That's Not Who I Am! Investigating the Role of Uniqueness and Belongingness for Designing Successful Personalized Recommendations

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Abstract

Although many firms rely on personalization to enhance the user experience of their digital service, their efforts might backfire if users feel misunderstood by the personalized offerings. So far, the psychological processes underlying the phenomenon of feeling misunderstood by personalization systems and potential means to alleviate this perception remain largely uninvestigated. Building on the psychological concepts of uniqueness and belongingness, we propose a framework to investigate how transparency impacts users' feeling of being misunderstood by personalization systems. To test our research model, we conduct an online experiment using Spotify's "Discover Weekly" playlist. The results show that considering not only users' uniqueness but especially their belongingness is decisive to avoid misunderstanding. Further, we find that transparent explanations of the system's inner workings elicit a feeling of control among users, which fosters the perception that both users' uniqueness and belongingness are considered, resulting in less misunderstanding and continued usage.

Keywords: personalization, misunderstanding, transparency, uniqueness, belongingness.

1. Introduction

In today's digital landscape, users are often overwhelmed by the abundance of content alternatives available. Therefore, many firms rely on personalization to minimize information overload and provide users with tailored recommendations (Liang et al., 2006). The importance of personalized recommendations for content providers becomes evident by the circumstance that 80% of streamed content on the leading paid video streaming service Netflix is suggested by its personalization algorithm (Biddle, 2021). Yet, to benefit from the advantages of personalized offerings, aligning the provided recommendations with users' actual preferences is decisive (Tam & Ho, 2005). If users perceive that the provided recommendations do not match their self-concept, they might feel misunderstood and the firm's personalization effort could backfire (Puntoni et al., 2021). For instance, in a review on Spotify's personalized "Discover Weekly" playlist, a user complains: "*The recommendations s*ck: Listened to a few anime covers, now all my "Discover Weekly" is filled with disgusting covers*" (Grandterr, 2019). Likewise, a Netflix user criticizes in a Google Play Store review that the video streaming service fails in understanding who he is: "*[…] Netflix will only show me movies someone who isn't me would like and they always recommend movies filmed in another country [...]*" (Miller, 2021). Those examples highlight the frustration of users who feel misunderstood by personalized recommendations. So far, research has focused on the phenomenon of feeling misunderstood and the associated consequences in the context of human-to-human relationships and has shown that feeling misunderstood is related to several negative consequences (Lun et al., 2008; Reis et al., 2017). In this context, feeling misunderstood refers to humans' perception that their "needs, abilities, traits, wishes, beliefs, and preferences" (p. 1) are not comprehended by other human beings (Reis et al., 2017). Yet, as individuals tend to apply the same social rules in interactions with technical systems as with other humans (Nass et al., 1994), it is of central interest to gain deeper insights into the circumstances under which users feel misunderstood by a personalization system (PS). In this vein, Puntoni et al. (2021) call for investigating the underlying psychological processes that explain why users feel misunderstood by PSs. Tackling this question is of high relevance, as a survey revealed that in February 2021 almost half of the users of video streaming services in the US were frustrated with the provided recommendations, while at the same time the services struggled with a churn rate of 36% among paying users (Deloitte, 2021).

Addressing this research gap, our study examines why users feel misunderstood by PSs and how this impacts their continuance intention. Following Puntoni et al. (2021), we investigate how two central human

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needs impact users' perception of personalized recommendations: the need for belongingness (Baumeister & Leary, 1995) and the need for uniqueness (Snyder & Fromkin, 1980). Accordingly, we argue that in order to inhibit misunderstanding, recommendations should consider both users' belongingness, by referring to social groups that are crucial to a user's self-concept, and users' uniqueness, by referring to the unique junction of various facets of a user's self-concept that distinguishes the user from others (Fan & Poole, 2006). Hence, we pose the following research question:

RQ1: *How does considering users' belongingness and uniqueness impact their feeling of being misunderstood by the PS and the resulting continuance intention?*

Second, we investigate how firms can alleviate users' perception of being misunderstood by adapting the design of the PS. Recent literature suggests that the aversion toward imperfect intelligent systems can be mitigated by providing users with control opportunities even if users can only slightly modify the resulting outcome (Dietvorst et al., 2018). Following those findings, we draw on the illusion of control (Langer, 1975) and propose that providing users with transparent explanations of the system's inner workings can counteract users' concerns by fostering perceived control. We thus pursue the following research question:

RQ2: *How does disclosing the PS's inner workings counteract users' perception of being misunderstood?*

In order to answer the research questions, we conducted an online experiment, in which we investigated participants' perception of the personalized "Discover Weekly" playlist on Spotify. Our findings provide valuable insights for theory and practice by revealing the importance of both belongingness and uniqueness for inhibiting misunderstanding as well as the central role of transparency in fostering continued usage.

2. Theoretical foundation

2.1. The need for uniqueness and belongingness

A fundamental concept in psychology is the self-concept, which describes how a person thinks about himself (Neisser, 1993). The self-concept represents an individual's idea of who he is by combining both a personal identity, i.e., aspects that differentiate the self from others, and one or more social identities, i.e. aspects identifying the self as part of social units (Brewer, 1991). For example, an individual's self-concept could comprise his personal identity as being empathic, intelligent, and technology-savvy, whereas his social identities refer to identifying as a student of a certain business school or member of a sports club.

According to established insights from psychology, a person's goal is to achieve or retain a positive evaluation of this self-concept (Oyserman, 2001). Therefore, individuals are striving for two seemingly diverse goals: being unique (Snyder & Fromkin, 1980) and belonging to others (Baumeister & Leary, 1995).

Various studies have investigated the importance of uniqueness and belongingness in individuals' decision-making processes, such as in the context of consumption decisions (Chan et al., 2012) or online advertisement (Liu & Mattila, 2017). Following Snyder and Fromkin (1980), uniqueness is the outcome of a comparison process of oneself with social others, focusing on the perceived dissimilarity between oneself and others. According to the theory of uniqueness, individuals do not aim at being as unique as possible but strive for a moderate level of uniqueness without losing commonalities with others (Snyder & Fromkin, 1980). In other words, individuals do not seek maximum distinctiveness from others but an adequate level of uniqueness, which allows them to differentiate themselves from others without isolating themselves. Further, besides the drive to achieve a moderate level of uniqueness, individuals are striving for belongingness (Baumeister & Leary, 1995). In order to satisfy this need for belongingness, they seek significant connections with others, for example, by identifying as a member of certain social groups (Baumeister & Leary, 1995). According to prior research, a lack of belongingness to others can cause a range of adverse effects, such as an impairment of psychological functioning (Hagerty et al., 1996).

Individuals' need for uniqueness and belongingness also plays a fundamental role in understanding consumer behavior. By either consuming products or services associated with desired social groups or consuming products or services that deviate from the consumption patterns of others, uniqueness and/or belongingness can be supported (Chan et al., 2012). For example, a person could buy the smartwatch that his friends are using to demonstrate membership in this social group but simultaneously choose an extravagant color to achieve uniqueness. As a result, consumption can depict a way of nurturing one's self-concept by reaching a desired level of uniqueness and belongingness.

2.2. Perceived control in the personalization process

Personalization refers to tailoring products and services to users' individual needs and preferences with the aim of presenting each user with the right content at the right time (Tam & Ho, 2005). Recent research has shown that visible personalization results in manifold

advantageous user behaviors such as an increase in content sharing (Thürmel et al., 2021), a higher willingness to pay, and increased website stickiness (Benlian, 2015).

According to Adomavicius and Tuzhilin (2005) personalized recommendations are the result of a personalization process that is realized by so-called PSs, which are a specific type of algorithmic decision aids (Li & Karahanna, 2015). First, the PS aims to gain a comprehensive image of the user by combining explicit and implicit data collection techniques. Whereas explicit data collection refers to collecting information that users actively provide, implicit data collection describes inferring preferences based on user behavior, e.g., scrolling behavior or time spent on an item. Next, the PS applies matchmaking algorithms to generate personalized recommendations for each user. The most common recommendation techniques are the content-based approach, i.e., recommending items to a user that are similar to items that he has preferred in the past, and collaborative filtering, i.e., recommending items that users with similar tastes have liked. Subsequently, the resulting personalized recommendations are presented to the user (Adomavicius & Tuzhilin, 2005).

Although algorithmically supported decisions have become an integral part of our everyday lives, users are often reluctant to rely on superior but imperfect algorithms (Burton et al., 2020; Dietvorst et al., 2015). In a literature review on algorithm aversion, Burton et al. (2020) outline that one of several causes for humans' skepticism toward algorithm decision-making is a lack of decision control. Accordingly, Dietvorst et al. (2018) found that when users see an algorithmic decision aid to err, the possibility to modify the algorithm forecast increases their reliance on the algorithm – even if they can only slightly modify the resulting outcome. The importance of users' subjective perception of control is further elaborated by Skinner (1996), who delineates objective control, i.e., actual control mechanisms, from the subjective perception of control, i.e., individuals' beliefs about how much control they have. He outlines that individuals' perception of control is more powerful in impacting human behavior than actual control. Accordingly, perceived control has been found to play a

central role in the formation of behavioral intentions (Ajzen & Madden, 1986). Also in personalization research, the impact of perceived control on user behavior has been investigated. For instance, Lee and Benbasat (2011) found that perceived control positively affects users' perceived accuracy of recommendations and decreases the effort needed to make a decision, resulting in a higher usage intention. Likewise, Vaccaro et al. (2018) found that users are more satisfied with a personalized news feed when provided with control mechanisms, independent of whether they can actually control the resulting recommendations. The latter underscores that the positive outcomes of perceived control do not necessarily depend on the degree to which control mechanisms are implemented in the personalization process. Often, the illusion of having control is sufficient to evaluate the personalized recommendations positively.

3. Hypotheses development

Reis et al. (2017) define feeling understood as "people's belief that another person knows one's feelings, needs, and preferences" (p. 2). Whereas feeling understood stimulates several positive consequences such as physical well-being (Lun et al., 2008), feeling misunderstood elicits behaviors such as the resistance to interact with or being influenced by others (Reis et al., 2017). In the context of personalization, feeling misunderstood refers to a user's perception that his self-concept, i.e., his personal and social identities, implied by the PS is incorrect (Puntoni et al., 2021). Building on the aforementioned theoretical insights, we developed a research model to gain a deeper understanding of why users might feel misunderstood when consuming personalized recommendations and how firms can counteract this phenomenon. The research model depicted in Figure 1 comprises two parts. First, we investigate the underlying psychological processes that explain why users feel misunderstood when consuming personalized recommendations. Second, we examine how providing transparency on the system's inner workings impacts users' perception that the PS correctly
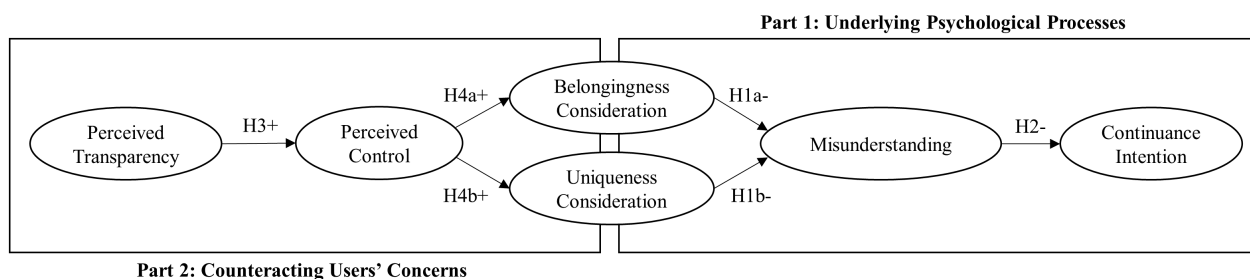

Figure 1. Research model

reflects their self-concept, drawing on the illusion of control.

Following earlier proposals (Puntoni et al., 2021), we argue that not accounting for two central human needs could elicit the feeling of being misunderstood by personalized recommendations: the need for belongingness and the need for uniqueness. Individuals generally have the tendency to not only think of themselves as individuals in isolation, but also as members of social groups in everyday life (Turner & Reynolds, 2012). Hence, when receiving personalized offerings, they infer that the PS has made implications about their membership in certain groups (Puntoni et al., 2021; Summers et al., 2016). Due to the human need for belongingness (Baumeister & Leary, 1995), being classified is often perceived as positive by users, as it confirms their self-concept (Puntoni et al., 2021). For instance, Gai and Klesse (2019) found that user-based framing of personalized recommendations which stresses a user's similarity to other users, such as Amazon's "customers who viewed this article also viewed...", outperforms item-based framing, which stresses similarities to other products. On the other hand, low social identification can induce negative feelings such as anxiety (Hagerty et al., 1996). We thus hypothesize that personalized recommendations that do not account for users' membership in their aspirational groups are considered as failing in reflecting belongingness and thus elicit the perception of being misunderstood.

H1a: Considering a user's belongingness decreases the feeling of being misunderstood.

Further, the consideration of users' uniqueness has shown to be decisive for the acceptance of intelligent systems. For instance, in the context of medical artificial intelligence, users' concerns that automated systems do not account for their unique characteristics result in less reliance on treatment recommendations by automated compared to human providers (Longoni et al., 2019). In the context of personalization, uniqueness can be achieved by accounting for users' unique junction of personal and social identities (Fan & Poole, 2006). For example, to perceive personalized music recommendations as unique, the recommendations should not only consider a user's interest in one specific artist but also his interest in other artists and genres. Accordingly, we argue that personalized recommendations that do not reflect all facets of a user's perceived self-concept are perceived as less unique and thus elicit a feeling of being misunderstood.

H1b: Considering a user's uniqueness decreases the feeling of being misunderstood.

Adapting the expectation-confirmation theory (Oliver, 1980) to the context of Information Systems (IS), Bhattacherjee (2001) introduced a model of IS continuance, which states that the confirmation of users' expectations for IS use is essential for forming a continuance intention. Since failing to recognize users' need for the best product or service as well as presenting irrelevant information represents a disconfirmation of users' expectations (Tan et al., 2016), also feeling misunderstood can be seen as disconfirmation of users' initial expectations regarding personalized recommendations. Hence, we argue that when users perceive that a PS does not live up to their expectations and therefore feel misunderstood, they are less likely to continue using the personalized recommendations.

H2: Feeling misunderstood decreases continuance intention.

After investigating the underlying psychological processes that explain why users feel misunderstood, we focus on how the design of personalized recommendations can alleviate this phenomenon. Research on algorithm aversion proposes to counteract the aversion toward imperfect algorithms by giving users the opportunity to intervene in the decision-making process (Dietvorst et al., 2018). We argue that providing users with transparent explanations of the system's inner workings enhances their perception of the effectiveness of the PS by creating an illusion of control (Langer, 1975).

In line with Awad and Krishnan (2006), who state that knowledge is fundamental for establishing perceived control, we propose that providing users with transparency regarding the system's inner workings strengthens their feeling of being actively involved in the personalization process and thus elicits an illusion of control (Langer, 1975). According to Wang and Benbasat (2016), PSs are perceived as being transparent when users understand the system's inner workings, thus reducing information asymmetry between the system and the user. In our study, we focus on transparency regarding the first stage of the personalization process, i.e., disclosing which user actions serve as implicit data input and how user preferences are derived based on this input. Since intelligent systems are often perceived as black-boxes that are difficult to understand for users (Puntoni et al., 2021), disclosing the system's functioning might improve users' understanding of how particular actions of themselves affect the resulting personalized recommendations. Accordingly, in line with the illusion of control (Langer, 1975), we hypothesize that understanding how one's behavior impacts the personalization process enhances users' perception of being in control through enabling active involvement.

H3: Perceived transparency increases perceived control.

According to psychological literature, the perception of control refers to the perception of being

able to change external events according to one's needs and wishes (Rothbaum et al., 1982). Advancing earlier findings that perceived control is beneficial to users' evaluation of personalization accuracy (Lee & Benbasat, 2011), we argue that perceived control enhances users' perception of being able to adjust the PS's image of themselves according to their self-concept. First, we hypothesize that perceived control elicits the perception of being in control of one's assignment to desired social groups by the PS and thus positively impacts perceived belongingness consideration. Second, we hypothesize that perceived control enhances users' perception of uniqueness consideration, as users feel in control of ensuring that all relevant aspects of their self-concept are considered in the personalization process.

H4a: Perceived control increases a user's perception of uniqueness consideration.

H4b: Perceived control increases a user's perception of belongingness consideration.

4. Method

4.1. Experimental design

We tested our hypotheses by conducting an online experiment referring to Spotify's personalized recommendations. Therefore, we employed a two-group (transparency vs. no transparency) between-subject design. We chose Spotify as the context for our experiment, as personalization is an integral part of Spotify's offering. Every week Spotify provides a weekly-updated personalized "Discover Weekly" playlist to its users, which recommends songs based on earlier listening behavior (Spotify, 2021). Since our experiment aims at investigating participants' perception of and continuance intention toward their personal "Discover Weekly" playlist, participating in our study required access to a Spotify Premium account to be able to use all Spotify functions.

First, after an introduction to the study, we briefly informed the participants that Spotify uses a PS that selects suitable music based on users' past music listening habits. Next, we randomly assigned all participants to one of the two experimental groups. The treatment group received additional information that aimed at making Spotify's personalization process more transparent. Accordingly, they received explanations on how their actions, namely skipping, liking, adding a song to personal playlists, and following an artist, are interpreted by the PS. For instance, they were told that when they skip a song within the first 30 seconds, the PS infers that they do not like this particular song, whereas adding a song to a personal playlist is interpreted as a strong affection for this song or artist. In order to internalize these explanations, participants were encouraged to use one of the mentioned actions in the further course of the experiment. The control group did not receive any information on the inner workings of Spotify's personalization process. We then instructed all participants to use their Spotify account for six minutes, while pursuing two tasks. In the first task, we provided all participants with a playlist of five songs and invited them to briefly listen to those songs to give them an opportunity to interact with Spotify and provide participants of the treatment group with the possibility to discover the just introduced actions. In the second task, we then instructed all participants to explore their personalized "Discover Weekly" playlist by listening to some of the proposed songs. To ensure participants' attention during this task, we asked them to state their opinion on the discovered songs in a subsequent open-text question. After completing the two tasks, we asked respondents to fill out the post-experimental questionnaire. The structure of the questionnaire followed the subsequent order: dependent variables, independent variables, and demographics. The described experimental set-up is depicted in Figure 2.

4.2. Operationalization of constructs

All constructs were measured using established scales from prior literature, which were carefully adapted to our experimental context. To assess uniqueness consideration, we applied four items based on Franke and Schreier (2008). Further, belongingness
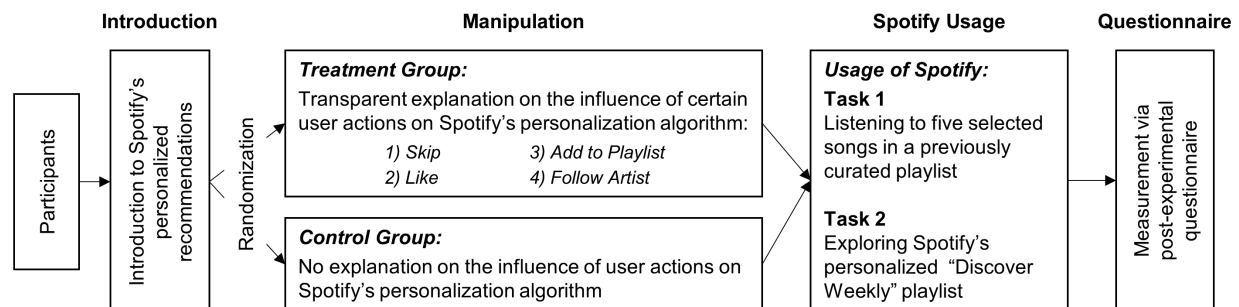

Figure 2. Experimental setup

consideration was measured based on four items from Malone et al. (2012). To measure misunderstanding, we applied two items from Lun et al. (2008), asking participants to which degree they felt understood as well as misunderstood by the personalized music recommendations. Continuance intention of the personalized recommendations was measured based on three items from Roca et al. (2006). Lastly, for assessing perceived transparency, four items from Wang and Benbasat (2016) were used, and perceived control was assessed by adapting a scale of Collier and Sherrell (2010) with four items. All items were rated on seven-point Likert-scales anchored at 1 (strongly disagree) and 7 (strongly agree). Since our study was conducted in German, we employed a back-translation to ensure that the meaning of the items was not affected by the translation. Further, to account for users' diverse perceptions of transparency, we followed a procedure of Lowry et al. (2013) and relied on the perception of transparency in our structural model instead of the binary treatment variable. This allows for increased generalizability, as it encompasses an intentional manipulation of perceptions, in addition to integrating the diversity of perceptions (Rühr et al., 2019).

4.3. Sample and data collection

Prior to collecting the data, we conducted a pretest with 14 IS and marketing researchers, practitioners, and students to check for the comprehensiveness of the questionnaire and to verify that the manipulation was perceived as intended. Data collection for the main study took place in Q1 2022. Participants were recruited via the mailing list of a large public German university. This resulted in a sample consisting mainly of students (83.1% of respondents), which is common practice in related research (e.g., Lee & Benbasat, 2011). As an incentive, participants had the chance to win one of five vouchers worth 50€ each, which were raffled among all participants.

At the end of the data collection period, 142 participants had completed the questionnaire. We did not exclude any participants from the dataset. An analysis of demographics exhibited that 63.4% of

respondents were female, and the average age of participants was 24. Further, 85.9% of the respondents indicated that they use Spotify on a daily basis. The sample consisted of 67 participants in the treatment group and 75 participants in the control group, resulting in similar group sizes. To ensure that sufficient treatment effects are present, we tested for significant group differences. A t-test revealed significant differences for perceived transparency ($t(140) = 2.899$, $p < 0.01$) between treatment and control group.

5. Results

5.1. Measurement model analysis

The analysis of the study was conducted using SmartPLS 3 (Ringle et al., 2015). For assessing the reflective measurement models, we conducted a confirmatory factor analysis following established procedures for structural equation modeling (Hair et al., 2017). Cronbach's Alpha (CA) and composite reliability (CR) both exceeded the threshold value of 0.7 for all constructs, confirming the model's internal consistency reliability. An assessment of indicator reliability revealed that factor loadings (FL) exceeded the threshold value of 0.7 for all indicators, except one indicator of the perceived control construct. We, therefore, followed the procedure described by Hair et al. (2017), which recommends to retain the indicator, as the factor loading is above 0.4 and removal is not necessary to reach satisfactory values for internal consistency reliability criteria. Next, convergent validity of the constructs was assessed by using the average variance extracted (AVE), which showed satisfactory values greater than 0.5. Discriminant validity was confirmed using the Fornell-Larcker criterion, indicator cross loadings, and the heterotrait-monotrait ratio of correlations, which all achieved satisfactory values. The respective values for all constructs are listed in Table 1.

Table 1. Factor loadings, internal consistency criteria, AVE, and correlation matrix

Construct	FL	CA	CR	AVE	(1)	(2)	(3)	(4)	(5)	(6)
(1) Perceived Transparency	.783 – .923	.884	.920	.743	.862					
(2) Perceived Control	.689 – .891	.842	.896	.684	.533	.827				
(3) Uniqueness Consideration	.737 – .876	.859	.905	.706	.282	.365	.840			
(4) Belongingness Consideration	.783 – .912	.894	.927	.760	.325	.459	.475	.872		
(5) Misunderstanding	.898 – .941	.821	.917	.846	-.414	-.478	-.298	-.353	.920	
(6) Continuance Intention	.914 – .950	.930	.956	.878	.349	.443	.396	.434	-.660	.937
Note: The elements in grey boxes indicate the square root of the AVE for the respective construct.										

5.2. Analysis of the structural model

To analyze the proposed effects, we set up a structural equation model by using the partial least squares approach (PLS-SEM). Collinearity issues were ruled out by examining the variance inflation factors (VIF) of the predictor constructs, which were below the critical threshold of 5. For the assessment of the significance of the path coefficients in the structural model, we conducted a bootstrapping procedure with 10,000 subsamples. Estimation results, as obtained from the analysis, are depicted in Figure 3.

Consistent with H1a and H1b, belongingness consideration (-0.274, p = 0.001) and uniqueness consideration (-0.168, p = 0.050) had a negative effect on misunderstanding. Further, misunderstanding negatively affected users' intention to continue using the personalized recommendations (-0.660, p < 0.001), therefore supporting H2. Moreover, consistent with H3, a higher degree of perceived transparency was associated with a higher degree of perceived control (0.533, p < 0.001), indicating that disclosing the PS's inner workings increases users' perception of control. Finally, perceived control showed a positive effect on both uniqueness consideration (0.365, p < 0.001) and belongingness consideration (0.459, p < 0.001), hence supporting H4a and H4b. Assessing the predictive power of the model revealed that the model explained 43.6% of the variance in continuance intention and 14.7% in misunderstanding.

6. Discussion

The aim of this study was to investigate why users might feel misunderstood when using personalized recommendations and whether providing them with transparency can mitigate those concerns. Our results provide two central findings: First, following psychological literature on individuals' self-concept, we show the importance of meeting users' needs for belongingness and uniqueness in order to inhibit the discontinuance of personalized services by reducing misunderstanding. Second, in line with the illusion of control, our results show that providing users with transparency creates a feeling of control, which positively impacts users' perception that both their belongingness and their uniqueness are considered in the personalization process.

Our findings indicate that users feel misunderstood when they have the feeling that their belongingness to certain aspirational groups is not considered in personalized recommendations. This corresponds to previous literature, which suggests that belongingness is a central human need that is essential for individuals' psychological well-being (Baumeister & Leary, 1995; Hagerty et al., 1996). In the context of personalization, Gai and Klesse (2019) found that users value recommendations that are derived based on their similarities to other users. Our results extend those findings by demonstrating pitfalls of such classification, indicating that users feel misunderstood if the PS draws an image of them, which does not consider essential social identities that are crucial to their self-concept. Hence, we found that it is decisive that the classification by the PS is aligned with a user's self-concept. Furthermore, we found that, besides a lack of belongingness, also an insufficient consideration of users' uniqueness triggers the perception of being misunderstood. Previous psychological literature has elaborated on the human need to differentiate from others (Snyder & Fromkin, 1980), which is also crucial for individuals' consumption decisions (Chan et al., 2012). In line with those findings, our results show that it is decisive that personalized recommendations reflect users' self-concept by accounting for each user's unique intersection of personal and social identities.

Literature on personalization has tended to emphasize the importance of offering users recommendations tailored to their individual preferences (Benlian, 2015; Tam & Ho, 2005), indicating the importance of uniqueness. Yet, our findings suggest that users' belongingness motives might even prevail in the context of personalization. This indicates that it is decisive to address both users' uniqueness and belongingness motives when generating personalized recommendations. In the context of music recommendations this would mean, on the one hand, to address users' need for social connectedness by taking
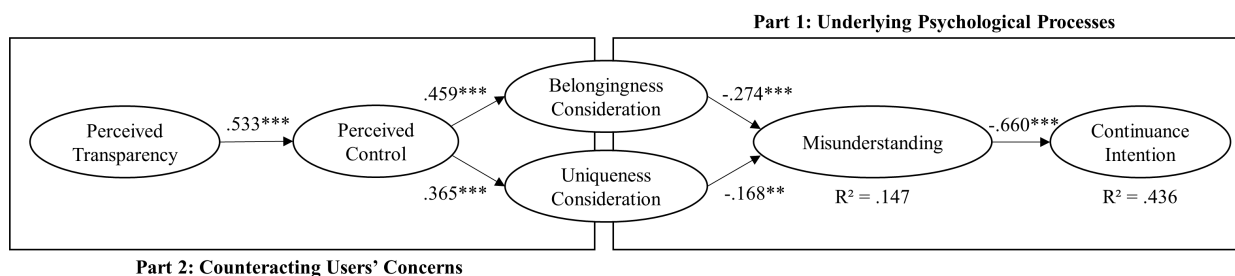
Part 1: Underlying Psychological Processes

Part 2: Counteracting Users' Concerns

Figure 3. PLS estimation results (n = 142; *** p ≤ .01; ** p ≤ .05)

into account their belongingness to crucial social groups with which they identify, e.g., the Jazz community or connoisseurs of classical music. On the other hand, users' belongingness to particular groups should not be overrated, but it is decisive to generate recommendations that take into account various facets of users' self-concept.

Further, in line with the expectation-confirmation theory (Bhattacherjee, 2001; Oliver, 1980), our results show that when users feel misunderstood, they are less likely to continue using personalized recommendations. So far, IS literature suggests that providing users with visible personalization enhances their stickiness to media offerings (Benlian, 2015). Our study constrains this finding by proposing that if users are provided with poor recommendations by which they feel misunderstood, they are likely to discontinue using the personalized recommendations.

Further, our results show that providing users with transparency regarding the system's inner workings strengthens their perception of being in control. In a study on algorithmically curated news feeds, Vaccaro et al. (2018) found that "fake" control mechanisms can function as a placebo allowing for increased user satisfaction with personalized news offerings. Our findings suggest that instead of deceiving users with random control settings, firms can rely on transparency features that disclose how certain user actions serve as data input for the PS in order to foster perceived control.

Furthermore, our study shows that perceived control positively influences users' perception that the PS considers their belongingness and uniqueness. Psychological literature states that perceived control refers to individuals' assumption that they can bring the external environment to conform with their wishes (Rothbaum et al., 1982). In this regard, we show that perceived control elicits the perception of being able to adjust the PS's image of oneself according to one's self-concept. Interestingly, the positive influence of perceived control is stronger for belongingness than for uniqueness. This indicates that when feeling in control, users assume that they have more influence on the groups to which they are assigned by the PS, e.g., by signaling their belongingness through following certain artists, than on assuring that all aspects of their self-concept are considered in the personalized offering. One reason for this could be that users can signal uniqueness by liking songs or following artists which reflect their multifaceted self-concept, but it is hard to ensure that all those facets are eventually considered by the PS.

7. Theoretical and practical implications

The findings of our study offer valuable insights for theory and practice. From a theoretical perspective, our study contributes to the existing literature on PSs by drawing on recent studies from IS, marketing, and psychology research. Psychological literature has shown that feeling understood in social interactions with other humans is closely linked to individuals' well-being (Lun et al., 2008). Yet, although understanding why users feel misunderstood when receiving recommendations from intelligent systems is of high practical relevance (Puntoni et al., 2021), the phenomenon of feeling misunderstood in human-system interactions has not been investigated so far. Our study addresses this gap in literature and reveals that feeling misunderstood is a central reason why users discontinue using personalized recommendations. Further, we aimed to gain insights into why users feel misunderstood by PSs. Therefore, we have been drawing on psychological literature on individuals' need for belongingness to certain social groups (Baumeister & Leary, 1995) and individuals' need for uniqueness (Snyder & Fromkin, 1980). Previous research has elaborated on the importance of considering users' need for belongingness and users' need for uniqueness in various contexts, such as consumer behavior (Chan et al., 2012) or online advertisement (Liu & Mattila, 2017). In this vein, our study shows that those two needs are also crucial for understanding why users feel misunderstood when receiving personalized recommendations. Surprisingly, although one might infer the prevalence of uniqueness motives in the context of personalization, our study reveals that users require even more belongingness than uniqueness in order to feel understood by PSs. Furthermore, our findings extend the existing literature on transparency in the context of personalization by revealing that transparency can elicit an illusion of control which is beneficial in inhibiting misunderstanding, resulting in continued usage of personalized services.

Lastly, our findings also provide valuable insights for practitioners. In order to tackle the problem that users often feel misunderstood by personalized recommendations and thus discontinue their usage, firms can provide them with transparent explanations of the personalization algorithm by disclosing how their actions impact the resulting recommendations. For instance, as shown in our experiment, music streaming providers might benefit from providing transparent cues on how liking, skipping, or adding a song to a personal playlist is interpreted by the PS. Thereby, firms can foster perceived control and thus prevent a feeling of being misunderstood without having to implement complex and costly control mechanisms. Further, firms should address users' need for belongingness and uniqueness when generating personalized recommendations. Hence, personalized recommendations should take into account both users'

membership in aspirational groups as well as their multifaceted self-concept.

8. Limitations and future research

There are limitations to the study, which open up avenues for future research. First, we relied on a student sample for our experiment. Conducting another study with a more diverse sample could further enhance the generalizability of the results. Second, besides a lack of considering uniqueness and belongingness, users might also feel misunderstood if the recommendations are not aligned with their current activities or environment. This could be added in future studies to build a more comprehensive model for explaining misunderstanding. Lastly, participants in the treatment group of our study were solely able to apply the gained knowledge about how their actions influence Spotify's personalization algorithm during the course of the experiment. Hence, we propose that conducting a long-term study could yield further insights into how users' perception of control evolves over time if they receive transparent explanations of the system's inner workings.

In summary, our study provides valuable insights into the underlying mechanisms of why users might feel misunderstood by PSs and highlights the role of transparency as an effective mechanism to counteract misunderstanding perceptions, as well as foster continued use of PSs.

9. References

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