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SOCIAL MEDIA ADOPTION: BARRIERS TO THE STRATEGIC USE OF SOCIAL MEDIA IN SMES

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Research

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Abstract

Social media adoption by firms has generally increased over time; however, little is known about why small firms do or do not use these digital technologies. Using a survey of 268 Swiss small and medium-sized enterprises (SMEs), this study identifies the determinants of social media adoption by SMEs. The descriptive results show that only 35% of SMEs adopt social media for business purposes. On the basis of technology acceptance theories at the individual level as well as qualitative research this study develops theory, hypotheses, and a measurement instrument on factors and mechanisms influencing the strategic application of social media in SMEs. In line with technology acceptance theories, the results show that SME executives are mainly influenced by the expectancy of low returns as well as high perceived risks to not adopt social media applications in their companies. In contrast, aspects of perceived ease of use of social media have no effect on their social media adoption. However, aspects of perceived ease of use require a closer analysis on more complex patterns in the context of social media adoption in SMEs. The implications for research on small business management, technology adoption, and social media marketing are discussed.

Keywords: Small and Medium Sized Enterprises (SMEs), Social Media, Technology Adoption, Social Media Strategy, Online Marketing, Corporate Communication, Digital Strategy

1 Introduction

In the past decade, consumers have rapidly adopted social media platforms for private use to create and share content. Although social media platforms are low cost, technically easy to use, and accessible to a large number and variety of potential consumers, firms have been slower to adopt these technologies. Among firms, large firms have primarily increased their presence on social media platforms (Andzulis, Panagopoulos, and Rapp 2012; Barnes and Jacobsen 2013). In contrast, especially small and medium-sized enterprises (SMEs) show considerable difficulties to apply social media, in particular, in a strategic manner meaning social media applications to pursue concrete purposes of their business.

A number of previous studies have already focused on business-related aspects of social media use in companies, primarily analysing large firm behaviour (Barnes and Jacobsen 2013), specific sectors (Bruhn, Schoenmueller, and Schäfer 2012; Hong 2012), specific platforms (Lee and Cho 2011; Lipsman, Mudd, Rich, and Bruich 2012; Sinclair and Vogus 2011), and specific consumer contexts, such as B2C- or B2B-settings (Michaelidou, Siamagka, and Christodoulides 2011; Moore, Hopkins, and Raymond 2013). Further, more fine-grained analyses have examined the use of social media for specific business-related functions (Lipsman, Mudd, Rich, and Bruich 2012). In this context, researchers have analysed how social media applications can support corporate communication (El-Haddadeh, Weerakkody, and Peng 2012), marketing, promotion, and sales of products and services (Moore, Hopkins, and Raymond 2013; Schlinke and Crain 2013), relationship management with customers and stakeholders (Brennan and Croft 2012), brand awareness and brand image (Bruhn, Schoenmueller, and Schäfer 2012; De Vries, Gensler, and Leeflang 2012; Mäläskä, Saraniemi, and Tähtinen 2011), information sourcing (Pontes and O'Brian Kelly 2000; Sisodiya, Johnson, and Grégoire 2013), as well as recruiting (Alfaro, Bhattacharyya, and Watson-Manheim 2013). Some other studies investigated private use of social media in companies e.g. by focusing on performance effects of private social media use on productivity (Aguenza, Alkassam, and Matsom 2012; Sarbu 2013). Mainly large organizations find social media to be useful for supporting business functions. For instance, a survey of the Inc. 500 companies shows that 71% of these firms used Facebook in 2010 (Barnes and Jacobsen 2013). However, social media is primarily considered to be a tool for brand communication (Henry and Harte 2012), as social media allows customers to become brand communicators by creating a word-of-mouth environment (Gensler, Völckner, Liu-Thompkins, and Wiertz 2013).

Nevertheless, empirical evidence on the strategic use of social media in SMEs is limited. However, it can be expected that social media applications and the mechanisms of their value creation in business models function differently for SMEs than for large firms. For instance, small firms have a tendency to form relationships with customers that are more personal relative to larger organizations (Harrigan, Ramsey, and Ibbotson 2012). Particularly with regard to marketing activities, small firms tend to rely on rather simple, low-cost, and efficient approaches that align with their strategy and culture (O'Dwyer, Gilmore, and Carson 2009). Although brand communication is one of the central purposes of large firms' social media use, SMEs – and particularly those in a B2B-environment – cannot use social media in a similar manner. Therefore, small firms' social media use likely differs substantially from that of larger organizations. This raises the question of when and how small firms choose to engage in social media.

This study aims to analyse the mechanisms that influence small firms' strategic social media application. Based on a representative sample of Swiss SMEs, this study identifies the main factors of strategic social media adoption by small firms. First, we develop theory, hypotheses, and a measurement instrument based on technology acceptance theories at the individual level as well as qualitative research. Next, we employ exploratory factor analysis to identify an underlying factor structure and to detect a three-factor solution in the context of perceived risk, perceived usefulness, and perceived ease of use. We then combine these (weighted) factors with further relevant variables and run logistic regression analysis. Overall, we find support for most of our hypotheses regarding the factors that influ-

ence SMEs to adopt social media. Also, we are able to derive more complex insights into the mechanisms and factors influencing the social media adoption of SMEs.

2 Relevance of Social Media for Small Firms

2.1 Social media as a new form of communication

Social media include numerous types of mobile and web-based applications that allow individuals and communities to create, share, and modify user-generated content through highly interactive platforms (Kaplan and Haenlein 2010; Kietzmann, Hermkens, McCarthy, and Silvestre 2011). Social media is built on the ideological and technological idea of Web 2.0. With this infrastructure, all users can participate in online and mobile platforms to create, modify, and communicate their content continuously. This level of creation and participation by many users differs from that at the beginning of the Internet (Web 1.0), when websites were coded by individual protagonists who made the content public via a web server. At that time, recipients could only read the information that was published on the websites. Websites were thus primarily informational and, at best, provided an e-mail address or phone number for further contact. This early process followed the logic of mass media through a one-to-many type of communication (Morris and Ogan 1996). The fundamental shift to Web 2.0 allowed new technologies to become available as web-based services, enabling users to generate and communicate their own content on platforms without any coding. Platforms and networks provide features to generate profiles and upload content and files. Thus, all Internet users can use online platforms to share their opinions and experiences by entering simple text or uploading content in other formats, such as documents, photos, videos, or audio files (Lai and Turban 2008). This user-generated content is central to social media and is available on public websites. Characteristic features include some creative efforts instead of copying existing content and that this content is created outside of professional media practices (Kaplan and Haenlein 2010). With this shift to Web 2.0, a crucial change has occurred in corporate communication among stakeholders. Individuals and communities can share and create content and can discuss products and services without firms' permission (word of mouth) (Beier and Wagner 2015). Moreover, organizations have little impact on new technological features and changes in user behaviour via social media platforms. Thus, social media applications are associated with a high degree of uncertainty for firms because social media platforms are hosted and established by external third parties (Mergel 2013). Organizations might fear that they have lost control of not only the content but also the technological infrastructure.

2.2 Marketing and social media in small firms

SMEs are generally characterized by their limited size. The European Commission defines SMEs as firms with fewer than 250 full-time equivalent employees and an annual turnover of less than 50 million EUR or an annual balance sheet of less than 43 million EUR (European Commission 2005). SMEs represent the largest segment of companies in Switzerland and in most European countries. Within this segment, most firms belong to the smallest category: while 99.8% of firms are SMEs, 92.3% have fewer than 9 full-time equivalent employees (BfS 2013). Thus, small firms are a significant driver of national and regional economic growth (Carree and Thurik 2003; Cravo, Gourlay, and Becker 2012; Mancinelli and Mazzanti 2009). In contrast to larger organizations, SMEs face several constraints in their strategic business activities, marketing resource endowments, and brand communication through social media. First, SMEs tend to balance strategic and operational business activities differently from larger firms. For example, SMEs often focus on managing day-to-day business activities and challenges rather than long-term strategic orientation and planning, particularly with respect to communication issues (McGrath and O'Toole 2011). Second, SMEs usually have limited resources, particularly with respect to their financial abilities and specific expertise and impact (Harrigan, Ramsey, and Ibbotson 2012). Conversely, SMEs often lack the financial and human resources that are re-

quired to foster operational and strategic marketing and communication activities (Keh, Nguyen, and Ng 2007). SMEs may also have deficits in their marketing knowledge (O'Dwyer, Gilmore, and Carson 2009; Piercy 2009) and may subsequently lack an appropriate marketing and communication framework (Fu 2011). Third, although social media is a tool for brand communication, it is mainly used by larger firms (Henry and Harte 2012). Social media allows firms to engage customers as brand communicators through word of mouth (Gensler, Völckner, Liu-Thompkins, and Wiertz 2013). The communication of existing and potential customers about a firm's brand is the central feature added by social media to firms' communication portfolio (Lovett, Peres, and Shachar 2013). SMEs, nevertheless, rarely focus on brand communication in their marketing activities. Finally, SMEs often follow different business models what often also corresponds with different forms of strategic social media use (Gassmann, Enkel, and Chesbrough 2010; Lee, Park, Yoon, and Park 2010; Lee, Shin, and Park 2012).

Social media has completely changed how people communicate. Because of the intense growth in social media consumption, social media platforms have become means by which firms can reach a variety of individual users. Although some firms have exploited the benefits of social media since its conception on the Internet, other firms have been reluctant to engage in social media activities (Andzulis, Panagopoulos, and Rapp 2012; Beier, Früh, and Wagner 2013). Moreover, little is known about small firms' adoption of social media, particularly regarding factors and processes that influence the adoption decision for their business.

3 Theory and Hypotheses

3.1 The adoption decision on an individual level

Respective adoption decisions are based on individual perceptions and assessments regarding the voluntary intended use of social media (Fu, Farn, and Chao 2006). However, this can happen in two different ways: In a *bottom-up approach*, any member of a firm is allowed to use one or multiple social media platforms in the firm's name. Because no external costs arise (up to a certain level of activities), no formal budget approval is necessary. The traditional power and control mechanisms of organizations largely do not apply (Livingston 1975). Therefore, the decision to use social media for firm purposes is the individual decision of the employees. In contrast, in the case of *top-down adoption*, an executive decision is made to instruct or motivate employees to engage in social media. Riemenschneider, Harrison, and Mykytyn (2003) argue that firm-level decision making in small firms is typically made by a single executive. In most cases, only a few formalized and institutionalized decision processes extend beyond direct conversations between people (Almeida, Dokko, and Rosenkopf 2003). With both approaches, the adoption decision is made on an individual level. Thus, the behaviour of only one individual can already change the firm's adoption behaviour toward social media applications from non-adoption to adoption. For instance, any employee who connects his or her business contacts on LinkedIn for relationship management purposes already turns a firm into a social media-adopting one.

Several studies have addressed individuals' acceptance of new technologies, primarily focusing on how and why individuals adopt new technologies (Venkatesh, Morris, Davis, and Davis 2003). To explain the acceptance and adoption of new technologies, intention models and behavioural decision theories from social psychology have been applied in several contexts. Theories have aimed to explain the adoption of earlier technologies such as e-commerce (Daniel and Grimshaw 2002; Grandón, Nasco, and Mykytyn 2011), online banking (Pikkarainen, Pikkarainen, Karjaluoto, and Pahnla 2004), electronic tax filing (Fu, Farn, and Chao 2006; Warkentin, Gefen, Pavlou, and Rose 2002), mobile Internet (Lenhart, Purcell, Smith, and Zickuhr 2010), and websites (Riemenschneider, Harrison, and Mykytyn 2003).

3.2 The technology acceptance model

A well-established perspective on the adoption of new technologies by individuals is the technology acceptance model (TAM) proposed by Davis (1989). The original theory aims to provide an explanation of the determination of individual computer acceptance (Davis 1989), drawing on the generic approach of the theory of reasoned action (TRA) proposed by Ajzen and Fishbein (1980; for a current, further developed version of the approach see Fishbein and Ajzen 2010). The TAM was developed to predict the acceptance of individual system use in the workplace (Davis 1989), and it has been applied in many online contexts to evaluate user perceptions of system use and the probability of new system adoption (Featherman and Pavlou 2003; Gefen and Straub 2000; Moon and Kim 2001; Pavlou 2001). According to the TAM, perceived ease of use and perceived usefulness are important factors that determine a user's attitude toward, intention to use, and actual use of an information system (Adams, Nelson, and Todd 1992). Further, Venkatesh, Morris, Davis, and Davis (2003) identify perceived usefulness and perceived ease of use as the most influential predictors of technology adoption. Adopting this approach in the social media context, we develop our first two hypotheses:

Perceived usefulness is the degree to which an individual believes that adopting a technology will have a performance benefit. Performance expectancy, the extent to which use is expected to improve work performance, is one of the most consistent predictors of technology adoption (Venkatesh, Morris, Davis, and Davis 2003). Perceived usefulness also reflects an individual's perception of the advantage of a certain technology relative to an alternative practice (Rogers 1983).

Web 2.0 and social media platforms allow firms to communicate and interact more effectively and efficiently with internal and external stakeholders. Social media can thus be an effective tool to enhance a firm's performance by generating higher revenues and increasing cost effectiveness. Specifically, social media can be used to increase brand awareness (De Vries, Gensler, and Leeflang 2012), improve traffic conversion from platform to point of sale (i.e., e-commerce in web shops, order forms, or physical shops), reduce the cost of marketing activities (Gensler, Völckner, Liu-Thompkins, and Wiertz 2013), and increase the speed of processes through direct product or service feedback (Moore, Hopkins, and Raymond 2013; Schlinke and Crain 2013). Thus, the following hypothesis is proposed:

H1: *Perceived usefulness is positively related to the actual use of social media applications.*

Perceived ease of use refers to the degree to which an individual user considers working with a new technology to be simple, i.e., the degree to which a new technology is considered to be easy to understand and to implement (Davis 1989; Riemenschneider, Harrison, and Mykytyn 2003). Moreover, when interacting with a technology is easier for a user, the user will be more likely to find it useful (Thong, Hong, and Tam 2004). A large body of literature in the field of information science supports this view for instance, with respect to the use of IT in general (Chau 2001), digital libraries (Hong, Thong, Wong, and Tam 2002), e-commerce (Pavlou 2001), Internet banking (Amin 2007; Lallmahmood 2007), and digital devices (Shim and Viswanathan 2007).

At first glance, social media applications appear to be readily available, low cost, and user friendly because users can easily generate profiles and send content. All Internet users can use online platforms to share information through simple content formats such as text, photos, videos, or audio (Lai and Turban 2008). Upon closer consideration, however, implementing social media strategically to pursue specific business objectives requires more than merely using the appropriate communication technologies. Most SMEs face significant difficulties in adapting social media opportunities to their business logic and in realizing the business-related potential of social media (Beier, Früh, and Wagner 2013; Ramanathan, Ramanathan, and Hsiao 2012). If the effort required to use social media is perceived as too high, potential users will rather prefer to use established channels for marketing and communication. Thus, the following hypothesis is proposed:

H2: *Perceived ease of use is positively related to the actual use of social media applications.*

3.3 Perceived risk

To provide a more comprehensive model of Internet technology adoption, we follow other studies that have supplemented the basic TAM constructs (i.e., perceived usefulness and perceived ease of use) with the literature on perceived risk (Featherman and Pavlou 2003; Fu, Farn, and Chao 2006). According to previous literature on consumer behaviour, one relevant concern for many potential adopters is inherent risk (Fu, Farn, and Chao 2006). Although risk is difficult to measure objectively, the previous literature has defined the notion of perceived risk as “the expectation of losses associated with purchase [that] acts as an inhibitor to purchase behaviour” (Peter and Ryan 1976, 185). The basic idea of perceived risk is that the behaviour of the consumer or user will have consequences that cannot be anticipated and that may be unpleasant (Bauer 1967). Perceived risk has been identified as a relevant barrier to consumers’ acceptance of Internet services (Featherman and Pavlou 2003). It may affect users’ adoption decisions when such a decision creates feelings of uncertainty (i.e., because of a perception of insecurity), psychological discomfort, anxiety, or conflict (Dowling and Staelin 1994; Featherman and Pavlou 2003) or users seek to avoid making mistakes (Mitchell 1999).

In examining the concept of perceived risk, many scholars have aimed to develop dimensions of risk. A large stream of literature shows that several sub-facets of risk are crucial for understanding purchase decisions. In particular, psychological risk, economic risk, social risk, time risk, and functional risk explain most of the variance in overall risk (Jacoby and Kaplan 1972; Stone and Gronhaug 1993). Additionally, privacy risk has become a new dimension associated with the decision to adopt web-based services (Featherman and Pavlou 2003). Indeed, the use of the Internet has become associated with potential dangers in terms of security risks and the potentially high public dissemination of information, and users may perceive a risk of privacy rights violations from information generated on various Internet platforms (Farzianpour et al. 2014).

However, the previous literature has not used perceived risk to better predict social media adoption in SMEs. Business users may perceive social media applications to be more risky than other established forms of communication channels, such as e-mail, telephone, face-to-face interaction, or other conventional forms of marketing (Steinman and Hawkins 2010). Furthermore, social media applications are associated with a high degree of uncertainty because they are hosted and designed by external third parties (Mergel 2013). Hence, organizations have lost control over the technological features that are implemented, the way that user behaviour may change, and the information that is stored on external providers’ platforms (Aula 2010). Therefore, the following hypothesis is proposed:

H3: *The adoption of social media applications is negatively influenced by the level of perceived risk associated with the technology.*

4 Method, Data, and Results

4.1 Data collection and sample

To provide a basis for the quantitative survey, 16 qualitative interviews were conducted in SMEs from East Switzerland with different patterns of social media use. The results helped to elucidate the drivers of and barriers to social media adoption. Based on this rich information and literature on social media, technology adoption, and SMEs, a printed questionnaire was finalized and pretested with three executives from small businesses in East Switzerland. Minor changes based on the pilot interviewees’ suggestions were made to the final questionnaire. A postal survey was drawn from a representative sample based on an address dataset from the Swiss Federal Statistical Office (BfS). A randomly selected sample of 10% of all independent SMEs in East Switzerland (5,447 firms) was drawn from this database and used for the survey. A cover letter and a postage-paid return envelope were included with the questionnaire. The questionnaire was also offered as a web-based questionnaire, and the interviewees could access a specific web address to fill out the questionnaire online. The additional survey channel via mailing was intentionally chosen to avoid an online preference bias by firms using any type of

online or social media to access the respondents. We included SMEs from all sectors except public administration. The mailing was addressed directly to the chief executive officer, who was asked to complete the questionnaire as a “key informant” in the firm. To increase the representativeness of the data and the response rate, a second round of telephone requests was performed as a follow up for non-responders, accounting for the size, sector, and regional characteristics of the firms in the sample. Representing a final return rate of 6%, 324 firms returned questionnaires. After the questionnaires that were not appropriate for further statistical analyses were excluded, the resulting subset of firms with valid questionnaires was 278 SMEs. We checked for nonresponse bias by comparing the data of the SMEs from our survey with the data structure of the original representative sample. We found a high degree of similarities concerning distribution of firm size, sector, and further regional characteristics between the original sample and the SMEs’ respondents.

4.2 Measurement and variables

To measure potential influences on SMEs toward adoption of social media (independent variable), 10 statements referring to perceptual factors in the context of relevant attributions to social media were developed based on the theoretical framework described above as well as the qualitative interviews of the initial phase of this study. In the resulting quantitative questionnaire, the interviewees were asked to evaluate potential barriers to social media use by using Likert-type scales, with 1 representing strongly disagree and 4 representing strongly agree. Although the research framework includes positive (perceived usefulness, perceived ease of use) and negative facets (perceived risk) of social media in the context of SMEs, the items were all formulated negatively to avoid difficulties with filling out the questionnaire and to ease further calculations. Table 1 shows the mean values for the 10 statements comparing SMEs using social media with non-users.

Variables of the factor analysis	Users		Non-Users		p
	Mean	N	Mean	N	
1. High costs and efforts	2.78	72	2.86	149	0.56
2. Low returns	2.81	74	3.08	142	0.04
3. Low control mechanisms	2.04	73	2.78	144	0.00
4. Risk of public criticism	1.70	74	2.09	143	0.01
5. Inappropriate to the business	1.84	74	2.92	153	0.00
6. Lack of strategy	2.58	74	2.81	145	0.16
7. Lack of knowledge in operating social media	2.24	74	2.72	154	0.00
8. Not of interest to our customers	2.18	73	2.86	152	0.00
9. Unclear legal situation (data privacy protection)	1.86	73	2.69	147	0.00
10. No need to join the new trends of social media	1.78	74	2.58	155	0.00

Notes: S takes the value of one for a firm engaged in social media and zero otherwise. p=p-values, computed from t-statistics for pairs of variables. N is the sample size.

Table 1. Descriptive statistics of the factor analysis variables

The results show that the most notable barrier to social media use by non-adopters is the perceived low level of returns (mean=3.08), followed by the perception that social media use is inappropriate to the business (2.92), that social media use is not of interest to customers (2.86), and that costs and efforts of

social media use are excessively high (2.86). However, the variance within the scales is high, which leads to the assumption that small firms have very different perceptions regarding the barriers to social media use.

As adoption decisions may also be influenced by firm-related and individual characteristics related to social media, we include additional relevant variables in our empirical analysis. Therefore, we control for characteristics of the respective executive as well as of the SMEs. The age of individuals has previously been observed to be a factor that influences social media adoption for private purposes (Holt, Shehata, Strömbäck, and Ljungberg 2013). In general, young people are more likely to use new communication technologies than older people (Beier and Aebli 2016; Lenhart, Purcell, Smith, and Zickuhr 2010). They are used to new kinds of communication (“digital natives”), whereas older people by trend are accustomed to other, conventional types of communication (Bennett and Maton 2010). Moreover, a generally younger workforce in SMEs is positively related to the adoption of new information technologies (Bakeman and Hanson 2012; Meyer 2011). The flexibility and task orientation of younger people appear to facilitate technology adoption (Brown, Dennis, and Venkatesh 2010). Correspondingly, in our analysis we control for the age of the respective executive.

With respect to characteristics of the firm we include age and size of the SMEs in the empirical analysis. The work environment is relevant to the adoption of social media applications. Similarly to older people, older firms tend to require a more intense change process to shift from traditional forms of communication to new forms of communication, such as social media. Younger firms’ business models frequently rely per se on social media marketing and communication, even if the business is not an online business. Younger firms have commercialized their products and services with the advent and growth of Web 2.0 and social media marketing and communication. In contrast, older firms generally show lower propensities of introducing innovations in their work processes (Huergo and Jaumandreu 2004). As larger companies apply social media differently and are known for higher propensities of social media usage we also include firm size (measured by the number of employees and revenue) in our analysis.

4.3 Exploratory factor analysis

In a first step of data analysis an exploratory factor analysis is conducted by using a principal components factor analysis with a varimax rotation. (Table 2). The results reveal a three-factor solution according to the latent root criterion (three factors have eigenvalues greater than 1). To further interpret the results, a threshold of .600 for the factor loadings is used to match items with factors. No multiple factor loadings of the items are given. The three factors account for 63.3% of the total variance. Finally, we obtain a solution where the resulting three factors can be matched to the conceptual approach of the developed technology adoption model. Because all items have been formulated in the same direction the resulting factors also have to be formulated in a negative manner focussing on the lack of potential beneficial aspects, leading to:

- (1) Factor 1: “Perceived Risks” (6 items)
- (2) Factor 2: “Perceived Lack of Usefulness” (2 items)
- (3) Factor 3: “Perceived Lack of Ease of Use” (2 items)

To test the reliability of the three-factor solution, Cronbach’s alpha is calculated for each factor. Cronbach’s alpha for factor 1 (“Perceived Risk”) is .824, that for factor 2 (“Perceived Lack of Usefulness”) is .606, and that for factor 3 (“Perceived Lack of Ease of Use”) is .707. Nunnally (1978) suggests that Cronbach’s alpha values above 0.7 indicate adequate reliability. Therefore, we drop the second factor (Perceived Lack of Usefulness) and include the two single items “Costs and Efforts” and “Low Returns” separately into the following regression analysis.

Variable	Factor 1	Factor 2	Factor 3
Label / Interpretation of the factors	<i>Perceived Risks</i>	<i>Perceived Lack of Usefulness</i>	<i>Perceived Lack of Ease of Use</i>
1: High costs and efforts		0.77	
2: Low returns		0.85	
3: Low control mechanisms	0.65		
4: Risk of public criticism	0.68		
5: Inappropriate to the business	0.71		
6: Lack of strategy			0.88
7: Lack of knowledge in operating social media			0.83
8: Not of interest to our customers	0.62		
9: Unclear legal situation (data privacy protection)	0.80		
10: No need to join the new trends of social media	0.74		
Variance explained	38.44%	13.52%	11.34%
Cronbach's Alpha	0.82	0.61	0.71

Table 2. Results of factor analysis

4.4 Descriptive statistics

The share of businesses in which at least one individual is using one social media platform for the purposes of the firm is 35% of the sample. In 65% of the interviewed firms, no social media is used. This finding highlights the strength of the barriers to social media adoption in SMEs for business purposes. The average age of the respondents (executives) who returned a questionnaire is 47 years, the average age of the SMEs is 37 years, and the average size of the SMEs is 14 employees, with a mean revenue of 3.7 Mio Swiss Francs. Among the executive respondents, chief executive officers account for 70%, whereas other executive respondents include owners and heads of departments such as marketing, human resources, and finance. Correlations are provided in table 3. As could be expected, some measures of age and size of the firm are correlated positively. Size of the firm measured in number of employees is significantly correlated with age of the firm as well as with the firm's revenues. Also, age of the executive is positively related with the extent of perceived risks of social media applications. Indeed, some of the explanatory variables are correlated significantly. However with .44 as the maximum correlation coefficient multi-collinearity issues are not indicated with respect to the following regression analysis.

Variables	1	2	3	4	5	6	7	8	9
1: Social Media Usage	1.00								
2: Age Executive	-.32*	1.00							
3: Age Firm	-.06	.08	1.00						
4: Size Firm (Employees)	.06	-.10	.32*	1.00					
5: Size Firm (Revenues)	.08	.02	.09	.42*	1.00				
6: Costs and Efforts (Item)	-.04	.13	-.02	-.06	-.07	1.00			
7: Low Returns (Item)	-.14	.06	-.04	-.14	-.05	.44*	1.00		
8: Perc. Lack of Ease of Use	-.10	.10	.04	-.04	-.12	.20*	.00	1.00	
9: Perceived Risks	.42*	.26*	.09	-.09	.06	.07	.25*	.00	1.00

Notes: * Pearson correlation coefficient with significance level $p \leq 0.01$.

Table 3. Correlation matrix: Variables used for logistic regression

4.5 Regression results

For the next step, the factors identified in the exploratory factor analysis are included as explanatory variables in a regression analysis. The dependent variable of this regression analysis, namely, social media use, is a dichotomous variable that measures whether an SME is actively using at least one social media platform. The dummy variable takes the value of one if at least one individual in the SME is actively using one or more social media platforms for the purposes of the firm and takes the value of zero otherwise. As adoption decisions may also be influenced by firm-related and individual characteristics related to social media, additionally, we control for characteristics of the respective executive as well as of the SME. Because our dependent variable is dichotomous, we test our hypotheses by using logistic regression analysis. As recommended by Aiken and West (1991) and Frazier, Tix, and Barron (2004), we mean-centred and standardized all independent variables to account for different measurement scales. The results are listed in table 4. For enhanced readability of the regression results antilogs of the coefficients are presented additionally.

With respect to the control variables of the regression analysis the results show a negative relationship of age of the executive with social media adoption ($p < 0.05$). In contrast, revenues of the firm shows a strong positive relationship with the dependent variable ($p < 0.05$). Age of the firm as well as size of the firm measured in number of employees showed no significant relation.

Hypothesis 1 suggests that a lack of perceived usefulness is negatively related to the strategic use of social media applications in SMEs. As a result of the previous factor analysis the items “Costs and Efforts” and “Low Returns” of the factor “Perceived Lack of Usefulness” have been analysed separately in the regression analysis. The results confirm the heterogeneity of the items: They show no significant influence of “Costs and Efforts” on social media adoption. In contrast, “Low Returns” as another facet of perceived lack of usefulness is negatively related with social media adoption ($p < 0.05$). Hypothesis 1 thus is partially confirmed by the data. *Hypothesis 2* states that a lack of perceived ease of use is negatively related to the use of social media applications in SMEs. The regression results show no significant relation in this regard. Correspondingly, hypothesis 2 is not supported. *Hypothesis 3* suggests that higher perceived risks are negatively related to the use of social media applications in SMEs. The regression results correspondingly show a negative relation between the factor “Perceived Risks” ($p < 0.01$) and the use of social media applications in SMEs. Hypothesis 3 is thus fully confirmed by the data.

Variables	Coefficients	Anti-Logs
Constant	-1.233 ***	0.292
Age Executive	-0.635 **	0.530
Age Firm	-0.232	0.793
Size Firm (Employees)	-0.438	0.645
Size Firm (Revenues)	0.792 **	2.208
Item (Factor 2): Costs and Efforts (H1)	0.124	1.132
Item (Factor 2): Low Returns (H1)	-0.612 **	0.542
Factor 1: Perceived Lack of Ease of Use (H2)	0.194	1.215
Factor 3: Perceived Risks (H3)	-1.027 ***	0.358
Observations	132	
Nagelkerke's R ²	0.362	

Notes: Dependent variable "Social Media Adoption"; * $0.1 > p \geq 0.05$; ** $0.05 > p \geq 0.01$; *** $p < 0.01$

Table 4. Results of logistic regression

5 Discussion

The descriptive results in table 1 show that "Low Returns" have the highest negative scores in the evaluation by users as well as non-users of social media. On the one hand, this shows, how difficult it is for SMEs to develop a concrete understanding of how social media activities can help to pursue specific business goals. On the other hand, in connection with the regression results it indicates that potential returns could be a relevant driver of social media adoption in SMEs. However, currently only few SMEs really recognize significant opportunities to derive benefits from social media applications. These results are in line with exploratory observations showing that many SMEs are still in a state of experimenting with the new infrastructures just to learn how they can be applied in their business (McCann and Barlow 2015; Nair 2011; Pentina and Koh 2012). They also correspond to the ongoing discussion about the return on investment (ROI) of social media applications in companies (Fisher 2009; Kaske, Kügler, and Smolnik 2012; Kumar and Mirchandani 2012). Generally, many SMEs have difficulties to realize and monitor how their social media activities effect their concrete business measures (Beier, Früh, and Wagner 2013; Weinberg and Pehlivan 2011). Social media facilitate infrastructures and channels for new kinds of communication and relationship activities for companies. This provides the opportunity of a rather free development of activities and services in social media as well as the involvement of many different persons within a company. However, this freedom has to be realized by a sound elaboration of an individual social media strategy for the company as well as by designing concrete activities to implement these strategies (Wamba and Carter 2014). The realization of such opportunities is much more difficult for SMEs in comparison to larger firms. Most small companies just lack the human resources (with respect to quantity as well as qualification) necessary to develop and perform activities in social media platforms targeting concrete business objectives (Keh, Nguyen, and Ng 2007; O'Dwyer, Gilmore, and Carson 2009; Piercy 2009).

More general, the results of this study raise the question of how the factors "Perceived Lack of Ease of Uses" and "Perceived Lack of Usefulness" are connected in a more complex way as the original TAM captures this so far. Our factor analysis identified one factor in the context of a "Lack of Ease of Use" including only the two items "Lack of Strategy" and "Lack of Knowledge in Operating Social Media".

In contrast, the item “Costs and Efforts” showed a stronger connection to the factor “Lack of Usefulness” with the item “Low Returns” in its centre. Therefore, it seems that two different facets of ease of use have to be differentiated. On the one hand, there are solely questions of technical usability and an amount of operational workload, which are covered in the results with the item “Costs and Effort”. With respect to these aspects, social media applications are technically rather easy to use, as they are specially designed for high usability to be used easily by a broad variety of people (Valdez, Schaar, Bender, Aghassi, Schuh, and Ziefle 2016). On the other hand, there are more complex questions of using social media strategically for the purposes of a company and its business model. These aspects of social media are covered in the items “Lack of Strategy” and “Lack of Knowledge in Operating Social Media” which have been aggregated to the factor “Lack of Ease of Use” in the factor analysis. In this manner, to executives in SMEs social media seem to be rather difficult to apply (Beier, Früh, and Wagner 2013; Ramanathan, Ramanathan, and Hsiao 2012). This conclusion is in line with the classical approach of technology adoption where already has been observed that higher perceived ease of use, addressing the operational aspects of usage, can be related to higher perceived usefulness (Thong, Hong, and Tam 2004). It has been argued that when interacting with a technology is easier for a user, the user will be more likely to find it useful. Applied to the context of this study, this means that as more comprehensive decision makers understand how social media can be applied strategically to pursue concrete business objectives as more do they perceive social media applications as valuable tools.

Perceived risks also appear to have a strong influence on the decision to adopt social media. This “subjective expectation of loss” creates feelings of uncertainty, psychological discomfort, and anxiety because possible negative consequences may arise (Bauer 1967; Featherman and Pavlou 2003; Stone and Gronhaug 1993). Thus, when making a decision, firms must weigh both the expected positive benefits and the possible negative consequences. Our results indicate that for many executives, the perceived benefits of social media adoption do not outweigh the perceived risks. However, low adoption of social media among the firms in our sample reflects not only the high perceived risk but also the low perceived benefits of social media use among the executives. Many executives still doubt the benefits of social media use in terms of performance, growth, and cost reduction.

6 Implications and Conclusions

In this study, we elaborated theory and hypotheses in the context of classical approaches of the technology adoption model to explain when and why SMEs do or do not apply social media for specific purposes of their business. On the basis of TAM literature as well as qualitative interviews we developed a measurement instrument based on the perceptions and attributions of small firm executives toward social media use. By application of an exploratory factor analysis, we empirically identified three major barriers to strategic social media use in SMEs in line with the elaborated logic of the technology adoption model. With “Perceived Risk” and “Perceived Lack of Ease of Uses” two factors could be derived clearly from the data. In contrast, the third factor “Perceived Lack of Usefulness” showed some ambiguity in the underlying items. Therefore, the respective two items “Costs and Efforts” and “Low Returns” have been treated separately in the further analyses of the study. We included the two factors identified, the two single items, and further control variables into a logistic regression analysis and found a significant negative relationship between attributed low returns of social media applications and the non-adoption of social media (Hypothesis 1). We also found a significant negative relationship between higher levels of perceived risks and non-adoption of social media in SMEs (Hypothesis 3). The factor “Perceived Lack of Ease of Uses” showed no significant relationship to social media adoption which means that our hypothesis 2 had to be rejected. Also the single item “Costs and Efforts” did not show a significant relationship with social media adoption in SMEs. In summary, SME executives are mainly influenced by the expectancy of low returns of social media applications as well as high perceived risks to not adopt social media for strategic applications in their companies.

This study has limitations especially with respect to the generalizability of the results. The survey and the empirical tests are based on a representative sample of firms in German-speaking East Switzer-

land, which is mainly characterized by peripheral and semi-peripheral regions with smaller towns as regional centers (e.g., St. Gallen, Chur). Although the size and age of the firms in the sample are generally representative of firms in Switzerland, the distribution over the industry sectors shows some differences. In Switzerland (comparable to other industrialized nations) SMEs show a distribution of 75% of the firms in the tertiary sector, 15% in the secondary sector and 10% in the primary sector. In comparison to this, the sample of this study shows a distribution of (70/20/10) meaning a slightly higher share of firms in the secondary sector by a correspondingly lower share of the tertiary sector. Thus, the results may not be generalizable just like that to other areas in Switzerland, as well as other countries. Therefore, replications of this study in different countries are necessary to broaden its scope.

Our findings have several practical implications. Social media platforms offer various opportunities to generate benefits for SMEs, e.g. to improve customer satisfaction, to attract and keep new customers, to gain relevant market information and knowledge, or to communicate with stakeholders. However, social media activities will only contribute to firm growth and enhance a firm's performance if executives understand how to strategically integrate social media initiatives into their business activities, how to develop a long-term strategy for social media use, and how to gain knowledge through using social media for business purposes. Therefore, SMEs generally should less concentrate on the fast developing area of new channels and infrastructures in social media (*technology driven approach*). Instead, they should start with concrete purposes and objectives which can be pursued by focussed social media applications and design concrete activities targeting these (*strategy driven approach*). Correspondingly, social media strategy has to be derived from concrete requirements of the business model of a company. Therefore, it is necessary that the development of social media initiatives is not just assigned to employees in the role of operational social media managers. Rather, the strategic part of social media adoption has to be fulfilled by the top management of a company (Beier, Früh, and Wagner 2013). If the concrete exploitation of potential social media benefits is not clear before a respective initiative is started first projects within an initiative also can focus on exploratory objectives, particularly to gain context-specific knowledge via experimental activities. However, for such an approach it also is necessary to develop relevant goal metrics and systematic variations of activities as well as monitoring, documentation and reflection on resulting effects (Weinberg and Pehlivan 2011).

Future research should address the need for more complex models of technology adoption with respect to social media applications in SMEs. This could also add to some ongoing discussions in the literature on necessary further developments of TAM asking for extensions of the original perspective of individual decisions of simple usage of a technical device (Bagozzi 2007; Benbasat and Barki 2007; Chuttur 2009). In this regard this study shows some potential directions. Generally, TAM could be further developed in enhancing the perspective extending it towards an organizational and procedural perspective. Therefore, future technology adoption models for company applications, for instance, could differentiate aspects of potential risks, benefits, and costs being located on an operational versus a strategic level. For SMEs, the generation of a return on investment from social media applications is quite complex, depending on the SME's individual business model, stakeholders, and strategy (Fisher 2009). Future research could validate general success factors for social media use and derive concrete business cases and successful practices regarding social media use in SMEs. Therefore, it seems necessary to investigate more in detail relationships between concrete activities in specific social media channels and outcomes with respect to concrete business objectives. As our results identified perceived risks as a main barrier for social media adoption in SMEs, research also could further address certain elements of risks in specific settings. In particular, privacy risks have been identified recently to be associated with the use of the Internet and web-based services (Farzianpour et al. 2014; Steinman and Hawkins 2010). For example, executives may fear a potential loss of control over personal and firm-related information, or they may fear that employees will communicate inconsistent firm-related information, behave inappropriately, or spread confidential information (Väyrynen, Hekkala, and Liias 2013). All these questions call for a more complex expansion of TAM to strategic, structural and process-related aspects of potential risks, benefits and costs of new technology applications, especially in the context of strategic use of social media in SMEs.

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