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Playful persuasion

Advergames as gamified advertising

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Main paper [A]

Branded Apps¹

From App Engagement Experiences to App and Brand Responses

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The use of mobile applications (or apps) proliferated in recent years, due to the increasing popularity of mobile devices (Chung, 2013). Brand managers have noticed this trend and many brands have created their own ‘branded apps’. Branded apps are “software that is downloadable to a mobile device and prominently displays a brand identity, often via the name of the app and the appearance of a brand logo or icon, throughout the user experience” (Bellman et al., 2011, p. 191). Although over 90% of the top 100 global brands offer a branded app on at least one of the major app stores (e.g., Apple app store, Google Android market; Spriensma, 2011), branded app engagement remains an understudied area.

Different from more traditional types of advertising, branded apps are pull (rather than push) media (Bellman et al., 2011). This means that consumers decide themselves whether they want to seek out a branded app (Son, 2017), for example because it offers a certain functionality or experience, rather than that it is ‘pushed’ to them by a brand (e.g., like a television commercial is pushed to its audience). The fact that a branded app is a pull medium—and its use is dependent on what value it offers to the consumer—makes it important to understand exactly what experiences branded apps offer to the consumer, and how a set of these experiences, also called ‘engagement’, translates into valuable app and brand responses.

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To examine consumer engagement with branded apps, we adopt the media engagement framework (e.g., Calder & Malthouse, 2008). According to this framework, media offer *engagement* through media *experiences*. These experiences are best described as consumers' beliefs concerning the value a medium offers them while using it (Calder, Malthouse, & Schaedel, 2009); for example the belief that an app offers convenience or social empowerment. These experiences subsequently can lead to so called *engagement consequences*—like increased media use, clicks, likes, or shares.

Previous research (Bellman et al. 2011; Calder et al., 2009) into effects of media engagement has considered engagement conceptually as a single higher-order construct and primarily focused on the effects of engagement as a sum of experiences. In this study we argue that considering *types* of engagement, rather than engagement as a single higher-order construct, offers more valuable insights into the workings of engagement.

Moreover, brands invest in branded apps because they assume that branded apps create value for the brand itself (Wang, Kim, & Malthouse, 2016). Interestingly however, brand responses have mostly been neglected in previous research on branded app engagement (for exceptions see, Ahmed, Beard, & Yoon, 2016; Bellman et al., 2011). Examining how app engagement influences brand attitude, via app responses, results in a more complete understanding of the effectiveness of branded apps and offers valuable additional insight for brand managers.

The aim of this study is therefore twofold. First, we aim to examine which types of app engagement predict app usage, app attitude, and app attention. To explain this process, we use the second generation of the *unified theory of acceptance and use of technology* (UTAUT2; Venkatesh, Thong, & Xu, 2012). Second, we apply insights from media context research to examine whether these app responses translate into more positive brand attitudes. In sum, this leads to a better theoretical understanding of the types of engagement experiences branded apps should elicit to enhance app responses, and also whether these responses improve consumers' attitude toward brands.

Introducing Four Types of App Engagement

Branded apps do not need to deliver the same experiences to be engaging. In fact, since content of branded apps can be diverse, it is likely that branded app users have multiple and/or diverse types of engagement experiences when interacting with various types of branded apps (Bellman et al., 2011). A branded app from an airline for example might be considered more functional by its users and might offer a convenience experience, where a different app from a soft drink brand might use gamification to create a more experiential experience and offer its users intrinsic enjoyment. Thus, branded apps can evoke various types of experiences with its users, resulting in different types of engagement.

Four types of engagement are believed to be important for branded apps: personal identification, social empowerment, intrinsic enjoyment, and convenience. Calder et al. (2009) suggests that personal engagement experiences (e.g., personal identification, social empowerment, and intrinsic enjoyment) are relevant experiences for engagement with online media (i.e., website use). Personal engagement experiences express the personal relevance of the medium for a user. Calder et al. (2009) describe personal engagement experiences as: “[media] users seek stimulation and inspiration from the [medium], they want to use the [medium] to facilitate their interactions with other people, they feel the [medium] affirms their self-worth, they get a sense of intrinsic enjoyment in using the [medium] itself, they feel it is useful for achieving goals and they value input from other users.” (p. 327).

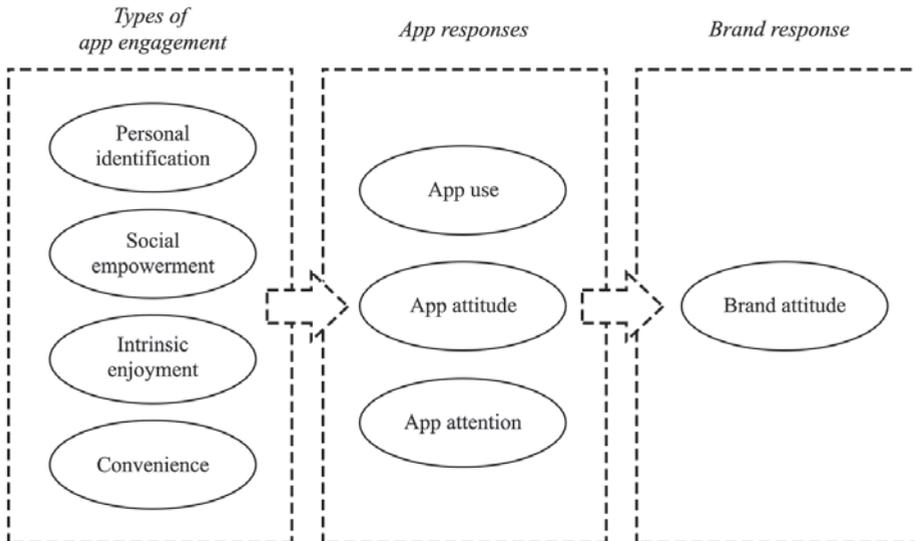
Additionally, the literature suggests that, besides the personal engagement experiences, convenience is also an important experience that could drive app responses (Kim, Kim, & Wachter, 2013; Peng, Chen, & Wen, 2014). Where Kim et al. (2013) show that convenience is a driver of smartphone use in general, branded apps in particular are often designed to help consumers. Examples are the facilitation of online payments, offering information about public transport or flights, and enabling online shopping (Kim et al., 2017). Therefore, it seems appropriate to also consider convenience experiences when examining the effects of engagement with branded apps.

When examining the relationships between app engagement types and app responses, three different responses are considered: app use, app attitude, and app attention. These dimensions (i.e., conative, affective, and cognitive) have been identified in the past as outcomes of engagement in consumer behavior contexts: like advertising (Bronner and Neijens, 2006) and social media marketing (Muñoz-Expósito, Oviedo-García, & Castellanos-Verdugo, 2017).

App Responses and Brand Attitude

The general assumption in media context research, is that the experience with the medium spills over (or in other words: transfers) to the content that is embedded within the medium. This effect is demonstrated for both offline (e.g., Bronner & Neijens, 2006) and online media (e.g., Calder et al. 2009). Media context research demonstrates that responses to the medium (e.g., app use) can result in responses to the content within the medium (e.g., appreciation of app content). This is important to consider, because conceptually a branded app is not only a medium but also the (branded) content. Often this is expressed by brand identity indicators (e.g., logos) and branded messages that are integrated within the content of the app. App responses are expected to spill over to the brand, resulting in more positive brand attitudes (Bronner & Neijens, 2006). Therefore, in addition to the effects of engagement types on app responses, also media context effects (from the app on the brand) are important to consider when studying branded apps. A visual representation of this conceptual model is displayed in Figure 1.

Figure 1
Conceptual Model for Types of App Engagement, App Responses, and Brand Response



Linking Experiences with App Responses

The UTAUT2 (Venkatesh et al., 2012) is used to predict how engagement types result in app responses. This theory offers insights into the drivers of use and acceptance of technology (in this case branded apps) in a consumer context. According to this theory there are seven drivers (i.e., performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit) of app use and app attitude. A recent study by Chen and Fu (2018) however, identified that hedonic, utilitarian, and sociability are most important values for mobile app users, corresponding with four of the drivers (i.e., performance expectancy, effort expectancy, social influence, and hedonic motivation). Going forward, these four values will serve as basis for our predictions.

Where Venkatesh et al. (2012) suggest that the expectancies and motivations identified in the UTAUT2 predict app responses, we expect engagement experiences to ultimately modulate these effects and determine whether a person actually re-uses an app. A similar effect of experiences on attitudes and behavior is suggested by Kim, Chan, and Chan (2007), who state that positive app experiences gradually result in positive attitudes and subsequent behavior.

The First Engagement Type: Personal Identification

Personal identification experiences are engagement experiences that resonate with one's personal values and help gaining insight in one's self. For example, personal identification is experienced when media are stimulating or inspiring, boost self-esteem, or make one feel like a good person (civic mindedness). In other words, personal identification experiences are experiences that make one feel increasingly positive about one's self.

The UTAUT2 (Venkatesh et al., 2012) suggests that hedonic motivations drive both app use and attitudes. Personal identification experiences could be considered a type of hedonic experience, because the identification process is believed to result in internal pleasure; eventually resulting in more positive app responses. In line with these predictions, Hsu and Lin (2016) found that experiencing identification when using apps increases app use, where Calder et al. (2009) showed that this type of experiences positively affect attitudes on websites.

Personal identification experiences are also expected to increase app attention, since they result in internal pleasure. In line with the hedonic contingency hypothesis, people who are in a positive mood, for example as a result of experiencing personal identification or intrinsic enjoyment, are expected to be more willing to use and be attentive to a message that caused the positive mood (Wegener & Petty, 1994). That is, because from a hedonic point of view, people who are in a positive mood want to stay in that mood. They are motivated to pay attention to the cause of the positive mood—in

this case the branded app—to prolong the positive experience. Subsequently this would increase app attention. Overall, we expect positive app responses for app users that experience personal identification. The following hypothesis is proposed:

H1: Experiencing personal identification when using branded apps positively predicts (a) app use, (b) app attitude, and (c) app attention.

The Second Engagement Type: Social Empowerment

Social empowerment is experienced when media are used to gather information that could facilitate conversations in the future (McQuail, 1983). Examples are the experiences elicited by sharing products from a particular brand with friends for feedback, or experiences that allow for a conversation to spark in the future about the branded app one is using.

Following the UTAUT2 (Venkatesh et al., 2012), social empowerment experiences are expected to increase one's branded app use and attitude. Social influence is believed to drive app use and precedes users' search for social empowerment experiences in order to conform to the social norm that is set by their surroundings; hence resulting in more app use and a more positive app attitude. Calder et al. (2009) found support for this assumption, and showed that in the context of websites, experiencing social empowerment leads to more positive attitudes. In addition, social empowerment is assumed to increase app attention, because in order to retrieve information about the brand at a later time, increased attention to the app is required to correctly process and store the information (Kamboj & Sarmah, 2018). In sum, we expect positive app responses for app users that experience social empowerment and propose the following hypothesis:

H2: Experiencing social empowerment when using branded apps positively predicts (a) app use, (b) app attitude, and (c) app attention.

The Third Engagement Type: Intrinsic Enjoyment

Intrinsic enjoyment draws on the idea that media can elicit enjoyment, arousal, and relaxation (McQuail, 1983). Intrinsic enjoyment is an especially important experience to consider in the context of apps, because hedonic benefits of an app directly affect consumers' perceived value of an app (Xu, Peak, & Prybutok, 2015).

Similarly to when experiencing personal identification, the hedonic nature of intrinsic enjoyment experiences is expected to result in more app use and positive app attitudes (Venkatesh et al., 2012). Moreover, following the hedonic contingency hypothesis, experiencing intrinsic enjoyment is also expected to result in more positive app attention.

Several studies examining non-branded mobile apps found that enjoyment predicts app use, app attitudes, and app attention (e.g., Hsu & Lin, 2016; 2015; Yang, 2013).

With respect to app attitudes, an alternative explanation can be found in the Mehrabian Russell model of affect (Mehrabian & Russell, 1974), which states that the experience of positive moods from using a medium result in more positive attitudes toward the medium. Empirical evidence was found for this assumption by Yang (2013), who showed that perceived enjoyment enhanced attitudes toward mobile apps. In addition, Hsu and Lin (2015; 2016) and Kim, Yoon, and Han (2016), showed similarly that positively valenced experiences enhance app attitudes and app use. Summarizing, we expect positive app responses for app users that experience intrinsic enjoyment and propose the following hypothesis:

H3: Experiencing intrinsic enjoyment when using branded apps positively predicts (a) app use, (b) app attitude, and (c) app attention.

The Fourth Engagement Type: Convenience

Convenience is experienced when searching for practical information, or by seeking advice on practical matters. This conceptualization is expanded by suggesting that one could experience convenience, not only by the practical information offered by the medium, but also because of the practicality (usefulness) of the medium, or the ease to use the medium, makes one's life easier.

In line with the UTAUT2 (Venkatesh et al., 2012), this suggests that the performance and effort expectancy (which is influenced by the convenience that is experienced) influences app use and attitude. If a branded app elicits convenience, people are expected to use the app more often, as not using the app would make the task at hand more difficult. Moreover, as the app facilitates specific tasks, it is expected to be appreciated, which should become apparent from a more positive app attitude (Venkatesh et al., 2012). Proof for this assumption can be found in several studies. Yang (2013) for example found that usefulness and ease of use positively predicted app attitude, and that ease of use explains intention to use an app. Similarly, Hsu et al. (2015) found that usefulness of an app positively predicts intention to use it.

Moreover, convenience experiences are expected to influence app attention. Branded apps are often used to perform tasks that have a specific informational goal—such as making a transfer with online banking or finding information about public transportation. This kind of goal directed, or volitional, behavior requires increased levels of attention (Dijksterhuis & Aarts, 2010). It is therefore expected that an increase in convenience, facilitating this goal directed behavior, predicts an increase in app attention. In sum, we expect that app users who experience convenience show more positive brand responses; the following hypothesis is proposed:

H4: Experiencing convenience when using branded apps positively predicts (a) app use, (b) app attitude, and (c) app attention.

The Effects of App Responses on Brand Attitude

Drawing on media context literature, we expect a positive relationship between app responses and brand attitude. A possible underlying mechanism for this positive relationship is the interactivity of the app. Previous research has shown that interactivity of a medium can lead to positive behavioral (e.g. Novak, Hoffman, & Yung, 2000) and affective (e.g., Wu, 2005) responses to the medium and its content. In the context of branded apps, Bellman et al. (2011) showed that for branded apps, app use positively affects brand attitude. We expect to corroborate this effect in the current study.

Wu (2005) found that (perceived) interactivity positively affects responses to websites and elicits appreciation. This subsequently positively influences responses to the content of that medium (in our case the brand). Positive affect experienced while using the app is expected to become associated with the brand that is embedded in the app. This process is often called *affect spillover* and suggests that affect elicited by a medium (i.e. branded app) transfers to a brand that is embedded in the medium (Ahluwalia, Unnava, & Burnkrant, 2001). Substantive empirical evidence supports this notion (e.g., Ahmed et al., 2016; Chou & Wang, 2016). For branded apps, Ahmed et al. (2016) demonstrated that respondents who used a branded app of an unfamiliar brand, reported more positive brand evaluations.

Finally, drawing from processing theory, attention for the branded app is expected to result in an increase in brand attitude. Bellman et al. (2011) suggest that branded apps are often informational apps and that therefore often a lot of attention is allocated to branded apps (Petty & Cacioppo, 1986). These increased levels of attention are believed to lead to more positive brand evaluations. Bellman et al. (2011) found an increase in brand attitude for branded apps that required increased attention. Summarizing, we believe that app responses positively affect brand attitude, and we propose the following hypothesis:

H5: For branded apps, (a) use, (b) attitude, and (c) attention positively predict brand attitude.

Methodology

Participants and Procedure

For this study we conducted a cross-sectional survey among 298 smartphone users (50.0% female). They were between 18 and 76 years of age ($M = 42.54$, $SD = 14.55$) and about half of them were college graduates (51.4%). The sample was representative of the average smartphone user in the Netherlands.

After giving informed consent, the participants were asked to fill out an online questionnaire, which included questions about the last branded app they had used on their smartphone. Previous studies into the effects of media consumption (e.g., Voorveld et al., 2013) showed that asking for a specific recent media usage moment is an effective way to study general media usage. Branded apps were defined by two criteria. They should: (1) have a clear brand identity (for example by having a logo or a brand name incorporated into the content of the app); (2) be developed by brands that offer a product or service that one needs to purchase. Examples of branded apps are the H&M app (clothing store app) and the Vodafone app (telecom provider app). Apps that were not considered for this study were for example: WhatsApp, Snapchat, and Facebook. Where these apps might have a clear brand identity, they are not clearly used as a marketing tool for a *paid product or service* and therefore do not meet the second criterion. People that failed to choose a branded app were not included in the study.

In the questionnaire, participants were asked to indicate how often they use the branded app they had selected, and how much attention they generally allocate to the app when using it. Subsequently, they were asked to rate the app and indicate their level of engagement with it. Additionally, brand attitude toward the app's brand was measured. After finishing the questionnaire, the respondents were thanked and paid for their participation. An overview of descriptive statistics for and correlations between all the constructs can be found in Table 1.

Table 1
Overview of Correlations, Descriptive Statistics, and Indicators of Validity

	<i>M</i>	<i>SD</i>	<i>CR</i>	<i>AVE</i>	1	2	3	4	5	6	7	8
1. Personal identification	3.43	1.30	.92	.60	-	.72	.61	.17	.66	.33	.22	.42
2. Social empowerment	3.28	1.54	.90	.73	.52	-	.49	.05	.52	.26	.20	.31
3. Intrinsic enjoyment	4.59	1.26	.82	.70	.37	.31	-	.36	.44	.50	.32	.53
4. Convenience	5.50	0.97	.90	.68	.03	.00	.13	-	.22	.36	.28	.28
5. App use	3.40	1.38							-	.33	.18	.33
6. App attitude	5.85	0.87								-	.26	.73
7. App attention	5.07	1.17									-	.23
8. Brand attitude	5.80	0.96										-

Note. *CR* = composite reliability, *AVE* = average variance extracted. Inter-construct correlations are shown right of the dash, squared inter-construct correlations for engagement experience type variables are shown left of the dash. Inter-construct correlations presented in bold are significant at the .004 level.

Measures

App Engagement

For each of the four engagement types that we identified to be important for app engagement (i.e., personal identification, social empowerment, intrinsic enjoyment, and convenience), we asked the respondents to indicate on Likert scales ranging from 1 (*Totally disagree*) to 7 (*Totally agree*) how much they agreed with statements measuring specific app engagement experiences. Each app engagement experience corresponded with one of the four app engagement types, as is displayed in Table 2.

First, personal identification was measured with nine items from the personal engagement scale (Calder et al., 2009) measuring the experiences: personal identification, stimulation & inspiration, and self-esteem & civic-mindedness. Second, social empowerment was measured with three items taken from Calder et al. (2009) and Hsu and Lin (2016). Third, intrinsic enjoyment was measured with two items, also taken from the personal engagement scale by Calder et al. (2009). Fourth, convenience was measured with four items; two for each dimension of convenience (ease of use & usefulness; Venkatesh et al., 2012).

Table 2
Overview Measurement Items App Engagement
Experiences and Factor Loadings

Experience type	Item	Std. Loading
Personal identification ($\alpha = .92$)	This app makes me more interesting	.86
	This app represents what I find important in my life	.77
	This app makes me think differently about certain things	.75
	This app makes me feel good about myself	.67
	This app makes me feel like I belong to a group	.65
	This app inspires me	.64
	This app makes me feel like I am part of my surroundings	.58
	With this app I can stay in contact with my friends	.56
	I am proud being a user of this app	.53
Social empowerment ($\alpha = .90$)	I use information from this app when I am talking with other people	.93
	This app gives me something to talk about with others	.77
	I use information from this app when I talk with acquaintances	.70
Intrinsic enjoyment ($r_{SB2} = .82$)	Using this app makes me feel good	.72
	This app makes me happy	.63
Convenience ($\alpha = .90$)	This app helps me	.91
	This app is useful	.90
	This app is handy	.80
	This app makes my life easier	.74

Note. r_{SB2} = Spearman-Brown stepped-up reliability coefficient. The Spearman-Brown stepped-up reliability coefficient is reported, rather than Cronbach's alpha or Pearson correlation, as reliability measure for the two-item scale, following recommendations by Eisinga, Grotenhuis, and Pelzer (2013).

To determine the fit of the proposed measurement model for app engagement, we used the *R* statistical package *Lavaan* (version 0.5 - 22; Rosseel, 2012). The model was estimated with Maximum Likelihood (ML) estimation and robust standard errors to account for non-normality in the data. There were no missing data. Suggestions by Hu and Bentler (1999) were followed when evaluating the fit of the model. Because the chi-square statistic is sensitivity to sample size (Kline, 2015), we considered primarily the fit

indices CFI, RMSEA, and SMRS. Hu and Bentler (1999) suggest that a CFI cutoff point of .90-.95 can be considered acceptable, if the *standardized root mean square residual* (SRMR) value is below .08. They state that the SRMR is more sensitive than the other fit indices to misspecifications in the model and suggest to compare the CFI in combination with the SRMR. Additionally, the *root mean square error of approximation* (RMSEA) should preferably be lower than .05, and not higher than .08. A higher value could be considered acceptable only if a non-significant p -close value is found—indicating that the model is a *close-fitting* model (Hu & Bentler, 1999; Kline, 2015).

We estimated an unconstrained model, which rendered an insufficient fit, χ^2 (129) = 560.21, $p < .001$; CFI = .86; RMSEA = .11, 95% CI [.10, .11], p -close < .001, SRMR = .07. Most fit indices (except for the SRMR value), indicated a poor fit for the unconstrained model. A step-by-step approach for adding the residual correlations was used to improve the fit of the model. This means that after each residual correlation was added the model was estimated again and the modification indices were examined respectively to improve the fit of the model. Only correlations between residuals of indicators that measure the same engagement experience type were considered. We added four residual correlations.

The final model, χ^2 (124) = 424.10, $p < .001$; CFI = .91; RMSEA = .09, 95% CI [.08, .10], p -close < .001, SRMR = .06, had an improved fit compared to the unconstrained model, χ^2_{diff} (5) = 136.11, $p < .001$. The CFI value of .91 is considered satisfactory in combination with the SRMR value of .06. The RMSEA however indicated a non-satisfactory fit. Since the fit indices do not allow for a uniform evaluation of the fit of the hypothesized model, we performed more stringent tests to evaluate the validity and reliability of the model.

Convergent and Discriminant Validity. To determine the convergent validity of the model, we used the Fornell-Larker criterion (Fornell & Larker, 1981). Fornell and Larker suggest that the average variance extracted (AVE) of all latent variables should be above .50 and preferably above .70. In addition, the composite reliability (CR) should be greater than .70 for good convergent validity. As shown in Table 1, both requirements were met, verifying the convergent validity of the construct.

In order to establish discriminant validity, Fornell and Larker (1981) suggested that the AVE of all latent variables should be greater than the squared inter-construct correlations between the constructs in the model, see Table 1 for AVE values and squared inter-construct correlations. This requirement was satisfied, hence confirming the discriminant validity of the constructs. These findings, in addition to the fit indices, indicate that the overall fit of the measurement model can be considered acceptable.

The Dimensionality of Engagement. Despite the overall fit of the proposed model seems acceptable, we conducted a final robustness check to verify whether our hypothesized four-dimension model of app engagement provides a better fit than an alternative model in which engagement is specified as a single higher-order construct (following Calder et al., 2009). The fit of our hypothesized model was found to be

better than that of the alternative model, $\chi^2_{diff}(11) = 139.64$, $p < .001$. This implies that estimating a model with separate engagement types is more suitable in the context of studying branded app engagement, than considering branded app engagement as a single (higher-order) construct. These findings confirm our hypothesized model and index variables were created for each of the four app engagement types.

App Responses and Brand Attitude

For this study, we considered three app responses (app use, app attitude, and app attention) and brand attitude. First, app use was measured by asking the respondents to indicate on a three-item Likert scale, ranging from 1 (*Totally disagree*) to 7 (*Totally agree*), how much they agreed with three statements measuring app use (e.g. “I use this app more often than other apps?”; Zott, Amit, & Donlevy, 2010). Second, app attitude was measured on a three-item 7-point semantic differential scale (Li, Daugherty, & Biocca, 2002). Respondents were asked to indicate how “bad/good”, “negative/positive”, “boring/fun”, they perceived the branded app to be. Third, app attention was measured by asking all respondents to indicate on a single-item scale, ranging from 1 (*No attention at all*) to 7 (*All my attention*), how much attention they allocated to the app when using it (Van Reijmersdal, Tutaj, & Boerman, 2013). Finally, brand attitude was measured using the same three 7-point semantic differential scales used to measure app attitude (Li et al., 2002). Reliable index variables were created for app use (EV = 2.26, $R^2 = .75$, Cronbach’s $\alpha = .83$), app attitude (EV = 2.31, $R^2 = .77$, Cronbach’s $\alpha = .84$), and brand attitude (EV = 2.52, $R^2 = .84$, Cronbach’s $\alpha = .90$).

Results

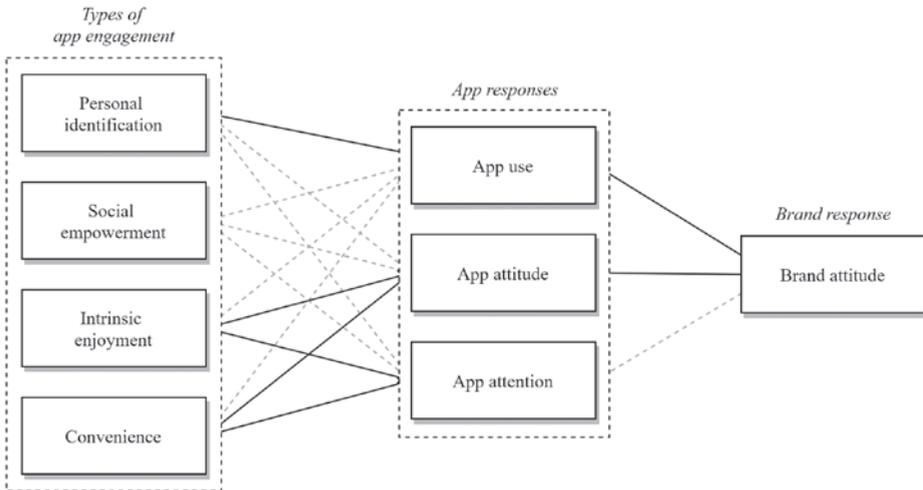
To test the hypotheses, we estimated a path model (as shown in Figure 2) with Maximum Likelihood (ML) estimation and robust standard errors to account for non-normality in the data. There were no missing data. Overall the fit indices indicate that the model has an acceptable fit: $\chi^2(7) = 20.21$, $p = .005$, CFI = .97, RMSEA = .08, 95% CI [.05, .11], p -close = .064, SRMR = .03. A CFI of .97 is considered excellent, especially in combination with a SRMR of .03. The RMSEA of .08 is considered acceptable because of the non-significant p -close value, which indicates that the model is *close-fitting*. In other words, the RMSEA of .08 does not significantly differ from .05 (cf. the RSMEA of a good fitting model).

Hypothesis Testing

The results, as shown in Table 3, indicate that the *personal identification* engagement experiences predict app use ($p < .001$), but not app attitude ($p = .567$) or

app attention ($p = .917$). This means that when someone experiences an app to fit their personal identity, they will use this app more often, but will not like this app better or have more attention for it. We thus found support for Hypothesis 1a, though no support was found for Hypotheses 1b and 1c.

Figure 2
Structural Path Model as Estimated



Note. Paths in bold indicate significant positive effects, where dotted paths indicate insignificant effects. Standardized regression coefficients for this path model can be found in Table 3.

No significant effects were found for *social empowerment* experiences on app use ($p = .133$), app attitude ($p = .625$), or app attention ($p = .221$). This means that whether one experiences a branded app to be useful in facilitating future conversations does not predict app use, nor does it affect app attitude or app attention. We therefore reject Hypothesis 2.

Similarly, no effects were found for the engagement experience types *intrinsic enjoyment* ($p = .723$) and *convenience* ($p = .064$) on app use; meaning that we reject Hypotheses 3a and 4a. Intrinsic enjoyment ($p < .001$; $p = .013$) and convenience ($p = .009$; $p = .011$) did however predict app attitude and app attention. Meaning that when one perceives a branded app to be enjoyable or convenient, this increases one's attitude toward the app and the attention allocated to the app. These findings support Hypotheses 3b, 3c, 4b, and 4c.

Table 3
Standardized Regression Coefficients for Effects of App Engagement Type

	App use		App attitude		App attention		Brand attitude	
	<i>b</i> *	SE	<i>b</i> *	SE	<i>b</i> *	SE	<i>b</i> *	SE
Personal identification	.57	.10	.05	.06	-.01	.08	-	-
Social empowerment	.13	.08	.04	.04	.10	.06	-	-
Intrinsic enjoyment	-.03	.09	.37	.06	.21	.08	-	-
Convenience	.12	.09	.22	.08	.20	.09	-	-
App use	-	-	-	-	-	-	.10	.03
App attitude	-	-	-	-	-	-	.70	.05
App attention	-	-	-	-	-	-	.04	.03

Note. Regression coefficients presented in bold are significant; *p* values can be found in-text.

Finally, the results indicated that app use ($p = .022$) and app attitude ($p < .001$) predict brand attitude. This implies that generally when people use a branded app more or have a more positive attitude toward the app, the embedded brand is evaluated more positively. This supports Hypothesis 5a and 5b. Finally, the results do not support Hypothesis 5c, meaning that an increased attention to the app ($p = .326$) does not seem to predict brand attitude.

Alternative Model

Because an argument could be made that brand attitude affects branded app responses and subsequently app engagement experiences—and not vice versa—we compared our hypothesized model with an alternative model in which we reversed the causal structure of our predictions. In the alternative model we specified brand attitude to predict app responses and subsequently to predict app engagement types. The two models were compared and the hypothesized model proved to be superior to the alternative model. The alternative model showed lower, or comparable, fit for all fit indices: $\chi^2(7) = 29.31$, $p < .001$, CFI = .97, RMSEA = .10, 95% CI [.07, .14], *p*-close = .005, SRMR = .05. In sum, the hypothesized model proved better fitting than the alternative model, which offers support for the proposed conceptual model.

Discussion

In this study we aimed to examine which types of branded app engagement experiences predict app usage, app attitude, and app attention, and whether these app responses affects brand attitude. Drawing on a representative sample of smartphone users, the study provides new insights, grounded theoretically in the media engagement framework (Calder et al., 2009) and the UTAUT2 (Venkatesh et al., 2012). In addition, the results indicate that considering engagement types, rather than engagement as a higher-order construct, is preferred when studying the effects of branded app engagement.

The Effects of Engagement Types on App Responses

Drawing from previous engagement literature, we identified four types of branded app engagement: personal identification, social empowerment, intrinsic enjoyment, and convenience. We expected positive effects for all four types of engagement on app use, app attitude, and app attention. Based on the results we can draw three important conclusions.

First, we can conclude that of the four types of engagement, only personal identification seems to affect app use. Drawing on insights from the UTAUT2 (Venkatesh et al., 2012), positive effects on app use were expected for all four types of engagement. Where the four types of app engagement were expected to modulate the effects of hedonic motivation, social influence, performance expectancy, and effort expectancy of branded app users, the results support the prediction concerning the effect of hedonic motivation only partially and do not support the other predictions.

These findings imply that app characteristics and functionalities that enhance the branded app experience such that users belief that it compliments their own identity (e.g., makes them more interesting or inspires them) positively affects the frequency people use the branded app. Since experiencing social empowerment, intrinsic enjoyment, and convenience did not predict app use, functionalities that enable users to share content, that make the experience of the app more fun, or that make the app more user-friendly are not expected to promote app use.

Alternatively, for some apps, external factors rather than the experience with the app might be stronger predictors of the *frequency* of app use. If an app performs a very specific task, for example helping with planning a trip with public transportation, the experience one has with an app might not so much influence the frequency of use as would the fact that one needs to plan a trip. This means that, even though the app might be convenient or elicit intrinsic enjoyment, this will not boost the *frequency* of its use, simply because there is no need to perform the specific task that the app facilitates. In this case, it is more likely that the experience with the branded app is a reason for using

versus not using the app, but not for the *frequency* of using it once a user has already decided to download the app.

Second, our study shows that both app attitudes and app attention are associated with experiencing intrinsic enjoyment and convenience when using branded apps. These findings corroborate the findings of Yang (2013), Hsu and Lin (2016), and Kim et al. (2016) who examined non-branded mobile applications. These studies also found that intrinsic enjoyment and convenience enhanced attitudes toward mobile apps and are in line with the UTAUT2 (Venkatesh et al., 2012). Both hedonic experiences and the ease of use and usefulness of a new technology are believed to increase one's attitudes toward the technology. The positive effect on app attention is in line with the hedonic contingency hypothesis (Wegener & Petty, 1994), which states that if an app provides enjoyment it is beneficial for one's mood to pay increased attention to the app in order to maintain this mood.

Contrary to what was expected, no relationships between personal identification and app attitude or app attention were found, nor any relationships between social empowerment and app responses. This implies that experiencing personal identification or social empowerment when using branded apps does not drive app attitude or attention, and that social empowerment also does not drive app use. These findings are inconsistent with the UTAUT2 (Venkatesh et al., 2012), for personal identification and social empowerment experiences were expected to modulate the effects of hedonic motivation and social influence. An explanation for the current results could be the design of the study, which could have influenced the effects of this particular experience type. Since in the current study, users were asked to evaluate the branded app they had used most recently, it seems plausible that these apps are apps that users already have been using for a while, mitigating the effect of personal identification and social influence.

The Effects of App Responses on Brand Attitude

Third, we found that app engagement seems to result in more positive brand attitudes via app use and app attitudes. Building on existing media context literature (e.g., Bronner & Neijens, 2006), our study showed that the more people use a branded app, and/or the more positive their attitudes are toward the app, the more positive their attitudes will be toward the brand that is embedded in the app. Both findings are in line with prior empirical work examining the effects of media use (e.g. Novak et al., 2000) and app attitude (e.g. Ahmed et al., 2016) on brand attitude. Contrary to our expectations, we found no evidence for a positive relationship between app attention brand attitude. This means that when people allocate more attention to a branded app, this does not seem to affect their brand attitude.

Limitations and Suggestions for Future Research

In this study we identified four important engagement experience types for studying the effects of branded app engagement. We cannot rule out however, that there are additional relevant engagement experience types for studying branded apps. We believe that future research should therefore focus on identifying additional types of branded app engagement experiences. Two approaches are suggested: a bottom-up approach, by conducting qualitative interviews (see Calder & Malthouse, 2008), or a top-down approach, by considering additional theories and frameworks. For example, experiences grounded in other drivers of app use as described in the UTAUT2 (Venkatesh et al., 2012); like habitual experiences or experiences related to one's price value evaluation.

Where the current study offers insight into which experience types lead to which app responses, it remains unclear which app functionalities and characteristics facilitate these engagement experiences. Future research could therefore focus on examining specific branded app functionalities and characteristics—like personalization functionalities which offer users the ability to personalize and customize a branded app to their preferences (likely offering personal identification experiences) or social media buttons that facilitate the sharing behavior (likely offering social empowerment experiences)—to determine which exact functionalities should be integrated into branded apps to elicit certain engagement experiences. Those insights would complement the findings of this study and would facilitate the decision making process for both branded app developers and (brand) managers that decide which functionalities and characteristics to include when developing or auditing branded apps.

Moreover, the cross-sectional design of the study comes with certain limitations, because this type of research design has only limited explanatory power and cannot be used to infer causality. We therefore suggest a follow-up experiment or longitudinal study into app engagement, in order to gain insights into the causality of the different types of engagement experiences. Even though our data showed a better fit for the causal structure from app responses to brand attitude (than for the reverse causal structure), one could argue that brand attitude might still affect app responses to a certain extent (at least over time). Conducting a longitudinal study would allow for a more stringent test of a possible two-way relationship between app responses and brand attitude and would help determine causality.

Theoretical Implications

Theoretically, the current study showed that distinguishing between types of engagement, rather than treating engagement as a higher-order construct, can be an effective way to study the effects of engagement experiences on app responses. We showed that differentiating between engagement types is more suitable than considering engagement as a single higher-order construct. Additionally, differentiating between engagement types, rather than considering engagement as a single construct, offers

more nuanced insights into the workings of (different types of) engagement and would offer practitioners better directions when tasked with developing branded applications.

Moreover, we demonstrated that insights from the media engagement framework seem compatible with those from the UTAUT2 (Venkatesh et al. 2012). For this study, we drew on insights from the UTAUT2 for predicting the effects of the different app engagement types, however a more comprehensive integration of media engagement types into the UTAUT2 model might prove valuable. For example, users' actual engagement experiences with a medium might modulate the relationship between user's motivations and attitudinal and behavioral responses. Also, we believe that integrating insights from the media engagement framework into the UTAUT2 would likely increase the overall explanatory power of the model.

Practical Implications

For app developers, marketers, and brand managers who aim to improve the impact of their branded apps, our results offer several implications. In order to drive app use, it seems important to focus on app functionalities that offer users experiences of personal identification. Branded apps that can inspire their users, or represent what their users find important in life, are more likely to be used more often. This means that branded app developers have to provide content or functionalities that fits the personal identity of potential users of the app. To do so, detailed knowledge about the target group seems essential. Potentially, offering users the option to personalize the branded app might also result in stronger experiences of personal identification.

Moreover, to drive app attitude and app attention, functionalities that elicit experiences of intrinsic enjoyment and convenience seem most important to consider. This means that in order to increase overall app attitude and app attention, functionalities should be offered that make the app experience more enjoyable or more convenient.

Finally, we have two concluding remarks for practitioners. First, the data shows that social empowerment does not seem to affect any app responses and we therefore do not recommend integrating app functionalities that offer solely social empowerment experiences. Second, since app use and app attitude both seem to drive brand attitude, integrating app functionalities that evoke experience from any of the three remaining engagement types seems valuable; personal identification functionalities via increasing app use and intrinsic enjoyment and convenience via app attitude.

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