

Facets of Facebook

Use and Users

Edited by
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Chapter 10. “Blind as a Bat”: Users of Social Networking Services and Their Biased Quality Estimations in TAM-like Surveys

Abstract: Studies concerning the quality and the acceptance of services on the Internet often make use of the technology acceptance model (TAM) or related models (e.g., TAM 2, TAM 3, UTAUT, MATH, and ISE), which in turn bank on the results of user surveys. TAM-like approaches try to measure information systems’ quality on dimensions, such as perceived ease of use, perceived utility, trustworthiness, and fun. Yet all of those dimensions are constructs. Are the constructs valid? Empirical studies based on the TAM model family always work with quantitative user surveys. Are the surveys valid and reliable? We reviewed the validity and reliability of surveys using the example of social networking services (SNSs). Each user will be “socialized” through her or his standard quasimonopolistic SNS (e.g., Facebook in Germany and VKontakte in Russia). The evaluation of both the standard and a nonstandard SNS ultimately results in a discovery called *standard-dependent user blindness* (SDUB). SDUB is a newly discovered method bias in quantitative TAM-like surveys that pertain to using Internet services. It thus appears impossible to gather unbiased user perceptions on the network markets of the Internet. If this discovery were indeed generalizable, it would have strong consequences for empirical research on the Internet insofar as it relies on quantitative user surveys.

Keywords: Social Networking Services, Quality, User, Technology Acceptance Model, Standard-dependent User Blindness, Method Bias, Status Quo Bias, Survey, Facebook, VKontakte.

Introduction

Are users of the Internet able to present objective, unbiased descriptions and evaluations of “their” primarily used Internet services and of other competitive

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services? Are user surveys that pertain to Internet information systems valid and reliable? In this chapter, we will discuss the appropriateness of quantitative surveys in the service of Internet research using the example of the social networking services (SNSs) market.

On national SNS markets, we find precisely one dominant SNS. In terms of network economics, such a dominant service is known as a “standard.” Are users, in effect, captured by their standard SNS? Does it make them “blind” to perceiving the quality of their own SNS compared with other, possibly even better service providers? If such blindness is indeed a given, its discovery would have consequences for all empirical Internet research on social media insofar as the studies rely on user surveys. Under the proposition of such a *standard-dependent user blindness* (SDUB) (Baran & Stock, 2015c; Baran & Stock, 2015e), all user surveys on network markets are principally at risk of bias.

Boyd and Ellison (2007, p. 211) define SNSs as web-based services that allow individuals to 1) construct a public or semipublic profile within a bounded system, 2) articulate a list of other users with whom they share a connection, and 3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.

To capture user experience with information systems and to perform quantitative measurement and evaluation tasks, the social sciences as well as computer science often make use of surveys (Stern, Bilgen, & Dillman, 2014). All known common models of technology acceptance and information system evaluation rely on quantitative user statements. The technology acceptance model (TAM) (Davis, 1989) and its successors, for example, TAM2 (Venkatesh & Davis, 2000), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003), the model of adoption of technology in households (MATH) (Brown & Venkatesh, 2005; Venkatesh & Brown, 2001), TAM3 (Venkatesh & Bala, 2008), the DeLone/McLean models (DeLone & McLean, 1992; DeLone & McLean, 2003), the Jennex/Olfman model (Jennex & Olfman, 2006), and the information service evaluation model (ISE) (Schumann & Stock, 2014) try to measure information systems’ quality on dimensions, such as perceived ease of use, usefulness, trust, and fun.

Some of these models have also been applied to describe the success of SNSs. Most authors use modified (i.e., enriched) versions of TAM or (to a lesser extent) UTAUT (Baran & Stock, 2015d; Rauniar, Rawski, & Johnson, 2014). All dimensions of either TAM or UTAUT are constructs. Are these constructs valid? Studies based on the TAM model family always work with quantitative user surveys. Are the surveys valid and reliable? This chapter examines two surveys on SNSs (Face-

book¹ and VKontakte²) in two countries (Russia and Germany), covering them as case studies.

Davis and Venkatesh (Davis & Venkatesh, 1996), the originators of TAM and many subsequent TAM-like methods, were well aware of potential biases in TAM. “A major potential concern is that the high reliability and validity of the TAM scales and the large proportion of variance in intention explained by perceived usefulness and ease of use could simply be an artifact of the measurement approach” (Davis & Venkatesh, 1996, p. 21). Some authors are even more skeptical about the validity and reliability of TAM, calling the method a “black box” (Benbassat & Barki, 2007; Wu, 2009).

Quality Dimensions in TAM-Like Surveys

We will empirically evaluate the information systems quality (perceived ease of use, usefulness, trust, fun) of both Facebook and VKontakte. Why do we measure those four dimensions? A historical point of origin for evaluating the quality of information systems in the business area is the registration of technology acceptance in the workplace. TAM (Davis, 1989) uses dimensions (initially: perceived ease of use and perceived usefulness) in order to measure the quality of an information service’s technical composition. In TAM2, Venkatesh and Davis (2000) demonstrated that perceived usefulness is dependent on other factors including the user’s experience, voluntariness, social influences (called “subjective norm”), image, output quality in relation to the job, and result demonstrability. Perceived ease of use correlates with control (computer self-efficacy and facilitating conditions), with the intrinsic motivation of the user and with his/her emotions (Venkatesh, 2000). The construction of TAMs climaxed with UTAUT (Venkatesh et al., 2003). In this vehicle, four user-specific criteria (gender, age, experience, and voluntariness of use) meet four aspects of the user-system relationship (performance expectancy, effort expectancy, social influence, and facilitating conditions). Performance expectancy includes the well-known perceived usefulness, and effort expectancy, the perceived ease of use. The other two aspects are known from TAM2.

TAM, TAM2, and UTAUT find their applications in business contexts. For the example of adopting of personal computers in homes (Venkatesh & Brown, 2001),

1 <https://www.facebook.com/>

2 <https://vk.com/>

Brown and Venkatesh (2005) constructed their MATH. MATH works with a set of users' beliefs and includes attitudinal beliefs (e.g., application for personal use, utility for children, or status gains), normative beliefs (among others, friends' and family influences as well as those from television, newspaper, etc.), and control beliefs (costs, ease of use, requisite knowledge).

Venkatesh (2000) conceptualized intrinsic motivation as computer playfulness. With the development of the Web (Moon & Kim, 2001), of digital games – or “pleasure-oriented (or hedonic) information systems” (van der Heijden, 2004, p. 695), and of social media services (Knautz, Soubusta, & Stock, 2010), the dimension of perceived fun as a result of perceived playfulness (Lieberman, 1977; Barnett, 1990) became an important building block of the perceived information system quality. Especially with the successful implementations of e-commerce systems and electronic banking, a further dimension emerged: perceived trust (Gefen, Karahanna, & Straub, 2003).

Meta-analyses of TAM (King & He, 2006; Legris, Ingham, & Collette, 2003; Yousafzai, Foxall, & Pallister, 2007) demonstrate this model's utility in organizational settings as well as in household, residential, and consumer contexts.

The ISE model (Schumann & Stock, 2014) applies – apart from an unspecific “other factors” category – the four important dimensions of perceived ease of use, perceived usefulness, perceived trust, and perceived fun as indicators of the information systems' quality estimation. In line with ISE and most of the other TAM-like methods, we will adopt those four dimensions for our surveys.

For Russian users, VKontakte is the standard SNS, but many Russian students are also familiar with Facebook (as a nonstandard SNS in Russia). For German users, Facebook is the standard SNS; VKontakte is only rarely used. We instructed students to use VKontakte for a while. For our study, VKontakte was the nonstandard SNS in Germany. Thus, we insured that all test participants were familiar with both services.

Under such conditions, we can initially assume that all survey respondents will have (more or less) similar estimations of the quality of Facebook (case study 1) and of VKontakte (case study 2). Our participants all were given identical questions, their familiarity with both SNSs was comparable, and they evaluated the same systems. There is one difference between our groups of participants: Though one group (the Russians) is familiar with Facebook, Russians mainly use VKontakte. In Germany, our participants use Facebook on an everyday basis, and they learned to handle VKontakte only for a brief period. In a second view, we can hypothesize that the experiences with the standard (VKontakte in Russia and Facebook in Germany) lead to different quality estimations of both the standard and the nonstandard SNS.

What is a “Standard” on Network Markets?

What is a “Standard” SNS?

Why do people use SNSs (Lin & Lu, 2011)? Key characteristics of SNS suppliers are that “any pair of participants may interact with one another” (Aggarwal & Yu, 2012, p. 147), and that “the presence of a larger number of users increases the value of the site for all other users” (Aggarwal & Yu, 2012, p. 142). An SNS is not very useful if it only has a small number of users in relation to the amount of the SNS’s target group. Based on a literature study, Nadkarni and Hofmann (2012) found that the use of Facebook is primarily motivated by two basic social needs: “1) the *need to belong*, and 2) the *need for self-presentation*. The *need to belong* refers to the intrinsic drive to affiliate with others and gain social acceptance, and the *need for self-presentation* to the continuous process of impression management” (p. 245). The benefits of Facebook “friends” can be seen as the “social capital” of its users (Ellison, Steinfield, & Lampe, 2007; Valenzuela, Park, & Kee, 2009). In an empirical investigation, PwC (2012, p. 37) observed that 75 % of all (German) SNS users access his or her SNS to keep in touch with friends. Around 67 % used the SNS to search for old acquaintances and to restore contact with them. The more direct network effects an SNS offers, the more it will serve those main motivations to use SNSs.

In the theoretical framework of network economics (Linde & Stock, 2011; Shapiro & Varian, 1998), direct and indirect network effects play important roles (see Figure 1). After one or more players enter a market and a combat zone emerges, one service trespasses on the critical mass of users. Then, network effects start (Katz & Shapiro, 1994; Rohn, 2013). Direct network effects (Linde & Stock, 2011, pp. 53–57) are given by the number of users: the more users, the more valuable the network is. The more valuable the network is, the more it will attract new users. This feedback loop leads to the successful networking service taking off and to the losing network sputtering out. Indirect network effects (Linde & Stock, 2011, pp. 57–60) are user-independent effects, for example, the number of complementary products (e.g., social games on an SNS), or the amount of advertising. Direct as well as indirect network effects conduce the winning network toward a “standard” (Fjell, Foros, & Steen, 2010) and thus to a quasimonopoly (a winner-take-all scenario) and the losing rivals toward niche markets or even toward a market exit (“the loser standing small”) – an idea perfectly captured in song by the Swedish pop group ABBA (Anderson & Ulvaeus, 1980).

So much for theory. Are there really standards on the Internet? On specific Internet markets, we are unfailingly able to locate precisely *one* information service that dominates a single submarket as a standard, in most cases on a global

level, in a few cases only on country level. There is only one sharing service on the Web for images with a broad market share, namely, Flickr³; the same holds true for video sharing services (YouTube⁴). Delicious⁵ dominates the social bookmarking service market, as Wikipedia⁶ does in that for knowledge bases. Twitter⁷ is dominant on the market of microblogging-oriented SNSs. Similar monopolies on information markets can be found for search engines (Google⁸), auctioning platforms (eBay⁹), and online bookselling (Amazon¹⁰) in many regions of the world. Does the Web indeed drive market monopolization (Haucap & Heimeshoff, 2014)?

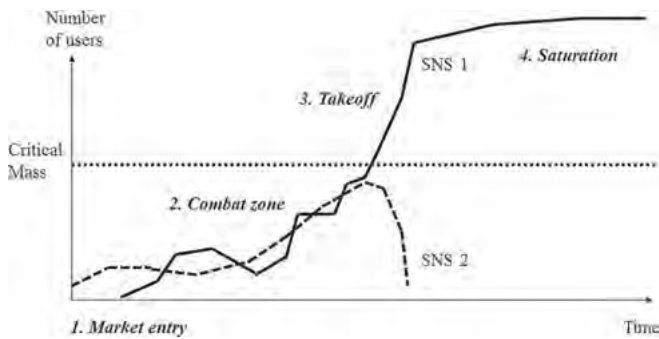


Figure 1: Typical Development on SNS Markets. Source: Following Dietl & Royer (2000).

How is the situation in the SNS Internet market? The research firm eMarketer¹¹ (Winkels, 2013) found that for the United States (2012), 89 % of all SNS users are on Facebook (next is Google Plus with 1 %).

In Germany, there are 38.6m unique visitors on Facebook, followed by Xing¹² with 4.2 million visitors. Regarding all social media platforms, PwC calculates Facebook's visitors' share in Germany at about 88 % (2012, p. 11).

³ <https://www.flickr.com/>

⁴ <http://www.youtube.com/>

⁵ <https://delicious.com/>

⁶ <https://www.wikipedia.org/>

⁷ <https://twitter.com/>

⁸ <https://www.google.com/>

⁹ <http://www.ebay.com/>

¹⁰ <http://www.amazon.com/>

¹¹ <http://www.emarketer.com/>

¹² <https://www.xing.com/>

In Russia (Winkels, 2013, p. 13), VKontakte has 38.5 million unique visitors, with about 13.5 billion page views; second is Odnoklassniki¹³ with 33.5 million unique visitors, but with only 3.7 billion page views. There are only around 19 million Facebook users in Russia, with 0.6 billion page views (all data for September 2012).

In both the United States and Germany, Facebook clearly dominates the SNS market as the standard SNS; in Russia, VKontakte does, but to a lesser extent. Indeed, ABBA (and the theory on network markets) appears to be correct: On SNS markets, the winner apparently takes all.

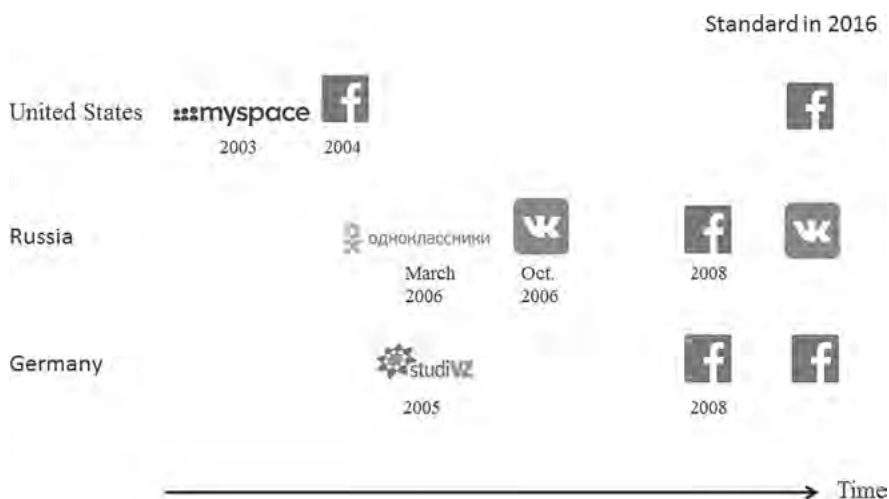


Figure 2: Market Entries of SNS Players in the United States, Russia, and Germany. Source: Baran, Fietkiewicz, & Stock (2015).

Innovators and Imitators on Network Markets

After a prehistory with some SNS-like information services (e.g., in 1995, Classmates,¹⁴ or, in 1996, Bolt¹⁵), the history of broadly successful SNSs started in

¹³ <http://www.odnoklassniki.ru/>

¹⁴ <http://www.classmates.com/>

¹⁵ [http://bolt.com/\(1996-2007\)](http://bolt.com/(1996-2007))

2003 with the market entry of MySpace.¹⁶ A few years later, national SNSs such as Odnoklassniki in Russia or studiVZ¹⁷ in Germany entered their markets. From the global perspective, MySpace was the innovator on the SNS market, and all other companies were imitators. For the national markets of Russia and Germany, however, Odnoklassniki and studiVZ were innovators. In the United States, Facebook superseded MySpace; in Germany, Facebook superseded studiVZ as well; and in Russia, VKontakte prevailed over Odnoklassniki. In Russia, Facebook never had a chance to become the standard (Baran & Stock, 2015a; Malahov, 2011). In no case has the (international or national) innovator become the standard; it has always been an imitator (see Figure 2).

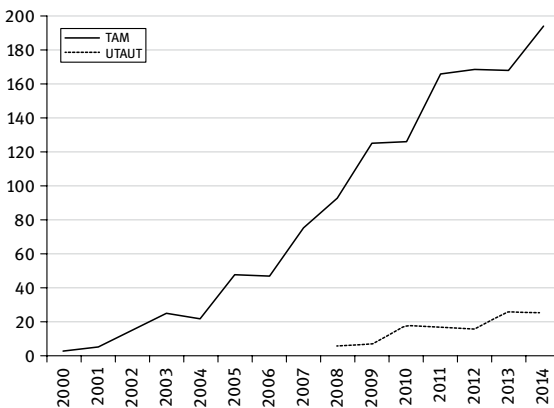


Figure 3: TAM and UTAUT Studies on Internet Information Systems, 2000–2014. Data source: Web of Science.

TAM-Like Studies on Internet Information Systems

In the literature of information systems research, one finds thousands of articles that address TAM and TAM-like models. Yousafzai, Foxall, and Pallister (Yousafzai, Foxall, & Pallister, 2007, p. 264) found in a meta-analysis of TAM that it “has emerged as a preeminent model of user’s acceptance of technology.” In this chapter, our focus is narrower: We only analyze the employment of TAM-like models on the Internet. Are such models also used in Internet research?

¹⁶ <https://myspace.com/>

¹⁷ <http://www.studivz.net/>

To answer this question, we conducted a small bibliometric study. We considered the article’s title terms, and words in both the abstract and in the keywords. Our search arguments on “Web of Science” (SCI, SSCI, A&HCI)¹⁸ were

a) “technology acceptance model” and (Internet* or online or WWW or mobile or digital or web or wireless or “e-commerce” or ecommerce or “e-government” or egovernment or “e-governance” or eovernance or website* or “e-learning” or elearning);

and

b) (UTAUT or “Unified theory of acceptance and use of technology”) and (Internet* or online or WWW or mobile or digital or web or wireless or “e-commerce” or ecommerce or “e-government” or egovernment or “e-governance” or eovernance or website* or “e-learning” or elearning).

The results of our bibliometric study (see Figure 3) are indisputable: There is a sharp increase of the number of articles on TAM in Internet systems studies between 2000 and 2014. In 2014, nearly 200 journal articles on this topic were covered by Web of Science. UTAUT saw less attention devoted to the topic, but here as well, one can identify about 20 publications per year in Web of Science. If a systematic bias were found in TAM-like surveys on the Internet, this result would have massive consequences for appraising both the validity and the reliability of survey-based Internet studies.

Case Studies: Facebook and VKontakte

Our exemplary SNSs are Facebook and VKontakte. Facebook (see Figure 4), one of the most popular SNSs at present, has a “mission:” “to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what’s going on in the world, and to share and express what matters to them” (Facebook, 2016a). Facebook was founded by Mark Zuckerberg in 2004. Its headquarters is in Menlo Park, California, and it has 12,691 employees (December 31, 2015) and more than 1.04 billion daily active users all over the world (on average for December 2015). More than 1 million advertisers work with Facebook, leading to revenues of about \$17.928 billion (in 2015) (Facebook, 2016b).

18 <http://webofknowledge.com/>

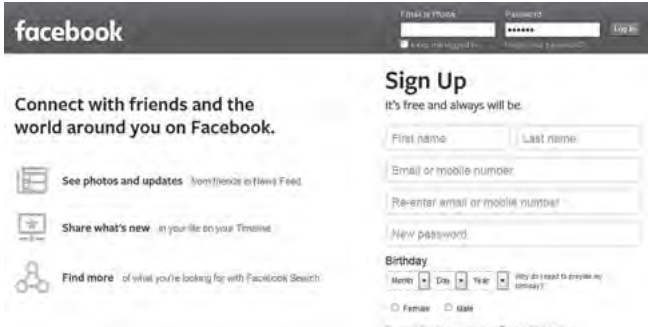


Figure 4: Case Study 1: Facebook. Source: Facebook.com.

Vkontakte (“in touch”) (see Figure 5) was founded by Pavel Durov in 2006. It is owned by Mail.ru, has about 200 employees, and it is located in St. Petersburg, Russia. VKontakte reports an average of 65 million daily users (November 2014). In 2013, VKontakte generated revenues of \$85 million, leading to a profit of \$1.2 million. VKontakte’s functionalities are similar to Facebook’s, but in contrast to Facebook, it additionally offers a platform to share audio and video files (Baran & Stock, 2015a; Baran & Stock, 2015b; Khveshchanka & Suter, 2010).

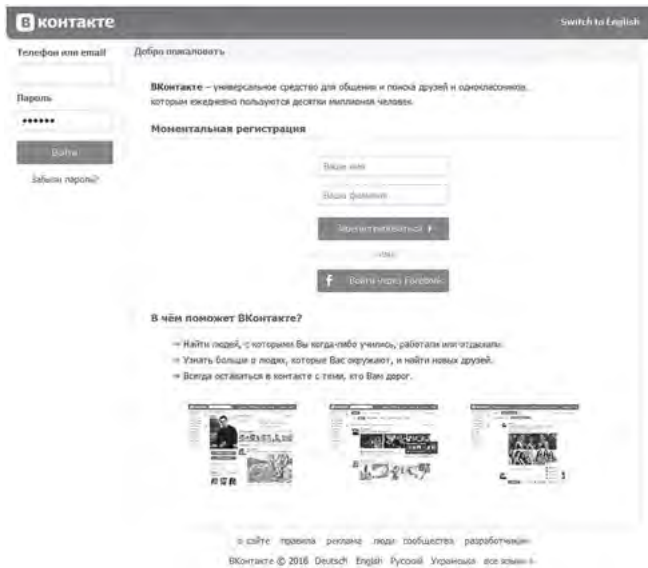


Figure 5: Case Study 2: VKontakte. Source: VK.com.

Research Model

Facebook achieved a critical mass of German users, retaining its dominant position as the country’s standard SNS; VKontakte has achieved the same level of success in Russia. Additionally, Facebook is a nonstandard SNS in Russia, as is VKontakte in Germany.

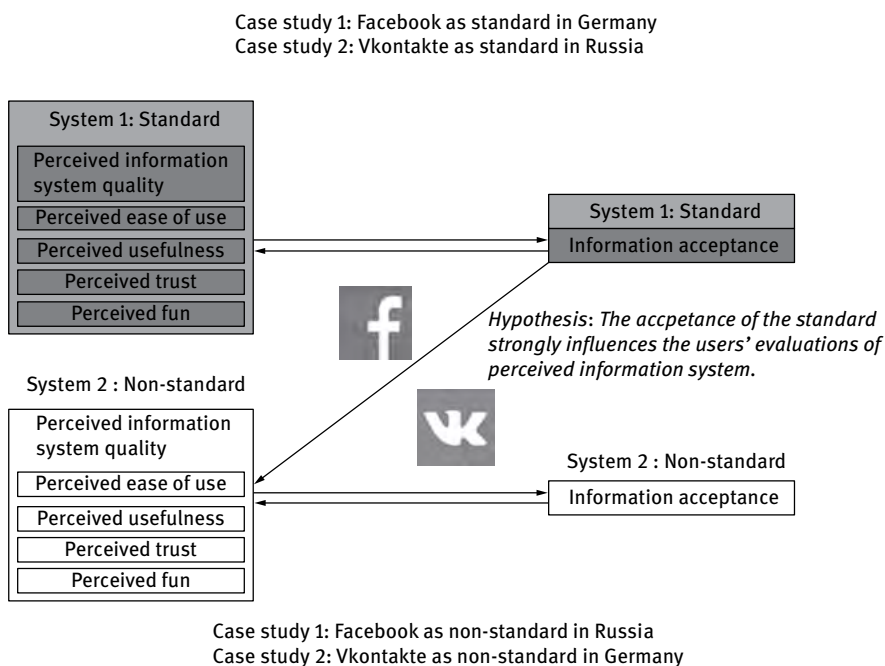


Figure 6: Our Research Model. Source: Following Baran & Stock (2015c).

Here, our research question arises: Under such conditions, are users able to give an unbiased view on the information quality dimensions of “their” standard SNS and (perhaps even better) other SNSs, which is needed for studies based on TAM and related models? The “classic” view of TAM-like studies focuses on analyzing the influences of indicators of perceived information system quality (e.g., ease of use, usefulness, trust, and fun) on the acceptance of the information systems. In Figure 6, this is the direction from the left-hand side of the model to the right-hand side. In our research, we also change the direction and ask for the influences of the acceptance indicators (in our further studies, we work with the four dimensions of adoption, use, impact, and diffusion) (Baran & Stock, 2015b, 2015d) on the perceived quality indicators. Our research problem lies in the direction from

right to left in Figure 6. How does the user's acceptance of one single information system influence her or his perception concerning its ease of use, usefulness, trust, and fun? Under the conditions of a standard (as in SNS markets), how does the user's acceptance of the standard influence the quality perceptions of the standard system and of further nonstandard information systems? Hence, in this work we propose the following hypothesis:

User perceptions of the quality of an SNS are strongly influenced by the standard SNS. This “winner-takes-all” situation makes its users “blind” to offer an unbiased quality perception of “their” (standard) SNS and of other (perhaps even better) SNSs.

Research Methods

We tested our research model employing two case studies. The target respondents of these studies were current SNS users in Moscow, Russia, and Düsseldorf, Germany. Our TAM-like questionnaire included 50 items. On a scale between 1 (“not at all”) and 10 (“highly applicable”), every participant was asked to estimate the importance of an indicator for his or her SNS behavior for both services – VKontakte and Facebook – in a quantitative way. Typical questions for the dimension of perceived SNS quality were “Is the design of SNS clear and easy to use?”; “Could you quickly orient yourself on the website?”; “Do you find that VKontakte / Facebook enriches your life”; and so forth. Some questions are adopted from the TAM (Davis, 1989) and others from the ISE model (Schumann & Stock, 2014). We validated our questionnaire by applying a pretest with four people, three of whom were native Russian speakers. All questions were formulated in the Russian language for the Moscow respondents and in German for the Düsseldorf group. The examiner was present at the time of filling out the questionnaires. If there were any problems (e.g., what does “enriches your life?” mean), the examiner could answer those questions.

The questionnaire method and additionally the in-depth interviews in an offline context were chosen to collect empirical data because we want to study Russian and German users as well; therefore, we had the chance for a live investigation of our participants.

Our test group in Moscow was composed of Russian students from Lomonosov Moscow State University. To identify our sample, we contacted 12 deans of Lomonosov University. Two of them (philosophy and economics faculty) answered in the affirmative and allowed us to distribute the questionnaires and

to conduct interviews in their classes. The surveys took place at Lomonosov University in February 2014. A total of 54 participants completed the questionnaire and the interview. The interviews lasted from 10 to 30 minutes. The examiner (KSB) recorded all answers on her interview guideline form. Our participants declined to approve the use of video- or audiotaping. Among these SNS users, 61.1 % were women and 38.9 % were men. Most were between 18 and 25 years old. All 54 participants are active VKontakte users. Of users, 52 to 54 answered they are registered on Facebook, but they do not use it, being thus passive users; only 2 participants are active Facebook users. At the time of the survey, everyone had experience using VKontakte and Facebook for more than 6 months and had more than 100 friends on VKontakte and about 10 friends on Facebook. Of participants, 79.6 % spent more than 2 hours a day on VKontakte and 61.1 % spent fewer than 15 minutes a day on Facebook.

We replicated the survey with students of Heinrich-Heine-University Düsseldorf, Germany ($N = 27$). German students had a Facebook account and used it very actively, but they did not have a VKontakte account, so our participants were instructed to create one for this study, and they used it actively for about one month. All our participants were thus familiar with both SNSs.

Other than the language (Russian vs. German), all questions were identical. The standard/nonstandard distinction is oppositional. What in Germany is the standard (namely, Facebook), is a nonstandard in Russia. Whereas, what in Russia is the standard (namely, VKontakte) is a nonstandard in Germany.

We calculated the mean values of the user values for all questions on the two analyzed SNSs. Additionally, we calculated for the four “classic” TAM dimensions (ease of use, utility, trustworthiness, and fun) the difference values between the user estimations of the service as a standard and the user estimations of the same service as a nonstandard.

Results

We present the results of our two case studies in two strands: for Facebook as standard (Germany) and nonstandard (Russia) (see Figure 7), and for VKontakte as standard (Russia) and nonstandard (Germany) (see Figure 8). For all indicators of information systems’ quality, our Russian and German participants chose their favorite SNS – Russian users favor VKontakte over Facebook, and German users favor Facebook over VKontakte. Almost all values are twice as high for the standard. Keep in mind users answered identical questions and evaluated identical systems! The only difference is a user group whose members are familiar with a

specific standard. Additionally, the differences between the standard SNS and the nonstandard SNS are statistically very significant for nearly all indicators, apart from the utility of the Russian standard (VKontakte).

For perceived ease of use, the difference between the evaluation of the standard and the nonstandard users is 1.31 points (**) for the case study of VKontakte and even 2.96 points (***) for the other case study of Facebook. The standard is easier to use for those individuals most familiar with the site.

The case study of VKontakte does not lead to statistically significant differences for the TAM dimension of utility. But the Facebook case study shows a great difference of 3.18 points (***). For Facebook standard users, this SNS is more than twice as useful as for nonstandard users (5.67 points in contrast to 2.49 points).

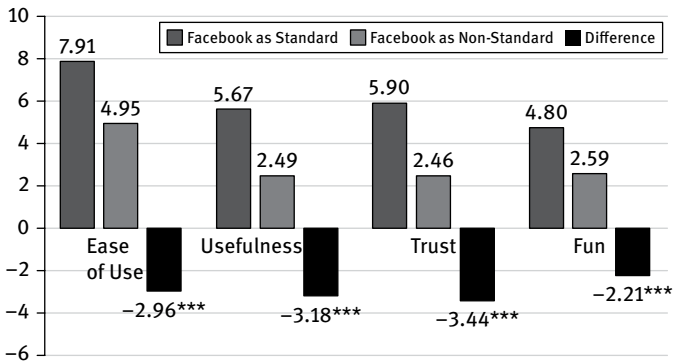


Figure 7: Quality Perceptions for Standard and Nonstandard SNSs. Case Study 1: Facebook. ***: $p < 0.001$. Facebook is the standard SNS in Germany (dark gray) and a nonstandard in Russia (light gray).

Perceived trust shows extreme differences for both case studies. The difference for case study 2 (VKontakte) is 2.55 points (***), while the difference for the Facebook case study is 3.44 points (***). We learned that a particular standard's users do trust "their" SNS and trust, to a much lesser extent, other SNSs.

For perceived fun, both case studies exhibit great differences between the standard and nonstandard users. The VKontakte study amounts to a difference of 2.04 points (**) and the Facebook case to a difference of 2.21 points (***). All users have much more fun with "their" standard than they do with a nonstandard SNS.

It is obvious that identical questions on the same SNSs lead to completely different answers, independent of any affinity for the users' standard SNS. Our research hypothesis could be clearly confirmed. The users were not able to give an unbiased quality perception on SNSs. We refer to this bias on SNS markets as

the “Standard-dependent User Blindness” (SDUB) (Baran & Stock, 2015c; Baran & Stock, 2015e).

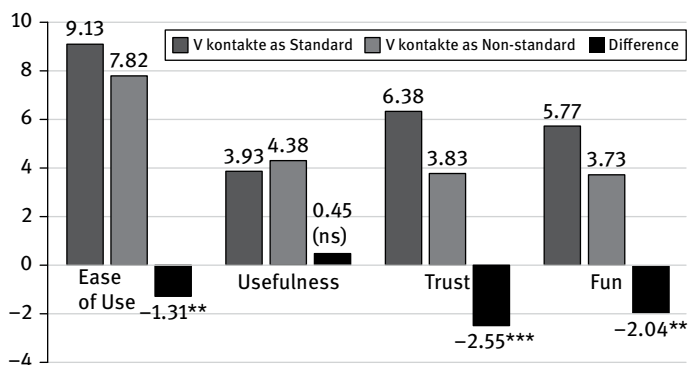


Figure 8: Quality Perceptions for Standard and Nonstandard SNSs. Case Study 2: VKontakte. *ns*: not significant; **: $p < 0.01$; ***: $p < 0.001$. VKontakte is the standard SNS in Russia (dark gray) and a nonstandard in Germany (light gray).

SDUB as a New Method and Status Quo Bias

What kind of bias is SDUB? Is it a new bias or is it a new manifestation of a known bias? There are some “methodological problems with subjective self-reported measures” (Straub, Limayem, & Karahanna-Evaristo, 1995, p. 1329) in TAM-like quantitative surveys. A first bias to discuss is the existence of faked answers. But SDUB is clearly no fake bias. Our participants did not consciously falsify their value estimations. Nor does it seem to be a bias of social desirability (Furnham, 1986), which is a kind of a fake bias, as test takers falsify their estimations in the direction of what they believe other people favor.

SDUB is a method bias (Podsakoff, MacKenzie, & Podsakoff, 2012), because the reasons for the biased results lie in the method (i.e., in quantitative TAM-like surveys on the Internet). In such a method bias, different constructs are measured with the same method. Normally, similar values for different constructs result from the fact “that they share the same method of measurement” (Podsakoff, MacKenzie, & Podsakoff, 2012, p. 540). This kind of method bias is called “common method bias” or “common method variance” (Straub, 2007). “With this utilization of the same method (i.e., the same common rater), the risk of common method variance (CMV) is extremely high” (Straub, 2007, p. 225). Such a bias could be confirmed with regard to TAM (Baek, 2012; Gerpott, 2011; Sharma, Yetton, &

Crawford, 2009). In the case of SDUB, we indeed apply the same method of measurement (i.e., TAM or TAM-like methods), but we do not observe such similar results – contrariwise, there are differences in the results of the same constructs. Therefore, SDUB is not a bias of CMV.

Kim and Kankanhalli (2009) discuss a so-called “status quo bias.” This bias results from user resistance to change to a new information system and to a preference for the status quo (i.e., the system actually used). “Status quo bias theory aims to explain people’s preferences for maintaining their current status or situation” (Kim & Kankanhalli, 2009, p. 569). Possible triggers of status quo are switching costs (which refer to “the perceived disutility a user would incur in switching from the status quo to the new IS” (Kim & Kankanhalli, 2009, p. 572) and the switching benefits (changing the system would result in beneficial effects for the user). There is a clear positive relation between switching benefits and the perceived value of the information system, but a negative one between switching costs and the perceived value of the new system. “Switching costs increase user resistance” (Kim & Kankanhalli, 2009, p. 578). SDUB is near to the status quo bias. But there is a difference: here, the status quo is the standard and the other service is not new for the user, but is known (albeit only as a nonstandard).

Considering the reviewed literature and the current state of survey methodology (Stern, Bilgen, & Dillman, 2014), SDUB seems to be a new Internet-specific bias. SDUB is a special case of method bias and has a clear relation to the status quo bias. It is a bias of surveys on network markets (where a standard exists, which in turn is one of the triggers of SDUB). The “black box” of TAM (Benbassat & Barki, 2007; Wu, 2009) thus incorporates with the discovery of SDUB another – and unpleasant – facet.

Discussion

Considering the wide distribution of TAM-like studies throughout the social sciences, computer science, and information systems research as well as the high level of importance SNSs occupy in present-day society, the results of our study concerning the conditions of system quality perceptions are extremely interesting and also new. This study discovered that users perceive the quality of an SNS to be dependent on their standard SNS in favor of their standard system and in opposition to the nonstandard information systems. This winner-take-all scenario blinds its users to offer an unbiased quality perception of “their” (standard) SNS and, accordingly, of other SNSs. SNS quality estimations by users are obviously highly vulnerable areas of surveys.

If such an effect is determined to apply to other markets of the network economy, then we must expect to always find biased user perceptions and SDUB in all social and computer science studies concerning social media insofar as the situation relies on TAM-like user surveys. In network markets, describing information systems quality by user statements is highly biased, because users are so familiar with their standard system. To open the “black boxes” of TAM-like surveys (Wu, 2009), it could be helpful to combine more independent measurement methods with TAM (Straub, 2007), for example, mixing quantitative and qualitative methods in Internet research.

Have we any advice to estimate the impact of the SDUB bias on survey results or even to avoid SDUB bias completely? For now, the simple answer is, “no.” What is needed is further research on SDUB as a method bias of TAM-like quantitative surveys on the Internet.

References

- Aggarwal, C. C., & Yu, P. S. (2012). On the network effect in Web 2.0 applications. *Electronic Commerce Research and Applications*, 11(2), 142–151.
- Anderson, B., & Ulvaeus, B. (1980). *The winner takes it all* / ABBA. Polar Music.
- Baek, S.-Y. (2012). 한국 TAM 실증연구의 동일방법편의 분석 [Analyzing common method bias of the Korean empirical studies on TAM]. *정보시스템연구 [Journal of Information Systems]*, 21(1), 1–17.
- Baran, K. S., Fietkiewicz, K. J., & Stock, W. G. (2015). Monopolies on social network services (SNS) markets and competition law. In F. Pehar, C. Schlögl, & C. Wolff (Eds.), *Re:Inventing Information Science in the Networked Society. Proceedings of the 14th International Symposium on Information Science (ISI 2015), Zadar, Croatia, 19th-21st May 2015* (pp. 424–436). Glückstadt, Germany: Hülsbusch.
- Baran, K. S., & Stock, W. G. (2015a). Facebook has been smacked down. The Russian special way of SNSs: Vkontakte as a case study. In *Proceedings of the 2nd European Conference on Social Media (ECSM 2015), 9.-10. July 2015, Porto, Portugal* (pp. 574–582). Reading, UK: Academic Conferences and Publishing Limited.
- Baran, K. S., & Stock, W. G. (2015b). Acceptance and quality perceptions of social network services in cultural context: Vkontakte as a case study. In *Proceedings of the 9th International Multi-Conference on Society, Cybernetics and Informatics (IMSCI 2015), 12.-15. July 2015, Orlando, Florida, USA* (pp. 114–119). Winter Garden, FL: International Institute of Informatics and Systemics.
- Baran, K. S., & Stock, W. G. (2015c). Interdependencies between acceptance and quality perceptions of social network services: The standard-dependent user blindness. In *Proceedings of the 9th International Multi-Conference on Society, Cybernetics and Informatics (IMSCI 2015), 12.-15. July 2015, Orlando, Florida, USA* (pp. 76–80). Winter Garden, FL: International Institute of Informatics and Systemics.

- Baran, K. S., & Stock, W. G. (2015d). Acceptance and quality perceptions of social network standard and non-standard services in different cultures. In C. Stephanidis (Ed.), *HCI International 2015 – Posters' Extended Abstracts. HCI International 2015, Los Angeles, CA, USA, August 2–7, 2015. Proceedings Part II* (pp. 65–70). Cham, Switzerland: Springer (Communications in Computer and Information Science; 529).
- Baran, K. S., & Stock, W. G. (2015e). Between the profiles: Another such bias. Technology acceptance studies on social network services. In C. Stephanidis (Ed.), *HCI International 2015 – Posters' Extended Abstracts. HCI International 2015, Los Angeles, CA, USA, August 2–7, 2015. Proceedings Part II* (pp. 71–77). Cham, Switzerland: Springer (Communications in Computer and Information Science; 529).
- Barnett, L. A. (1990). Playfulness: Definition, design, and measurement. *Play and Culture*, 3(4), 319–336.
- Benbassat, I., & Barki, H. (2007). Quo vadis, TAM? *Journal of the Association for Information Systems*, 8(4), 211–218.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210–230.
- Brown, S. A., & Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS Quarterly*, 29(3), 399–426.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. *International Journal of Human-Computer Studies*, 45(1), 19–45.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60–95.
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30.
- Dietl, H., & Royer, S. (2000). Management virtueller Netzwerkeffekte in der Informationsökonomie. *Zeitschrift Führung + Organisation*, 69(6), 324–331.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends”: Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
- Facebook (2016a). *Our Mission*. Online: <http://newsroom.fb.com/company-info> (accessed February 15, 2016).
- Facebook (2016b). *Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015 (Form K-10) / Facebook, Inc.* Washington, DC: United States Securities and Exchange Commission.
- Fjell, K., Foros, Ø., & Steen, F. (2010). *The Economics of Social Networks: The Winner Takes it All?* Bergen, Norway: Institute for Research in Economics and Business Administration (SNF Working Paper; 42/10).
- Furnham, A. (1986). Response bias, social desirability and dissimulation. *Personality and Individual Differences* 7(3), 385–400.
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping. An integrated model. *MIS Quarterly*, 27(1), 51–90.

- Gerpott, T. J. (2011). Determinants of self-report and system-captured measures of mobile Internet use intensity. An empirical investigation of common method bias among German mobile communication customers. *Information Systems Frontiers*, 13(4), 561–578.
- Haucap, J., & Heimeshoff, U. (2014). Google, Facebook, Amazon, eBay: Is the internet driving competition or market monopolization? *International Economic and Economic Policy*, 11(1–2), 49–61.
- Jennex, M. E., & Olfman, L. (2006). A model of knowledge management success. *International Journal of Knowledge Management*, 2(3), 51–68.
- Katz, M. L., & Shapiro, C. (1994). Systems competition and network effects. *Journal of Economic Perspectives*, 8, 93–115.
- Khveshchanka, S., & Suter, L. (2010). Vergleichende Analyse von profilbasierten sozialen Netzwerken aus Russland (Vkontakte), Deutschland (StudiVZ) und den USA (Facebook). *Information – Wissenschaft und Praxis* 61(2), 2010, 71–76.
- King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, 43(6), 740–755.
- Kim, H.-W., & Kankanhalli, A. (2009). Investigation user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, 33(3), 567–582.
- Knautz, K., & Soubusta, S., & Stock, W. G. (2010). Tag clusters as information retrieval interfaces. In *Proceedings of the 43rd Annual Hawaii International Conference on System Sciences*, IEEE Computer Society, Washington, DC (10 pp.).
- Legris, P., Ingham, J., & Colletette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204.
- Lieberman, J. N. (1977). *Playfulness: Its Relationship to Imagination and Creativity*. New York, NY: Academic Press.
- Lin, K.-Y., & Lu, H.-P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152–1161.
- Linde, F., & Stock, W. G. (2011). *Information Markets. A Strategic Guideline for the I-Commerce*. Berlin, Germany, New York, NY: De Gruyter Saur.
- Malahov, A. (2011). Facebook не грузится. Популярность сети в России одна из самых низких в Европе [Facebook is not popular in Russia]. *КОММЕЦАНТ [Kommersant]*, 33, Febr. 25, 2011, p. 12.
- Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management*, 38(4), 217–230.
- Nadkarni, A., & Hofmann, S. G. (2012). Why do people use Facebook? *Personality and Individual Differences*, 52(3), 243–249.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6–30.
- Rohn, U. (2013). Social networking sites across cultures and countries: proximity and network effects. *Qualitative Research Reports in Communication*, 14(1), 28–34.
- PwC. (2012). *Social Media Deutschland. The winner takes it all. Studie unter 1.000 Nutzern zu ihrer Einstellung zu sozialen Medien*. Frankfurt/Main, Germany: PricewaterhouseCoopers.

- Schumann, L., & Stock, W. G. (2014). The Information Service Evaluation (ISE) model. *Webology*, 11(1).
- Shapiro, C., & Varian, H. R. (1998). *Information Rules. A Strategic Guide to the Network Economy*. Cambridge, MA: Harvard Business School.
- Sharma, R., Yetton, P., & Crawford, J. (2009). Estimating the effect of common method variance: The method-method pair technique with illustration from TAM research. *MIS Quarterly*, 33(3), 473–490.
- Stern, M. J., Bilgen, I., & Dillman, D. A. (2014). The state of survey methodology: Challenges, dilemmas, and new frontiers in the era of tailored design. *Field Methods*, 26(3), 284–301.
- Straub, D. (2007). Veni, vidi, vici: Breaking the TAM logjam. *Journal of the Association for Information Systems*, 8(4), 223–229.
- Straub, D., Limayem, M., & Karahanna-Evaristo, E. (1995). Measuring system usage: Implications for IS theory testing. *Management Science*, 41(8), 1328–1342.
- Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site? Facebook use and college students' life satisfaction, trust, and participation. *Journal of Computer-Mediated Communication*, 14(4), 875–901.
- van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695–704.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the Technology Acceptance Model. *Information Systems Research*, 11(4), 342–365.
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315.
- Venkatesh, V., & Brown, S. A. (2001). A longitudinal investigation of personal computers in homes: Adopting determinants and emerging challenges. *MIS Quarterly*, 25(1), 71–102.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly* 27(3), 425–478.
- Winkels, M. (2013). *The Global Social Network Landscape. A Country-by-Country Guide to Social Network Usage*. New York, NY: eMarketer.
- Wu, P. F. (2009). Opening the black boxes of TAM: Towards a mixed methods approach. In *Proceedings of the Thirtieth International Conference on Information Systems (ICIS), Phoenix, Arizona*, paper 101.
- Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. (2007). Technology acceptance: A meta-analysis of the TAM. *Journal of Modelling in Management*, 2(3), 251–280 (part 1), 281–304 (part 2).