weight of each element for perceived personalization can be derived. The method thus allows exposing consumers to multi-attribute stimuli as they would see them in real life, without explicitly having to ask them about the relative weight or importance of each element for their perceived personalization (Levy, 1995). This approach has previously been used to examine consumers’ perceptions of, for example, brand globalness or online review credibility (De Meulenaer et al., 2015; Lopes et al., 2020).

2. Theoretical background

2.1. The importance and effect of perceived personalization

Previous research has shown that perceived personalization is a far better predictor of consumer responses than actual personalization (Li, 2016). Actual personalization can be objectively assessed by observing, for example, the number of personalization elements used or by observing how easily a personalization element can identify a specific individual. As such, personalization can range from no personalization at all (i.e., a generic message), over general personalization (i.e., advertisement based on broad categories such as gender) to full personalization where one individual is addressed based on specific individual information (e.g., name, connections to specific pages) (Arora et al., 2008; Grubbs Hoy and Milne, 2010; Hawkins et al., 2008).

Perceived personalization, on the other hand, is subjectively experienced by users. Previous research has indicated that in order for any personalization effect to take place, consumers need to perceive the advertisement as personalized, irrespective of how this personalization was achieved (Kramer et al., 2007; Li, 2016).

Personalization can result in longer and more visual attention (Bang and Wojdyszynski, 2016; Pfiffelmann et al., 2020), more careful processing (Römer and Kreuter, 2006), and a more positive brand attitude and higher behavioral intentions because it benefits perceptions of relevance (De Keyzer et al., 2015), entertainment (De Keyzer et al., 2021; Kim and Han, 2014) and credibility (Tran, 2017). At the same time, there is evidence that personalized advertising also leads to increased feelings of intrusiveness (Pfiffelmann et al., 2020) and creepiness (De Keyzer et al., 2022), which in turn could result in less positive consumer responses (Gironda and Korgaonkar, 2018). These negative perceptions might also be linked to privacy concerns (Boerman et al., 2017). Consumers are concerned about how their personal information is being used in personalized advertising (Phelps et al., 2000), and these privacy concerns, in turn, increase the likelihood of advertising avoidance (Turow et al., 2009).

While the main focus of the current study is on the effect of actual personalization elements on perceived personalization, our implications for theory and practice will include a discussion on which personalization elements may be more likely to generate positive downstream effects and which would cause adverse reactions to personalized advertising messages.

2.2. Personalization elements

2.2.1. Rationale for the selection of personalization elements

Based on the literature and personalization practices on social media (Facebook in particular), we made a selection of 11 possible personalization elements (age, education, location, work, life events, gender, relationship status, interests, own page likes, friends, and friend referrals) (Meta Platforms Inc., 2022c). These personalization options are not limited to Facebook. For instance, on Instagram (2022), advertisers can also use location, demographics, and interests, together with online behavior, as personalization elements. Twitter (2022) reports that advertisers can use more or less the same options (e.g., location, gender, interests, behavior, and followers), and also Pinterest (2022) allows advertisers to personalize messages based on age, location, gender, interests, and keywords users searched for. We do not include behavior, which is another type of personalization mentioned by Facebook, because “the tracking of online activities, collection of behavioral data, and dissemination of information often happens covertly” (Boerman et al., 2017, p. 364). Moreover, behavioral (re)targeting often happens based on behavior outside of the Facebook environment, making it very different from the other types of personalization that we study, which are based on the information disclosed by users within the Facebook environment.

To select the attributes (the actual personalization elements) for use in the main study, we conducted a pre-test in which we presented a
convenience sample (recruited through the personal Facebook account of the first author) of 37 respondents (\(X_{\text{age}} = 34.65, \text{SD}_{\text{age}} = 11.75; 48.6\% \text{ male}\)) with these 11 pre-selected personalization elements, and asked them to indicate on two seven-point Likert items from Weathers et al. (2007) to what extent they found these personalization elements useful and annoying as a basis for personalization on social media. All respondents had to have at least one social media account. By pre-testing the cues this way, we account for the fact that personalization elements may lead to positive and negative responses.

We then selected the three personalization elements that consumers in the pre-test perceived as the most useful for personalization (Table 1): interests (\(X_{\text{useful}} = 4.51, \text{SD}_{\text{useful}} = 1.84; X_{\text{annoying}} = 3.19, \text{SD}_{\text{annoying}} = 1.68\)), age (\(X_{\text{useful}} = 4.03, \text{SD}_{\text{useful}} = 1.80; X_{\text{annoying}} = 2.95, \text{SD}_{\text{annoying}} = 1.76\)), and gender (\(X_{\text{useful}} = 4.19, \text{SD}_{\text{useful}} = 1.76; X_{\text{annoying}} = 3.11, \text{SD}_{\text{annoying}} = 1.91\)) and the three that they perceived as most annoying (\(p < .008\)): friend referrals (\(X_{\text{annoying}} = 4.95, \text{SD}_{\text{annoying}} = 1.90; X_{\text{useful}} = 2.65, \text{SD}_{\text{useful}} = 1.86\)), life events (\(X_{\text{annoying}} = 4.70, \text{SD}_{\text{annoying}} = 1.73; X_{\text{useful}} = 3.24, \text{SD}_{\text{useful}} = 1.67\)) and location (\(X_{\text{annoying}} = 4.59, \text{SD}_{\text{annoying}} = 1.77; X_{\text{useful}} = 3.35, \text{SD}_{\text{useful}} = 1.60\)). The “useful” cues were considered significantly more useful than annoying, and vice versa.

### 2.2.2 Use of the selected personalization elements in prior research

Table 2 provides an overview of prior experimental studies that have attempted to manipulate personalization. This overview demonstrates that prior research has not manipulated personalization in a systematic way, but rather has used a variety of personalization elements and levels, manipulating only a single element at times or a seemingly random combination of elements. Because studies have also used different measures for perceived personalization (or have not measured it all), it is difficult to draw systematic conclusions. The following section provides more detail of these studies with respect to the six selected actual personalization elements.

### 2.2.3 Location

A market can be divided based on geographical units, such as nations, states, and cities (Kotler and Keller, 2006). Previous research has used consumers’ geographical location to manipulate personalization. In a study on location-based advertising, Ketelaar et al. (2017) do not report whether location-congruent ads (ads appearing when the consumer is at the exact location of the advertised product in a virtual supermarket) are perceived as more personalized than location-incongruent ads (when the consumer is not in proximity of the advertised product). While they find that the former leads to a higher brand personalization, there is no significant effect of location congruence on annoyance. Studies have also attempted to manipulate personalization.

#### Table 2

Overview of prior experimental studies manipulating personalization.

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Manipulation of personalization</th>
<th>Manipulation check?</th>
<th>Measurement of perceived personalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalyanaraman and Sundar (2006)</td>
<td>1. Interests (e.g., environmental issues)</td>
<td>Not reported.</td>
<td>Yes, successful.</td>
</tr>
<tr>
<td></td>
<td>2. Combination of location and preferences</td>
<td>Not reported.</td>
<td>• The content and information featured on the website targeted me as a unique individual.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• This website was personalized according to my interests.</td>
</tr>
<tr>
<td>Sheng et al. (2008)</td>
<td>1. No personalization</td>
<td>Yes, successful.</td>
<td>• In this scenario, Company X offers personalized services based on my location.</td>
</tr>
<tr>
<td></td>
<td>2. Combination of location and preferences</td>
<td>Not reported.</td>
<td>• In this scenario, Company X offers personalized services based on my preferences.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• In this scenario, to what extent has Company X personalized its weather service to you?</td>
</tr>
<tr>
<td>Sundar and Marathe (2010)</td>
<td>1. Interests (e.g., environmental issues)</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td></td>
<td>2. Ads based on preferred holiday destination</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td></td>
<td>3. Ads based on age or name of participants’ photo</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>van Doorn and Hoekstra (2013)</td>
<td>1. Browsing data</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td></td>
<td>2. Combination of browsing data and name</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td></td>
<td>3. Combination of browsing data and information about previous actions</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Tucker (2014)</td>
<td>1. No personalization</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td></td>
<td>2. Combination of location and preferences</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Aguirre et al. (2015)</td>
<td>1. No personalization</td>
<td>Yes, successful.</td>
<td>• This advertisement is directed to me personally.</td>
</tr>
<tr>
<td></td>
<td>2. Interests (based on a scenario provided by the researchers)</td>
<td>Yes, successful.</td>
<td>• I recognize my personal situation in this advertisement.</td>
</tr>
<tr>
<td></td>
<td>3. Combination of condition 2 combined with age, gender and location</td>
<td>Yes, successful.</td>
<td>• This advertisement takes into account the problem I faced.</td>
</tr>
</tbody>
</table>

(continued on next page)

### Table 1

Selection of elements.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mean (SD)</th>
<th>Annoying Mean (SD)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>3.35 (1.60)</td>
<td>4.59 (1.77)</td>
<td>2.820 (36)</td>
<td>0.008</td>
</tr>
<tr>
<td>Age</td>
<td>4.03 (1.80)</td>
<td>2.95 (1.76)</td>
<td>2.238 (36)</td>
<td>0.031</td>
</tr>
<tr>
<td>Gender</td>
<td>4.19 (1.76)</td>
<td>3.11 (1.91)</td>
<td>1.191 (36)</td>
<td>0.054</td>
</tr>
<tr>
<td>Life events</td>
<td>3.24 (1.67)</td>
<td>4.70 (1.73)</td>
<td>2.918 (36)</td>
<td>0.006</td>
</tr>
<tr>
<td>Interests</td>
<td>4.51 (1.84)</td>
<td>3.19 (1.68)</td>
<td>2.763 (36)</td>
<td>0.009</td>
</tr>
<tr>
<td>Page-likes from friends</td>
<td>2.65 (1.86)</td>
<td>4.95 (1.90)</td>
<td>4.258 (36)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Manipulation of personalization</th>
<th>Manipulation check?</th>
<th>Measurement of perceived personalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bodoff and Ho (2015)</td>
<td>1. No personalization&lt;br&gt;2. Education: study major, self-reported knowledge level and study stage</td>
<td>Yes, successful.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Brinson and Eastin (2016)</td>
<td>1. No personalization&lt;br&gt;2. Combination of location and gender</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Bang and Wojdynski (2016)</td>
<td>1. No personalization&lt;br&gt;2. Combination of name and location</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Kim and Gambino (2016)</td>
<td>1. No personalization&lt;br&gt;2. Combination of interests (type of cuisine) and label “Foodies.com choice for YOU”</td>
<td>Yes, successful.</td>
<td>I feel the content on Foodies.com was tailored to my preferences of foods.</td>
</tr>
<tr>
<td>Li (2016)</td>
<td>1. No personalization&lt;br&gt;2. Interests</td>
<td>Yes, successful.</td>
<td>The ad seems to be designed specifically for me.</td>
</tr>
<tr>
<td>Matz et al. (2017)</td>
<td>Personality traits (study 1: extraversion; study 2: openness)</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Ketelaar et al. (2017)</td>
<td>Location of advertised product in store</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Li and Liu (2017)</td>
<td>1. No personalization&lt;br&gt;2. Greeting by name</td>
<td>Yes, successful.</td>
<td>The ad seems to be designed specifically for me.</td>
</tr>
<tr>
<td>Mutz et al. (2017)</td>
<td>Personality traits</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Tran (2017)</td>
<td>Scenario-based retargeting (for either a laptop or shoes)</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
<tr>
<td>Higgins et al. (2018)</td>
<td>1. No personalization&lt;br&gt;2. Gender&lt;br&gt;3. Age&lt;br&gt;4. Interests</td>
<td>Not reported.</td>
<td>This advertisement makes recommendations that match my needs.</td>
</tr>
</tbody>
</table>

(continued on next page)
advertisement receives significantly more attention (total duration of fixations) than a non-personalized advertisement and increases the number of visits to the advertisement. The increase in attention would suggest that consumers indeed perceive the ad as more personalized. However, it is not clear whether these effects are due to the localization information or the inclusion of the respondent’s name. Using a scenario-based method, Sheng et al. (2008) manipulate the personalization of an online weather service by not only providing real-time weather reporting based on the customer’s location but also by mentioning that they can set their preferences for being alerted to severe weather conditions (e.g., tornados, hurricanes). Zarouali et al. (2018) distinguish between ‘low’ and ‘high’ personalization by adding information about respondents’ age, gender, and location to adolescents’ general interest in sneakers. While the two latter studies both report that their manipulations successfully increased perceived personalization, it is not possible to disentangle the effects of location as a personalization cue from those of the other cues they used.

### 2.2.4. Demographics

Demographic characteristics such as gender, age, or people’s stage in the life cycle often form a base for market segmentation (Kotler and Keller, 2006). They are therefore also often used to personalize advertisements. De Keyzer et al. (2015) manipulate personalization based on gender but do not report a manipulation check for perceived personalization. Maslowska et al. (2016) report that using gender and occupation (i.e., being a student or not) combined made people feel more personally addressed than a generic ad in the pretest, but do not find a significant effect on perceived personalization in their main study. As mentioned, Zarouali et al. (2018) report a significant increase in perceived personalization when adding information about both respondents’ age, gender, and location combined. It is unclear, however, whether gender in itself adds to this result. Other studies have also used gender as a personalization element combined with other personalization elements (Brinson and Eastin, 2016; Higgins et al., 2018; Kaspar et al., 2019; Walrave et al., 2016), but do not report whether their manipulation results in differences in perceived personalization perception.

Higgins et al. (2018) use age as a separate personalization element, as well as combined with gender. However, they do not report a manipulation check. Their findings indicate that personalization based on either the respondent’s age or gender or the combination of the two personalization elements (age and gender) increases click-through rates. This increase in click-through rate suggests that age, gender, and the combination of both successfully elicit perceived personalization. Other studies use age in combination with other personalization elements as well (e.g., Kaspar et al., 2019): in combination with gender, professional interest, place of residence and current occupation; Walrave et al., 2016: in combination with first name, gender, interests and profile picture and in combination with first name, gender, interests, surname, address, email address, album picture and status update.

Song et al. (2016) expose participants to one of two scenarios, either one in which they read an e-mail containing only a fictitious name or one in which they were proposed a “personalized mortgage plan” based on their demographic characteristics (i.e., age and occupation) and other personal information that supposedly appeared in their personal tweets. Their manipulation check shows a significant difference in perceived personalization between the two scenarios. Zarouali et al. (2018) successfully use age combined with gender and location to manipulate personalization.

People also go through different life stages, for example, going to college, graduating, moving, or getting married. Reported life events on social media mark transitions between different life stages. These life stages present opportunities for marketers to target people (Kotler and Keller, 2006). On Facebook, Google, and YouTube, advertisers can use reported life events to target consumers. For example, a company selling wedding rings is likely to target people who just got engaged. To the best of our knowledge, life stages (or life events) have not been used to research personalized advertising in general or on social networking sites in particular.

Nevertheless, personalization based on life events bears great value for advertisers as it can provide an excellent reason to engage with a consumer (Bedgood, 2017). According to Think With Google (2017), using life-stage marketing increased Origin Energy’s, an Australian energy provider, ad recall by 36 % and searches for Origin Energy with 60 %. This suggests that life events positively contribute to the perception of personalization.

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### Table 2 (continued)

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Manipulation of personalization</th>
<th>Manipulation check?</th>
<th>Measurement of perceived personalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higgins et al. (2018)</td>
<td>1. Age 2. Gender 3. A combination of age and gender</td>
<td>Not reported.</td>
<td>• This advertisement was targeted at me as a unique individual.</td>
</tr>
<tr>
<td>Karmakar and Webster (2018)</td>
<td>1. No personalization 2. Interests</td>
<td>Yes, successful.</td>
<td>• The presented environmental material:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• matched my personal interest;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• was tailored to my interest;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• matched my personal concern;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• was personalized to my personal preference;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• featured information related to my specific interests;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• personalized environmental degradation for me;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• catered to my personal interests;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• spoke to my personal interest.</td>
</tr>
<tr>
<td>Zarouali et al. (2018)</td>
<td>1. Interests 2. combination of interests, age, gender and location</td>
<td>Yes, successful.</td>
<td>• Was the advertisement personalized according to your personal interests?</td>
</tr>
<tr>
<td>Kaspar et al. (2019)</td>
<td>1. Non-personalized: opposite of respondent’s characteristics 2. Personalized: combination of gender, age, professional interest, place of residence and current occupation</td>
<td>Not reported.</td>
<td>Not reported.</td>
</tr>
</tbody>
</table>
2.2.5. Interests
Many advertisers and researchers use a person’s interests as a base for advertising personalization. For example, Kalyanaraman and Sundar (2006) use three levels of personalization in which they use a higher number of reported interests (e.g., sports, movies, and books) to personalize the content shown on MyYahoo.com (e.g., bookmarks to other Websites, sports news headlines, news clipper). Using more interests increases the level of perceived personalization. Aguiar et al. (2015) asked respondents to imagine that they needed a car loan to purchase a new car and that they had sent a message to a friend on Facebook to ask for information about car loans. Then they were redirected to a Facebook homepage that contained an advertisement for a home loan (slightly personalized) or a car loan (more personalized). They report that the perceived level of personalization is higher in the more personalized condition than in the slightly personalized condition. Li (2016) reports that ads based on people’s preferred travel destination increase perceived personalization. Karmakar and Webster (2018) show a message about how increasing pollution increases allergies and breathing problems to those who indicated that allergies were a critical environmental issue for them. This personalization based on respondents’ environmental interests results in higher perceived personalization. Kim and Gambino (2016) report that respondents who viewed a personalized advertisement for a restaurant with their preferred cuisine perceive the advertisement as being more personalized than an advertisement for a restaurant with a randomly selected cuisine. However, the personalization condition combines the preferred cuisine with the label “Foodies.com choice for YOU,” which might have also contributed to the perception of personalization. Several other studies manipulate personalization by using interests, either in itself (Sundar and Marathe, 2010) or in combination with other personalization elements (i.e., most viewed brand, Bleier and Eisenbeiss, 2015b; i.e., education, Tucker, 2014; i.e., first name, gender, birthday, profile picture, Walrave et al., 2016) without reporting whether this has the intended effect on perceived personalization.

2.2.6. Friend referrals
Finally, marketers tap into normative perceptions by pointing out that (one or more of) a person’s friends like the advertiser. Kim et al.’s (2015) survey shows that perceptions about other users’ evaluations or opinions (i.e., friends liking the advertiser) influence users’ normative perceptions. Using the specific names of a consumer’s friends might be important in signaling perceived personalization because friends are highly idiosyncratic. Windels et al. (2018) examine the visual attention participants pay to an advertisement with and without social context (i.e., the mention of friend referrals). They propose that adding social context increases personalization. While they do not report a manipulation check on perceived personalization, their finding that participants paid longer attention to ads without social context is counterintuitive and raises questions on whether social context ads actually induce perceived personalization.

2.2.7. The relative weight of personalization elements
As demonstrated above, different researchers have used different personalization elements (in different combinations) to manipulate personalization. There are indications that each of these elements could increase perceived personalization. However, it is not clear how strongly each element is likely to contribute to this perception. While some personalization elements (e.g., location, age and gender) are rather general and shared by a larger group of customers, others (e.g., life events, interests or friend referrals) are more idiosyncratic (or distinctive) to a specific customer or a smaller segment.

According to Aaker et al. (2000), a personally meaningful message element increases the likelihood that a consumer perceives the intended target of the advertisement as similar and, therefore, will perceive the advertisement as more personalized. Forehand et al. (2002) found that the processing of identity-relevant information is most pronounced when more pertinent information is used since this increases the likelihood of activating an individuals’ self-schema. This activation of self-schema is called identity salience: a state characterized by an increased sensitivity to identity-relevant stimuli. Identity primes in advertising can direct attention to any specific aspect of one’s social identity (Forehand et al., 2002). Based on the activation of self-schema, it can be assumed that more idiosyncratic information, which is more pertinent, would increase the perception of personalization.

Additionally, according to the distinctiveness theory, distinctive characteristics will be more salient than common characteristics (McGuire, 1984; McGuire and McGuire, 1981). Social distinctiveness indicates “the extent to which a person’s social identity is unique in the immediate environment” (Forehand et al., 2002, p. 1087). Social distinctiveness would increase an individual’s sensitivity to identity-relevant information (DeShpande and Stayman, 1994). Therefore, a distinction between general and idiosyncratic personalization elements is suggested. A general personalization element presents a characteristic that is shared with many others. An idiosyncratic personalization element, on the other hand, is an element that represents something peculiar to an individual, which makes it more personal and distinct in nature. Simonsen (2005) suggests that more idiosyncratic elements will, in general, be overweighted in consumers’ evaluations of product information as they distinguish consumers more from other consumers. In their seminal paper, White et al. (2008) considered location (operationalized as state of residence) as being a lowly distinctive personalization element. Maslowska et al. (2016) manipulated personalization through gender and occupation, and named this “contextualization”, as opposed to a second strategy they named “identification” (mentioning a respondents’ name). Their results indicate that respondents did not perceive a contextualized newsletter (based on gender and occupation) as more personalized than a generic one, which implies that gender (and occupation) is also a lowly distinctive personalization element.

In segmentation literature, it is widely acknowledged that psychological and behavioural variables provide a better basis for segmentation, even though demographic and geographic segmentation is often easier to implement (Moscardo et al., 2001). Previous research indicated that using activities, as a form of interests, provided strong between-group differences and within group similarities (Moscardo et al., 2001). As such, the use of interests as a personalization element can be considered a highly distinctive personalization element. In psychology, it has been found that life events (especially positive events) are crucial elements in a person’s life story (Bernstsen et al., 2011). Moreover, life choices (which are related to certain life events) such as the decision to change jobs or to become a parent can be life-changing, and potentially change the things valued in life (Crone, 2021). As a result, life events can be considered as highly involving, given the potential high impact of the event. Finally, friends are at the center of individual’s identity (Anthony and McCabe, 2015), and are, therefore, highly personal. In sum, life events, interests or friend referrals are more idiosyncratic since they are more personal and distinct characteristics than, for example, gender and are more likely to activate social self-schema.

From a practical perspective, we have considered the audience size that targeting based on a certain personalization element would result in. When trying to create a Facebook audience comprising only US Facebook users in June 2022, the expected audience size would be between 226 million and 267 million people. Selecting only female US Facebook users would decrease the expected size to between 119.9 and 141.6 million users, which is still a large segment. Selecting a target audience between 20 and 29 years of age would result in an estimated target audience between 63.6 million and 74.8 million US Facebook users. With respect to location, while state sizes vary, the estimated target audience size would always be relatively large. For example, the estimated target audience for Facebook users in Florida would be between 16 million and 18.8 million people. In contrast, selecting a life-event such as ‘recently moved’ results in an estimated audience size of “only” 934 100 to 1.1 million US Facebook users. Selecting an interest
such as gaming to create a target group would result in an estimated
target audience size of between 6.4 million and 1.1 million U.S. Facebook
users. These numbers suggests that life-events and interests are more
distinctive personalization element than gender, age or location.

Therefore, we hypothesize that more idiosyncratic personalization elements will carry relatively more weight to elicit perceptions of
personalization.

H1: To evoke perceived personalization in an advertisement on a social
networking site, more idiosyncratic personalization elements (i.e., life events,
interests and friend referrals) have a greater weight than general personali-
ization elements (i.e., location, age, and gender).

2.3. The moderating effect of perceptions about product characteristics

Different personalization elements might not be equally important for
evaluating perceived personalization for different individuals,
depending on their perceptions of products or services as being more or
less involving, possessing search or experience qualities, and their he-
donic or utilitarian buying motivations.

2.3.1. Product category involvement

First, we expect the relative importance of personalization elements to
differ between lowly and highly involved individuals. In other words,
we expect product category involvement to moderate the effect of
personalization elements on perceived personalization. As argued
above, more idiosyncratic elements (i.e., personal interests and friend
referrals) are more likely to evoke perceived personalization than more
common characteristics. This should especially hold for highly involved
individuals. According to the Elaboration Likelihood Model (ELM)
(Petty and Cacioppo, 1986), high product category involvement causes
more elaborate (central) information processing, whereas low product
category involvement leads to peripheral processing. More highly
involved individuals consider information provided in an advertisement
more carefully and are more likely persuaded by the relevance of
arguments (De Meulenaer et al., 2015). It can be expected that more
idiosyncratic personalization elements will increase the likelihood of
self-referencing, a cognitive process used by consumers to process in-
formation (in an advertisement) by comparing that information to self-
relevant information stored in memory (Escalas, 2007). We would argue
that idiosyncratic personalization elements could be considered as more
relevant cues. As more highly involved consumers are more likely to
scrutinize the different personalization elements, they may find that
only ads appealing to truly idiosyncratic, self-relevant elements are
genuinely personalized. They will likely dismiss more general person-
aliization elements as relatively weak personalization elements because
they are not truly personal and therefore less relevant. At the same time,
more lowly involved consumers might consider any personalization el-
ements (e.g., gender, age, location, life events) as a sufficient cue to
signal personalization because they process the advertisement more
superficially. The ELM typically suggests a tradeoff between central and
peripheral processing (Lien, 2001): As argument scrutiny increases,
central cues become more important determinants of persuasion, and
peripheral cues become less important. We, therefore, hypothesize the
following:

H2: Product category involvement moderates the relative importance of
idiosyncratic versus general personalization elements: the importance of
idiosyncratic over general personalization elements to evoke perceived
personalization is stronger for more highly involved individuals than for lower
involved individuals.

2.3.2. Search and experience qualities

Second, a product or service’s search and experience qualities can
moderate the relative importance of personalization elements. People
can perceive goods and services as possessing primarily search or
furniture, for example, can be evaluated pre-purchase and are, therefore,
perceived as having primarily search qualities (Xia and Bechwati, 2010;
Zeithaml, 1981). A restaurant or theatre show, on the other hand, can
only be evaluated post-purchase (by actually experiencing the product)
and are, therefore, often perceived as having primarily experience qualities
(Hsieh et al., 2005; Zeithaml, 1981). Experiences are more personal and more subject to personal taste. The preferences for expe-
rience products may, therefore, be more heterogeneous than for search
products. Feick and Higie (1992) show that in the case of high prefer-
ence heterogeneity, consumers will focus on similarity information (in
their case, with an endorser), and similarity will be an important
determinant of influence. People would then estimate the degree of
personalization of the ad based on how much they have in common with
the intended target group of the ad. As experiences are highly personal,
more idiosyncratic personalization elements (such as the fact that your
friends like this product) could signal a greater deal of similarity with
the intended target group than more general characteristics (such as
your location). We therefore predict that people are more likely to judge
the degree of personalization of an advertisement based on idiosyncratic
personalization elements for experience goods. Search goods, on the
other hand, may be more standardized and more a matter of “opinion”
than “taste”: Claims can, at least in principle, be evaluated with regard
to their correctness. Therefore, the basis on which an ad for a search
good targets you may be of lesser importance; you can always judge the
quality for yourself later. Therefore, we expect:

H3: The product qualities (search vs experience) moderate the relative
importance of idiosyncratic versus general personalization elements: the
importance of idiosyncratic over general personalization elements to evoke
perceived personalization is stronger for a product with experience qualities
compared to a product with search qualities.

2.3.3. Hedonic and utilitarian buying motivations

Finally, goods and services can be bought to fulfill hedonic or utili-
tarian buying motivations (Batra and Ahtola, 1991; Dhar and Werten-
broch, 2000). We expect that people’s buying motivation, too, will
moderate the relative importance of personalization elements for
perceived personalization. Services or goods bought for predominantly
hedonic motivations (e.g., a restaurant) provide affective and sensory
experiences (Hirschman and Holbrook, 1982). As a result, hedonic ser-
vices are highly person-specific (Voss et al., 2003). A utilitarian buying
motivation (e.g., a bank), on the other hand, accomplishes a functional
or practical task. These tasks are often less person-specific: the evalua-
tion of the quality can be made more objectively (Voss et al., 2003).
Applying a similar logic as above, we expect that using highly idiosyn-
cratic personalization elements is not as important to evoke perceived
personalization for utilitarian as for hedonic buying motivations. Due to
the person-specific nature of hedonic products and services, idiosyn-
cratic personalization elements will more strongly trigger perceptions of
personalization than general characteristics. This difference should be
less outspoken when consumers seek to fulfill utilitarian buying moti-
vations. Therefore, we expect:

H4: Buying motivations moderate the relative importance of idiosyncratic
versus general personalization elements: the importance of idiosyncratic over
general personalization elements to evoke perceived personalization is
stronger for consumers with hedonic buying motivations than consumers with
utilitarian buying motivations.

2.4. The moderating effect of audience demographics

In order to be able to contribute to management decisions, we also
included gender, age, and education as potential moderating variables.
However, it is unclear what the impact of these three socio-demographic
variables might be on the evaluation of perceived personalization. With
regard to gender, the selectivity model (Meyers-Levy and Loken, 2015;
Meyers-Levy and Sterntthal, 1991) proposes that women tend to process
information taking all the available cues into account, assigning equal
importance to information relevant to themselves and to others. This
could mean that even more subtle personalization cues would signal personalization to women. On the other hand, due to the fact that women are more systematic processors (Busijeta Banks et al., 2016), it is also possible that they focus more on the idiosyncratic cues to assess perceived personalization since only those cues truly differentiate them from other consumers. Men, in contrast, use an item-specific processing style and tend to rely on a single salient cue or a subset of cues (Busijeta Banks et al., 2016). As such, we would expect men to focus more on the more salient, idiosyncratic, personalization elements to infer personalization.

Perceptions of personalized advertising might also differ depending on generation. Media behavior is, for example, affected by the adoption rate of media (van der Goot et al., 2018). Younger generations, who grew up with personalization techniques, find them more acceptable than older generations (Segijn and Van Ooijen, 2020). This might also affect perceptions of how personalized an advertisement is: as younger consumers grew up with personalized advertising, it can be expected that more general personalization elements do not elicit perceptions of personalization as much as it does with older consumers. At the same time, it is also possible that since they expect personalized advertising, they perceive more advertisements as personalized, whereas they are not actually personalized. Previous research also suggests that especially young consumers are susceptible to social norms due to the consumer socialization process (Moore and Bowman, 2006). Therefore, it may be expected that the referral to personal connections liking the product is a more important personalization cue for younger consumers than for older consumers.

Education has often been linked to the need for cognition (Cacioppo et al., 1996): people with higher levels of education are often found to be in higher need for cognition (NFC). Need for cognition, in turn, results in more elaborate processing; those high in need for cognition are more likely to elaborate and generate inferences in response to advertisements than those low in need for cognition (Haugtvedt et al., 1992; Sicilia et al., 2006). As a result, they might focus more on the more idiosyncratic personalization elements than lower educated consumers to assess the perceived personalization because only those might be successful in differentiating them from other consumers. At the same time, individuals high in need for cognition tend to process all elements of a persuasive message centrally, giving it more attention and elaborating more on the different elements (Sicilia et al., 2006), which might result in the fact that they might recognize all personalization elements more easily. In general, it is unclear what the effect of these three socio-demographic characteristics might be. Therefore, no formal hypotheses are formulated. Fig. 1 presents our conceptual framework.

3. Method

To determine the relative weight of various personalization elements for perceived advertising personalization, we use conjoint analysis. Conjoint analysis involves exposing respondents to a set of stimuli (‘cards’), in this case, advertisements that systematically vary in combinations of levels of a set of attributes (i.e., personalization elements). Each personalization element has two levels in the current study: the personalization element is either present or not present in a card. Respondents rate the perceived degree of personalization for all advertisements. Based on the perceived personalization score for each advertisement, ‘part-worth utilities’ of each level of each attribute are calculated. They constitute the ‘value’ of each level for perceived personalization. These part-worth utilities are then used to derive the relative weight (in conjoint analysis called relative importance) of each attribute. This weight is the difference between the score of the lowest and the highest level of an attribute divided by the sum of all differences between the lowest and the highest level of all attributes. The method thus allows to derive the relative weight of a personalization element for perceived personalization by exposing consumers to multi-attribute stimuli as they would see them in real life.

3.1. Pre-test: Product selection

In order to generalize the findings and to test for differences between different product characteristics, we conduct six separate conjoint analyses for six products: a bank, a smartphone, tableware, furniture, a restaurant, and a fashion retailer. The choice for these products is based on a pre-test, in which we aimed to select three search and three experience products/services with a substantial variation in involvement. We tested 29 potential products and services based on prior research. We then collected a sample of 61 US respondents (M_age = 31.754; SD_age = 9.384, 55.7 % male) through Prolific. Respondents were asked to rate the search and experience qualities of these products and services on two seven-point Likert scales from Weathers et al. (2007). To avoid fatigue, each respondent evaluated a random selection of 15 of the 29 products.

We selected the three products and services with the highest score on experience qualities (M_restaurant = 6.129, SD_restaurant = 1.088; M_furniture = 5.935, SD_furniture = 1.237; M_fashion retailer = 5.935, SD_fashion retailer = 1.263) and the three with the highest score on search qualities (M_smartphone = 5.109, SD_smartphone = 1.190; M_bank; M = 5.063, SD_bank = 1.287; M_tableware = 5.031, SD_tableware = 1.385). The selected products all appeared to be at least somewhat involving. People are not very likely to engage with advertisements they are not at least minimally involved with (M_smartphone = 6.083, SD_smartphone = 1.023; M_bank; M = 5.906, SD_bank = 1.024; M_fashion retailer = 5.602, SD_fashion retailer = 0.960; M_restaurant = 5.591, SD_restaurant = 0.922; M_furniture = 5.237, SD_furniture = 1.206.; M_tableware = 4.417, SD_tableware = 1.515).

3.2. Main study design

To develop the conjoint stimuli for the main study, the six attributes selected were each manipulated on two levels: either the advertising...
message referred to the personalization element, or it did not. We used SPSS orthoplan to create a balanced orthogonal design of eight advertisements (cards) (Table 3). We employed traditional full-profile conjoint analysis, where respondents needed to score all eight cards (Hair et al., 2014). Each card consisted of a different combination of levels (mentioned or not-mentioned) and attributes (actual personalization elements), but each attribute level appeared an equal number of times across the eight stimuli (De Meulenaer et al., 2015). For example, the attribute “age” as a personalization element appeared in four out of eight cards (the other four cards are not personalized based on age). Of these four cards, two also contained “gender” as a personalization element, while the other two did not personalize on gender.

When a card included personalization based on “age”, “gender”, “location”, “interests”, or “life events”, we inserted respondents’ data in the ad based on information they provided at the start of the questionnaire (see Table 4). For friend referrals, we used a generic sentence (“3 of your friends like [brand name]”) rather than asking them to write down actual friend names to avoid potential confounds caused by the relationship with specific friends (e.g., in terms of homophily, tie strength or source credibility).

Each advertisement was introduced by a short scenario explicating the personalization elements that were used. For example, “Imagine that you would encounter the advertisement (suggested post) below in your Facebook newsfeed, based on your location, life events and the page-likes from your friends.” For location, the advertisement headline read “The #1 choice (product) for people near you in (state).” When the advertisement was personalized based on age, the text above the picture read “The #1 choice (product) for people under 35”, because we only selected respondents between the ages of 18 and 35. For gender, the advertisements read “The #1 choice (product) for [men/women]”. The same was done for interests, for example, “The #1 choice (product) for people that are interested in [socializing]”. For life events, we included a statement above the advertisement “Other users who recently [life event] like [brand name].” For the friend referrals, we inserted the text “3 of your friends like [brand name]” above the advertisement. Depending on the selected attributes, combinations of the above manipulations were used: for example, “The #1 choice (product) for [men/women] under 35 near you in (state).” The picture in the advertisement and the rest of the advertising copy (call to action) were kept constant over the different advertisements for each product or service (an example is shown in Appendix A). Each respondent rated eight advertisements for the same product or service. For each of the eight advertisements, respondents rated the perceived personalization of the advertisement (8 items, αminimum = 0.934, based on Kalyanaraman and Sundar (2006), Maslowska et al. (2016) and Srinivasan et al. (2002)) on a seven-point Likert scale. The mean perceived personalization for each card ranged between 3.663 (SD = 1.471) and 4.778 (SD = 1.545). Construct scores per advertisement were computed by calculating the average of the items per advertisement for use in further analyses. See Table 5 for an overview of the construct items. Table 6 provides an overview of the mean scores and standard deviations per card.

Using the crowdsourcing website Prolific, we selected panel members that use Facebook at least once a month. Panel members are usually motivated to participate and have experience with online surveys. A quality check consisted of excluding partially completed questionnaires and rejecting respondents who rated all advertisements the same or inconsistently responded to reverse-scaled items (De Meulenaer et al., 2015). The final sample consisted of 595 U.S. respondents (Mage = 27.87, SDage = 3.93; 46.7 % male). We selected only respondents between 18 and 35 years old. Most of the respondents had at least a graduate degree (70 %). 53.8 % of the respondents were active on Facebook on a daily basis, and most spent less than one hour per day on Facebook (72.1 %).

The survey started with a welcome screen informing participants about the general aim of the study and guaranteeing anonymity. Respondents were first asked to indicate which social media they used at least once a month to verify the pre-screening. Next, socio-demographic information was collected (gender, year of birth, education, home state). Then, respondents were asked to choose the topics they were most interested in out of a list of 14 possibilities and select a life event that had happened to them in the last six months out of 12 possibilities (see Table 5 for the complete lists). On the next page, we asked them about their Facebook use (amount of days and minutes per day). Then, respondents were sent to a short instruction page in which they were informed that they would be presented with eight different advertisements about the same product category that they might encounter on Facebook. We thus carried out the conjoint analysis for each of the six product categories. By doing so, we excluded the potentially confounding effect of brand imagery and product category within the different advertisements each respondent rated. They were asked to look at the eight advertisements attentively. They were informed that the pages might look highly similar but were subtly different. Then, they were asked to rate the perceived personalization of each advertisement individually, disregarding the evaluations of any previous advertisement. The order of the advertisements was randomized to avoid

<table>
<thead>
<tr>
<th>Attribute mentioned</th>
<th>Manipulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Headline: “The #1 choice (product) for people near you in (state)”</td>
</tr>
<tr>
<td></td>
<td>Age: “The #1 choice (product) for people under 35”</td>
</tr>
<tr>
<td>Gender</td>
<td>Headline: “The #1 choice (product) for (men/women)”</td>
</tr>
<tr>
<td>Interests</td>
<td>Headline: “The #1 choice (product) for people that are interested in (socializing)”</td>
</tr>
<tr>
<td>Friend referrals</td>
<td>Additional statement above the advertisement: “3 of your friends like [brand name]”</td>
</tr>
<tr>
<td>Life event</td>
<td>Additional statement above the advertisement: “Other users who recently [life event] like [brand name].”</td>
</tr>
</tbody>
</table>

Table 3
Orthoplan.

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td>1</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>2</td>
<td>Mentioned</td>
</tr>
<tr>
<td>3</td>
<td>Mentioned</td>
</tr>
<tr>
<td>4</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>5</td>
<td>Mentioned</td>
</tr>
<tr>
<td>6</td>
<td>Mentioned</td>
</tr>
<tr>
<td>7</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>8</td>
<td>Not mentioned</td>
</tr>
</tbody>
</table>
Table 5

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Cronbach’s alpha</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interests</td>
<td>Socializing, Traveling, Sports, Golf, Art and Culture, Camping, Music, Hiking, Skiing, Reading, Gaming, Nature, Shopping, Going out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life events</td>
<td>Got a new job, Started at a new school, Studied abroad, Got a new relationship, Got engaged, Got married, Celebrated an anniversary, Got a new child, Moved, Bought a home, Did home improvement, Traveled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived personalization</td>
<td>1) This ad is tailored to my situation, 2) I believe this ad is customized to my needs, 3) This ad was targeted at me as a unique individual, 4) I believe that this ad is customized to my characteristics, 5) This ad was personalized according to my profile, 6) There was personal information in the ad, 7) The ad was targeted at me, 8) I could recognize myself in the group the ad was targeted at</td>
<td>0.944</td>
<td></td>
</tr>
<tr>
<td>Product category involvement</td>
<td>1) unimportant – important, 2) meaningless – meaningful, 3) does not matter to me – does matter to me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search product qualities</td>
<td>1) I can adequately evaluate [product/service] using only the information provided by the retailer about its characteristics, 2) I can evaluate the quality of [product/service] simply by reading information about [product/service].</td>
<td>0.807 4.00</td>
<td></td>
</tr>
<tr>
<td>Experience product qualities</td>
<td>It’s important for me to personally [try tableware/a bank/a sofa/on clothing/a smartphone/a restaurant] to evaluate it.</td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>Hedonic buying motivation</td>
<td>If I were to [buy tableware/a bank/a sofa/on clothing/a smartphone/a restaurant], I would primarily do this because it is … 1) not fun – fun, 2) dull – exciting, 3) unenjoyable – enjoyable</td>
<td>0.895 5.33</td>
<td></td>
</tr>
<tr>
<td>Utilitarian buying motivation</td>
<td>If I were to [buy tableware/a bank/a sofa/on clothing/a smartphone/a restaurant], I would primarily do this</td>
<td>0.876 6.33</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 (continued)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Cronbach’s alpha</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Are you 1) Male, 2) Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Calculated based on birth year:</td>
<td>27.00</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>What year were you born?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days spent on FB</td>
<td>In the past week, on average, approximately, how many days have you used Facebook?</td>
<td>1) 1 day, 2) 2 days, 3) 3 days, 4) 4 days, 5) 5 days, 6) 6 days, 7) 7 days</td>
<td></td>
</tr>
<tr>
<td>Minutes per day spent on FB</td>
<td>In the past week, on average, how many minutes per day have you spent on Facebook?</td>
<td>1) less than 10 min, 2) between 11 and 30 min, 3) between 31 and 60 min, 4) more than 1 h, but less than 2 h, 5) more than 2 h, but less than 3 h, 6) more than 3 h</td>
<td></td>
</tr>
</tbody>
</table>

Table 6

<table>
<thead>
<tr>
<th>Card</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (location – life events – friend referral)</td>
<td>4.033 (1.464)</td>
</tr>
<tr>
<td>2 (age – gender – location – friend referral)</td>
<td>4.432 (1.544)</td>
</tr>
<tr>
<td>3 (age – life events – interests – friend referral)</td>
<td>4.407 (1.486)</td>
</tr>
<tr>
<td>4 (location – interests)</td>
<td>4.228 (1.542)</td>
</tr>
<tr>
<td>5 (age)</td>
<td>3.854 (1.452)</td>
</tr>
<tr>
<td>6 (age – gender – location – life events – interests)</td>
<td>4.778 (1.545)</td>
</tr>
<tr>
<td>7 (gender – interests – friend referral)</td>
<td>4.243 (1.443)</td>
</tr>
<tr>
<td>8 (gender – life events)</td>
<td>3.663 (1.471)</td>
</tr>
</tbody>
</table>

Mean perceived personalization and standard deviation per card.

confound due to learning or wear-out effects, as suggested by Christen (1994).

3.4. Analyses and results

SPSS conjoint was used to carry out the analyses. For each respondent, the relative importance of each attribute (personalization element) is calculated based on the part-worth utilities for the two levels making up the attribute. Attributes with greater part-worth utility ranges are considered to be more important than those with smaller ranges. The importance percentages are computed by taking the utility range for each respondent for each attribute and dividing it by the sum of the
utility ranges for all attributes. Afterward, the average percentage across the respondents is calculated.

First, we pooled the data across the six products to answer H1 (Table 7). All part-worth utilities are positive, which indicates that each personalization element increases the perception of personalization. Nevertheless, some elements increase the perception of personalization substantially more than others. The elements that carry the most weight to evoke perceived personalization are interests, location, and age. The least important elements are gender, friend referrals, and life events. Therefore, we reject H1: only one of the three idiosyncratic personalization elements seems important to elicit perceived personalization, two of the three most important personalization elements are general.

Additionally, the part-worth utilities can be used to calculate a perceived personalization score for each of the 64 \(\left(2^6\right)\) possible combinations of personalization levels. For example, in Table 7 it can be seen the constant is 4.244. An advertisement that is not personalized at all (so none of the personalization elements are used) leads to a perceived personalization score of 3.524 (4.244 – 0.168(for location) – 0.168 (for age) – 0.077 (for gender) - 0.016 (for life-event) - 0.215 (for interest) - 0.076 (for friend referrals)). An advertisement that uses all personalization elements would lead to a score of 4.964 (4.244 + 0.168(for location) + 0.168 (for age) + 0.077 (for gender) + 0.016 (for life-event) + 0.215 (for interest) + 0.076 (for friend referrals)).

Next, we median split (a separate split for each moderator) the sample based on consumers’ perceptions of the different product characteristics (product category involvement, search vs experience qualities, and utilitarian vs hedonic buying motivations). We then reran the conjoint analyses for the separate samples. Table 8 shows the part-worth utilities for each attribute level for each median-split product characteristic. To test H2, we compared the results for the two samples differing in product category involvement. For both less and more involved consumers, each personalization element increases the perception of personalization. The results are highly comparable between the two groups and follow the pattern described above. For both groups, interests, location, age, and gender contribute the most to perceived personalization. For both groups, the elements that contribute the least are friend referrals and life events. Therefore, H2 is not confirmed.

The part-worth utilities can again be used to calculate the perceived personalization for both groups for any combination of personalization elements. For example, for the low involvement group using no personalization elements would lead to a perceived personalization score of 3.225, whereas using all personalization elements would lead to a score of 4.669. For the high involvement group, no personalization elements would lead to a perceived personalization score of 3.814, whereas using all personalization elements would lead to a perceived personalization score of 5.210. To test H3, we compared whether there were differences between products and services that were evaluated as

### Table 7
Conjoint analysis for perceived personalization: products pooled across products.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Part-worth</td>
<td>Importance</td>
</tr>
<tr>
<td>Location</td>
<td>Not mentioned</td>
<td>-0.168</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.168</td>
</tr>
<tr>
<td>Age</td>
<td>Not mentioned</td>
<td>-0.168</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.077</td>
</tr>
<tr>
<td>Gender</td>
<td>Not mentioned</td>
<td>-0.016</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.016</td>
</tr>
<tr>
<td>Life-event</td>
<td>Not mentioned</td>
<td>-0.215</td>
</tr>
<tr>
<td>Interests</td>
<td>Not mentioned</td>
<td>-0.076</td>
</tr>
<tr>
<td>Friend referrals</td>
<td>Not mentioned</td>
<td>-0.215</td>
</tr>
<tr>
<td>Constant</td>
<td>4.244</td>
<td></td>
</tr>
</tbody>
</table>

### Table 8
Conjoint analysis for perceived personalization: products pooled across product characteristics.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Part-worth</td>
<td>Importance</td>
</tr>
<tr>
<td>Location</td>
<td>Non-mentioned</td>
<td>-0.168</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.168</td>
</tr>
<tr>
<td>Age</td>
<td>Non-mentioned</td>
<td>-0.168</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.077</td>
</tr>
<tr>
<td>Gender</td>
<td>Non-mentioned</td>
<td>-0.016</td>
</tr>
<tr>
<td></td>
<td>Mentioned</td>
<td>0.076</td>
</tr>
<tr>
<td>Life-event</td>
<td>Non-mentioned</td>
<td>-0.215</td>
</tr>
<tr>
<td>Interests</td>
<td>Non-mentioned</td>
<td>-0.076</td>
</tr>
<tr>
<td>Friend referrals</td>
<td>Non-mentioned</td>
<td>-0.215</td>
</tr>
<tr>
<td>Constant</td>
<td>4.244</td>
<td></td>
</tr>
</tbody>
</table>

Notes: \(R^2 = 0.997, p < 0.001; R^2 \text{ utilitarian} = 0.995; R^2 \text{ hedonic} = 0.987; R^2 \text{ search} = 0.995; R^2 \text{ high involvement} = 0.999; R^2 \text{ low involvement} = 1.000; R^2 \text{ search experience} = 0.997; p < 0.001.

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having high search (i.e., above the median on the “search” scale) versus high experience (i.e., above the median on the “experience” measure) qualities. Consumers scoring above the median on both scales (n = 69) were excluded from the analysis to avoid counting them twice. For both types of products, each personalization element increases the perception of personalization. The results are again highly comparable between the two types of products and, in general, follow the pattern described above. For both groups, interests, location, and age contribute the most to perceived personalization. For both groups, the elements that contribute the least to perceived personalization are gender, friend referrals, and life events. Therefore, H3 is not confirmed. When calculating the minimum and maximum level of perceived personalization for each group, using no personalization elements (i.e., the minimum level of perceived personalization) for products and services with search qualities would lead to a score of 3.71, whereas using all elements (i.e., the maximum level of perceived personalization) would lead to a score of 5.117. For the products and services with experience qualities, the minimum score would be 3.326, and the maximum score would be 4.916.

Third, we compared products and services rated as either being highly hedonic (above the median) or being highly utilitarian (above the median) to test H4. Similar to the previous analysis, we excluded consumers who rated the product or service high on both hedonic and utilitarian buying motivations (n = 127). Again, all personalization elements contribute positively to the perception of personalization. For both utilitarian and hedonic products or services, we find that interests, location, and age contribute most to perceived personalization, whereas gender, life events, and friend referrals contribute least to perceived personalization.

We conclude that the results are highly stable across products. Therefore, H4 is not confirmed. When calculating the minimum and maximum scores of perceived personalization based on the part-worth utilities, the minimum for hedonic products/services is 3.440, and the maximum is 4.796. The minimum score for utilitarian products is 3.549, and the maximum is 5.135.

Finally, to answer RQ2, we also compared the results between respondents with different demographic characteristics (Table 9). First, we compared the importance values between men and women. The pattern for both men and women follows the general pattern described in the previous analyses: interests, location, and age contribute most to perceived personalization, whereas gender, friend referrals, and life events contribute the least. The minimum score of perceived personalization for men (based on using no personalization element) is 3.830, and the maximum score of perceived personalization (based on using all personalization elements) is 4.896. The minimum score of perceived personalization for women is 3.549, and the maximum score of perceived personalization is 5.043.

Next, we compared respondents 18–27 to those 28–35 years old (based on a median split of the sample). Interests and age contribute most to perceived personalization for both groups, whereas life events and gender contribute the least to perceived personalization for both groups. The minimum perceived personalization score for younger respondents is 3.448, and the maximum score is 4.942. The minimum perceived personalization score for older respondents is 3.639, and the maximum score 4.945.

Third, we compared respondents with a lower educational level to those with a higher educational level (based on a median split of the sample). Interests, location and age contribute most to perceived personalization for both groups, whereas life-events, friends referrals and gender contribute the least for both groups. The minimum perceived personalization score for respondents with a lower level of education is 3.427, and the maximum score is 4.755. The minimum perceived personalization score for respondents with a higher level of education is 3.427, and the maximum score is 4.973.

### Table 9

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Men</th>
<th>Part-worth Importance</th>
<th>Part-worth Importance</th>
<th>Women</th>
<th>Part-worth Importance</th>
<th>Part-worth Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Not mentioned</td>
<td>0.197</td>
<td>17.467</td>
<td>0.170</td>
<td>Not mentioned</td>
<td>0.168</td>
<td>17.194</td>
</tr>
<tr>
<td>Age</td>
<td>Under 27</td>
<td>0.197</td>
<td>17.467</td>
<td>0.170</td>
<td>Under 27</td>
<td>0.168</td>
<td>17.194</td>
</tr>
<tr>
<td>Gender</td>
<td>Not mentioned</td>
<td>0.057</td>
<td>14.766</td>
<td>0.042</td>
<td>Not mentioned</td>
<td>0.0574</td>
<td>14.763</td>
</tr>
<tr>
<td>Interests</td>
<td>Not mentioned</td>
<td>0.221</td>
<td>20.934</td>
<td>0.182</td>
<td>Not mentioned</td>
<td>0.221</td>
<td>20.934</td>
</tr>
<tr>
<td>Friend referrals</td>
<td>Not mentioned</td>
<td>0.081</td>
<td>13.703</td>
<td>0.104</td>
<td>Not mentioned</td>
<td>0.081</td>
<td>13.703</td>
</tr>
<tr>
<td>Life events</td>
<td>Not mentioned</td>
<td>0.210</td>
<td>17.477</td>
<td>0.142</td>
<td>Not mentioned</td>
<td>0.210</td>
<td>17.477</td>
</tr>
<tr>
<td>Education</td>
<td>Low</td>
<td>0.064</td>
<td>15.738</td>
<td>0.040</td>
<td>Low</td>
<td>0.064</td>
<td>15.738</td>
</tr>
<tr>
<td>Education</td>
<td>High</td>
<td>0.176</td>
<td>19.177</td>
<td>0.176</td>
<td>High</td>
<td>0.176</td>
<td>19.177</td>
</tr>
</tbody>
</table>

Notes: R²_men = 0.998, p < 0.001; R²_women = 0.998, p < 0.001; R²_age under 27 = 0.999, p < 0.001; R²_age over 27 = 0.999, p < 0.001; R²_gender = 0.997, p < 0.001; R²_location = 0.997, p < 0.001; R²_interests = 0.997, p < 0.001; R²_f-referrals = 0.997, p < 0.001; R²_life-events = 0.997, p < 0.001; R²_education = 0.997, p < 0.001.
4. Discussion

The study’s findings indicate that all personalization elements positively contribute to the perception of personalization, although some elements elicit substantially higher levels of perceived personalization than others. More specifically, when trying to achieve perceived personalization, it is best to use interests, location, and/or age. This is partly surprising since location and age are not considered idiosyncratic personalization elements. Since we were surprised by the fact that only one of our three idiosyncratic personalization elements elicited higher levels of perceived personalization, a follow-up study was conducted to uncover potential underlying explanations.

5. Follow-up study

We adopted the think-aloud technique for conducting interviews with social media users. While performing tasks, participants speak out loud which thoughts and feelings come to mind (Ericsson and Simon, 1993). This technique is suitable for understanding meta-cognitive processes (Hofer, 2004). It gains insights into the reasoning of participants at the time that this reasoning is taking place, avoiding the need to remember this reasoning in hindsight, which could bias results (Fonteyn et al., 1993). To avoid disrupting a respondent’s reasoning, no questions were asked during the think-aloud task (Fonteyn et al., 1993).

For this study, 16 participants were recruited (6 men, 10 women). They were all personal contacts of the interviewer (a master student) in order to ensure a sufficient level of trust so that participants would speak freely. 13 respondents were between 21 and 24 years old, 3 respondents were older than 40.

5.1. Procedure

We created 8 ‘tasks’ in the software program UxProbe, which is a user experience testing tool. This tool allows users to perform different tasks in a website while their video and audio is being recorded. For each task, participants were encouraged to explicitly voice their thoughts, feelings and other reactions. First, we asked respondents to log onto their own Facebook profile, scroll down their News Feed and describe what they would usually do and pay attention to. Task 2 was to find an ad in their News Feed and to click the button “Why am I seeing this ad?” This button results in a pop-up explaining why the respondent sees that interest. Nevertheless, participants indicated that a lot of personalized advertisements on their Facebook had access to such data. The interviewer ended the interview with two questions about the perceptions of explicit permission to use certain types of personal information and their overall attitude towards personalized advertisements. After transcription of the interviews, Nvivo coding software was used to code the data. We followed the guidelines for thematic analysis (Braun and Clarke, 2006). Based on the findings of our main study, we identified and categorized recurring themes.

6. Results

6.1. Personalization elements

Our conjoint analysis indicated that the use of a user’s age would result in higher levels of perceived personalization, even though we had not qualified age as an idiosyncratic personalization element. Interviewees mentioned that a lot of personalized advertisements on their News Feed had a very broad target group. For example, one of the ads displayed on the profile page of interviewee mentioned that the target group was men between 18 and 65 years old. As a result of being explicitly personalized based on a narrow age range (e.g., people in their thirties such as in our conjoint analysis) might therefore indicate a higher level of personalization to respondents. As mentioned, in the follow-up study advertisements were explicitly personalized incorrectly (e.g., using the wrong age range). This scared respondents off as they indicated that “a mistake is not good advertising”. Here, respondents mentioned that when the age category was only one category under or above the correct category (for example, “people in their thirties” shown to people who were actually in their twenties), interviewees did not mind the error as much when the age category mentioned was further from their actual age category. This too might result from the observations based on the real social media advertisements. Since we observed that the age range was very broad users might be extra aware when an advertisement is explicitly personalized on a narrow, yet incorrect age range.

Location is another element that we did not qualify as idiosyncratic, but that has a relatively important effect on perceived personalization. The follow-up study indicated that having the location correct was more important for respondents than having the age correct. Interviewees also mentioned that using location “can increase attention to the advertisement”, whereas using the wrong location “decreases relevance and interest”. Nevertheless, a mistake in location was considered as “less severe than the wrong age” because, as one respondent mentioned, they would “still visit the bar when passing by”.

Another surprising finding in our conjoint was that friend referrals were not very important to elicit perceived personalization, even though we considered them as an idiosyncratic element. Several participants in the follow-up study did not spontaneously notice the page-likes. This could be because they are not an integral part of the ad but mentioned just above the ad. Similar to banner blindness, social media users may have learned to ignore such information. Participants indicated that friend referrals “can attract attention to the advertisement”, but they also experienced that “they are not always correct”. When friends were asked about pages they had, according to the friend referrals liked, they indicated they had not liked the page. Moreover, it became clear that the use of friend referrals as such is not highly impactful, but the connection people have with these friends matters. Good or “best” friends have a stronger impact on responses towards the advertisement, because “it feels more credible”. Therefore, friend referrals as such might not drive perceived personalization, but it might elicit tie strength and source credibility which then, in turn, drive downstream consumer responses.
6.2. Underlying mechanisms

Even though this was not the main research question, throughout the tasks, respondents also pointed at several underlying mechanisms, such as relevance and the origins of personal data. With regards to relevance, respondents mentioned that if Facebook has access to so much personal data, then ‘their ads better be relevant’. At the same time, relevant advertisements can also result in ‘mixed feelings’ since advertisements that are not relevant are ‘simply ignored’, are ‘annoying’, ‘weird’, and even ‘a waste of time’, but at the same time relevant advertisement does ‘not automatically lead to action’ and are ‘deterrent’.

One reason for this that respondents mentioned was that the origin of the data mattered in their evaluation of the advertisements. For example, the use of “profile information was acceptable” because it is clear how Facebook obtained that data. However, the use of past searches, Instagram use or friend referrals was considered as “invasive” and “creepy”. The respondents’ opinions regarding the use of location were more diverse. For example, the use of a respondents’ wifi-connection to obtain their location was primarily regarded as “creepy”. This opinion was primarily expressed by those who were unaware of the use of wifi-connection for location determination.

7. General discussion

For advertising personalization to be effective, it has to be perceived as personalized. The present study is, to our knowledge, the first to investigate the relative importance of antecedents of perceived personalization for products and services with different product characteristics and different target groups. Since previous literature indicates that perceived personalization and actual personalization do not necessarily match (Kramer, 2007; Li, 2016), it is crucial for both academics and managers to understand what determines the perception of personalization and which elements contribute most to this perception. Previous research has failed to either report manipulation checks (e.g., Kaspar et al., 2019; Windels et al., 2018) or combine different personalization elements making it impossible to determine the contribution of single personalization elements (e.g., Walrave et al., 2016; Zarouali et al., 2018). Consequently, it is difficult to understand whether these studies are actually about a generic message (i.e., failed manipulation) or about a personalized message (i.e., successful manipulation).

Previous research has indicated that perceived personalization can have both positive (e.g., perceived relevance) and negative (e.g., perceived invasiveness and creepiness) effects (De Keyzer et al., 2021, 2022; Gironda and Korgaonkar, 2018; Pfiffelmann et al., 2020). Our pre-test to select the personalization elements, and the follow-up study show that some elements are qualified as ‘useful’ (positive), while others are perceived as more annoying or even creepy (negative). When combining personalization elements in an advertisement, it is advisable to only use those elements that lead to positive perceptions, being interests, location, and age (all considered ‘useful’ and not ‘annoying’). Based on the part-worth utilities in Table 7, an advertisement with these three elements would elicit a perceived personalization score of 4.964 (on a 7-point scale) compared to 3.524 for a non-personalized advertisement.

8. Theoretical implications

Based on the distinctiveness theory (McGuire, 1984; McGuire and McGuire, 1981), we expected that using interests would be relatively more important to elicit perceived personalization than other elements. Prior studies by Kalyanaraman and Sundar (2006) and Li (2016), for example, manipulating personalization through interests, also report that their manipulations successfully elicited perceived personalization. The current study confirms that interests are a successful way to manipulate perceived personalization. Notably, previous research has also indicated that this personalization element can also positively affect attitudes and behavioral intentions (Kalyanaraman and Sundar, 2006; Li, 2016).

Moreover, we also expected friend referrals to exert a relatively great influence as well. Our findings did not confirm this. This element elicits personalization perceptions, but it was relatively less effective in triggering perceived personalization than location, age, and gender (more general personalization elements). Our follow-up study indicates that not only should the number of friends referring a page be high enough, but the connection with those friends should also be close. This relates to the concept of tie strength, which refers to the strength between two social contacts (Money et al., 1998). Information from a strong tie is perceived as a more credible, which reduces potential risks (De Bruyn and Lilien, 2008; Rogers, 1995). This was indeed also indicated by respondents in our follow-up study. Although friend referrals and life events contribute positively to perceived personalization, our findings indicate that they are relatively less effective in triggering perceived personalization than the other elements. These two elements were also among the least studied in prior research. Windels et al. (2018), for example, reported that friend referrals did not increase visual attention, which might indicate that it is not a beneficial personalization element to use.

In sum, our findings indicate that the theoretical assumptions about the importance of idiosyncratic (compared to general) personalization elements to elicit perceived personalization do not fully hold. More general personalization elements (such as location or age) could also elicit perceived personalization. Based on the findings from our two studies, we conclude that the concept of idiosyncrasy might not be the (only) driving force behind perceived personalization. As indicated in the follow-up study, tie strength of connections and source credibility might be more important to drive the effects of friend referrals. Moreover, age is a commonly used segmentation criterion and, as such, users might be more used to personalized based on this criterion. This familiarity might mitigate feelings of creepiness or intrusiveness. Furthermore, different age groups are expected to exhibit unique needs, wants and preferences (Khan et al., 2020). As mentioned in our follow-up study, mistakes in age category decrease the relevance of the advertisement. Furthermore, as our respondents in the follow-up study indicated, relevance can be increased by using location. This indicates that perceived personalization is closely related to relevance. Previous research has, indeed, found that these two are closely connected (Arora and Bawa, 2022; De Keyzer et al., 2021). Moreover, buying products and services locally is a current trend (Erdly, 2020) which could increase the relevance of location as a personalization element. Petty et al. (1983) already used location to increase participants involvement with the advertisement. As such, it might not only be idiosyncrasy driving the effect of location on perceived personalization but also relevance and credibility.

9. Managerial implications

Previous research already indicated that when an advertiser wants to create a personalized advertisement, it is vital to choose those personalization elements that elicit perceived personalization and result in positive personalization effects. Perceived personalization, compared to actual personalization, actually drives these personalization effects, and therefore managers must select those personalization elements that actually induce perceived personalization. Moreover, in a study by Innovid (2020) 43 % of respondents say it is important that online ads are personalized. Nevertheless, even though opportunities to engage through digital marketing channels, brands still struggle to deliver personalized touch points (Innovid, 2020). Our findings provide guidelines on which elements should be used. Advertisers wanting to evoke perceptions of personalized advertisements should primarily use a consumer’s interests, as this is the strongest determinant of perceived personalization and is considered a useful personalization element. Friend referrals and life events seem less effective. As each personalization element contributes positively to perceived personalization, managers could consider combining all
possible personalization elements to induce the highest possible level of perceived personalization. Previous research, indeed, has often combined different personalization elements to manipulate higher levels of personalization (De Keyzer et al., 2021; Walrave et al., 2016; Zarouali et al., 2018). Our research indicates that this might be a good strategy to elicit perceived personalization, as there should be a cumulative effect when adding multiple elements. As indicated in our results’ section, when adding all personalization elements, the perceived personalization score is 4.964 whereas an advertisement without personalization elements results in a perceived personalization score of 3.524.

However, managers should weigh the costs and benefits. More narrow targeting could be more costly. Paying more to personalize elements that contribute less to perceived personalization could not be cost-effective. Advertisers should also consider their brand effects. While the use of certain personalization elements could also entail negative effects as they may annoy consumers and should, therefore, be used more cautiously. In our selection of elements study, respondents stated that location, life events, and friend referrals are more annoying than useful. Especially since the latter two only faintly contribute to perceived personalization, it would be better to avoid using them. Also, using the relatively important element ‘location’ as a personalization element should be used with care because respondents found location to be an annoying personalization element when used in advertisements.

Moreover, in our follow-up study respondents did indicate that it can be a relevant personalization element. However, it is also considered as potentially creepy when this information is based on data that is indirectly disclosed (e.g., through the use of wifi connection for location determination). Nevertheless, although friend referrals are considered a targeting option in social networking sites (e.g., Meta Platforms Inc., 2022c), they might rely on a different kind of tactic. They might not be very important to elicit perceptions of personalization; however, they might affect consumers’ responses via perceptions of tie strength or source credibility.

10. Limitations and suggestions for future research

Limitations of the present study provide opportunities for future research. First, we have used only six personalization elements. While these correspond to elements that are frequently used in advertising on social networking sites and are considered as either most useful or most annoying in our study, prior research has also included other elements (such as the respondent’s name or work status) (Li and Liu, 2017; Maslowska et al., 2016). Other studies have focused on the use of online behavioral advertising (see Boerman et al., 2017 for a literature review).

Online behavioral advertising is a type of personalized advertising based on, for example, consumers’ online behavior, including web browsing, data, search histories, media consumption (Zuiderven Borgesius, 2015). The tracking of these data happens more covertly (Ham and Nelson, 2016) and happens (primarily) outside the social networking site. We have not included this type of personalization elements in the current study as it is highly different from the personalization elements in the study. Since there are different types of online behavior that can be used for online behavioral advertising, we would suggest future research to examine the relative importance of different types of online (behavioral) data to determine perceived personalization. Nevertheless, other elements such as the respondent’s name, work status, income, and online behavior could also be tested in order to determine their relative importance on perceived personalization.

Future research could also examine other levels for each of the personalization attributes. For example, the current study manipulated friend referrals by stating that three of the respondents’ friends liked the page, indicating that more than three friends could have a different effect on perceived personalization. However, as Agarwal et al. (2017) posit, rather than the overall number of friend referrals driving effects on consumer responses, such as click-through, the relational characteristics with these friends might be more important. It might be more important to show consumers that are highly homophilous with the respondent as these friends can be expected to have similar needs and preferences according to social comparison theory (Festinger, 1954). Agarwal et al. (2017) show that more homophilous friends, who share, for example, age, gender, and interests, strengthen the effect of friend referrals on click intention. Moreover, the tie strength might also increase the strength of the effect of friend referrals on perceived personalization. Future research could examine the impact of interpersonal relationships on the effects of friend referrals on both perceived personalization and consumers’ attitudes and behavior (all intentions).

Nevertheless, the current research has opted not to do this to prevent confounds with regard to the relationship between the sender and his friends.

In the current study, each attribute’s levels were manipulated as being present or not present. However, real-life advertisements could make use of different levels for different personalization elements. For example, an advertisement could be personalized based on country-level, state-level, or city-level. This could easily be done in conjoint analysis. However, this would lead to participants having to judge many more cards. Conjoint analysis is an intensive task for respondents (De Meulenaer et al., 2015), and to avoid respondent fatigue, we opted to select more personalization elements and fewer levels per attribute. However, future research is encouraged to examine the effect of more fine-grained levels of personalization. Increasing the depth of the personalization might increase perceived personalization, but it might also increase negative feelings, as shown by Bleier and Eisenbeiss (2015a).

Second, we manipulated the personalization elements very overtly (using them in the slogan and the scenario instructions) to increase the study’s internal validity. The examples above provide evidence that explicit references to personalization cues reflect reality in at least some situations. However, personalization techniques can also be used more covertly. For example, life events are not always used to personalize in the same overt way as we manipulated it. As a result, the results of our study might not be generalizable to more covert personalization techniques. When using covert personalization techniques, it might be more challenging for respondents to recognize that the advertisement was personalized. Respondents were also exposed to static advertisements that were shown not shown in the context of a Facebook homepage, in which other information is competing for respondents’ attention. This lack of interactivity and context could have influenced the results. As with any research, there is a tradeoff between internal and external validity. A field experiment would provide insights on the generalizability of our findings.

Third, we only examined the main effects of the six personalization elements. Our conjoint design does not allow us to study potential interaction effects that could indicate synergies between elements. Again, to study these interaction effects, each respondent would have had to judge many more cards. Future research is invited to dig deeper into these potential interaction effects.

Fourth, we have only examined the impact of advertising elements on perceived personalization and not on attitudinal or behavioral measures. Our selection procedure of personalization elements indicated that, for example, location was perceived to be more annoying than useful, and it is one of the elements that elicits perceived personalization the most. As a result, it might elicit negative personalization effects. For example, decrease brand attitudes or purchase intentions. Future research could also examine other dependent variables to disentangle the positive and negative personalization effects. We would suggest future research to also look at this relationship in different contexts. For example, we find little differences in the perception of personalization between different product or demographic characteristics. However, different consumer segments might react differently toward the use of personalization for different products in terms of consumer responses, such as brand attitude, purchase...
intentions, or even sales. For example, the use of personalization might be more congruent with the expectations consumers have for (advertising of) hedonic products, which would result in more positive responses. Moreover, consumers might react differently toward personalized advertisements in different social media platforms even though social media platforms use similar personalization elements to personalize their advertisements. Nevertheless, personalization elements might not have the same effect on consumers’ responses due to the specific nature of the platform and the motivations consumers have to engage with the content on the platform. Previous research indicated that different social media are used to perform different brand-related activities (e.g., Buzeta et al., 2020; Voorveld, 2019). Future research could study personalization elements in different social media.

Finally, we selected products and services that were at least moderately involving, which might explain the lack of differences between highly and lowly involved consumers. Although there was still adequate variance in the involvement scores for the different products and services, future research could select different products and/or services with a larger variation in involvement to examine this further.

11. Conclusion
The current paper examined the relative weight of different actual personalization elements (age, gender, location, life events, interests, and friend referrals) in Facebook ads in eliciting perceived advertising personalization. Through the use of conjoint analyses for six products and a follow-up study employing the think aloud method, we find that the most important elements in eliciting perceived personalization are (in order of importance) a person’s interests, location, and age. This result remains stable across different product perceptions (product category involvement, product qualities, and buying motivations) and across different socio-demographic characteristics (gender, age, and education). Moreover, we shed light on the underlying thought processes of consumers when evaluating personalized advertising messages on social networking sites. It indicates that idiosyncrasy alone is not sufficient to understand the effects of personalization elements on perceived personalization. Relevance, creepiness and involvement all seem to be relevant constructs to take into account when establishing a more comprehensive understanding of perceived personalization.

CRediT authorship contribution statement
Freya De Keyzer: Conceptualization, Investigation, Writing – original draft. Nathalie Den: Writing – review & editing, Supervision. Patrick De Pelsmacker: Writing – review & editing, Supervision.

Declaration of Competing Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data
Supplementary data to this article can be found online at https://doi.org/10.1016/j.elerap.2022.101183.

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