"This is who I am": Identity Expressiveness and the Theory of Planned Behavior

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Abstract

This paper explores the role of self identity expressiveness and social identity expressiveness in the context of Multimedia Messaging (MMS) adoption. An extended version of the Theory of Planned Behavior (TPB), including a wider array of identity and social influences, is developed and tested. As hypothesized, self identity expressiveness and social identity expressiveness prove to be significant determinants of intentions to use. Moreover, the extended TPB model explains 62% of the variance in usage intentions. The paper also investigates the relationship between self identity expressiveness and attitude and between social identity expressiveness and subjective norm. The study results indicate that the concept of subjective norm alone is insufficient to capture the rich universe of identity and social influences driving behavioral intentions. Implications for marketing managers and scholars are discussed.

Introduction

Within both social psychology and marketing, the theory of reasoned action (Fishbein & Ajzen, 1975) and its successor, the theory of planned behavior (Ajzen, 1991), have been highly influential in explaining attitude-intention-behavior relations. However, despite the success of these theories in predicting behavior across a wide array of contexts, several researchers have doubted the sufficiency of the subjective norm component of the model(s) (cf. Conner & Armitage, 1998; Armitage & Conner, 2001; Terry, Hogg & White, 1999; Fekadu & Kraft, 2001; Mannetti, Pierro & Livi, 2002). For instance, in a meta-analytic review of 185 independent studies applying the theory of planned behavior (TPB), Armitage and Connor (2001) found the subjective norm construct to be a generally weak predictor of intentions. Although the weak effect of norms may partly be attributed to poor measurements, Armitage and Connor (2001), in line with other researchers, highlight the need to expand the subjective norm concept and add other social and identity-related variables. Consequently, recent contributions building on self identity-related theories have begun to expand TPB and TRA by including self identity as a predictor of intentions, independent of subjective norms (Sparks & Guthrie, 1998; Fekadu & Kraft, 2001; Terry, Hogg & White, 1999; Fitzmaurice, 2005). In general, these studies support the validity and predictive ability of including self identity in TPB and TRA.

The need to expand the social and identity-related predictors of intentions is also fueled by the recent rapid and widespread adoption of communication services like MSN-messenger and SMS/MMS messaging. Seemingly, social processes like expressing one's identity, following fashion and trends, and adhering to in-group norms, may be just as important explanatory

concepts as traditional variables such as user-friendliness and ease of use (cf. Davis, 1989) when predicting technology and service adoption. For instance, in a recent study of mobile services, Nysveen, Pedersen and Thorbjørnsen (2005) found expressiveness to be a strong driver of intention to use.

The main purpose of this paper is to present and test an extended version of the Theory of Planned Behavior aimed at capturing a wider array of social and identity-related influences. The theoretical underpinnings of the model are adopted from identity theory (Stryker, 1968; 1980), social identity theory (Tajfel, 1974; Tajfel & Turner, 1979) and recent findings on the role of fashion, status and sociability in technology usage in the fields of uses and gratification research (Leung & Wei, 2000; Höflich & Rössler, 2001) and domestication research (Ling, 2001; Skog, 2002).

The model is tested in the context of multimedia messaging services (MMS). Identity and socially oriented influences are considered particularly important for communication services like MMS. Communication and messaging services are used primarily for accommodating and maintaining social networks. Social and identity-related concepts are thus proposed to be essential for understanding the adoption and use of such services, and new insights into these antecedents should be valuable both for industry players and academic scholars.

The paper is organized as follows: First, the concept of identity expressiveness is presented. Second, the conceptual model of the study is presented and the twin (sub-) concepts of self identity expressiveness and social identity expressiveness are discussed. After having proposed hypotheses on model relationships, the methodology and results of the study are presented. And finally, the implications for managers and theory are discussed.

The Concept of Identity Expressiveness

In consumer behavior, self identity and social identity have been used as explanatory concepts in several distinct, albeit strongly related, research streams. These include self-concept congruity research (Dolich, 1969; Grubb & Hupp, 1968; Sirgy, 1982), symbolic interactionist views on products as social stimuli (Solomon, 1983), the role of products in impression formation and communication (Belk, 1988), symbolic consumption (Hirschman & Holbrook, 1981), attitude functions (Shavitt, 1989; Shavitt, Lowrey & Han, 1992), and the role of social identity in organizational/company identification (Bhattacharya, Rao & Glynn, 1995; Bhattacharya & Sen, 2003). The central tenets underlying these research streams are: 1) that consumers prefer brands associated with a set of personality traits congruent with their own, and 2) that consumers use these brands more or less consciously to express their own identity and values. This paper focuses on the latter phenomenon, that is, how identity expressiveness influences attitude formation and intentions to use. In line with Stryker and Burke (2000), Mittal (1994) and others, "expressiveness" is viewed as the consumers' perception of a given product's or service's ability to express both social and personal identity dimensions.

Expressiveness is believed to be a particularly strong determinant of intention and behavior for products and services that are symbolic and/or are consumed in public settings (Johar & Sirgy, 1991; Hirschman & Holbrook, 1981; Richins, 1994), such as mobile communication services. According to uses and gratification research (Leung & Wei, 1999; 2000; Höflich & Rössler, 2001), non-utilitarian gratifications such as sociability, status and fashion are very prominent for mobile services. Moreover, studies in the field of domestication research have suggested that adoption behavior in the context of mobile services can be explained by a

"theory of fashion" (Ling, 2001) and three different conceptions of fashion and style. Ling suggests a development from "style as display" through "style as communication", to "style as means to integrate social networks". With these conceptions, the use of mobile services can be understood as both a way of communicating and a means of social integration that plays the role of a style marker when the mobile phone itself has lost its significance as an object of style display. The social expressiveness of mobile services has also been identified and conceptualized in terms of "ritual gift giving" (Taylor & Harper, 2001a), treating the mobile phone as "symbolic capital" (Skog, 2002), as an instrument of "family differentiation and symbol of individuality" (Taylor & Harper, 2001b), as a "group marker or social identifier" (Weilenmann & Larsson, 2000) or as a "self identifier" (Hume & Peters, 2001). These conceptualizations are also in line with recent contributions in social psychology, where it has been suggested that self-expression might replace self identity as a determinant of intended behavior (Mannetti et al., 2002).

Gaining access to symbolic and social capital through using a product or service requires that the service facilitate some element of identity expressiveness. Many mobile services are primarily communication services, and thus, the extrinsic motivations for using the service are communication-related. Moreover, the requirements of expressiveness suggested by domestication research also include using the communication service to communicate on several levels, demonstrating participation in several networks maintaining different roles, and sharing and collecting prior communication sessions. These are all expressive elements of communication that originate in the derived motivations of using the service. As applied here, the term "identity expressiveness" focuses on the importance of behavior as something that may be interpreted by others in the social construction of identity and by oneself in the repeated self-construction of identity. Thus, identity expressiveness is an operational concept

applied to the use of technologies, products or services that are important to both social identity and role-oriented self identity. Thus, expressiveness in terms of both social expression of identity and self-identification may be important elements in the adoption and use of mobile services.

Conceptual Model

Inspired by identity theory and social identity theory, respectively, the concept of identity expressiveness may be refined into the twin concepts of self identity expressiveness and social identity expressiveness. These two concepts are proposed as independent determinants of intention to use in TPB, but will interact with attitudes and social norms in ways elaborated below. The conceptual model is presented in Figure 1.

Insert Figure 1 here

As depicted in Figure 1, the twin concepts of self identity expressiveness and social identity expressiveness complement the Theory of Planned Behavior. Moreover, model paths are suggested between self identity expressiveness and attitudes, and between subjective norms and social identity expressiveness. The key concepts of the model and interactions between them are presented and elaborated on below. Hypotheses on model paths are proposed successively.

Self Identity Expressiveness

Identity theory, originally formulated by Stryker (Stryker, 1968; 1980), is a micro-sociological theory that sets out to describe and explain individuals' role-related behaviors (Hogg, Terry, & White, 1995; Fekadu & Kraft 2001). Identity theory maintains that people have distinct components of self, called role identities, for each role position they occupy in society (Terry, Hogg & White, 1999). A person's role identity may, for instance, include the fact that she is a teenager, a daughter, a sister, a volleyball-player and a frequent mobile phone user.

Several contributions have focused on the role of (self) identity in explaining behavioral intentions and actual behavior across a wide array of contexts (Markus, 1980; Rosenberg, 1981; Sparks & Guthrie, 1998). Theoretically, focus has been directed in particular at the concept of self identity as a valuable addition to the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB). For instance, Theodorakis (1994) identified role-identity as a significant predictor of (female) subjects' intentions and behavior towards a program of exercise activity. By the same token, Sparks and Guthrie (1998) found self-identification as a health-conscious consumer to have a significant predictive effect on intentions and behavior *independent of* the effects of other variables in the TPB-model. Consequently, they conclude that self identity is a valuable and useful addition to the TPB-model. This particular finding was reconfirmed in a study by Terry et al. (1999) on household recycling behavior and is also consistent with a solid stream of previous research (cf. Biddle, Bank & Slavings, 1987; Sparks & Shepherd, 1992).

The present study argues that shifting the focal interest from self identity per se to self identity expressiveness when investigating the adoption of communication services is fruitful. First of

all, as noted above, these kinds of services are believed to be important vehicles for identity and status display. Second, most measures of self identity are less direct and explicit and may thus deflate the salience of potential identity outcomes. On average, the concept of self identity only accounts for 1% of the variance in intentions over and above TPB-variables (Conner & Armitage, 1998). Attempting a more explicit way of conceptualizing the expressive elements of self identity might thus be worthwhile.

The present study argues that self identity expressiveness constitutes a valuable addition to TPB. Self identity expressiveness here denotes how and to what extent consumers use MMS messages to display their own identity and values (to themselves as well as to others). Consequently, the following hypothesis is proposed:

H1: *Self identity expressiveness will positively influence intention to use MMS messaging*

Self Identity Expressiveness and Attitudes

Previous contributions on the role of self identity in TPB differ in their view of whether self identity is an independent antecedent of intentions or whether self identity rather influences intentions through attitudinal evaluations (cf. Sparks & Guthrie, 1998; Sparks & Shepherd, 1992). For instance, Sparks and Shepherd (1992) argued that there is unlikely to be a causal link from a person's self identity to behavioral intentions which is independent of attitudinal evaluations. Moreover, they suggested that attitude researchers aligned to the theoretical position of Fishbein and Ajzen (1975) would consider that self identity should be reflected in beliefs and values. Following this line of thinking, self identity should be considered an antecedent of attitudinal evaluations, and the inclusion of self identity would thus represent neither a theoretical nor an empirical advance (Sparks & Guthrie, 1998). However, both

Sparks and Shepherd (1992) and a series of later studies (e.g. Dennison & Shepherd, 1995; Theodorakis, 1994; Terry et al., 1999) show that self identity does indeed have an independent effect on intentions.

Few studies have investigated the interactive effect of self identity-related constructs and attitudes in predicting behavioral intentions in TRA/TPB. The position taken in the present study is that attitudes will, at least partially, mediate the effect of self identity expressiveness on intentions. When a person's self identity is important to him/her, then the creation, affirmation and subsequent expression of self identity will entail an evaluation of the potential behavioral outcome of expressing this self identity. According to TRA, such an evaluation of behavioral outcomes will influence attitudes (Sparks & Shepherd, 1992). Consequently, self identity expressiveness is conceptually distinct from evaluative attitudes, and, moreover, there exist a causal link between self identity expressiveness and attitudes. Hence, the effect of self identity expressiveness on intention to use is (partially) mediated by attitudes. This is expressed in the following hypothesis:

H2: *Self identity expressiveness will positively influence attitudes towards MMS messaging*

Social Identity Expressiveness

While identity theory is rooted in sociology, social identity theory (Tajfel, 1974; Tajfel & Turner, 1979) is a social psychological theory that sets out to explain group processes and inter-group relations. Social identity is suggested as a particularly useful concept to adopt for consumer research (Reed, 2002). Whereas identity theory focuses on role identities, social identity theory focuses on identities that emanate from *group membership* (Thoits & Virshup, 1997; Terry et al. 1999; Stets & Burke, 2000). Membership in social groups and categories is

central in social identity research and two processes are particularly important in explaining behavior: Categorization and self-enhancement (Terry et al. 1999). Categorization pertains to the basic cognitive process through which inter-group boundaries are formed and sharpened, producing group-distinctive stereotypical and normative attitudes and behaviors. By the same token, categorization implies that people (including self) and symbols are assigned to relevant social categories. The second process underlying social identity research – self-enhancement – refers to the tendency to behaviorally and perceptually favor the in-group over the out-group. Social identities will thus, through categorization and self-enhancement processes, direct behavior through the influence of group norms. A person will therefore be more likely to engage in a particular behavior if s/he perceives this behavior to be in accordance with the norms and values of the in-group. Consequently, as elaborated on below, social identity expressiveness is expected to be influenced by subjective norms.

Social identity expressiveness pertains to how and to what extent consumers expressively use MMS messaging to relate to other in-group persons. That is, while self identity expressiveness refers to the ways in which consumers' use of a service displays and reconfirms their self identity to themselves and others, social identity expressiveness pertains to the explicit, social way MMS messaging is utilized to impress and influence others.

A study by Terry et al. (1999) provides important insights on how to align and utilize identity theory and social identity theory for prediction purposes. Terry et al. (1999) included self identity, group identification and group norms as predictor variables, and found all variables to have a significant (direct or moderating) effect on behavioral intentions. Taken together, the effects observed for self identity and group identification underscore the importance of taking into account both self identity and social identity constructs when explaining intentions

and behavior (Terry et al. 1999). Thus, in line with the findings of Terry et al. (1999) and others, it is argued below that self identity expressiveness needs to be complemented with social identity expressiveness in predicting (consumer) behavior. Hence, the following hypothesis is proposed:

H3: *Social identity expressiveness will positively influence intention to use MMS messaging*

Subjective Norms

The discussion above highlights two of three important aspects relating to identity and social mechanisms in adoption, namely the symbolic capital derived from self identity expressiveness and social identity expressiveness. These two antecedents of adoption pertain to how a user of mobile services uses these services to more or less consciously express style and gain access to symbolic capital (personal as well as social). The third essential social and identity-related determinant of adoption is the subjective norm (social norm).

The subjective norm is a central component of TRA and TPB and has been included in numerous studies across a large number of different settings. The concept of subjective norm pertains to perceived norms of behavior developed through external and interpersonal influence. The relationship between identity expression and subjective norms has also been characterized as the "reciprocal influences" of mobile phones (Alexander, 2000). The concept of the subjective norm has received much attention in attitude and adoption research. For instance, subjective norms have been identified as an important determinant in explaining adoption of a wide array of technologies such as workplace computer systems (Venkatesh & Davis, 2000), computer resource centers (Taylor & Todd, 1995) and mobile WAP-services (Hung, Ku, & Chang, 2003). Norms are believed to be particularly important to young users

of mobile phones. For the service tested in this paper (MMS messaging), the average user is expected to be of a relatively young age. Townsend (2000) argued that young users may be more affected by external and interpersonal influences because their subjective norms are developing and changing, they are more frequently exposed to sources of external influence, such as the general mass media, and they are more directly approached by persuasive advertising by terminal vendors and operators. Also, young users may be more subject to social influence because they are at a stage of social development and learning (Ling & Yttri, 2002) and their social networks are more dynamic and thus more exposed to influence than other users' (Oksman & Raitiainen, 2001).

Although subjective norms have proven to be an important determinant of intentions to use various technologies and services, the results as regard mobile phone usage are mixed. For instance, a study by Kwon and Chidambaram (2000) of the general adoption of mobile phones in Hawaii, finds that subjective norms do not play any significant role in this context. Moreover, a recent study by Nysveen, Pedersen and Thorbjørnsen (2005) suggests that identity expressiveness may be more important than norms. That is, intentions to use mobile services may be explained largely by the gratifications of sociability and expressiveness, and not so much by the norms of mobile services use. The authors find stronger effects of identity expressiveness than of subjective norms on intentions to use mobile services. However, the relationship between social norms and identity expressiveness is not investigated further in their study.

Although past research has found only a weak effect of subjective norms on intentions, the majority of past findings would suggest a main effect of norms on intentions. Moreover, as the average user in the context of the present study is believed to be of a fairly young age, it is

hypothesized that subjective norms will play a significant role in influencing intentions to use MMS messaging:

H4: *Subjective norms will positively influence intention to use MMS messaging*

Social Identity Expressiveness and Subjective Norms

Previous research suggests that the concepts of social identity and subjective norms are related in various ways. For instance, Terry et al. (1999) find that, independent of the effect of self identity, subjective norms are positively related to intentions – but only for people who identify strongly with the group. That is, the effect of subjective norms on intentions is moderated by social identity. This finding is consistent with those of Terry and Hogg (1996), who showed that the relationship between norms and intentions (for high identifiers) is independent of the extent to which performing the behavioral role is a central component of self-conception. Following this line of thinking, the present researchers also expect social identity expressiveness and subjective norms to be related. Specifically, subjective norms are expected to positively influence social identity expressiveness. Subjective norms are determined by the normative beliefs regarding others' expectations and individuals' motivation to comply with these beliefs (Fishbein & Ajzen, 1975). When a consumer holds certain beliefs about the values and identity of in-group members, and these beliefs are made more salient and/or the motivation to comply with these beliefs is strengthened, the consumer is expected to have a higher motivation to express these beliefs. That is, when in-group members value MMS services very highly and subjective norms for using MMS are strong, the individual consumer will also to a greater extent be motivated to use MMS expressively to relate to other in-group members. As also argued by Reed (2004), consumer judgments are more likely to be affected by social identification when a social identity is highly salient.

Thus, the stronger the subjective norms, the more salient the social identity will become, and the more likely it is that social identification will affect social (expressive) behavior. Consequently, it is argued that subjective norms positively influence social identity expressiveness, which in turn influences intentions to use. This, in turn, implies that the effect of subjective norms on intentions to use is (at least partly) mediated by social identity expressiveness. The following hypothesis is therefore proposed:

H5: *Subjective norms will positively influence social identity expression.*

Perceived Behavioral Control

The inclusion of perceived behavioral control in TPB has been an important contributor to its explanatory power. Although the concept of behavioral control falls slightly outside the core focus of this paper (i.e. identity expression), it is important to include it in the study when estimating the relative effect of all variables in the extended TPB model. Judgments of behavioral control are influenced by beliefs concerning whether an individual has access to the necessary resources and opportunities to perform the behavior successfully (Ajzen, 1988). Both internal control factors (abilities, skills, information) and external control factors (financial resources, perceived barriers and dependence on others) will determine levels of perceived behavioral control among users and potential users. In general, it is argued that the internal control factors determining behavioral control will be less important to young and innovative users than to other users because of their experience and skill in using mobile services. However, external control factors such as financial resources and other barriers might be more important for the young user segment. Consequently, and in line with previous studies in both similar and dissimilar contexts, a significant effect of perceived behavioral control on behavioral intentions is hypothesized:

H6: *Perceived control will positively influence intention to use MMS messaging*

Method

To test the proposed hypotheses, a survey of MMS users was designed. The survey was made possible through collaborating with three Norwegian providers of mobile services: Djuice, Eurobate, and Rabbit. Djuice was at the time of the study a mobile portal subsidiary of the Norwegian operator Telenor. Eurobate is a provider of SMS and MMS services as well as mobile advertising services. Rabbit is a provider of branded mobile services for the publishing company Aller. All three providers offer services for creating a community of MMS users.

Design, Procedure and Sample Characteristics

The survey had a simple one-group posttest design. Respondents were recruited at the MMS services and community pages on the web sites of Djuice, Eurobate and Rabbit. A set of buttons was designed to recruit respondents with an interest in or opinion on MMS services. By clicking on the buttons, respondents were given an introduction to the study and presented with a service context including the use of multimedia messaging services. A total of 1774 subjects clicked into the study introduction. Of these, 563 respondents completed the entire survey, giving a response rate of 31.7%.

After the context and purpose of the study was presented, the stimulus setting was introduced by the following statement: "*We would now like you to focus on MMS services (multimedia messaging services). By MMS services we mean the sending or receiving of MMS messages to or from other mobile users or the use of MMS services to send pictures, sound and text as MMS messages from a mobile content provider (e.g. TV2, Djuice, FINN, Rabbit). Please*

answer the questions based upon your own experience. If you have no experience, please answer the questions based on what you know or believe about MMS services". Of the 563 respondents completing the entire survey, 30 were eliminated due to careless responses. Careless respondents were defined as using less than three minutes to answer the three pages of questions presented in the questionnaire. Thus, the final sample consisted of 533 complete responses. Of these respondents, 39.2% were recruited from Djuice, 56.3% from Eurobate and 4.5% from Rabbit.

The final sample consisted of more young and low-income users than the general population of mobile phone users. The sample also consisted of more male users than the general mobile user population. However, the sample seemed to represent the user population suggested by mobile operators, service providers and analysts to be early adopters of MMS. Thus, as a basis for investigating intention to use MMS, the sample represents groups of potential MMS users and seems well suited to investigating the adoption process of these users.

Measures

Measures of *social identity expressiveness* were primarily adopted from prior studies in marketing and uses and gratifications research. For example, Arnett (1995) included "identity formation" as a particular gratification of young users, Leung (2001) included "express affection", "fashion" and "inclusion" as gratifications of ICQ-use, and Leung and Wei (1999; 2000) included "fashion and status" as a gratification of both pager and mobile phone use. From these studies, a status-related expressiveness item was adopted with the social identity expressiveness wording: "Other people are often impressed by the way I use MMS". Studies of text messaging use have shown how one of the most important ways of expressing one's service use is to discuss the service/message with others and share it with others (Larsson,

2000; Grinter & Eldridge, 2001; Kaseniemi & Rautiainen, 2002). Thus, two items referring to this particular form of expressiveness were included with the wording: "I often show MMS messages and services to others" and "I often talk to others about MMS". Similar items, measuring the gratification of sharing technology use with others, that is, social interaction, have been included in studies of video games (Sherry, Lucas, Rechtsteinar, Brooks & Wilson, 2001) and TV (Lee & Lee, 1995).

As regards measures representing *self identity expressiveness,* a group of studies have been investigating the expression of a particular self identity, such as considering oneself an ethically or environmentally oriented individual. This group of studies has shown that expressing personal values is part of self-expression. In these studies, self-expression is typically measured by subjects indicating the extent to which they consider themselves as identifying with and expressing these personal values. Similar operations have also been used in studies applying identity theory (Stryker & Burke, 2000). In these studies, identity salience is the most frequently used concept; it is typically measured applying the identity salience indicators developed by Callero (1985); (cf. Fekadu & Kraft, 2001; Arnett, German & Hunt, 2003). For the present study, some of these indicators contribute to the design of the item "I use MMS to express my personal values". Kleine and Kleine (2000) have focused on the communication of self identity in consuming products, but have still tried to avoid focusing on self identity as exclusively socially constructed. They suggested that a global self schema is constructed that comprises an individual identity schema, an ideal identity schema and a role schema. Whereas role schemas are socially constructed, ideal identity schemas are in part socially, historically and individually constructed, and individual identity schemas are mainly individually constructed. To capture these elements of ideal identity in self identity expression, the present investigation uses the item "I use MMS to express who I want to be".

Moreover, in consumer research, the concept of expressiveness has been extended from individuals to products, indicating how well a product expresses values beyond instrumental utility (Mittal, 1994). Thus, value-expressive products are seen as expressing the consumer's identity. While the expressiveness concept in consumer research covers gratifications of prestige, fashion, pride and mood stimulation, it primarily focuses on issues of how products are used to "express my personality" and how they are "compatible with how I like to think of myself" (Mittal, 1994, p. 258). Thus, an item measuring these conceptions of self identity expressiveness has been included: "Using mobile services like MMS is part of how I express my personality".

Subjective norm was measured using three items almost identical to those used by Mathieson (1991) and Battacherjee (2000), but adapted to the setting of the present study. A somewhat simpler version of the measure was also used by Venkatesh and Davis (2000). The three items applied were: "People like me are expected to use MMS", "People who matter to me expect me to use MMS" and "People I look up to expect me to use MMS".

The measure of *behavioral control* was almost identical to the measure applied by Battacherjee (2000) and Taylor and Todd (1995) because two of their original items were used; "I feel free to use MMS as I like" and "Using MMS is entirely within my control". *Attitude toward use* was measured by means of four bipolar adjectives that indicated different aspects of subjects' attitude toward use. The items were similar to those used by, e.g. Taylor and Todd (1995) and included the bipolar adjectives "bad/good", "foolish/wise", "unfavorable/favorable", and "negative/positive". Finally, *intention to use* was measured by a two-item scale adapted from Battacherjee (2000) and Mathieson (1991). All items were measured on a seven-point scale.

Insert Table 1 here

As shown in Table 1, exploratory factor analysis of the items supports the hypothesized structure of the items being used. The eigenvalue dropped from 0.87 to 0.48 for the sixth factor, indicating that a structure with five factors was appropriate. From the pattern of cross-loadings, the items show acceptable convergence and discriminant validity. The measurement model was estimated using confirmatory factor analysis in AMOS 6.0. The analysis showed acceptable fit with $\chi 2/df=3.29$, Normed fit index (NFI)=0.94, Tucker-Lewis index (TFI)=0.94 and root mean square error of approximation (RMSEA)=0.066[1]. Descriptive data, reliabilities and correlation matrix for all variables are shown in Table 2.

Insert Table 2 here

From these analyses of the measurement model, the measures employed are assumed to be well founded in theory and show acceptable validity and reliability.

Results

Hypothesized relationships were investigated applying structural equations modeling (SEM) using AMOS 6.0. The results of the analysis of the effects of attitudes, social identity expressiveness, self identity expressiveness, subjective norms and behavioral control on intentions to use MMS are illustrated in Figure 2, which shows standardized regression coefficients between latent constructs along the paths of the figure.

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[1] According to Browne and Cudeck (cited in Arbuckle & Wothke [1999]) a RMSEA less than 0.08 is acceptable. According to Bentler (cited in Battacherjee [2000]), $\chi 2/df$ should be less than 5. According to Hair et al. (1998), NFI and TFI should be greater than 0.9.

Insert Figure 2 here

The full model shows acceptable fit ($\chi 2$/df=4.31, NFI=0.92, TFI=0.91, RMSEA=0.079) and explains 62.4% of the variance in intention to use MMS. Thus, this is a parsimonious model with considerable explanatory power. Intention to use MMS is significantly influenced by self identity expressiveness, social identity expressiveness and behavioral control, which supports H1, H3 and H6, respectively. However, intention to use MMS is not significantly influenced by subjective norms in the full model, which includes all mediated effects. Thus, no support is found for H4 in the full model.

The mediated relationships proposed in H2 and H5 may be tested by looking at the paths of the full model. From these paths, social identity is found to be significantly influenced by subjective norms and attitudes towards use are significantly influenced by self identity expressiveness, supporting H2 and H5, respectively.

A strong test of the importance of adding identity expressiveness to the TPB model and of the mediated relationship of the model may be conducted by comparing the full model to nested models, removing the mediated relationships and the latent variables representing identity expressiveness. The results of these tests are shown in Table 3.

Insert Table 3 here

As seen from Table 3, removing either the mediated relationship between self identity expressiveness and attitude or the mediated relationship between subjective norm and social

identity expressiveness leads to a significant loss in model fit ($\chi2$=187.0, df=1 and $\chi2$=71.6, df=1). Also, removing both identity expressiveness concepts from the model excluding the mediated relationships leads to a significant loss in model fit ($\chi2$=138.5, df=2). The fit of the model including only the direct effects of attitudes, subjective norm and behavioral control on intention to use MMS is almost as good as that of the full model ($\chi2$/df=7.82, NFI=0.85, TFI=0.80, RMSEA=0.113). A considerably lower fraction of the variance in intention to use MMS is explained by this model (39.7%). From these findings, the conclusion is that the full model shown in figure 2 is a strong, parsimonious model. Thus, for technologies, services and products that facilitate elements of identity expressiveness, the fit and explained variance of traditional adoption models may be greatly improved by adding the concepts of self identity expressiveness and social identity expressiveness.

Discussion and Implications

The present study provides several new insights both for marketing managers and scholars. First, the results demonstrate the general importance of including social and identity-related influences in technology and services adoption. The twin concepts of social identity expressiveness and self identity expressiveness constitute significant determinants of intention to use in this study. Moreover, the extended version of the TPB model developed here explains 62.4% of the variance in intention to use, as compared to only 39.7% for the traditional TPB model. The explained variance is thus also arguably higher than traditional studies applying e.g. the technology acceptance model. For industry players and marketing managers, the present findings suggest that closer attention should be paid to (social) identity expressiveness when developing and marketing communication services like MMS messaging. The results imply that products and services need not only be closely linked to the consumers' self and social identity, but should also facilitate identity expressiveness.

Second, the results support the prediction that the effect of self identity expressiveness on intention to use is, at least partially, mediated by attitudes. Most likely the expression of self identity will also entail an attitudinal evaluation on the consumers' part of the subsequent potential behavioral outcome. Yet marketing scholars should also note that self identity expressiveness contributes to the prediction of behavioral intention independent of attitudes. Thus, consistent with Biddle et al. (1987), this study supports the notion that self identity expressiveness is also an independent generative force driving behavior in line with attitudes and norms.

Third, this study demonstrates how social norms are related to social identity expressiveness and thus links more closely two concepts that have previously been treated as two independent antecedents of intention and adoption. The analyses above show that the effect of subjective norms on intentions to use is mediated by social identity expressiveness. This particular finding also suggests that the role of social norms in previous adoption studies may have been slightly simplified and perhaps even inflated. As social identity expressiveness and related concepts are seldom included as determinants of technology adoption, subjective norms often come to play the leading role on behalf of all social and identity-related antecedents. The present study shows that subjective norms are related to social identity expressiveness, and that the twin concepts of self identity expressiveness and social identity expressiveness actually explain larger portions of the variance in intentions to use than do norms in isolation. This latter finding is consistent with previous findings by Nysveen et al. (2005) in the context of mobile services.

In sum, the ability of products and services to help users express their personal and social identity appears to be an important, yet largely overlooked, driver of usage intentions. This suggests that adoption models not only should include elements reflecting intrinsic motives for use, but also derived motives like identity expressiveness. This corresponds well with recent contributions that include emotional elements in ICT adoption models (Venkatesh, 2000) as well as recent approaches to identity, social identity, and self-presentation in social psychology. In consumer psychology, identity expressiveness has mainly been applied to the consumption of value-expressive products (Mittal, 1994), such as objects of display and style, and products related to personal life-styles such as environmentally friendly products (cf. Cook, Kerr & Moore, 2002). Communication services like MMS-messaging constitute an equally important and interesting arena for investigating identity expressiveness and self-presentation effects. The development of the self and social identity expressiveness concepts – and subsequent tests of effects – in this and previous papers should give rise to further investigations in adoption research and consumer behavior.

Limitations

There are several limitations in this study. The procedure used to recruit subjects may have resulted in subjects having a more positive attitude towards the service – and higher usage intentions – than the population of potential users. To obtain respondents who were experienced with, or at least showed an interest in, multimedia messaging services, subjects were recruited via web-sites offering such services. This potentially limits the external validity of the findings, but in terms of internal validity this self-selection procedure did not seem to affect the results in ways that interact with the findings. However, internal validity is in principle limited to the constructs, measures, sample and services studied.

The issue of external validity may be discussed with reference to subject-, setting-, and time-specific threats. Although it is argued that the internal validity is not significantly threatened by the self-selection procedure applied to recruit respondents, external validity may be. Thus, one should be somewhat careful in generalizing the findings to users who have not so far shown an interest in MMS messaging or similar services. Another issue with respect to the subjects recruited is the distribution of demographic variables such as age, gender, education and income. Few model differences were found across these variables, even though the mean perceptions of most of the variables varied by age, gender, education and income. Consequently, it seems that the structural model may to a large degree be generalized across demographic variables, but mean levels of perceptions may not. A final issue regarding external validity is the stimulus context used in this study. It may be argued that the services offered by the recruitment websites affect the subjects' responses in systematic ways. But the providers offered a wide variety of services, not only MMS messaging and content services. The study was also conducted during a period of free trial for some services. This may have affected attitudes and intention to use in a positive direction. Thus, the findings should be interpreted with care because more attention was given to internal than to external validity in the design of the study.

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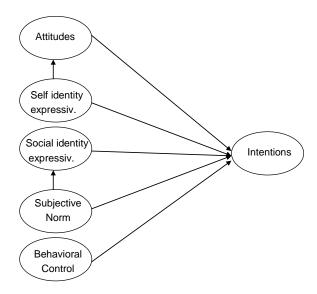
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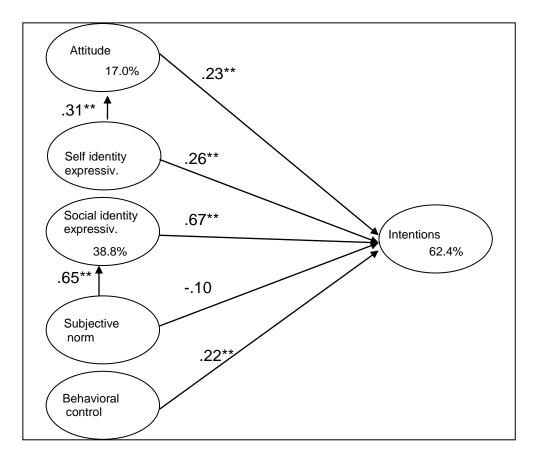
Figure 1: Conceptual model

Figure 2: Structural model (**indicate significance at p<0.01)

Table 1**:** Factor analysis (*)

Dim.	Item	Fact. 1	Fact. 2	Fact. 3	Fact. 4	Fact. 5
Attitude	Bad / Good	0.76	0.11	0.11	0.23	0.22
Attitude	Foolish / Wise	0.81	0.19	0.11	0.16	0.02
Attitude	Unfavorable / Favorable	0.84	0.10	0.13	0.03	-0.01
Attitude	Negative / Positive	0.81	0.15	-0.01	0.15	0.11
Soc. Id. Expr.	I often talk to others about MMS	0.29	0.74	0.21	0.30	0.09
Soc. Id. Expr.	I often show MMS messages and services to others	0.16	0.85	0.28	0.25	0.04
Soc. Id. Expr.	Other people are often impressed by the way I use MMS	0.16	0.86	0.23	0.17	0.04
Self-id. Expr.	Using mobile services like MMS is part of how I express my personality	0.16	0.38	0.28	0.70	0.06
Self-id. Expr.	I use MMS to express my personal values	0.30	0.11	0.16	0.78	0.23
Self-id. Expr.	I use MMS to express who I want to be	0.13	0.31	0.25	0.80	0.03
Subj. norm	People like me are expected to use MMS	0.08	0.16	0.79	0.26	0.07
Subj. norm	People who matter to me expect me to use MMS	0.09	0.24	0.87	0.20	-0.02
Subj. norm	People I look up to expect me to use MMS	0.12	0.24	0.84	0.10	-0.02
Behav. control	I feel free to use MMS as I like	0.15	0.02	0.02	0.09	0.86
Behav. control	Using MMS is entirely within my control	0.06	0.08	0.00	0.09	0.87

(*)Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Values above 0.4 are marked grey. Eigenvalues (% of variance): 6.16 (41.1), 2.13 (14.3), 1.44 (9.6), 1.06 (7.1) and 0.87 (5.8).

Table 2: Descriptives, reliabilities and correlation matrix(*)

Variable	N	Mean	St. dev	Coeff α	Atti-tude	Soc. Id. expr.	Self id. expr.	Subj. norm	Behav. control
Attitude	516	4.98	1.35	0.86					
Soc. Id. expr.	527	3.40	1.77	0.84	0.45				
Self Id. expr.	528	2.78	1.60	0.89	0.44	0.61			
Subj. norm	517	2.52	1.55	0.85	0.28	0.53	0.52		
Behav. control	528	5.19	1.51	0.71	0.28	0.37	0.22	0.14	
Intention	530	4.27	1.94	0.86	0.46	0.67	0.45	0.41	0.48

(*)All correlation coefficients significantly different from 0 ($p < 0.01$)

Table 3: Nested models

Removed relationships/variables	Model assumed correct	χ2 diff.
Self identity expressiv. - attitudes	Full	187.0**
Subj. norm – social identity expressiv.	Full	71.6**
Both identity expressiveness variables	Model without mediated relationships	138.5**

** indicate significant at p< 0.01.