Brands as Friends: An Investigation into Consumers' Motivations to Form Relationships with Brands in Online Social Networks

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Abstract: Online social networks (OSNs) have become an important channel that influences business sales; thus, many brands try to attract attention in OSNs. However, doing so requires an understanding of why consumers form relationships with brands in OSNs. We explore this topic theoretically and empirically with three survey studies that focus on the motivations of consumers to connect virtually with brands on the world's largest OSN, Facebook. Survey 1 concerns the conceptualization of motivational factors. Survey 2 helps to refine the conceptualization and develops an initial measurement model. Survey 3 validates the measurement scales and the relevance of the motivational factors in explaining consumers' propensity to form relationships with brands in OSNs. Overall, we identify nine motivational factors in three categories: consumers who seek brand-to-consumer communication, consumer-to-brand communication, and inter-consumer communication. We find substantial and significant effects with some brand-to-consumer and inter-consumer communication motivations but no effects with consumer-to-brand communication motivations regarding the propensity to relate to brands in OSNs. Practitioners can use the resulting structural and measurement models to understand their social media fan base more effectively and to plan and monitor their social media marketing activities. Researchers can build upon the results to theorize further on consumer behavior in OSNs.

Keywords: Social media, online social networks, online marketing, survey research, scale development, structural equation modeling

INTRODUCTION

Nowadays, online social networks (OSNs) play an important role in society worldwide. People use them in order to communicate with others, foster social relationships, or seek entertainment. OSNs are web-based services that allow individuals and brands to (1) construct a public or semi-public profile or page within a bounded system, (2) specify a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system (Boyd and Ellison 2007). The nature and nomenclature of these connections may vary from site to site. These OSNs, together with frequent technological innovation, have revolutionized today´s daily routine and consequently have substantial societal impacts (Aral et al. 2013). Crucial reasons for becoming involved with OSNs might be their role as information resources and their emotional attributes such as virtual affiliation (Ellison et al. 2007).

Individual OSN users are also consumers. Thus, businesses are interested in social media activities in order to increase their corporate reputations, manage brand images, attract new consumers, enhance consumer relationships, and recruit skilled workforces (Bernoff and Li 2008; Seol et al. 2012). Brands can achieve these objectives by one or more of three forms of communication in OSNs: brand-to-consumer, consumer-to-brand, and inter-consumer communication. These have been vividly referred to as megaphone, magnet, and monitor respectively (Gallaugher and Ransbotham 2010).

Businesses are interested in using brands to communicate with consumers in order to improve their knowledge of consumer needs, promote brand content, strengthen the relationship with consumers, and ultimately increase brand performance. These objectives are easier to achieve once consumers have a virtual relationship with a brand. In OSNs, these virtual relationships are enduring connections between users and brands represented by profiles and pages. For example, on Facebook, the largest OSN as measured by the number of users (Bik and Goldstein 2013), individual users have personal *profiles* and brands run so-called fan *pages*. On Facebook, users can form relationships with other users, and once related, these users are termed *friends*. Similarly, users can build a relationship with a brand by clicking a *Like* button on the brand's fan page or another HTML page that embeds the button. Users who have a relationship with a brand are commonly termed *fans* of that brand. The ability to connect to others is a constitutive characteristic of OSNs (Boyd and Ellison 2007). For Facebook fan pages, this ability is realized as *Like*, on Twitter it is *Follow*, on LinkedIn it is *Connect*, on Google+ it is *+1*, and on YouTube it is *Subscribe*.

When a brand posts content on its page, the OSN pushes this content to the newsfeeds of the brand's fans. Analogously, when a user posts content on a fan page, makes a comment, or *likes*, the OSN pushes this information to the newsfeeds of the fan's friends. Hence, a user's fan status increases brand awareness for the fan and her or his friends and allows the distribution of brand content more easily and widely. In addition, fan status enables the brand to gain virtual insight into the user's profile with details depending on the platform and individual privacy settings. The formation and display of a consumer-brand relationship is one form of so-called user-generated content (UGC). UGC has been shown to positively correlate with brand value (Kaplan and Haenlein 2010) and trading volume on the stock market (Tirunillai and Tellis 2012). Using a similar perspective, the social software agency Syncapse surveyed fans of 20 top consumer brands for their past and projected future behavior. According to this study, the average value of a Facebook fan is USD 174 (Syncapse 2013).

The prevalence of consumer-brand relationships in OSNs, the relevance of these relationships to brands, and the lack of theory on consumers' motivation to form relationships with brands in OSNs have led us to the research question: *What motivates consumers to form relationships with brands in OSNs?*

In this regard, we define *brands* as "a name, term, design, symbol or any other feature that identifies one seller's good or service as distinct from those of other sellers" (Bennett 1995, p. 27). *Consumers* are individual OSN users and a *relationship* within an OSN is a persistent connection between two nodes (i.e., pages or profiles) of the social network. *Motivation* refers to the factors that activate, direct, and sustain goal-directed behavior (Nevid 2012, p. 288). We build on social exchange theory and self-determination theory and focus on the activation and direction of behavior that forms relationships with brands in OSNs. In this context, the formation of such relationships is almost instantaneous and does not require sustained effort. The motivations for sustaining relationships are beyond the scope of this paper.

Based on the research question, Figure 1 presents a conceptual research model. With this, we aim to identify motivational factors that have causal effects on consumers' propensity to form brand relationships in OSNs. Such factors might qualitatively be classified as primarily relating to brand-to-consumer, consumer-to-brand, or consumer-to-consumer communication. To answer the research question, we reviewed the literature and performed three empirical studies using data from online surveys specifically designed and administered for this research.

For the surveys, we recruited participants using Facebook and, on Facebook, asked for information regarding their behavior and habits. By focusing on a single OSN, we aimed to achieve a consistent understanding among the participants and a high quality measurement.

| Type of communication | Motivational factors | Causal effects | Propensity to form a brand relationship |

Figure 1. Research model
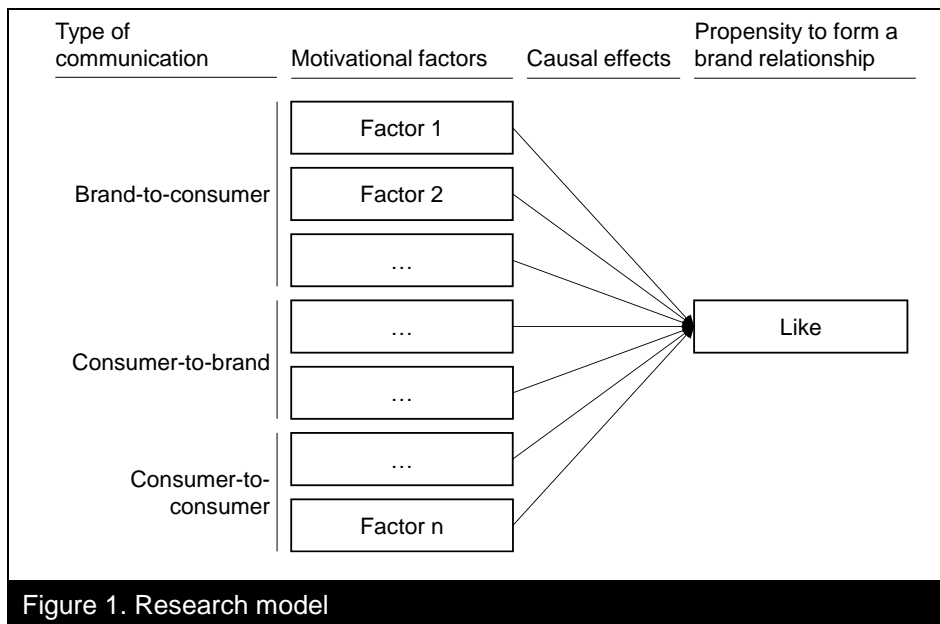
In summary, we found nine factors that potentially contribute to consumers' motivation to form relationships with brands in OSNs. In the final survey study, five of these nine factors exhibited a significant and meaningful effect on consumers' propensity to form an OSN relationship with a brand. In the category of brand-to-consumer communication, the factors are *Entertainment*, *General Information*, and *Financial Benefits*; in consumer-to-consumer communication, they are *Self-presentation* and *Support*. Interestingly, none of the factors that relate to consumer-to-brand communication exhibit a significant effect on the propensity to form a relationship. Each of these motivational factors is conceptualized and supported by a newly developed and validated measurement scale. This paper's contribution to research on information systems is that it provides a theory to explain and predict (Gregor 2006) consumers' relationship behavior in OSNs. The conceptualization, the causal structure of motivational factors, the propensity to form a relationship, and the measurement scales may help social media marketing practitioners to understand their fan base and target their OSN activities.

BACKGROUND AND RELATED LITERATURE

OSNs

OSNs are services that offer virtual interaction on a private and professional basis. Members of these networks can build relationships with other users and with brands. Users can create and exchange UGC, a term that summarizes all content created by users of an online social media service (Trusov et al. 2009; Kaplan and Haenlein 2010). Marketers can create and distribute marketer-generated content (MGC). OSNs provide a wide range of features for their members. These features may be different across OSNs but have the same core functions such as constructing personalized user profiles that offer the chance to provide individual personal information; finding different pieces of information, for example about other users, brands, or

events; and expressing thoughts and opinions throughout the OSN (Boyd and Ellison 2007; Kim et al. 2010). The most important feature for this study is the ability to connect with other users and brands. This variety of features has resulted in the tremendous popularity of OSNs and attracted a growing number of OSN members (De Vries et al. 2012). Facebook, for example, had 1.39 billion monthly active users as of December 31, 2014 (Facebook 2015). In short, social media in general is no longer a trend; it is mainstream because it has completely revolutionized the way in which people communicate (Gillan 2010).

The spread of OSNs started with the foundation of MySpace in 2003 and Facebook in 2004. Since then, OSNs have eroded traditional ways of communication and fundamentally changed the means of private and professional interaction (Gallaugher and Ransbotham 2010). With regard to professional interaction, it was predicted some years ago that online communities as a business model would continue to gain in importance and recognition (Rothaermel and Sugiyama 2001). This forecast was correct: in 2011, half of OSN members were interested in becoming virtually connected with certain kinds of brand within the OSNs (De Vries et al. 2012). This emerging relation of social media and the field of brands suggests that businesses should be present in OSNs in order to take advantage of these new developments and engage with the audience (Zhivov et al. 2011). Consequently, brands run so-called fan pages on OSNs, including Facebook (De Vries et al. 2012; Richter and Schäfermeyer 2011).

Relationships in OSNs

When a consumer clicks the *Like* button on a brand's fan page on Facebook or uses the analogous functionality in other OSNs, she or he manifests and publicizes her or his relationship with that brand. The existence of a *relationship* commonly requires evident interdependence between partners—they must collectively affect, define, and redefine the relationship (Hinde 1979). Accepting the effect of the consumer's actions on the relationship is easy; seeing the brand's ability to form relationships is less obvious. In order to be legitimate relationship partners, brands are personalized or humanized in some sense in order to facilitate interactions and lower existing barriers for relationships (Fournier 1998). "Marketing actions conducted under the rubric of interactive and addressable communications qualify the brand as a reciprocating partner" (Fournier 1998, p. 345). It is this perspective that mainly drives the popularity of social-media marketing in which brands become active, humanized partners in dyadic relationships. The question then becomes why brands and consumers would want to enter relationships in OSNs.

For the brand, the value from consumer interaction in OSNs derives primarily from consumers' subsequent actions: purchases by consumers who are emotionally attached to the brand, helpful feedback, positive word-of-mouth (UGC), or the distribution of UGC or MGC that leads to purchases by other consumers (Fournier and Avery 2011; Wang 2013). Such emotional attachment anticipates commitment to a relationship (Rusbult 1983). For example, people form emotional attachments not only to other people who are personally known to them but also to celebrities (Alperstein 1991), pets (Hirschman 1994), and brands (Schouten and McAlexander 1995). Of these attachments, consumer-brand relationships may include emotions such as love and warm feelings (Thomson et al. 2005). In a similar way to relationships with persons, emotional attachment to brands is frequently seen as an increase in commitment to the brand relationship (Thomson et al. 2005). In marketing, a relevant indicator of commitment is consumer brand loyalty (Garbarino and Johnson 1999). Thus, brand attachment is a long-lasting, commitment-inducing bond between a consumer and a brand that anticipates future purchases (Esch et al. 2006). Analogously, when a user likes a brand's fan page, one can view this as a manifestation of the user's attachment to that brand and thereby hypothesize a

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relation to future purchases by the user. In addition, interpersonal word-of-mouth and UGC are typically seen as more important sources of information than marketer-controlled sources (Katz and Lazarsfeld 1955; Buttle 1998). In this regard, social media have substantially accelerated the spread of word-of-mouth (Dellarocas 2003). For example, information about a Facebook friend who likes certain content on Facebook triggers positive emotions (Kuan et al. 2014), a situation that fosters information diffusion in social media (Stieglitz and Dang-Xuan 2013), which in turn is associated with increased firm value (Luo and Zhang 2013). In summary, brands may want to relate to consumers in OSNs for multiple reasons.

For the consumer, the value from interaction with brands in OSNs is less obvious. Relationships have a purpose (Fournier 1998): They add and structure meaning in a person's life (Berscheid and Peplau 1983; Hinde 1995). Further, the difference between a relationship and a transaction is the temporality of a relationship (Berscheid and Peplau 1983). Social exchange theory posits that consumers interact with brands because they expect a reward (Emerson 1976). An interaction is rewarding when the consumer perceives greater derived benefit than effort (Füller 2006). Arguably, the effort for liking a fan page is very low: At first, it is merely a single click on the *Like* button. Subsequently, the consumer has to accept the receipt of posts from that brand. If engagement with these posts is low, however, Facebook will gradually degrade their frequency and positioning and allow the consumer to move away from the brand's information stream. Hence, the cost-benefit trade-off implied by social exchange theory becomes primarily a benefit assessment.

According to motivation theory and self-determination theory, human needs are the drivers of motivation, which in turn is the basis for activating, directing, and sustaining actions (Deci 1975; Deci and Ryan 1985, 1987). Motivation theory suggests that needs-based motivations are the primary impetus for people and that such motivations can be broadly categorized into intrinsic and extrinsic motivations (Wu and Lu 2013). Intrinsic motivations describe individuals acting in order to satisfy immediate needs such as excitement, entertainment, pleasure, or fun. Satisfying these needs results in positive emotions. Extrinsic motivations describe an indirect satisfaction derived by people behaving in a certain way for external reasons. Different streams of research suggest that intrinsic and extrinsic motivations for behaviors vaguely relate to a consumer's formation of an OSN brand relationship. It may be hypothesized that these motivations pertain to the benefit assessment of relationship formation.

An "exploratory and preliminary" study provides an "apparently not exhaustive" list of factors that affect users' engagement with content on brand pages in OSNs (Wang 2013, p. 5). This study hypothesizes that utilitarian and hedonic factors are at play; thus, users are assumed to engage with brand page content to seek information (Park et al. 2009) and entertainment (Dogruer et al. 2011). This perspective is complemented by research on other online communities. For example, members of online travel communities are driven by four fundamental classes of need: functional, social, and psychological needs (Wang et al. 2002), and hedonic needs (Wang and Fesenmaier 2004). This framework may be transferred from online travel communities to OSNs, a suggestion that has been supported by three case studies in the literature (Zhivov et al. 2011). Functional needs relate to extrinsic motivations. They imply that members join communities in order to carry out certain activities such as gathering *information* (Galegher et al. 1998; Wang et al. 2002). This information about products, services, or job opportunities might otherwise be inaccessible (Butler et al. 2002). Further functional needs include efficiency, convenience, and value in transactions, and, more generally, *financial benefits* (Wang et al. 2002; Ke et al. 2008; Wu and Lu 2013, p. 156). Social needs include involvement and the *communication* of ideas and opinions within a community, as well as the provision of support and help for others (Wang et al. 2002). Communication to the brand may

aim at influencing the brand, a motivation that has been shown to encourage consumers to participate in brand communities (Woisetschläger et al. 2008). Likewise, altruistic *support* for brands has been shown to drive consumer engagement in new product development (Füller 2006). Psychological needs include the need for affiliation, belonging, and identification with a group. Consumers may strive for *self-presentation* and enhancement by joining OSNs (Krasnova et al. 2008) and interacting with brands (Grubb and Grathwohl 1967). Consumers may also demonstrate self-concepts to themselves via products (Sirgy 1982), and such relationships can reinforce their self-concepts (Aron et al. 1995). Self-presentation thereby requires a brand's compliance with the consumer's identity (Woisetschläger et al. 2008). Finally, hedonic needs include *entertainment*, enjoyment, and fun (Wang 2013). This concept of hedonic need is related to the hedonic motivation that is well known from technology acceptance research (Davis et al. 1992; Venkatesh 2000). Whether these motivational factors, which relate to participation and general behavior in OSNs and other online communities, apply to forming relationships with brands in OSNs is a question for empirical exploration.

METHOD

Based on established frameworks and methodological guidance (Churchill 1979; Hinkin 1998; De Vellis 2003; MacKenzie et al. 2011), we conceptualized motivational factors that affect consumer-brand connections in OSNs and developed a measurement model for these factors. The structural and measurement models were comprehensively constructed, tested, adapted, tested again, and validated. During this process, the research approach moved from exploratory to confirmatory research. Table 1 provides an overview of the seven steps that were undertaken. During the conceptualization of the motivational factors, we considered all kinds of OSNs. However, the analytical results refer to the OSN Facebook because of its large number of users and its worldwide popularity (Bik and Goldstein 2013).

Table 1. Methodical steps taken						
Construct model		Test model		Adapt model	Test and validate model	
Step 1: Conceptualize motivational factors (Survey 1)	**Step 2:** Develop measurement model	**Step 3:** Gather data from new sample (Survey 2)	**Step 4:** Examine model properties and validity	**Step 5:** Re-conceptualize motivational factors and adapt measurement model	**Step 6:** Gather data from new sample (Survey 3)	**Step 7:** Examine model properties and validity
Six motivational factors	49 items to measure the six motivational factors	Online survey with a final sample of 375 respondents	Indication for required model adaption	Nine motivational factors and 44 items to measure them	Online survey with a final sample of 528 respondents	Validated structural and measurement model for motivational factors

Step 1 complemented the related literature reviewed in this paper by using an exploratory survey to conceptualize the motivational factors that potentially affect consumers' propensity to

form brand relationships in OSNs. Step 2 operationalized these motivational factors, developed an initial measurement model, and assessed the content validity of the measurement items. Steps 3 and 4 gathered new data and performed exploratory principal axis factoring (PAF) to test internal consistency reliability and discriminant validity of the model. The results of these steps suggested a necessary reconceptualization, resulting in a set of nine motivational factors and adaptations to the measurement model (Step 5). Finally, Steps 6 and 7 again gathered data from a new sample, performed confirmatory factor analysis (CFA) and covariance-based structural equation modeling, and tested the revised model in terms of measurement invariance, internal consistency reliability, and discriminant and nomological construct validity. The overall result is validated structural and measurement models for motivational factors that form brand relationships in OSNs.

Participants for the surveys were recruited via different means from different populations in different countries in order to avoid bias and strengthen generalizability. Details are provided below for each survey. Statistical analyses were performed with the statistical environment R. Throughout the research, all appropriate ethical issues were taken into account in order to ensure compliance with the "Code of Research Conduct" prepared by the Association for Information Systems.

CONCEPTUALIZATION AND SCALE DEVELOPMENT

This section describes the evolution of the structural and measurement models as a set of seven steps as summarized in Table 1. We present each step as we evolved it from the initial conceptualization to the final validated models because we believe that tracking this research process strengthens an understanding of the final results. With regard to this, the initial steps are described rather briefly with further details in the Appendix. Later steps are described more extensively.

Step 1: Conceptualize motivational factors

Our central research question is, "What motivates consumers to form relationships with brands in OSNs?" In this regard, we first need to conceptualize motivation. To achieve this, we consider motivation as the factors that activate, direct, and sustain goal-directed behavior (Nevid 2012, p. 288). We then identify individual motivational factors by using deductive and inductive approaches. First, building on our discussion in the Introduction and Background and Literature Review sections, we reviewed the scientific and commercial literature regarding related concepts. The following literature sources were the most valuable for providing broad perspectives: Wang (2013), Krasnova et al. (2008), and Zhivov et al. (2011) highlighted select motivational factors with regard to participation and behavior in OSNs; and Wang et al. (2002) and Wang and Fesenmaier (2004) dealt with the needs of online community members. Second, we conducted five in-depth face-to-face interviews with long-term Facebook users about their behavior in the OSN and specifically their motivations to form relationships with brands.

The interplay of literature and interviews resulted in an initial list of six abstract motivational factors, each one potentially influencing consumers' propensity to establish consumer-brand relationships in OSNs: (1) *Entertainment*, (2) *Self-Presentation*, (3) *Information*, (4) *Communication*, (5) *Financial Benefits*, and (6) *Support* of the brand's cause. These six factors were grouped into the categories brand-to-consumer, consumer-to-brand, and inter-consumer communication (Gallaugher and Ransbotham 2010). Table 2 provides definitions, categorizations, and references. As outlined above, references do not directly relate the respective construct to

the formation of relationships in OSNs but to related behavior. Whether the transfer to the present application domain is warranted is seen in the further steps of theory development.

Table 2. First conceptualization of motivational factors			
Motivational factor		**Definition**	**References inspiring the inclusion and definition of the factor**
Brand-to-consumer	1) Entertainment	Reading brand posts and comments, and looking at pictures amuses, pleases, and entertains the consumer.	Davis et al. 1992, Venkatesh 2000; Wang et al. 2002; Wang and Fesenmaier 2004; Park et al. 2009; Dogruer et al. 2011; Wang 2013; Wu and Lu 2013
	2) Information	The consumer obtains information about the brand; for example, product information, advertisements, career information, and information for general research purposes.	Galegher et al. 1998; Butler et al. 2002; Wang et al. 2002; Wang and Fesenmaier 2004; Park et al. 2009; Wang 2013
	3) Financial Benefits	The consumer receives financial benefits from the brand; for example, by receiving special offers, coupons, discounts, and free samples, or by taking part in lotteries.	Ke et al. 2008; Wu and Lu 2013
Consumer-to-brand	4) Communication	The consumer communicates information or opinions to the brand by posting these on the brand's fan page.	Wang et al. 2002; Wang and Fesenmaier 2004; Woisetschläger et al. 2008; Park et al. 2009; Wu and Lu 2013
Consumer-to-consumer	5) Self-Presentation	The consumer controls her or his virtual image in the OSN by displaying a relationship with a brand that might signal personal attitude or self-identification.	Grubb and Grathwol 1967; Fournier 1998; Wang and Fesenmaier 2004; Henning-Thurau et al. 2004; Krasnova et al. 2008; Park et al. 2009
	6) Support	The consumer altruistically supports the brand or its cause by displaying a relationship with the brand.	Wang et al. 2002; Wang and Fesenmaier 2004; Füller 2006

Third, to check for the completeness of this initial list, we conducted an exploratory survey (Survey 1) among Facebook users. We employed the crowdsourcing platform Amazon Mechanical Turk ("MTurk" for short) to recruit 50 participants for an online survey. The participants were required to be registered as U.S. residents, to have worked on at least 100 approved tasks on MTurk (so called HITs), and to have a HIT approval rate of at least 95%. Participants were paid an average hourly rate of USD 6.5 for their involvement. Survey participants recruited via MTurk are usually seen as relatively representative of U.S. internet users (Ipeirotis 2009; Ross et al. 2010).

Participants were asked what motivated them to like a brand page on Facebook. They were free to submit up to four answers via input fields. These fields allowed free text replies. In addition, the participants had to provide the number of brands with which they had relationships on Facebook and the number of individuals. The number of brand relationships varied from 0

to 100, with a median of 15 and a mean of 31. The number of relationships with individual users varied from 20 to 1,000, with a median of 249 and a mean of 319. Rather prominent and round numbers suggested that many respondents might not have provided the correct number of relationships but a rough guess. Demographic information was not elicited.

The survey resulted in a total of 163 motivations listed by the 50 respondents (an average of 3.3 answers per respondent). Of the 163 answers, seven were omitted because they signaled the denial of relationships to brands; for example, the answer "N/A don't like brands." The remaining 156 answers were assigned to one of the six aforementioned motivational factors. Thus, we concluded that we had a comprehensive initial list of motivational factors. A revised conceptualization is presented in Step 5.

Step 2: Develop measurement model

The aim was to identify or create survey-based scales to measure the six motivational factors. As it was not possible to measure the complete domain of interest for these abstract concepts, it was important to achieve a sample of items that adequately represented the construct under examination (Ghiselli et al. 1981). None of the constructs was entirely new. Yet, existing scales are heterogeneous and not directly applicable to relationship formation in OSNs. Thus, we decided to develop new, specific, and homogenous scales for all motivational factors, guided by the literature where possible. We generated items inductively (also known as *grouping* or *classification from below*) and deductively (also known as *logical partitioning* or *classification from above*) (Hunt 1991, Hinkin 1998). The deductive approach is especially powerful in situations where a strong theory exists. Here, we based the approach on the initial conceptualization of motivational factors and the related literature (see Table 2). Because of the exploratory nature of our research at this stage, based on the categorizations of answers from the interviews with expert Facebook users and the survey conducted in Step 1, we considered the inductive approach more salient than the deductive approach. The wording of items followed standard guidelines (Harrison and McLaughlin 1993; Hinkin 1998; Tourangeau et al. 2000).

In total, 54 items were generated, each one representing one of the six latent factors: seven items each for the factors *Communication* and *Financial Benefits*, nine items each for the factors *Support*, *Information*, and *Entertainment*, and 13 items for the factor *Self-Presentation*. To ensure content validity and proper wording, a content validity assessment (CVA) and a pretest were undertaken (Hinkin 1998; MacKenzie et al. 2011). The CVA was conducted with four participants and resulted in the exclusion of five items, the renaming of seven, and the repositioning of 15. The process was then repeated with no further changes. The pretest survey included 20 participants who were part of an excessive feedback culture. After this pretest, some questions were rephrased and parts of the survey layout were adjusted.

The 49 remaining items for the initial measurement model can be found in Table 7 in the Appendix. All items are assessed on a 5-point Likert-type scale, consisting of the following options: "Disagree strongly," "Disagree a little," "Neither disagree, nor agree," "Agree a little," and "Agree strongly," and include the additional option "Cannot evaluate."

Step 3: Gather data from new sample (Survey 2)

To validate the generated model structure that consists of six factors and 49 items, data were gathered in an online survey. Besides the 49 items from the measurement model, the questionnaire covered demographics, general Facebook activity, and usage of the *Like* function for

forming relationships. The latter specifically asked for the time of a participant's last *Like* of a brand page (using a scale of: "Today," "Yesterday," "Within the last week," "Within the last month," "Within the last 3 months," and "More than three months ago") and the frequency of *Likes* of Facebook brand pages (using a scale of: "Less than once a month," "Monthly," "Several times a month," "Weekly," "Several times a week," "Daily," and "Several times a day"). In addition, the questionnaire included screening and control questions in order to improve data quality. The initial screening question read: "Do you run an own Facebook account? — Yes or No." The control question read: "If you are answering this questionnaire attentively, please tick the first box on the left" and was placed between regular items.

The recruiting procedure was purposefully different from Survey 1 in order to increase the results' external validity. For Survey 2, participants were recruited via snowball sampling on Facebook: We submitted the link to the online survey to Facebook groups, shared it on our own private Facebook accounts, and sent individual Facebook messages and tags to Facebook friends asking them to forward the invitation to the survey. Recruiting propagated by the addressees sharing the link. Participants could become involved anonymously. If they wished, they could submit their e-mail addresses and take part in a lottery for Amazon gift cards. These addresses were not used for the purpose of identification; all participants were anonymous. Because it could not be guaranteed that this recruitment procedure was representative of any meaningful population and because the procedure could be susceptible to sampling bias, the model was subsequently verified by repeating the survey with an independent sample recruited by using a different procedure. For further information, see Step 6.

In total, 473 participants started the survey and 397 concluded it (83.9%). There was no evidence of any systematic bias in the survey that could have caused premature abandonment. With regard to the screening question, two participants had no Facebook account; and with regard to the control question, 20 participants answered it incorrectly. Consequently, the subsequent analysis was conducted using 375 data points, which constituted 79.3% of the initial participants. This sample size is not excessive, but is sufficient for an exploratory factor analysis (Hinkin 1998; MacKenzie et al. 2011). The 375 participants took, on average, 8 minutes and 6 seconds to complete the survey (with a standard deviation of 1.93).

The respondents were aged between 12 and 67 years, with a median of 23 and a mean of 23.6 years. They had been members of Facebook for between 0 to 10 years, with a median of 5 and a mean of 4.8 years. Of the respondents, 49.3% were male and 50.7% were female. In terms of the highest educational level achieved, 6.4% had an education level lower than a high-school diploma, 38.9% had a high school diploma as their highest education level, 45.3% had a bachelor degree, and 9.4% had a master's degree or PhD. With regard to occupation, 61.3% were students, 25.9% were employed, and 12.8% were apprentices, pupils, job seekers, and others.

Step 4: Examine Model Properties and Validity

The 375 data points were analyzed by using exploratory PAF (Hinkin 1998; Matsunaga 2010). Missing data points were imputed by means and the number of factors to extract was determined by a minimum average partial (MAP) test (Velicer 1976). MAP test and parallel analysis are generally preferable to other methods such as the Kaiser-Gutman criterion or the Scree test (Wood et al. 1996; Zwick and Velicer 1982, 1986). Here, we favored a MAP test over parallel analysis because the PAF showed a very strong first factor with an eigenvalue (Hayton et al. 2004). The MAP test suggested that nine factors should be extracted compared with the hypothesized six factors derived in Step 1. PAF was continued by evaluating individual items according to their factor loadings after oblique promax rotation (Hinkin 1998).

Oblique rotation was chosen because we did not have a strong prior theory that factors were uncorrelated (Matsunaga 2010). Those items that showed a major loading lower than 0.4, a communality lower than 0.4, a cross loading equal to or greater than 0.4, or a lack of content fit, were eliminated. Finally, a maximum number of five items per factor was set (Hinkin 1998). If the maximum was exceeded, the items with the lowest fit were eliminated.

The resulting model has a set of 33 items with loading on nine factors (see Table 8 in the Appendix). In the model, we use Cronbach's alpha as a measure of internal consistency reliability. Conventional levels signaling adequate reliability are 0.6 (Nunnally and Bernstein 1967) and 0.7 (Nunnally and Bernstein 1978). For the nine factors in Table 8, Cronbach's alpha ranges from 0.652 to 0.935. All factors exceed the lower threshold and eight out of nine factors exceed the higher threshold. We concluded that the scales possessed sufficient internal consistency reliability to proceed.

Step 5: Re-conceptualize motivational factors and adapt measurement

The exploratory PAF suggested a nine-factor structure rather than the a priori hypothesized six motivational factors. The pattern matrix (see Table 8 in the Appendix) suggests that *Information* should be divided into two more specific concepts (*General Information* and *Career Information*); likewise, *Communication* should be divided into *Positive and Impartial Communication* and *Negative Communication*. Similarly, a new factor, *External Image*, is separated from *Self-Presentation*, thus requiring a re-conceptualization of the residual *Self-Presentation*. The resulting nine factors are listed and defined in Table 3.

Table 3. Second conceptualization of motivational factors		
Motivational factor		**Definition**
Brand-to-consumer	1) Entertainment	Reading brand posts and comments, and looking at pictures amuses, pleases, and entertains the consumer.
	2) General Information	The consumer obtains information about the brand (e.g., product information, advertisements, and information for general research purposes) except career information.
	3) Career Information	The consumer obtains information about career opportunities and job possibilities at the brand.
	4) Financial Benefits	The consumer receives financial benefits from the brand; for example, by receiving special offers, coupons, discounts, and free samples, or by taking part in lotteries.
Consumer-to-brand	5) Positive and Impartial Communication	The user communicates positive or impartial information or opinions to the brand by posting these on the brand's fan page.
	6) Negative Communication	The user communicates negative information or opinions to the brand by posting these on the brand's fan page.
Consumer-to-consumer	7) Self-Presentation	The consumer self-reflects and makes her or his profile in the OSN match real-life preferences and interests.
	8) External Image	The consumer controls her or his virtual image as presented to other users of the OSN by displaying a relationship with a brand that might signal personal attitude or self-identification.
	9) Support	The consumer altruistically supports the brand or its cause by displaying a relationship with the brand.

Because of the division of factors, some have only two items in the measurement model. No set rule exists that decides how many items are required for a proper scale; however, many authors suggest that three to five items is typically a good trade-off between reliability and practicality (Thurstone 1947; Carmines and Zeller 1979; Harvey et al. 1985; Schriesheim and Eisenbach 1990; Cortina 1993; Hinkin 1998). Thus, we generated new items for each construct measured by at least four items. Item generation followed the same procedures as in Step 2. The measurement model for the nine-factor model is presented in Table 4.

Step 6: Gather data from new sample (Survey 3)

We conducted a third online survey with the same general structure as Survey 2 (see Step 4) but with the new measurement model presented in Table 4. In addition, we hypothesized that the motivations to relate to a brand might differ by type of brand. Qualitative interviews with expert Facebook users suggested differentiating four types of brands: commercial industry, media, non-profit organizations, and famous characters such as musicians and athletes. At the beginning of the survey, we asked each participant to identify the category in which she or he liked brands the most and to answer all subsequent questions with respect to this category. In the analysis, we tested for invariance of the results toward these brand categories.

Common method variance (CMV) is always a concern in survey research. Thus, we implemented a priori procedural remedies in the survey design: protecting respondent anonymity, assuring respondents that there were no right or wrong answers, asking for honest answers, and carefully wording and scaling the items (Podsakoff et al. 2003). We added marker questions that we assumed were theoretically irrelevant in order to allow for detection of CMV in the data with the post hoc CFA marker technique (Richardson et al. 2009). These marker questions should be uncorrelated with the substantive questions except when CMV is present. For uncorrelated markers, we employed a scale with two items polling trust in medical treatments (Gimpel et al. 2013). Participants were recruited via MTurk with the same screening filter and reimbursement as in Survey 1 (see Step 1).

In total, 543 participants started the survey, 536 of whom had their own private Facebook accounts. Of those who started the survey, 528 finished it. The survey took the 528 participants 5 minutes and 29 seconds on average (with a standard deviation of 1.82). Data from these 528 respondents (97.2% of the initial participants) were analyzed as follows. Within the survey, 42.0% of the respondents were female (compared with 49.3% for Survey 2). The age range was 18 to 74 years (compared with 12 to 67 years) with a median of 29 and a mean of 31.7 years. One respondent stated that his age was 3 years, which we assumed to be an error and replaced with the mean age for the purpose of analysis. Further, the respondents' length of membership on Facebook covered the whole scale from 0 to 10 years, with a median of 6 and a mean of 5.8 years. 29.2% of respondents had a high school degree, 16.3% an associated degree, 41.3% a bachelor degree, 11.0% a graduate degree (i.e., master's, doctorate, etc.), and 2.2% were "other" (e.g., they did not have a degree yet). With regard to occupation, 15.0% were students, 56.6% were employed, 9.5% were unemployed, 15.5% were self-employed, and 3.4% were "other" (e.g., retired or apprentices). With respect to brand category, 24.4% of respondents chose commercial industry, 35.0% media, 21.7% non-profit organizations, and 18.9% famous characters.

As in Survey 2, two questions about *Like* behavior on Facebook were asked because the *Like* button enables people to establish a permanent relationship with brands (see Table 9 in the Appendix). In Step 7, this information on a respondent's propensity to relate to brands is combined in a formative construct that serves as an endogenous variable in a structured equation model (SEM).

Table 4. Measurement model for the nine-factor model		
Motivational factor		**Items**
Brand-to-consumer	Entertain-ment	ET1: I *Like* sites with single posts that make me happy ET2: I *Like* sites that make me happy ET3: I *Like* sites with posts that amuse me ET4: I *Like* sites that amuse me ET5: I usually laugh about contents shared by sites that I *Liked*
	General Infor-mation	GI1: I inform myself about specific products on Facebook GI2: I click the *Like* button because I want to have more information about a product that I already use GI3: I click the *Like* button to inform myself about [chosen category] GI4: I click the *Like* button to compare different sites of [chosen category] GI5: I click the *Like* button to inform myself about future purchases
	Career In-formation	CI1: I click the Like button to inform myself about career opportunities CI2: Via Facebook and I want to inform myself about career prospects CI3: I click the *Like* button to enhance my career chances CI4: I click the *Like* button to enhance my future career prospects CI5: I click the *Like* button to become more familiar with potential employers
	Financial Benefits	FB1: I click the *Like* button to use exclusive offers on Facebook FB2: I click the *Like* button to receive special discounts FB3: I click the *Like* button to participate in lotteries FB4: I click the *Like* button to win products FB5: I click the *Like* button to receive products for free
Consumer-to-brand	Positive and Impar-tial Com-munication	PC1: Clicking the *Like* button is a way of giving feedback PC2: Clicking the *Like* button is a way of saying something positive PC3: I click the *Like* button to communicate my experience PC4: I click the *Like* button to express a positive opinion
	Negative Communi-cation	NC1: I click the *Like* button to communicate a negative opinion NC2: I communicate negative experience with [chosen category] NC3: I click the *Like* button to complain NC4: I click the *Like* button to communicate negative issues
Consumer-to-consumer	Self-Presenta-tion	SP1: I adapt my profile on Facebook according to my interests (e.g., status mes-sages about my hobbies) SP2: I try to match my Facebook profile to my way of life SP3: My profile on Facebook should be a true reflection of myself SP4: My profile on Facebook aims to show who I am
	External Image	ET1: How my Facebook profile appears to others is important to me ET2: It is important to me what others think about my Facebook profile ET3: It is important to me that others like my profile on Facebook ET4: It is important to me that my profile on Facebook attracts others ET5: It is important to me how active my profile on Facebook appears to others ET6: I distribute *Likes* on Facebook in order to make my profile more attractive for others ET7: I *Like* content on Facebook in order to raise attention
	Support	SU1: By clicking the *Like* button, I want to support the sites of [chosen category] SU2: By clicking the *Like* button, I want to promote sites of [chosen category] ac-tively SU3: My *Like* is a public sign of support and encourages others to *Like* SU4: By pressing the *Like* button, I want to promote sites that in my view should become more popular SU5: My *Likes* help sites to become more popular

All items are scaled on a 5-point Likert-type scale, consisting of the options: "Disagree strongly," "Disagree a little," "Neither disagree, nor agree," "Agree a little," and "Agree strongly", and include the additional option "Cannot evaluate." "[chosen category]" is replaced by the category chosen by the respondent at the beginning of the survey: commercial industry, media, non-profit organizations, famous characters.

Step 7: Examine model properties and validity

To detect CMV in the data we used three post hoc statistical strategies (Podsakoff et al. 2003, Richardson et al. 2009): Harman´s single factor test (Podsakoff et al. 2003), the correlational marker test (Lindell and Whitney 2001), and the CFA marker technique (Richardson et al. 2009) based on the theoretically irrelevant marker questions included in the survey (see Step 6). All three strategies suggested that there was no major problem with CMV. Thus, we proceeded by first analyzing the measurement model and then the structural model.

Measurement Model Validity

In order to validate the model, we conducted a CFA with data from Survey 3. This CFA focused on the measurement model and obtained more information about the goodness-of-model fit (Hinkin 1998). The CFA concentrated on motivational factors and excluded the CMV marker questions and the dependent variable. Three items were eliminated because R² was substantially lower than 0.4 (see Table 8 in the Appendix for details). Internal consistency was satisfactory, as shown by Cronbach's alpha, the lowest value of which was 0.840, a figure greater than the thresholds of 0.6 and 0.7 respectively (Nunnally and Bernstein 1967, 1978) for each construct (see Table 10 in the Appendix for details).

The CFA resulted in an χ^2 of 2,050.433 with 743 degrees of freedom (df). Table 5 shows various goodness-of-fit measures for the CFA. Reporting follows Gefen et al.'s (2000) guidance and includes the root mean square error approximation (RMSEA) because of its prominence in related work. RMSEA and χ^2/df are overall fit measures. NFI, TLI, and CFI are comparative fit measures. AGFI is a measure of model parsimony. The goodness-of-fit measures comply with conventional thresholds. Only one of the comparative fit measures, namely the normed fit index (NFI), is slightly below the desired threshold.

Table 5. Fit measures for confirmatory factor analysis on the measurement model in Survey 3				
Topic	Measure	Value	Threshold	Source
Overall fit measures	Root Mean Square Error of Approximation (RMSEA)	.058	< .06	Lei and Wu (2007)
	χ^2/df	2.760	< 3	Gefen et al. (2000)
Comparative fit measures	Normed Fit Index (NFI)	.894	> .9	
	Tucker Lewis Index (TLI)	.922	> .9	
	Comparative Fit Index (CFI)	.929	> .9	
Model parsimony	Adjusted Goodness-of-Fit Index (AGFI)	.805	> .8	

Measurement Invariance

The survey asked participants to select one of four brand categories: commercial industry, media, organizations, or famous characters. The measurement scales might be expected to perform differently for these brand categories; thus, we tested for measurement invariance across the four categories with a multiple group-confirmatory factor analysis (MG-CFA). We

started with a "baseline model" that let the relationship between items and latent factors differ in their parameters (i.e., loadings, intercepts, and variance) across categories and gradually constrained this model by holding individual parameters constant across groups. A change of comparative fit index (CFI) smaller than 0.01 was used as a threshold for favoring a more constrained rather than a more relaxed model (Chen 2007; Cheung and Rensvold 2002; Hirschfeld and von Brachel 2014). The analysis revealed strong measurement invariance; in other words, loadings and intercepts can be assumed constant across all four brand categories.

Correlation of Motivational Factors

After establishing the measurement model's validity, we analyzed the correlation of motivational factors among themselves and also with the respondents' propensity to like, their age, their gender, and their education. Age was measured in years and gender was dummy coded with zero for males and unity for females. Education was measured by using the highest education level achieved by respondents on an ordinal scale with the following: "None/I have not received any degree yet," "Some High School," "High School Graduate," "Associate's degree," "Bachelor's degree," and "Graduate degree (master's, doctorate, etc.)." These were converted to a numerical scale ranging from 1 to 6 for the correlation analysis.

According to the measurement model's construction, the factors are not orthogonal but can correlate. In fact, almost each factor is significantly and substantially correlated with each other factor, with predominantly positive correlations (see Table 11 in the Appendix). Only *Negative Communication* (NC) tends to be negatively correlated with the other factors and for *Negative Communication* not all correlations are significantly different from zero. The strongest correlations are between *Positive Communication* (PC) and *Support* (SU), *Positive Communication* (PC) and *Entertainment* (ET), and between *General Information* (GI) and *Career Information* (CI). By convention, a correlation of 0.1 is considered a small effect, 0.3 a medium effect, and 0.5 a large effect (Cohen 1992). Following this convention, the strongest correlations among motivational factors have a large effect size. To test for multicollinearity, we computed variance inflation factors (VIFs). VIFs range from 1.2 to 2.4 and are substantially less than the conservative thresholds of 3 (e.g., Petter et al. 2007) and of 5 (e.g., Hair et al. 2011), and the common threshold of 10 (e.g., Neter et al. 1996; MacKenzie et al. 2011), thus suggesting that multicollinearity is not a major issue here.

All nine motivational factors are significantly positively correlated with the propensity to like a brand with small to medium effect sizes. This is a first indication of nomological validity. Details are subsequently analyzed in an SEM so as not to misinterpret the bivariate correlations here. The average variance extracted (AVE) was greater than the conventional threshold of 0.5 in all cases (Fornell and Larcker 1981), thus suggesting convergent validity. Further, the AVE is much greater than the square of the correlations, thus suggesting discriminant validity.

The demographic characteristics of age, gender, and education show only a few significant correlations with the motivational factors, with at most a small effect size, which is a further indication of discriminant validity. People with higher education tend to show less attraction to *Entertainment* (ET) when they like a brand and have an association with *External Image* (EI). Females show higher values for *Negative Communication* (NC), *Financial Benefits* (FB), and *Self-Presentation* (SP) than males. Age is related to *Entertainment* (ET), *Positive Communication* (PC), and *Support* (SU). We did not have a priori hypotheses on the effects of age, gender, or education. Thus, these findings might trigger future research but should not be overladen with ex post rationalization.

Structural Model

In order to assess overall construct validity further, SEM analysis should be undertaken (Gefen et al. 2000). We use covariance-based SEM (rather than partial least squares SEM) because of the rather low complexity of our model, the availability of established goodness-of-fit measures, and our focus on consistent parameter estimates and significance tests for parameter estimates (Chin and Newsted 1999; Urbach and Ahleman 2010). The dependent variable *Like* is measured by two items that assess the consumers' *Like* behavior.
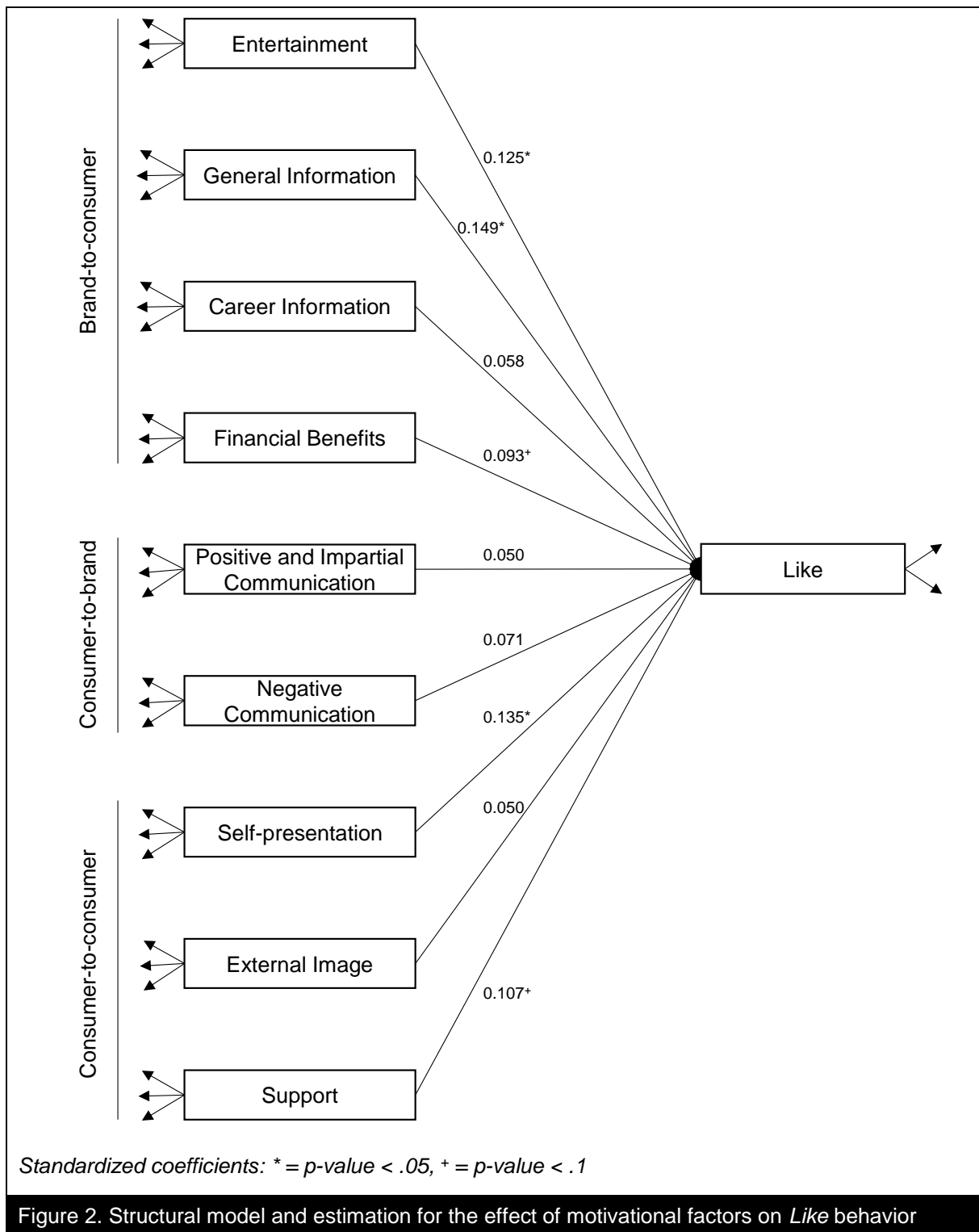
In a similar way to the measurement model, we test the whole SEM, including the structural model for invariance across the four brand categories. The analysis reveals strong invariance, namely loadings and intercepts can be assumed constant across all four brand categories. Hence, the model can be estimated for all brand categories simultaneously. The SEM analysis results in a χ^2 of 2,168.601 with 815 degrees of freedom (df). Various goodness-of-fit measures comply with conventional thresholds (Table 6). Again, NFI is the only exception.

Table 6. Fit measures for structural equation model for Survey 3				
Topic	Measure	Value	Threshold	Source
Overall fit measures	Root Mean Square Error of Approximation (RMSEA)	.055	< .06	Lei and Wu (2007)
	χ^2/df	2.661	< 3	Gefen et al. (2000)
Comparative fit measures	Normed Fit Index (NFI)	.892	> .9	
	Tucker Lewis Index (TLI)	.922	> .9	
	Comparative Fit Index (CFI)	.929	> .9	
Model parsimony	Adjusted Goodness-of-Fit Index (AGFI)	.803	> .8	

With adequate measurement and model fit established, we turn to path coefficients in the structural model in order to derive substantive information on motivational factors that form relationships with brands in OSNs. The overall R^2 for *Like* is 0.283 – the motivational factors explain 28.3% of variance in consumers' propensity to like a brand. Figure 2 presents standardized path coefficients and significance levels from the estimation. Five out of nine factors show significant positive influences on the dependent variable *Like*. Specifically, *Entertainment*, *General Information*, and *Self Presentation* are significant at the 5% level, and *Financial Benefits* and *Support* at the 10% level. Standardized path coefficients range from 0.093 to 0.149. Thus, they have a similar order of magnitude, and it appears that the five factors have an approximately equal positive impact on the propensity to like a brand.

For *Career Information*, *Positive and Impartial Communication*, *Negative Communication,* and *External Image,* our data do not show a significant effect on the propensity to form a relationship with a brand. It might be the case that these factors influence other activities in OSNs such as writing comments or sharing content. However, this is beyond the scope of the present study.

Entertainment — 0.125*

General Information — 0.149*

Career Information — 0.058

Financial Benefits — 0.093+

Positive and Impartial Communication — 0.050

Negative Communication — 0.071

Self-presentation — 0.135*

External Image — 0.050

Support — 0.107+

Brand-to-consumer

Consumer-to-brand

Consumer-to-consumer

Like

Standardized coefficients: * = p-value < .05, + = p-value < .1

Figure 2. Structural model and estimation for the effect of motivational factors on *Like* behavior

DISCUSSION

Theoretical Contribution

Our major theoretical contribution is our presentation of the first theoretical model regarding the motivations of consumers to form relationships with brands in OSNs. By doing so, we add to two streams of research: first, research that aims to understand individual user behavior in OSNs as a widely used specific class of socio-technical information systems, and second, research that aims to understand consumer-brand relationships in the context of marketing and e-commerce.

Specifically, we find five motivational factors that have a significant positive influence on a consumer's propensity to like a brand in an OSN. In the category of brand-to-consumer communication, these factors are (1) *Entertainment*, (2) *General Information*, and (3) *Financial Benefits*. In the category of consumer-to-consumer communication, they are (4) *Self-Presentation*, and (5) *Support*. A survey-based measurement scale supports each of these motivational factors. The measurement and structural models were developed and validated in a procedure that included an initial conceptualization based on related literature and an exploratory consumer survey; rigorous scale development following standard methodological guidelines; and adaptations of the structural and measurement models before achieving the final models. Statistical analyses centered on factor analysis and structural equation modeling. Overall, the procedures and analyses support unidimensionality; internal consistency reliability; content validity; convergent validity; discriminant validity; nomological validity; and invariance of the model to the type of brand, which includes commercial industry, media, organizations, or famous characters. In total, 953 consumers and active OSN users responded to one of three surveys, thereby building the empirical basis for developing and testing our theoretical model. Standard procedures to avoid CMV and to filter out non-sincere respondents were applied. Consumers were recruited at different times via different mechanisms from different pools in different countries to assure some level of robustness and generalizability. Thus, overall, we are confident that our results are internally valid, and we believe that they possess some level of external validity. Obviously, the model would benefit from further empirical tests in other contexts (e.g., other cultures or OSNs besides Facebook).

None of the five factors identified is surprising. Each of them is known from prior research on user behavior in online communities or from marketing research. The section on related literature and the initial conceptualization of motivational factors (Step 1) presented details of these connections. However, most of the factors had not been related previously to the focal behavior in this research—consumers forming relationships with brands in OSNs—and no prior work had identified these exact five factors as key motivational factors for this focal behavior.

Interestingly, related work and our initial steps suggested further motivational factors that did not prove their relevance as explanations of consumer-brand relationships in OSNs. In the context of consumer behavior in OSNs, *Career Information* proved to be a distinct concept from *General Information*, for example with regard to products and advertisements. Yet, *Career Information* does not appear relevant to a consumer's decision to like a brand or not. Similarly, relationships with brands are an integral part of a consumer's personal profile in OSNs. Such a profile signals information to the consumer and to other consumers using the OSN. Consequently, *Self-Presentation* and *External Image* are distinct theoretical constructs. Data suggest that only the former is relevant to the decision to relate to a brand in an OSN. However, it is worth noting that it depends on the OSN and user privacy settings as to how far access to information on a consumer's brand relations is provided to other users. Strict privacy settings might reduce the potential applicability and, thus, the effect of *External Image*

as an explanatory motivational factor. However, having strict privacy settings is by itself a signal that *External Image* might not be overly relevant to a specific consumer. Consumers seem to differentiate whether they communicate negative information to brands or other information (positive or impartial). Interestingly, neither of these two factors regarding consumer-to-brand communication were seen to influence the formation of consumer-brand relationships.

Limitations and Future Research

The first limitation of our research concerns the generalizability of our theoretical model. As mentioned above, further empirical tests that focus on OSNs besides Facebook would be beneficial. Likewise, testing the generalizability against different geographical areas and cultural backgrounds would further improve our understanding of the issue. Respondents in Surveys 1 and 3 were based in the U.S., and we did not specifically inquire about cultural background. Respondents in Survey 2 were predominantly based in Germany, Austria, and Switzerland; and again, we did not specifically inquire about cultural background. Further, our respondents are aged between 12 and 74 years with a mean of 23.6 years in Survey 2 and 31.7 years in Survey 3 (age was not measured in Survey 1). While this is a wide range, our sample might not be representative of Facebook users or other OSN users, or indeed the general population in terms of age or other demographic characteristics.

Our measures for behavior and motivations are based on self-reporting, thereby prompting common challenges with regard to the respondents' ability and willingness to sincerely disclose information about their behavior and motivations. We avoided asking for permission to obtain the factual number of brands liked and last liked, like frequency, and so on from the respondents' Facebook profiles because we believed that this would invade their privacy and lead to self-selection bias. Nevertheless, we suggest that future research uses more objective measures than self-reporting. One route might be to identify or create brand pages that cater to different motivational factors, present them to consumers, and observe their decisions to click the *Like* button. Settings for doing so can range from controlled laboratory environments where information on the brand's fan page could be processed and studied, for example by eye tracking, to field experiments in OSNs.

The focus of this study was on consumers' motivational factors to form brand relationships in OSNs. As such, we investigated motivations, namely factors that activate, direct, and sustain goal-directed behavior (Nevid 2012). We did not investigate factors that hinder the formation of consumer-brand relationships such as privacy concerns or the feeling of being overly pocketed by a brand. Future research may provide evidence that the absence of such hindering factors further increases consumers' propensity for brand relationships.

Finally, future research could refine our theoretical model by investigating further consequences of the motivational factors for behavior in OSNs besides the formation of relationships with brands. Examples could include the formation of relationships with other individual users, engaging with marketer-generated content, and producing stand-alone brand-related consumer-generated content. The inclusion of moderators and the investigation of motivational factors' antecedents would be further valuable additions toward a comprehensive theory on the drivers of consumer behavior in OSNs.

Managerial Implications

Our theoretical and empirical findings on consumers' motivations to relate to brands in OSNs have implications for brands that are active in OSNs or are planning to become active. These

implications can broadly be differentiated as follows: those that relate to understanding the consumer and fan base and those that support the design of an OSN presence and brand behavior.

Brands have consumers and, when brands are active in OSNs, they are likely to have fans; namely, OSN users that form a persistent relationship with the brands' presence in the OSN. A business that wants to understand its consumers or fan base in more depth might include our survey-based measurement scales in its market research and gain a deeper understanding of why people relate to its brand's OSN presence or not. It is likely that some but not all on- and offline consumers are OSN fans. Similarly, some, but not all, OSN fans will typically be consumers. Our survey-based measurement scales can help practitioners understand the different motivations that drive the three distinct groups of "consumers and fans," "consumers but not fans," and "fans but not consumers." In addition, the measurement scales can support market research in other or finer segments of consumers or fans. Further, an in-depth understanding of motivations may support the redesign of OSN activities in order to convert more consumers to fans. Fans per se might not be as beneficial to brands as fans that actively engage with the brand and its MGC; that produce UGC on the brand; and that are consumers. Thus, the analysis of fans' motivations might support efforts to retarget the brand's OSN activities to attract only active fans and consumers.

Apart from using the measurement scales in brand-specific market research, social media managers can use our structural model to inform their OSN activities. They can consider the five relevant factors that motivate OSN users to become fans of brands (*Entertainment*, *General Information*, *Financial Benefits*, *Self-Presentation*, and *Support*) and decide how to set up and run their brands' OSN presence. Several brands, for example, run separate Facebook pages for the brand in general and for career information related to the brand. This is plausible given that in our study *Career Information* is a distinct factor. Similarly, brands might decide to run different profiles that cater for people who are looking for *Entertainment* and for people who are looking for *Financial Benefits*. In addition, the structure of motivational factors might inform decisions about the information to be posted on a given OSN brand page and how to react to UGC. Overall, it should be kept in mind that our results are significantly broad in that they relate equally to different types of brand: commercial industry, media, non-profit organizations, and famous characters. Moreover, it should be kept in mind that our results primarily relate to Facebook users in the U.S., Germany, Austria, and Switzerland, and might not readily transfer to other OSNs or cultural backgrounds.

CONCLUSION

Today, OSNs are a key factor for the success of many brands. Brands use OSNs to communicate information to consumers, to obtain information from consumers by directly targeting consumer communication with the brands, and to observe communication among consumers. In this regard, brands have a stronger position once consumers are so-called fans of the brands. Thus, the question is: What motivates consumers to relate to brands and become their fans? Based on social exchange theory and self-determination theory, this study identifies and substantiates a set of five motivational factors that activate and direct consumers to become fans of brands in OSNs. In the category of brand-to-consumer communication, these factors are *Entertainment*, *General Information*, and *Financial Benefits*. In the category of consumer-to-consumer communication, they are *Self-Presentation* and *Support*. However, consumer-to-brand communication does not appear to influence the formation of consumer-brand relation-

ships. In such a context, we developed a theoretical structural model and survey-based measurement model and demonstrated the factors' validity empirically. This result sheds further light on consumer behavior in virtual networks and may support social media marketing activities.

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APPENDIX

Details for Step 2

Table 7. Initial measurement model for six-factor model	
Factor	**Items**
Entertainment	I *Like* sites with single posts that make me happy I *Like* sites that make me happy I *Like* sites with posts that amuse me I *Like* sites that amuse me I usually laugh about contents shared by sites that I *Liked* I enjoy spending my time browsing through postings of sites that I *Liked* I *Like* a site if I think its postings are funny I *Like* a site if I think its postings are exciting
Information	I inform myself about specific products on Facebook I click the *Like* button because I want to have more information about a product that I already use I click the *Like* button to inform myself about [chosen category] I click the *Like* button to compare different sites of [chosen category] I click the *Like* button to inform myself about future purchases I click the *Like* button to get more information about [chosen category] I click the *Like* button to receive information about time, location, or reason of events I click the *Like* button, to inform myself about career opportunities Via Facebook I want to inform myself about career prospects
Financial Benefits	I click the *Like* button to use exclusive offers on Facebook I click the *Like* button to receive special discounts I click the *Like* button to participate in lotteries I click the *Like* button to win products I click the *Like* button to receive products for free I use exclusive offers which are only available on Facebook I like searching for online discounts
Communication	Clicking the *Like* button is a way of giving feedback Clicking the *Like* button is a way of saying something positive I communicate positive experience with [chosen category] I click the *Like* button, to communicate a negative opinion I communicate negative experience with [chosen category] I click the *Like* to communicate with [chosen category] I click the *Like* button to enter a dialogue
Self-Presentation	I adapt my profile on Facebook according to my interests (e.g. status messages about my hobbies) I try to match my Facebook profile to my way of life My profile on Facebook should be a true reflection of myself My profile on Facebook aims to show who I am I *Like* content, I want to represent Via *Likes* I identify myself with certain content Via *Likes* I express my personal opinion I *Like* in order to draw attention to me and my interests I *Like* sites which are liked by my friends or which are in trend I *Like* the Facebook site of my employer to show publicly for whom I am working for How my Facebook profile appears to others is important to me It is important to me what others think about my Facebook profile
Support	By clicking the *Like* button, I want to support the sites of [chosen category] By clicking the *Like* button I want to promote sites of [chosen category] actively My *Like* is a public sign of support and encourages others to *Like* By pressing the *Like* button, I want to promote sites that in my view should become more popular My *Likes* help sites to become more popular I *Like* Facebook sites when friends ask me to do so

All items are scaled on a 5-point Likert-type scale, consisting of the options: "Disagree strongly," "Disagree a little," "Neither disagree, nor agree," "Agree a little," and "Agree strongly", and include the additional option "Cannot evaluate." "[chosen category]" is replaced by the category chosen by the respondent at the beginning of the survey: commercial industry, media, non-profit organizations, famous characters.

Details for Step 4

Table 8. Pattern matrix of principal axis factoring on data from Survey 2 after promax rotation											
Factor	Item	Factor									Cron-bach's alpha
		1	2	3	4	5	6	7	8	9	
ET	ET1	.828	-.073	-.066	-.015	.133	-.086	.019	.042	.017	.924
	ET2	.859	-.033	-.060	.055	.111	-.057	-.044	.017	.003	
	ET3	.922	.002	.031	-.048	-.057	.024	.043	-.025	-.031	
	ET4	.875	.072	.028	.029	-.104	.061	-.042	-.010	-.018	
	ET5	.786	.050	.026	.003	-.075	.021	.001	-.018	.025	
GI	GI1	-.064	.754	.013	.078	-.051	-.063	.052	-.028	-.062	.822
	GI2	.004	.815	-.014	.025	.059	-.060	.038	-.011	-.099	
	GI3	.112	.426	.018	-.027	-.008	-.044	-.038	.065	.256	
	GI4	.062	.498	.117	-.116	.011	.172	-.066	-.007	.164	
	GI5	-.006	.755	-.014	.080	-.041	-.063	.031	-.081	.011	
CI	CI1	-.037	.124	.898	-.015	.037	-.034	-.005	.008	-.045	.935
	CI2	.006	-.055	.963	.015	-.043	-.003	.021	-.026	-.013	
FB	FB1	-.043	.150	-.006	.592	.074	-.003	-.108	.163	.050	.909
	FB2	-.051	.197	-.064	.686	.017	-.019	-.044	.102	-.085	
	FB3	-.003	-.104	.040	.919	-.020	.031	.049	-.060	.029	
	FB4	.026	-.060	.029	.933	-.065	.044	.050	-.085	.040	
	FB5	.035	.019	-.012	.898	.031	-.011	-.016	-.003	-.009	
PC	PC1	-.071	.023	-.071	.012	.830	.008	.016	-.041	.011	.735
	PC2	.096	-.062	.074	-.007	.687	.023	.015	.013	.013	
NC	NC1	.051	-.032	-.067	.065	-.024	.708	.003	-.092	-.094	.652
	NC2	-.061	-.056	.014	-.005	.084	.761	.015	.024	-.024	
	NC3	.013	.089	.053	-.032	-.067	.421	-.016	.124	.164	
SP	SP1	.052	.072	.016	-.014	.009	.047	.470	.066	.035	.817
	SP2	-.102	.092	.008	.028	-.019	.087	.644	.004	.017	
	SP3	.007	.030	-.016	-.006	.035	-.066	.833	.022	-.013	
	SP4	.067	-.064	.019	-.030	.004	-.023	.813	.011	.014	
EI	EI1	-.007	-.060	-.007	.013	-.031	-.010	.045	.928	-.020	.856
	EI2	-.011	-.025	-.015	.021	.001	-.022	.052	.796	-.015	
SU	SU1	-.043	.043	-.064	.002	-.030	-.034	.029	-.051	.859	.884
	SU2	-.051	.004	-.062	-.001	-.023	.007	.080	-.062	.884	
	SU3	-.003	-.041	-.028	-.034	-.046	.039	-.014	.031	.829	
	SU4	.026	-.000	.043	.047	.097	-.119	-.070	-.020	.791	
	SU5	.035	-.078	.064	.026	.043	.030	.012	.070	.650	
Eigenvalue		8.223	3.425	2.984	2.553	1.966	1.535	1.298	1.16	1.056	
Share of variance		.25	.10	.09	.08	.06	.05	.04	.04	.03	
Cumulative share		.25	.35	.44	.52	.58	.63	.67	.7	.73	

ET = *Entertainment,* GI = *General Information,* CI = *Career Information,* FB = *Financial Benefits,* PC = *Positive and Impartial Communication,* NC = *Negative Communication,* SP = *Self-Presentation,* EI = *External Image,* SU = *Support.*

Details for Step 6

Table 9. Descriptive statistics on *Like* behavior as reported in Survey 3			
When was the last time you liked content within your selected category?		How often do you like content within the selected category?	
More than 3 months ago	8.3%	Less than once a month	25.8%
Within the last 3 months	10.0%	Monthly	19.1%
Within the last month	25.9%	Several times a month	18.8%
Within the last week	29.3%	Weekly	12.1%
Yesterday	17.6%	Several times a week	16.1%
Today	8.9%	Daily respectively several times a day	8.1%
N	528	N	528

Table 11. Correlations and AVEs												
	ET	GI	CI	FB	PC	NC	SP	EI	SU	Like	Age in years	Gender Female	Education
ET	.675	.380***	.116**	.275***	.589***	-.050	.539***	.268***	.529***	.397***	.076+	.049	-.080+
GI		.654	.543***	.492***	.366***	.226***	.457***	.382***	.524***	.467***	.022	.048	-.028
CI			.852	.315***	.112**	.363***	.157***	.344***	.207***	.284***	-.014	.010	.005
FB				.740	.167***	.114**	.311***	.253***	.304***	.336***	.023	.114**	-.030
PC					.574	-.131**	.484***	.342***	.606***	.351***	.090*	.039	.007
NC						.805	-.013	.106*	-.018	.132**	.064	.125**	-.072
SP							.683	.479***	.428***	.418***	.070	.084+	.005
EI								.688	.239***	.309***	.048	.064	.102*
SU									.600	.408***	.072+	.038	.053
Like										.728	.059	.025	-.063
Age											n.a.	.222***	.086*
Gender												n.a.	.008

ET = *Entertainment,* GI = *General Information,* CI = *Career Information,* FB = *Financial Benefits,* PC = *Positive and Impartial Communication,* NC = *Negative Communication,* SP = *Self-Presentation,* EI = *External Image,* SU = *Support.*

Diagonal elements are AVEs and off-diagonal elements are Pearson correlations.

*** = p-value < .001, ** = p-value < .01, * = p-value < .05, + = p-value < .1

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Table 10. Pattern matrix of confirmatory factor analysis on data from Survey 3

Factor	Item	Loading	p-value	R^2	Cronbach´s Alpha
Entertainment	ET1	.720	<.001	.456	.911
	ET2	.771	<.001	.737	
	ET3	.877	<.001	.824	
	ET4	.913	<.001	.910	
	ET5	.731	<.001	.523	
General Information	GI1	.798	<.001	.480	.900
	GI2	1.039	<.001	.732	
	GI3	1.033	<.001	.694	
	GI4	.913	<.001	.585	
	GI5	1.083	<.001	.752	
Career Information	CI1	.970	<.001	.814	.967
	CI2	.981	<.001	.791	
	CI3	.995	<.001	.920	
	CI4	1.034	<.001	.936	
	CI5	1.001	<.001	.812	
Financial Benefits	FB1	1.198	<.001	.785	.933
	FB2	1.203	<.001	.788	
	FB3	.987	<.001	.561	
	FB4	1.168	<.001	.742	
	FB5	1.240	<.001	.812	
Positive and Impartial Communication	PC1	.570	<.001	.631	.841
	PC2	.621	<.001	.704	
	PC3	.592	<.001	.394	
	PC4	.627	<.001	.675	
Negative Communication	NC1	.797	<.001	.662	.843
	NC2(+)	.488(++)	<.001	.185	
	NC3	.815	<.001	.834	
	NC4	.909	<.001	.936	
Self-Presentation	SP1	.685	<.001	.397	.879
	SP2	.859	<.001	.606	
	SP3	1.004	<.001	.823	
	SP4	1.040	<.001	.898	
External Image	EI1	1.056	<.001	.720	.886
	EI2	1.171	<.001	.834	
	EI3	1.068	<.001	.786	
	EI4	.918	<.001	.622	
	EI5	.820	<.001	.483	
	EI6(+)	.525(++)	<.001	.243	
	EI7(+)	.428(++)	<.001	.122	
Support	SU1	.659	<.001	.595	.890
	SU2	.821	<.001	.702	
	SU3	.746	<.001	.659	
	SU4	.786	<.001	.657	
	SU5	.694	<.001	.425	

(+) dropped due to low R^2
(++) value has been estimated before the variable was dropped