

The Social Media Use Integration Scale: Towards reliability and validity

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Abstract

The growing importance of social media and research interest in the field, make it imperative to consider the measures used to assess SNS use. The Facebook Intensity Scale has seen prolific use since its development - however, it has been criticized by some scholars. Jenkins-Guarnieri, Wright, and Johnson (2013) suggested another scale, the Social Media Use Integration Scale (SMUIS), which was developed to be suitable for use across different SNS platforms. They advised further research to confirm its psychometric properties; testing it on a more diverse sample than US college students; and on social media other than Facebook. In this study, EFAs and a CFA were conducted to examine the validity of the SMUIS on Facebook and LinkedIn in the African context. The results provide preliminary evidence of the reliability and validity of the SMUIS for diverse age ranges. Further testing of the scale on LinkedIn is recommended.

Keywords:

Social networks, social media use integration, scale validation, Facebook, LinkedIn, South Africa

1 INTRODUCTION

Social media and social networking sites (SNS) have become a part of life, and partly due to the continuous evolution of the internet, online social networking has changed the way people communicate (Mir, 2014, p. 42). The use of SNSs has grown exponentially – in particular prominent sites such as Facebook. Of the myriad SNSs available today, Facebook is the most popular globally (Statista, 2016), as well as in South Africa. LinkedIn is the most extensively used professional SNS, with 100 million users globally. As Facebook and LinkedIn are the most

popular SNSs in their categories (friend network and professional network, respectively), they are viable platforms to investigate. Knowing more about the integration of each of these platforms into their members' lives may provide insights to the SNS owners (and companies seeking to use the platforms for marketing or other purposes) to stimulate increased use or more targeted approaches.

The perceived ubiquity of social networks and their widespread use have attracted the attention of researchers and scholars seeking to investigate the phenomenon from various angles. According to Pérez-Latre, Portilla, and Blanco (2011, p. 67) SNS research has been conducted on impression management, privacy issues, SNS use by various audiences, as well as the role that SNSs play in culture, notably using an ethnographic approach referred to as Netnography. Wilson, Gosling, and Graham (2012, p. 204) point out that research on Facebook has covered a wide range of disciplines ranging from "law, economics, sociology, and psychology to information technology, management, marketing, and computer-mediated communication".

SNS studies have covered a wide variety of aspects relating to the use of social platforms. According to Wu, Sun and Tan (2013, p. 259), several genres of research in social media exist, namely word-of-mouth, information diffusion and network dynamics, internal social networks, mobile, healthcare, crowdsourcing and crowdfunding. SNSs are also seen as instruments for accumulating information and are used for educational research applications (Pérez-Latre et al., 2011, p. 68).

When considering the importance of social media in society, as well as the substantive research interest in the field, it is imperative to consider the measures used to assess SNS use.

Researchers have attempted to establish measures for the intensity of social media use in order to determine the levels of integration of SNS in users' lives. One of the most prominent measures being used in research is the Facebook Intensity Scale developed by Ellison Steinfield and Lampe (2007). Despite its prolific use, the scale has been criticized by, among others, Asghar (2015), Orosz, Tóth-Király and Bóthe (2015) as well as Jenkins-Guarnieri, Wright and Johnson (2013). The latter suggested an "improved" scale, the Social Media Use Integration Scale (SMUIS), which is relatively new and therefore has not been tested extensively.

Jenkins-Guarnieri et al. (2013) tested the SMUIS using a US sample of mainly first-year student Facebook users. The authors called for further research to confirm the scale's psychometric properties, and also for research using a more diverse sample than young college students. They further suggested research into social media other than Facebook (Jenkins-Guarnieri et al., 2013, p. 48).

There are only a few other (primarily Western) studies that have measured SMUIS since its development (for example: Asghar, 2015; Berryman, 2014; Doğan & Tosun, 2016), and even fewer that attempted to validate it. Additionally, a comprehensive literature review indicated that the SMUIS has not been measured on LinkedIn, nor has it been validated in an African context. South Africa embodies a suitable representative of an African market within which to test the SMUIS, which has only been validated in US and Eurasian (Turkey) contexts to date.

This research answers these gaps in three ways: examining the factor structure on Facebook in an African context (South Africa); validating the scale on a more diverse age range on a second

Facebook sample, and also by investigating its factor structure on a third sample on LinkedIn, a platform with a different focus than Facebook.

In order to reach the primary objective of validating the scale in an African context and to test it on a professional platform, three different samples of respondents on two social media platforms, Facebook and LinkedIn, were used for the analysis.

The paper is structured as follows: a literature review is provided, followed by research method, results, and a discussion thereof. Limitations and directions for future research are given and concluding remarks are made.

2 LITERATURE REVIEW

2.1 AFRICA - AN EMERGING MARKET RICH IN RESEARCH OPPORTUNITIES

The African continent has been receiving growing interest from business and researchers (George, Corbishley, Khayesi, Haas & Tihanyi, 2016, p. 377). According to Chandy and Narasimhan (2015, p. 251), sub-Saharan African emerging markets have been showing GDP growth of 6% or more across several years. Furthermore, the changes in emerging markets reflect a scope that has not been seen before and leads to many opportunities for management research. George et al. (2016, p. 377) call for “more empirical and conceptual work” in order to investigate the opportunities and challenges of Africa. Their call is supported by Duh (2015, p. 760), who stresses that models developed in Western contexts need to be tested in non-

Western cultural contexts. Attempting to validate a US-developed scale in an African context is thus important.

South Africa can be considered a viable representative of Africa. Winschiers-Theophilus and Bidwell (2013:246) point out that a paradigm of collectivism is universal to a majority of African cultures. They explain that this is typified in the South African concept of Ubuntu, which refers to “humanness”; people being people through others.

South Africa, a unique emerging market due to its growing technological infrastructure and high mobile penetration, is a viable target for social media and the business potential associated with social media (Deans, 2015, p. 6). SA forms part of BRICS (Brazil, Russia, India, China and South Africa), a growing economic group. The BRICS is expected to grow to a level that will enable competition for the G7 due to increasing market size and innovations in terms of science and technology, among other factors (Mostafa & Mahmood, 2015, p. 166).

South Africa has considerable future business potential, and is different from other emerging markets due to its developing technological infrastructure, high telecommunication costs and adoption of social media. South Africa’s growing mobile access has enabled it to “leapfrog to technologies that support social media” (Deans, 2015, p. 6). Research has also showed that emerging market consumers use multiple social media platforms (Chikweche & Fletcher, 2014, p. 407).

According to Goldstuck (2015, p. 54) the majority (81.7%) of Facebook users reside outside the US. African users of Facebook number 124,568,500 (Internet World Stats, 2016). Goldstuck

(2015, p. 6) indicates that consumers use such mobile technologies to ask advice, provide recommendations, as well as post complaints and reviews in online communities, which can influence behavior. These aspects support the examination of South African social media users.

2.2 SOCIAL MEDIA

Social media has grown in popularity and a plethora of social network sites (SNS) exist today. People can build up their personal networks as social media enables them to meet others, develop relationships, as well as maintain relationships via online platforms (Lin & Lu, 2011, p. 1152). Boyd and Ellison (2007, p. 210) define SNSs as online services which enable users to develop a profile within a bounded structure, connect with other users and navigate their connections, as well as the connections of their contacts. Online SNS users can interact with their contacts or connections, and view the online doings of their contacts. SNSs include various online services such as online rating sites, virtual game worlds, video sharing sites and online communities (Bolton et al., 2013, p. 248).

SNSs exist mainly as social connection tools; people choose to become part of SNSs "... due to the need for integration and social interaction" (Kim, Kim & Nam, 2010, p. 1080). Various SNSs have differing main focus points. For example, Facebook is a friend networking site, whereas LinkedIn is a professional network aimed at linking people with work-related connections, such as potential employers or business partners. According to Statista (2016), Facebook is the leading SNS, with 1.71 billion users globally as measured in September 2016. In South Africa, there are 11.8 million active Facebook users (Goldstuck, 2015, p. 53).

The messaging platforms WhatsApp, Facebook Messenger and QQ follow Facebook in popularity, ranging between 853 and 1000 million active users. In terms of professional SNS, LinkedIn is the most extensively used (Statista, 2016). According to Goldstuck (2015, p. 73), LinkedIn has grown exponentially in Africa (15.25 million members), as well as in South Africa, where it grew 40% from 2013 to 2014, boasting 3.8 million users.

Several measures of social media use exist and have evolved from mere frequency of use to more sophisticated measurements.

2.3 MEASURES OF SOCIAL MEDIA USE

Frequency and duration measures have often been used as indicators of social media use. According to Orosz et al. (2015, p. 95) early Facebook research featured scales focused on time spent, number of friends, group membership and some activities on Facebook. Such measures are not sufficient to indicate Facebook usage (Ellison et al., 2007, p. 1150). This is supported by Jenkins-Guarnieri et al. (2013, p. 48), who agree that frequency measures are insufficient proof of the way in which people incorporate social media into their typical routines and also how emotionally attached they are to the platform(s).

Ellison et al. (2007) developed the Facebook Intensity Scale (FIS) in an attempt to measure beyond frequency and duration of Facebook use. The FIS consists of two Facebook behavior assessments representing the extent of active engagement in Facebook activities (self-reported number of friends on Facebook and time spent using the platform), as well as a six-item attitudinal assessment. The latter is a Likert-style, unidimensional measure that was designed to

“tap into the extent to which the participant was emotionally connected to Facebook and the extent to which Facebook was integrated into her daily activities” (Ellison et al. 2007, 9. 1150). The six items were as follows: “Facebook is part of my everyday activity”, “I am proud to tell people I’m on Facebook”, “Facebook has become part of my daily routine”, “I feel out of touch when I haven’t logged into Facebook for a while”, “I feel I am part of the Facebook community”, and “I would be sorry if Facebook shut down”.

Ellison et al. (2007) reported the FIS to have a Cronbach alpha score of .83. They did not, however, report any further analyses on the scale in order to confirm its validity. Regardless of this, the scale gained popularity and has been used in literally hundreds of studies since its appearance in 2007, most reporting acceptable reliabilities. Buehler (2014, p. 17) reported that the scale demonstrated weak reliability ($\alpha=.23$) for Facebook in her study; some other studies did not report its reliability.

The FIS has been used primarily in studies on Facebook using student samples (for example: Cavallo et al., 2012; Clayton, Osborne, Miller & Oberle, 2013; Foubert & Masin, 2014; Jordaan & Van Heerden, 2017; Kimpton et al., 2016; Lampe, Wohn, Vitak, Ellison & Wash, 2011; Lou, Yan, Nickerson, & McMorris, 2012; Pettijohn, LaPiene & Horting, 2012; Phua & Ahn, 2014; Yaacoub & Najjar, 2016). Some studies investigated adolescents or young adults (Daniels, 2014; Dunne, 2015; Meshi, Morawetz & Heekeren, 2013; Pabian, De Backer, & Vandebosch, 2015; Tazghini & Siedlecki, 2013), and some specifically targeted adult users of Facebook (Błachnio & Przepiorka, 2016; Błachnio, Przepiorka & Pantic, 2016; Przepiorka & Błachnio, 2016; Przepiorka, Błachnio & Díaz-Morales, 2016). A few studies included another social network, notably Buehler’s (2014) and Petrocchi, Asnaani, Martinez, Nadkarni and Hofmann’s

(2015), both of which examined Twitter along with Facebook. Chong, Zhang, Mak and Pang (2015) surveyed users of Lesbian, Gay and Bisexual (LGB) social media; and Steinfield, DiMicco, Ellison and Lampe (2009) studied an internal work social network, Beehive. Many studies adapted the scale for various reasons (Bryant & Marmo, 2012; Glynn, Huges, & Hoffman, 2012; Kapidzic, 2013; Kuo & Tang, 2014; Ross et al., 2009). Some scholars used the FIS to measure general social media use, thus not stipulating a specific platform but referring to “social media” or “social network sites” (Barker, Dozier, Weiss & Borden, 2013; Charoensukmongkol, 2014; Gupta & Shrivastava, 2013; Kamal, Chu & Pedram, 2013; Kluesner, 2013; Mahoney, 2013).

The FIS has been criticized by Asghar (2015, p. 266) and Jenkins-Guarnieri et al. (2013, p. 39) for a lack of psychometric evidence supporting the validity of the scale. Furthermore, Mahoney (2013, p. 19) recommended exploring other measures that would be statistically more fitting. The main criticism that Orosz et al. (2015, p. 96) had against the scale (and its slightly extended version created by Ross et al., 2009) was that it was unidimensional in measuring the intensity of involvement in Facebook. According to Orosz et al (2015, p. 96), measuring the intensity of the use of Facebook should also consider the “magnitude of the integration of Facebook into one’s everyday life”. They thus developed a Multidimensional Facebook Intensity Scale (MFIS). That scale is specifically intended to measure the salient aspects of Facebook use and was not recommended by the authors for other social media.

Bodroža and Jovanović (2016, p. 427) criticized measures of Facebook behavior (including the FIS) for not examining the deeper aspects of psychological phenomena associated with Facebook use. Their subsequent development of the Psycho-Social Aspects of Facebook Use

scale (PSAFU), was also aimed specifically at Facebook and no other social media, as they argue that a common social media measure would need to be very general and not able to “tap into such subtle psychological processes” (Bodroža & Jovanović, 2016, p. 428).

Jenkins-Guarnieri et al. (2013) created the Social Media Use Integration Scale (SMUIS), which is partly based on the FIS, in order to create a more methodologically rigorous measurement than Ellison et al.’s scale. The SMUIS was intended to be suitable for other social media apart from Facebook. This is one of the reasons it was selected as a social media use measure in this study (as it set out to examine LinkedIn users). The SMUIS measures engaged social media usage, the emotional attachment to using social media, as well as how integrated social media is into the social habits of users (Jenkins-Guarnieri et al., 2013, p. 48). It was not intended to measure more complex psychological processes.

According to Jenkins-Guarnieri et al. (2013, p. 38), up to their development of the SMUIS, no other scale demonstrated appropriate rigor in measuring the integration of and utilization of social media in people’s daily lives. They argue that authors who developed their own scales often did not report details of the processes followed in creating and validating their scales (Jenkins-Guarnieri et al., 2013, p. 39). They felt that in order to measure how social media is integrated into peoples’ lives, more robust measures needed to be used, at least including exploratory factor analyses and confirmatory analyses to support the validity of the measures.

In their scale validation paper Jenkins-Guarnieri et al. (2013, p. 41) indicate that the study provided preliminary proof of the convergent and discriminant validity, as well as the internal structure of the SMUIS on a sample of Facebook users. Following a rigorous process (refer to

Jenkins-Guarnieri et al., 2013, pp. 42-43) the scale was refined from an initial 19-item measure to a 10-item measure demonstrating validity and reliability. Not only exploratory factor analyses (EFAs), but also confirmatory factor analyses (CFAs) (using the model generating approach to structural equation modelling (SEM)) were conducted in order to “evaluate the fit of the observed indicators selected by the EFA (the a priori model) to the data on the same scale items from the separate hold-out sample” (Jenkins-Guarnieri et al., 2013, p. 44). The resultant ten-item model indicated satisfactory fit with the data: RMSEA=.075; CFI=.96; NNFI=.95 (Jenkins-Guarnieri et al., 2013, p. 45).

The SMUIS resulting from their endeavors is a ten-item Likert-type scale consisting of two social media use dimensions (reflected in two subscales), namely Social Integration and Emotional Connection (SIEC) and Integration into Social Routines (ISR) (Jenkins-Guarnieri et al., 2013, p. 43). SIEC is represented by six items, namely:

- I feel disconnected from friends when I have not logged into Facebook
- I would like it if everyone used Facebook to communicate
- I would be disappointed if I could not use Facebook at all
- I get upset when I can't log on to Facebook
- I prefer to communicate with others mainly through Facebook
- Facebook plays an important role in my social relationships

The ISR dimension is represented by four items, namely:

- I enjoy checking my Facebook account
- I don't like to use Facebook (*item to be reverse scored*)
- Using Facebook is part of my everyday routine
- I respond to content that others share using Facebook

The SMUIS shares similarities with three items from the attitudinal measure of the widely-used FIS: “I feel out of touch when I haven’t logged into Facebook for a while”, “I would be sorry if Facebook shut down”, and “Facebook has become part of my daily routine”. The first two items align to two of the items representing the SMUIS’ SIEC dimension (“I feel disconnected from friends when I have not logged into Facebook” and “I would be disappointed if I could not use Facebook at all”), and the other to the ISR dimension (“Using Facebook is part of my everyday routine”). However, the six items of the FIS were unidimensional, whereas the SMUIS’ ten-item measure is two-dimensional, answering the criticism of Orosz et al. (2015) against the FIS.

Since its publication in 2013, the SMUIS has been used in a few studies, as summarized in Table 1. The reliability of the scale was acceptable in most of the studies that reported it after exploratory factor analyses were run. Note that reliability is considered acceptable when Cronbach’s alpha scores exceeds .7 (Quinlan et al., 2011, p. 114).

Table 1 shows that the SMUIS has been validated in only a few studies, notably in Turkey. Akin, Ozbay, and Baykut (2015, p. 630) were the only authors who set out specifically to validate the SMUIS in a non-US context (Turkey). Following their lead, two other Turkish studies examined the factor structure of the SMUIS (Doğan & Tosun, 2016; Savci & Aysan, 2016). Of the other studies, only one (Lyon, 2015) reported factor analyses (EFA only), and the rest used the SMUIS either as a total scale (Asghar, 2015; Berryman, 2014; Weisen, 2016) or one component thereof (Scott, 2015; Woods & Scott, 2016). None of these examined the SMUIS specifically on LinkedIn, and none in an African context.

Table 1: Summary of studies using the SMUIS

Sources	Country	Sample	Platform(s)	Factor analyses
Doğan and Tosun (2016)	Turkey	344 Adolescents	Unspecified	CFA
Weisen (2016)	USA	412 Students	Unspecified	None
Woods and Scott (2016) and Scott (2015)	Scotland	467 Adolescents (only adapted SIEC)	Unspecified	None
Savci and Aysan (2016)	Turkey	307 Students	Unspecified	EFA and CFA
Akin, Ozbay and Bakut (2015)	Turkey	247 students	Facebook	EFA and CFA
Asghar (2015)	International ¹	150 Adults	Facebook	None
Lyon (2015)	USA	104 Adults	Unspecified	EFA
Berryman (2014)	USA	471 Students	Unspecified	None
Jenkins-Guarnieri et al. (2013)	USA	617 Students (original validation study)*	Facebook	EFA and CFA

¹ Majority (73%) from Saudi Arabia, Pakistan, and USA. The rest were from Australia, Brazil, Canada, France, Georgia, India, Israel, Italy, Korea, Mauritius, New Zealand, Portugal, Qatar, Russia, Slovakia, South Africa, Turkey, United Arab Emirates and the United Kingdom (Asghar, 2015: 262). Specific distribution of the rest of the respondent pool was not reported.

It is important to validate a scale developed in a Western context (such as the US) when using it in other countries. Duh (2015, p. 760) highlights the need for Western-developed models and theories to be tested in other (African) cultural contexts, supporting the testing of measurements that originate in Western cultures.

With regard to theory, Ellison et al. (2007) examined the relationship between Facebook Intensity of use and social capital, thus suggesting that social capital theory could be an appropriate lens through which to view the measure of social media use integration, which was not specifically linked to a particular theory in the original validation article by Jenkins-Guarnieri et al.

2.4 SOCIAL CAPITAL THEORY

Social capital essentially refers to the social currency present between people participating in a social network. According to Ellison et al. (2011, p. 875) social capital is “embedded in the relationships between individuals, and can be measured at the individual or group level”. Lin (1999, p. 30) argued that social capital is a type of “neo-capital” theory that focuses on the access to and the usage of various resources inherently present in social networks. These resources may take different forms. Putnam’s often-cited work differentiates between bridging and bonding social capital (Putnam, 2000).

Bridging social capital exists between people who do not have strong relationships (thus weak ties) and bonding social capital between close-knit people (for example, family or friends). Emotional needs can be met through bonding capital, whereas informational needs can be met

through bridging social capital, which involves mere connection (Barker, Dozier, Weiss & Borden, 2015, p. 1605).

Choi and Chung (2013, p. 621) conclude that social media may be instrumental in creating social capital. According to Utz (2015, p. 1) social capital can be increased through the use of social media. Social media enables both types of social capital as users typically connect with close friends and/or family, as well as mere acquaintances on social media platforms. LinkedIn, as a professional networking site, presumably features predominantly weak ties (thus bridging social capital) between people who are only professionally interested in each other's doings. Contrarily Facebook, as a friend-networking site, could conceivably represent stronger ties – bonding social capital.

The SMUIS, as a measurement of social media platform use, features items that refer to communicating and connecting with people. Ellison et al. (2011, p. 888) found that the way people engage with communication practices on Facebook has an influence on social capital outcomes. It thus seems logical that engaging in the use of social media, and the integration of such networks into the lives of people, enhance the sharing of social capital. This is supported by Ellison et al. (2007, p. 1161) who found a positive association between Facebook use and social capital.

3 RESEARCH METHOD

In all three studies, ethical clearance to conduct the research was received from the University of Pretoria, South Africa. Informed consent was obtained from each respondent, after which

they completed the questionnaire. The consent form acknowledged their anonymity and their voluntary participation in the research. The instruments were pre-tested before fielding. No incentives were provided.

3.1 MEASUREMENTS

The research instruments used in the three studies were structured, self-administered questionnaires. Amongst other measures, each featured the SMUIS, as well as demographic questions (gender, race and age).

All three studies measured social media use integration by utilizing the ten-item SMUIS suggested by Jenkins-Guarnieri et al. (2013). Six of the items represent Social Integration and Emotional Connection (SIEC), while the other four represent Integration into Social Routines (ISR) (Jenkins-Guarnieri et al., 2013, p. 47). The ten items were operationalized using a five-point Likert type scale format, anchored 1=strongly disagree and 5=strongly agree. High mean values would therefore represent high levels of social media use integration.

3.2 DATA COLLECTION AND SAMPLING

Study 1 (assessing the SMUIS factor structure on Facebook):

The student sample entailed 383 third-year undergraduate students who were active members of Facebook in 2014. The sample was drawn on a convenience basis and the respondents were intercepted on-campus. Respondents included those who logged into Facebook at least once a month. The gender distribution was 64% female and 36% male. In terms of race, a large

majority of the respondents were classified as white ²(70.2%) followed by African (19.4%). The age distribution indicated that the majority (62%) were between 18 and 21 ($M=21.1$, $SD=1.672$). This sample expanded on the age range of Jenkins-Guarnieri et al. (2013, p. 41) who studied first-year students ($M=18.42$, $SD=.996$).

Study 2 (assessing the validity of the factor structure on Facebook):

The second study sample consisted of 290 conveniently selected respondents, who were intercepted on campus as well as at workplaces to ensure a sample representing both students and non-students, in 2014. Gender distribution indicated that 48.6% were male and 51.4% were female. Most (49.7%) of the sample represented the white race group, followed by 37.2% Africans. The age distribution was as follows: 18-25, 36.9%; 26-34, 15.5%; 35-46, 24.8%; and 47-65+, 22.7%. As this sample included both students (29.8%) and working people (70.2%), it answered Jenkins-Guarnieri et al.'s (2013, p. 48) call to test the scale on a sample consisting not only of college students.

Study 3 (assessing the factor structure on LinkedIn):

The third study reported in this paper tested the scale on LinkedIn. Jenkins-Guarnieri et al. (2013, p. 48) noted that a limitation of their validation study was that it did not test the scale on a platform other than Facebook. The LinkedIn study sample consisted of 297 conveniently selected respondents in 2014. Similar to study 2, respondents were chosen specifically to ensure a sample representing both students (47.5%) and non-students (52.5%), by intercepting them on campus and at workplaces. Males represented 47.8% of the sample, and females 52.2%. The racial distribution indicated that the majority (55.9%) were white, followed by 30%

² Note that the racial classifications according to Statistics South Africa were used.

Africans. Respondents aged between 18-25 years were the majority (58.6%), 26-34 year olds 22.9%, 35-46 years old 13.1%, and the smallest age group was aged 47-65 years (5.4%).

4 RESULTS

In order to validate the SMUIS, factor analyses were run for the three studies. An exploratory Factor Analysis (EFA) was first run for Study 1 (first Facebook sample) to determine the underlying factor structure in the South African context, and to examine reliability. The scale was then subjected to a confirmatory factor analysis (CFA) using AMOS on another Facebook sample (Study 2). The SMUIS was also measured on another platform (Study 3 - LinkedIn) to determine if it would retain the proposed factor structure in a different social media context. An EFA was thus also conducted for the LinkedIn sample in Study 3, as the SMUIS has not been measured yet on that specific platform (as far as a broad review of literature could find).

Before the EFAs were conducted for the relevant data sets (Study 1 and Study 3), the Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was used to determine whether the data was suitable for factor analysis. According to Pallant (2013, p. 199), Bartlett's test of sphericity is significant at .05 or smaller and the Kaiser-Meyer-Olkin (KMO) should exceed .6. All the constructs revealed statistically significant values for Bartlett's test of sphericity, and the KMO values exceeded .6 (Study 1 KMO=.893, Bartlett=.000; Study 3 KMO=.864, Bartlett =.000).

The EFAs were conducted by utilizing the method used by Jenkins-Guarnieri et al. (2013, p. 43) - Maximum Likelihood with Promax rotation and Kaiser Normalization. Eigenvalues exceeding 1

were considered, and factor loadings cut-off was .3. After the EFA was run, reliability of the total and the subscales were measured using Cronbach's alpha, and scores of .7 or more were deemed acceptable.

Table 2: Factor analysis – Study 1 SMUIS

	Factor	
	1 SIEC	2 ISR
I prefer to communicate with others mainly through Facebook	.918	
I feel disconnected from friends when I have not logged into Facebook	.673	
Facebook plays an important role in my social relationships	.661	
I would like it if everyone used Facebook to communicate	.658	
I get upset when I can't log on to Facebook	.561	
I enjoy checking my Facebook account		.861
Using Facebook is part of my everyday routine		.702
I don't like to use Facebook*		.669
<i>I would be disappointed if I could not use Facebook at all</i>	.379	.494
I respond to content that others share using Facebook		.379
Eigen values	5.077	1.097
Variance explained	50.77%	10.97%
Cronbach Alpha for subscales	.874	.766

**Item reversed scored*

Assessing the SMUIS factor structure on Facebook in a South African context (Study 1)

The EFA resulted in a two-factor solution, as expected. The two factors explained 61.74% of the variance. Factor loadings ranged between .379 and .918. According to Hair, Black, Babin, and Anderson (2014: 116), factor loadings around .3 are minimally acceptable. The SMUIS scale was reliable as the Cronbach alpha value for the total scale (.891) and for the two subscales (SIEC=.874; ISR=.766) exceeded .7. Table 2 represents the pattern matrix.

The two factors correspond with those identified by Jenkins-Guarnieri et al. (2013, p. 43), namely SIEC and ISR. However, one item displayed a double loading: the item, 'I would be disappointed if I could not use Facebook at all', which loaded stronger on Factor 2 (ISR). However, Jenkins-Guarnieri et al. (2013) indicated it as an SIEC item. When considering that the factor loading (.379) for this item on Factor 1 (SIEC) is above the minimal cut-off of .3, it could still be considered an SIEC item. The factor was retained as such.

It should be noted that although it is common practice to delete double-loading items, it was not done in this case as the focus of the study was to establish if the underlying structure of the scale as developed by Jenkins-Guarnieri et al. (2013) would be the same in a different context. Thus the decision to retain the item as per the original scale was made, considering that the item still loaded sufficiently high on the theoretical factor (SIEC) to support its retention. Further future research using this scale should be mindful of this occurrence.

The respondents indicated higher propensity for ISR ($M=3.49$; $SD=.796$), indicating that they perceive Facebook to be more prominent as an integral part of their social routines than it is in terms of emotional connection (SIEC $M=2.48$; $SD=.872$).

Assessing the validity of the SMUIS factor structure on Facebook (Study 2)

A confirmatory factor analysis (CFA) was conducted on the data for confirmatory purposes. This was done by using SPSS Amos (version 22).

The CFA for the Facebook sample in Study 2 revealed that all standardized (and unstandardized) parameter estimates were significant. Furthermore, all the standardized regression weights (β values) exceeded .5 (ranging between .562 and .770).

The values for NFI (.914), CFI (.940) and TLI (.920) were all over .9 and indicate good fit. The RMSEA was .08, which is reasonable - although a bit higher than the RMSEA (.075) of the model of Jenkins-Guarnieri et al. (2013, p. 45). Given that the β values were all above .5, none should be removed. Considering all the fit indices, this model thus provides preliminary evidence confirming the validity of the internal structure of the SMUIS in the Facebook context in South Africa.

In Turkey, three studies also conducted CFAs on the SMUIS on Facebook. Akin et al.'s (2015) study (using a Turkish-translated version of SMUIS) reflected an RSMEA of .076 and other fit indices (for example NFI, CFI) exceeded .9. Savci and Aysan (2016, p. 110) reported CFA

results of RMSEA=.090 and assorted other fit indices of $>.9$; and Doğan and Tosun (2016, p. 107) indicated an RMSEA of .98 and other indices around .9.

Similar to the descriptive results of the first study on Facebook, the mean for ISR was higher ($M=3.38$; $SD=.822$) than for SIEC ($M=2.41$; $SD=.860$). Therefore the generationally more diverse Facebook sample also indicated that integration into social routines plays a larger role than emotional connection to the platform.

Assessing the SMUIS factor structure on a LinkedIn sample (Study 3)

In order to evaluate the underlying factor structure for the SMUIS on a platform not previously measured (LinkedIn), an EFA was run. It resulted in a two-factor solution. The two factors explained 49.98% of the variance (SIEC: 38.23% and ISR: 11.75%).

Factor loadings ranged between .302 and .855 and are therefore acceptable. A two-factor solution corresponds with Jenkins-Guarnieri et al. (2013, p. 43). However, one item, "Using LinkedIn is part of my everyday routine", loaded on SIEC whereas Jenkins-Guarnieri et al. (2013) indicated it as an ISR item. Although the item loaded quite strongly (.505) as an SIEC item, it fits better with ISR (theoretically and logically). A closer examination of the descriptives of the items revealed that this item's response pattern showed closer similarity to those of the SIEC items. Refer to Table 3.

Table 3: Descriptive statistics of the items

Items and subscale according to Jenkins-Guarnieri et al. (2013)	<i>M</i>	<i>SD</i>
I feel disconnected from my connections when I have not logged into LinkedIn (SIEC)	2.39	1.12
I would like it if everyone used LinkedIn to communicate (SIEC)	2.76	1.00
I would be disappointed if I could not use LinkedIn at all (SIEC)	2.84	1.20
I get upset when I can't log on to LinkedIn (SIEC)	2.51	1.16
I prefer to communicate with others mainly through LinkedIn (SIEC)	2.11	.91
LinkedIn plays an important role in my social relationships (SIEC)	2.25	1.04
I enjoy checking my LinkedIn account (ISR)	3.36	1.03
I don't like to use LinkedIn (reversed) (ISR)	3.69	1.01
<i>Using LinkedIn is part of my everyday routine (ISR)</i>	<i>2.48</i>	<i>1.18</i>
I respond to content that others share using LinkedIn (ISR)	3.15	1.16

Subsequently, a decision to delete the item rather than to retain it (as was the case with the item that had a double loading in Study 1), was made for two reasons. First, this particular item loaded on a factor contrary to the theoretical basis of the original scale, and second it was not the same item as the one in Study 1.

The item was subsequently deleted and the factor analysis re-run without it. However, the subsequent result (using Maximum Likelihood) featured a cautionary note as to the interpretation of the solution. The decision was then made to run the analysis using Principal Axis Factoring (also using Promax). The results are presented in Table 4.

Table 4: Factor loadings using PAF

	Factors	
	1 SIEC	2 ISR
I feel disconnected from my connections when I have not logged into LinkedIn	.554	
I would like it if everyone used LinkedIn to communicate	.436	
I would be disappointed if I could not use LinkedIn at all	.519	
I get upset when I can't log on to LinkedIn	.599	
I prefer to communicate with others mainly through LinkedIn	.826	
LinkedIn plays an important role in my social relationships	.590	
I enjoy checking my LinkedIn account		.813
I don't like to use LinkedIn (reversed)		.496
I respond to content that others share using LinkedIn		.302

The total scale's Cronbach alpha was acceptable (.787), as was the subscale SIEC (.776). However, the Cronbach alpha for ISR (.571), was below the preferred value of .7. This could not be improved by deleting items. This value is also lower than the minimum acceptable level of .6 for exploratory work (Hair et al., 2014, p. 125). The ISR subscale, in this study, can thus not be considered reliable. These results suggest that further testing of this scale needs to be conducted on this platform in order to truly confirm the structure of the scale on LinkedIn. Confirmatory analyses are also advisable.

The descriptive statistics for the nine-item version of the scale indicated that the mean for SIEC was 2.48 ($SD=.739$), and for ISR 3.40 ($SD=.781$), indicating that the LinkedIn respondents

showed a higher tendency towards ISR. Thus these LinkedIn respondents seem to be connected to the platform routinely but they are not emotionally invested in it. Table 5 provides a summary of the descriptive statistics of all three studies.

Table 5: Summary of the descriptive statistics for the three studies

Study	Dimensions	Means	Standard deviations
Study 1 (Facebook)	SIEC	2.48	.872
	ISR	3.49	.796
Study 2 (Facebook)	SIEC	2.41	.860
	ISR	3.38	.822
Study 3 (LinkedIn: 9 items)	SIEC	2.48	.739
	ISR	3.40	.781

Overall, the descriptive results indicate that across all three studies, ISR is more prominent to the respondents. Accessing these platforms, therefore, may be considered an integral part of the users' daily lives. This is consistent with results reported by Jenkins-Guarnieri et al. (2013, p. 45). Emotional connection seems to be less important across the platforms. The results suggest that these users access the platforms habitually rather than to satisfy emotional needs. Other studies that reported these descriptives, either used a total SMUIS mean score (Doğan & Tosun, 2016, p. 109; Berryman, 2014, p. 17) and reported it to be slightly positive or only one dimension (Woods & Scott, 2016, p. 44), namely SIEC, which was high among a sample of adolescents.

5 DISCUSSION

The research aimed to validate the SMUIS in a South African context and to test it on a platform on which it had not been tested before. This aim was partly achieved as the scale demonstrated validity and reliability on Facebook across different and demographically diverse samples.

However, the results of the LinkedIn study supports further investigation of the scale on that platform. The evidence suggests that the scale structure may not be the most suitable for such a platform. Further testing of the SMUIS on LinkedIn, preferably using diverse samples, is advisable. Testing the scale on other SNSs is also imperative to determine if it is valid and reliable across various social media, as the developers intended. It may also be that more items would need to be generated to adequately measure ISR in SNS contexts other than Facebook.

Of the two SMUIS dimensions, ISR was found to be more prominent across the three studies. The respondents thus indicated that the platforms held larger integrative value to their daily lives than emotional connection. This may signify that users are accessing the platforms more out of habit than out of a sense of connection or emotional attachment.

6 LIMITATIONS AND FUTURE DIRECTIONS

As is true of most research, this work also has limitations. No generalizations to the general population may be made as non-probability sampling was used in all three studies. This also meant that the racial diversity was not very broad as the majority of respondents in the three studies are classified as white or African, and the other two South African race groups (colored

and Indian/Asian) are under-represented. Future studies in South Africa should consider using sampling techniques that will ensure broader racial representation, owing to the diversity of this so-called Rainbow Nation.

The results for social media use integration across all three samples indicate that users may be using the SNS habitually. It is possible that users demonstrating higher levels of emotional connection to SNSs may be intentional rather than habitual users, and future research should include a range of users from low to heavy users. Kim, Kim and Nam (2010, p. 1096) also suggested research should differentiate between habitual and intentional social media use.

The two dimensions of SMUIS (SIEC and ISR) could possibly link to the forms of social capital in different ways. Future research should examine possible associations between the different forms of social capital and the dimensions of social media use integration. Cross-cultural comparisons can also provide valuable insights and serve to further validate the SMUIS. According to Brengman, Geuens, Weijters, Smith and Swinyard (2005, p. 81), measurements used in cross-cultural studies must demonstrate cross-cultural validity.

Future research should again conduct EFAs on LinkedIn as the results in this study differed from those of the developers of the scale. Confirmatory analyses should also be conducted on LinkedIn. Furthermore, it would be valuable to explore other social networks such as Instagram, Twitter and Pinterest, which also have a different focus from that of Facebook. The messaging platforms WhatsApp and WeChat (also considered social networks) could possibly yield very different results due to their primary communicative natures.

7 CONCLUDING REMARKS

In this research, EFAs and a CFA were conducted on different samples in order to establish preliminary validity evidence for the internal structure of the SMUIS measure in the South African context and on two platforms. It added to the work by Jenkins-Guarnieri et al. (2013) by examining a broader age range than first-year students and adding another platform than Facebook (LinkedIn). This research provided preliminary evidence of the reliability and validity of the SMUIS across two different social networking sites, as well as for relatively diverse age ranges. However, the results for LinkedIn suggest further testing of the scale on that platform as it displayed slightly differently from the results of the originators of the scale. Suggestions for future research were made.

REFERENCES

- Akin, A., Ozbay, A., & Baykut, I. (2015). The validity and reliability of the Turkish version of the social Media Use Integration Scale. *Journal of International Social Research, 8*(38), 628-633.
- Asghar, H. M. (2015). Measuring Information Seeking through Facebook: Scale development and initial evidence of Information Seeking in Facebook Scale (ISFS). *Computers in Human Behavior, 52*(0), 259-270. doi: 10.1016/j.chb.2015.06.005.
- Barker, V., Dozier, D. M., Weiss, A. S., & Borden, D. L. (2013). Facebook 'friends': Effects of social networking site intensity, social capital affinity, and flow on reported knowledge-gain. *The Journal of Social Media in Society, 2*(2), 76-97.

- Barker, V., Dozier, D. M., Weiss, A. S., & Borden, D. L. (2015). Harnessing peer potency: Predicting positive outcomes from social capital affinity and online engagement with participatory websites. *New Media and Society*, 17(10), 1603-1623. doi: 10.1177/1461444814530291.
- Berryman, C. (2014). # *storyofmylife: Personality Characteristics Associated With Attention Seeking Behavior Online and Social Media Use in Emerging Adulthood*. (Honors in the Major Program in Psychology), University of Central Florida, Florida, USA.
- Błachnio, A., & Przepiorka, A. (2016). Personality and positive orientation in Internet and Facebook addiction. An empirical report from Poland. *Computers in Human Behavior*, 59, 230-236. doi: 10.1016/j.chb.2016.02.018.
- Błachnio, A., Przepiorka, A., & Pantic, I. (2016). Association between Facebook addiction, self-esteem and life satisfaction: A cross-sectional study. *Computers in Human Behavior*, 55, 701-705. doi: 10.1016/j.chb.2015.10.026.
- Bodroža, B., & Jovanović, T. (2016). Validation of the new scale for measuring behaviors of Facebook users: Psycho-Social Aspects of Facebook Use (PSAFU). *Computers in Human Behavior*, 54, 425-435. doi: 10.1016/j.chb.2015.07.032.
- Bolton, R. N., Parasuraman, A., Ankie, H., Migchels, N., Kabadayi, S., Gruber, T., . . . Solnet, D. (2013). Understanding Generation Y and their use of social media: A review and research agenda. *Journal of Service Management*, 24(3), 245-267. doi: 10.1108/09564231311326987.
- Boyd, D. M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210-230. doi: 10.1111/j.1083-6101.2007.00393.x.

- Brengman, M., Geuens, M., Weijters, B., Smith, S. M., & Swinyard, W. R. (2005). Segmenting Internet shoppers based on their Web-usage-related lifestyle: a cross-cultural validation. *Journal of Business Research*, *58*(1), 79-88. doi: 10.1016/S0148-2963(02)00476-9.
- Bryant, E. M., & Marmo, J. (2012). The rules of Facebook friendship: A two-stage examination of interaction rules in close, casual, and acquaintance friendships. *Journal of Social and Personal Relationships*, *29*(8), 1013–1035. doi: 10.1177/0265407512443616.
- Buehler, E. M. (2014). *Factors Influencing Adolescent Impression Management on Social Networking Sites*. (Master of Arts in Communication Masters), Wake Forest University Graduate School of Arts and Sciences, Winston-Salem, North Carolina.
- Cavallo, D. N., Tate, D. F., Ries, A. V., Brown, J. D., DeVellis, R. F., & Ammerman, A. S. (2012). A Social Media–Based Physical Activity Intervention: A Randomized Controlled Trial. *American Journal of Preventive Medicine*, *43*(5), 527-532.
- Chandy, R., & Narasimhan, O. (2015). Millions of Opportunities: An Agenda for Research in Emerging Markets. *Customer Needs and Solutions*, *2*(4), 251-263. doi: 10.1007/s40547-015-0055-y.
- Charoensukmongkol, P. (2014). Effects of support and job demands on social media use and work outcomes. *Computers in Human Behavior*, *36*, 340-349. doi: 10.1016/j.chb.2014.03.061.
- Chikweche, T., & Fletcher, R. (2014). Marketing to the 'middle of the pyramid' in emerging markets using a social network perspective: Evidence from Africa. *International Journal of Emerging Markets*, *9*(3), 400-423. doi: 10.1108/ijoem-05-2013-0090.
- Choi, G., & Chung, H. (2013). Applying the Technology Acceptance Model to Social Networking Sites (SNS): Impact of Subjective Norm and Social Capital on the Acceptance of SNS.

- International Journal of Human-Computer Interaction*, 29(10), 619-628. doi: 10.1080/10447318.2012.756333.
- Chong, E. S., Zhang, Y., Mak, W. W., & Pang, I. H. (2015). Social media as social capital of LGB individuals in Hong Kong: Its relations with group membership, stigma, and mental well-being. *American Journal of Community Psychology*, 55(1-2), 228-238. doi: 10.1007/s10464-014-9699-2.
- Clayton, R. B., Osborne, R. E., Miller, B. K., & Oberle, C. D. (2013). Loneliness, anxiousness, and substance use as predictors of Facebook use. *Computers in Human Behavior*, 29(3), 687-693. doi: 10.1016/j.chb.2012.12.002.
- Daniels, M. (2014). *Facebook and depression in late adolescence: Intensity of use, quality of interactions, and the role of self-definition and identity*. (Doctor in Clinical Psychology), Royal Holloway, University of London.
- Deans, P. C. (2015). *Teaching Social Business Strategy from a Global Perspective*. Paper presented at the SIGED: IAIM Conference, AIS Electronic Library (AISeL).
- Doğan, U., & Tosun, N. İ. (2016). Lise öğrencilerinde problemlü akıllı telefon kullanımının sosyal kaygı ve sosyal ağların kullanımına aracılık etkisi. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 1(1), 99-128.
- Duh, H. (2015). Testing three materialism life-course theories in South Africa. *International Journal of Emerging Markets*, 10(4), 747-764. doi: 10.1108/IJoEM-02-2013-033.
- Dunne, A. (2015). *An investigatory study of Self-Consciousness, Body-Esteem, with relation to Facebook usage*. (Bachelor of Arts (Psychology specialization)), DBS School of Arts, Dublin.

- Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication practices. *New Media and Society*, 13(6), 873–892. doi: 10.1177/1461444810385389.
- Ellison, N., 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, 1143-1168. doi: 10.1111/j.1083-6101.2007.00367.x.
- Foubert, J. D., & Masin, R. C. (2014). Effects of gender and Facebook use on the development of mature interpersonal relationships. *Journal of Student Affairs*, 23, 51-58.
- George, G., Corbishley, C., Khayesi, J. N., Haas, M. R., & Tihanyi, L. (2016). Bringing Africa In: promising directions for management research. *Academy of Management Journal*, 59(2), 377-393. doi: 10.5465/amj.2016.4002.
- Glynn, C. J., Huge, M. E., & Hoffman, L. H. (2012). All the news that’s fit to post: A profile of news use on social networking sites. *Computers in Human Behavior*, 28(1), 113-119. doi: 10.1016/j.chb.2011.08.017.
- Goldstuck, A. (2015). *South African social media landscape report 2015*. Pinegowrie: Fuseware and World WideWorx.
- Gupta, A. K., & Shrivastava, S. (2013). Social Media Usage in Indian Information Technology Professionals. *International Journal of Management and Social Sciences Research*, 2(3), 11-17.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*. Upper Saddle River, NJ [etc.]: Pearson Prentice Hall.
- Jenkins-Guarnieri, M. A., Wright, S. L., & Johnson, B. (2013). Development and validation of a social media use integration scale. *Psychology of Popular Media Culture*, 2(1), 38-50. doi: 10.1037/a0030277.

- Jordaan, Y., & Van Heerden, G. (2017). Online privacy-related predictors of Facebook usage intensity. *Computers in Human Behavior, 70*, 90-96. doi:10.1016/j.chb.2016.12.048.
- Kamal, S., Chu, S.-C., & Pedram, M. (2013). Materialism, attitudes, and social media usage and their impact on purchase intention of luxury fashion goods among American and Arab young generations. *Journal of Interactive Advertising, 13*(1), 27-40. doi: 10.1080/15252019.2013.768052.
- Kapidzic, S. (2013). Narcissism as a predictor of motivations behind Facebook profile picture selection. *Cyberpsychology, Behavior, and Social Networking, 16*(1), 14-19.
- Kim, J. H., Kim, M.-S., & Nam, Y. (2010). An analysis of self-construals, motivations, Facebook use, and user satisfaction. *International Journal of Human-Computer Interaction, 26*(11-12), 1077-1099. doi: 10.1080/10447318.2010.516726.
- Kimpton, M., Campbell, M., Weigin, E. L., Orel, A., Wozencroft, K., & Whiteford, C. (2016). The Relation of Gender, Behavior, and Intimacy Development on Level of Facebook Addiction in Emerging Adults. *International Journal of Cyber Behavior, Psychology and Learning (IJCBL), 6*(2), 56-67. doi: 10.4018/IJCBL.2016040104.
- Kluesner, K. (2013). *Fairness perceptions of screening social networking sites for hiring decisions*. (Masters of Arts in Industrial and Organizational Psychology Masters), Middle Tennessee State University.
- Kuo, T., & Tang, H.-L. (2014). Relationships among personality traits, Facebook usages, and leisure activities – A case of Taiwanese college students. *Computers in Human Behavior, 31*, 13-19. doi: 10.1016/j.chb.2013.10.019.
- Lampe, C., Wohn, D., Vitak, J., Ellison, N., & Wash, R. (2011). Student use of Facebook for organizing collaborative classroom activities. *International Journal of Computer-Supported Collaborative Learning, 6*(3), 329-347. doi: 10.1007/s11412-011-9115-y.

- Lin, K.-Y., & Lu, H.-P. (2011). Intention to continue using Facebook fan pages from the perspective of social capital theory. *Cyberpsychology, Behavior, and Social Networking*, 14(10), 565-570. doi: 10.1089/cyber.2010.0472.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28-51.
- Lou, L. L., Yan, Z., Nickerson, A., & McMorris, R. (2012). An examination of the reciprocal relationship of loneliness and Facebook use among first-year college students. *Journal of Educational Computing Research*, 46(1), 105-117. doi: 10.2190/EC.46.1.e.
- Lyon, T. R. (2015). *An investigation of the new media and conscientiousness in relation to attitudes about jury service*. Argosy University, Los Angeles.
- Mahoney, T. Q. (2013). *Exploring the Influence of Social Media on Future Intentions of Charity Sport Participants*. University of Louisville.
- Meshi, D., Morawetz, C., & Heekeren, H. R. (2013). Nucleus accumbens response to gains in reputation for the self relative to gains for others predicts social media use. *Frontiers in Human Neuroscience*, 7, 1-11. doi: 10.3389/fnhum.2013.00439.
- Mir, A. (2014). Effects of Pre-Purchase Search Motivation on User Attitudes toward Online Social Network Advertising: A Case of University Students. *Journal of Competitiveness*, 6(2). doi: 10.7441/joc.2014.02.04.
- Mostafa, G., & Mahmood, M. (2015). The rise of the BRICS and their challenge to the G7. *International Journal of Emerging Markets*, 10(1), 156-170. doi: 10.1108/IJOEM-07-2012-0063.
- Orosz, G., Tóth-Király, I., & Bőthe, B. (2015). Four facets of Facebook intensity — The development of the Multidimensional Facebook Intensity Scale. *Personality and Individual Differences*, 100, 95-104. doi: 10.1016/j.paid.2015.11.038.

- Pabian, S., De Backer, C. J. S., & Vandebosch, H. (2015). Dark Triad personality traits and adolescent cyber-aggression. *Personality and Individual Differences, 75*(0), 41-46. doi: 10.1016/j.paid.2014.11.015.
- Pallant, J. (2013). *SPSS survival manual*. Berkshire: McGraw-Hill Education (UK).
- Pérez-Latre, F. J., Portilla, I., & Blanco, C. S. (2011). Social networks, media and audiences: A literature review. *Comunicación y Sociedad, 24*(1), 63.
- Petrocchi, N., Asnaani, A., Martinez, A. P., Nadkarni, A., & Hofmann, S. G. (2015). Differences between people who use only Facebook and those who use Facebook plus Twitter. *International Journal of Human-Computer Interaction, 31*(2), 157-165. doi: 10.1080/10447318.2014.986640.
- Pettijohn, T. F., LaPiene, K. E., & Horting, A. L. (2012). Relationships between Facebook intensity, friendship contingent self-esteem, and personality in US college students. *Cyberpsychology, 6*(1), 1-7. doi: 10.5817/CP2012-1-2.
- Phua, J., & Ahn, S. J. (2014). Explicating the 'like' on Facebook brand pages: The effect of intensity of Facebook use, number of overall 'likes', and number of friends' 'likes' on consumers' brand outcomes. *Journal of Marketing Communications*, (Epub ahead of print, 30 July 2014), 1-16. doi: 10.1080/13527266.2014.941000.
- Przepiorka, A., & Blachnio, A. (2016). Time perspective in Internet and Facebook addiction. *Computers in Human Behavior, 60*, 13-18. doi: 10.1016/j.chb.2016.02.045.
- Przepiorka, A., Blachnio, A., & Díaz-Morales, J. F. (2016). Problematic Facebook use and procrastination. *Computers in Human Behavior, 65*, 59-64. doi: 10.1016/j.chb.2016.08.022.

- Putnam, R. D. (2000). Bowling Alone: America's Declining Social Capital. In L. Crothers & C. Lockhart (Eds.), *Culture and Politics: A Reader* (pp. 223-234). New York: Palgrave Macmillan US.
- Quinlan, C., Babin, B., Carr, J., Griffin, M., Zikmund, W. G., & Grene, J. (2011). *Business research methods* (1st ed.): South-Western Cengage Learning Andover.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25(2), 578-586. doi: 10.1016/j.chb.2008.12.024.
- Savci, M., & Aysan, F. (2016). Relationship between Impulsivity, Social Media Usage and Loneliness. *Educational Process: International Journal*, 5(2), 106-115. doi: 10.12973/edupij.2016.52.2.
- Scott, H. (2015). *Is social media use related to sleep quality, self-esteem, anxiety and depression in adolescence?* University of Glasgow, Glasgow.
- Statista. (2016). Global social networks ranked by number of users. Retrieved from <https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>.
- Internet World Stats. (2016). Internet usage statistics for Africa. Retrieved from <http://www.internetworldstats.com/stats1.htm>.
- Steinfeld, C., DiMicco, J. M., Ellison, N. B., & Lampe, C. (2009, June 25 - 27). *Bowling online: Social networking and social capital within the organization*. Proceedings of the fourth international conference on Communities and Technologies, University Park, PA, USA.
- Tazghini, S., & Siedlecki, K. L. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior*, 29(3), 827-832. doi: 10.1016/j.chb.2012.11.010.

- Utz, S. (2015). Is LinkedIn making you more successful? The informational benefits derived from public social media. *New Media and Society*, 1-18. doi: 10.1177/1461444815604143..
- Weisen, S. R. (2016). *Relational-Interdependence and Life Transitions in College: Study Abroad, First-Year, and International Students*. (Honors thesis), St. John's University/College of St. Benedict.
- Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science*, 7(3), 203-220. doi: 10.1177/1745691612442904.
- Winschiers-Theophilus, H. and Bidwell, N. J. 2013. Toward an Afro-Centric indigenous HCI paradigm. *International Journal of Human-Computer Interaction*, 29(4): 243-255. doi: 10.1080/10447318.2013.765763.
- Woods, H. C., & Scott, H. (2016). # Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence*, 51 41-49. doi: 10.1016/j.adolescence.2016.05.008.
- Wu, J., Sun, H., & Tan, Y. (2013). Social media research: A review. *Journal of Systems Science and Systems Engineering*, 22(3), 257-282.
- Yaacoub, H. K., & Najjar, R. (2016). Effect of Facebook friends on each other's consumption patterns. *Journal of Competitiveness Studies*, 24(3), 177-193.

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