

Networking via LinkedIn: An examination of usage and career benefits

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ABSTRACT

Even though networking has been identified as an important career self-management behavior, research to date has been limited to traditional channels of communication. With the advent of social media, networking opportunities have expanded to a new set of technology-based methods. However, very little is known about the benefits of using such social networking platforms, especially LinkedIn, which was designed for professional purposes. Integrating research on networking and careers with research on social networking sites, we introduce a model relating extraversion and protean career orientation via networking ability to social networking site usage (i.e., number of contacts and frequency of usage) and a variety of career benefits (e.g., career sponsorship). Using a mixed-mode survey, data were collected from 322 working professionals enrolled in business-related graduate programs, of which 133 used LinkedIn as their predominant professional networking tool. In addition, a subset of the sample using LinkedIn granted us permission to access their LinkedIn profile, which we coded for nine characteristics. In general, data from the survey responses as well as the LinkedIn profiles supported the proposed model. Results also showed that it was not the number of contacts one had, but the frequency of usage, that mattered for the receipt of career benefits.

1. Introduction

LinkedIn is the most popular professional social networking site (SNS) (Totoro, 2017) with over 660 million users in 200 countries (LinkedIn, 2019a). Despite the increasing use of SNSs such as LinkedIn, few academic studies have examined the possible career benefits of using these sites (see Forret's, 2018 review). Scholars have shown that networking is an important career self-management strategy associated with career success (Blickle et al., 2012; Forret & Dougherty, 2004; Kim, 2013; Ng & Feldman, 2014; Spurr, Hirschi, & Dries, 2019; Wolff & Moser, 2009, 2010). Yet, these studies focused on networking through face-to-face interactions, neglecting the use of networking via SNSs. Research that has been completed on SNSs has focused on personal, rather than professional, use of these sites, with most of these studies examining Facebook rather than LinkedIn (Zhang & Leung, 2015). Nevertheless, writers in the popular press regularly tout the benefits of networking through SNSs to find jobs (e.g., Grillo, 2015; Quast, 2015) and some consider SNSs the key to networking for introverts (Johnston Osburn, 2018; Stewart, 2015). More evidence-based

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research is needed to learn how individuals actually use LinkedIn for professional networking and how their social media profile may influence the career benefits received.

Drawing from the networking literature (Ferris et al., 2005; Forret & Dougherty, 2001, 2004; Wolff & Moser, 2009, 2010), we propose a model relating extraversion and protean career orientation via networking ability to SNS use (i.e., number of contacts and frequency of usage) and to a number of career benefits (e.g., career sponsorship, job search assistance). This study makes three contributions to the literature. First, we take an initial step in furthering our understanding of how individuals use SNSs for professional purposes. Specifically, this study focuses on the relationship between established career concepts (e.g., protean career orientation, networking ability) and the use of LinkedIn. The handful of prior studies on SNSs have typically been published in communication journals and focused on concepts outside of the careers literature (e.g., Barrufaldi, Di Maio, & Landoni, 2017; Nikitkov & Sainty, 2014; Utz, 2016). As LinkedIn represents the largest network for individuals interested in navigating their professional lives (LinkedIn, 2019b), it is timely for scholars to extend concepts and knowledge from the careers literature to examine SNS usage thereby bridging these largely disconnected research streams.

Second, this study answers repeated calls for more research on how individuals use SNSs in pursuit of career outcomes (Sullivan & Al Ariss, 2019; Treem & Leonardi, 2012; Utz & Breuer, 2016). We develop a model relating well-known career concepts with career benefits based on LinkedIn usage; the findings based upon this model offer both practical and theoretical implications on the use of SNSs for professional purposes. With the enormous number of individuals using LinkedIn, scholars and counselors need more knowledge of how SNS usage allows or eases career self-management. Third, this study investigates a novel topic using multisource data. We not only examine self-reports of LinkedIn use, but also utilize data from professionals' LinkedIn profiles to provide further corroboration of our proposed model in a mixed-mode survey (Dillman, Smyth, & Christian, 2014).

1.1. Networking and social networking sites

Networking is defined as “individuals' attempts to develop and maintain relationships with others who have the potential to assist them in their work or career” (Forret & Dougherty, 2001, p. 284). Research has found that networking is positively related to many career outcomes, including job search success (Van Hove, Van Hooft, & Lievens, 2009; Wolff & Moser, 2010), number of promotions (Forret & Dougherty, 2004; Michael & Yukl, 1993; Wolff & Moser, 2010), job performance (Blickle et al., 2012; Thompson, 2005), salary level (Blickle et al., 2012; Bozionelos, 2008; Forret & Dougherty, 2004), and rate of salary growth over time (Wolff & Moser, 2009). Studies have also found that networking is positively associated with career satisfaction (Forret & Dougherty, 2004; Wolff & Moser, 2009), perceptions of marketability (Eby, Butts, & Lockwood, 2003), and affective commitment (McCallum, Forret, & Wolff, 2014).

However, we know relatively little about the potential benefits of networking using SNSs. Scale items typically used to measure networking either explicitly refer to face-to-face interactions or do not specify any communication channel, and at best might include online networking to some extent. The lack of measures that specifically focus on online networking is surprising given that platforms such as LinkedIn and Facebook are purposely designed to foster and enhance social interactions (Boyd & Ellison, 2008; Cheung & Lee, 2010; Heidemann, Klier, & Probst, 2012). In this study, we address this research gap by explicitly measuring the use of and benefits associated with LinkedIn.

In the communications literature, Boyd and Ellison (2008) describe SNSs as “web-based services that allow individuals to (1) construct a (semi-) public 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” (p. 211). According to Treem and Leonardi's (2012) affordances framework, SNSs provide a specific set of action possibilities to users. SNSs afford *visibility* of content and people (e.g., posting expertise or a new responsibility), *persistence* (i.e., ability to retrieve postings), *editability* of content, and *association* of people (i.e., the explicit display of people's connections). SNSs are unique as they provide all four affordances, whereas other media do not. For example, e-mail affords persistence and editability, but not visibility and association.

SNSs support social relationships in three main ways. First, SNSs may help individuals develop weak ties with those outside of their close-knit social circle, who can be called upon for assistance (Granovetter, 1983). SNSs permit individuals to easily connect with people from different companies and backgrounds who possess specific resources or similar interests (Arruda, 2014; Heidemann et al., 2012), but who they probably would not have connected with otherwise (Barrufaldi et al., 2017). Second, SNSs provide an additional communication channel that may help individuals reinforce strong ties as some argue that building new contacts is rare compared to maintaining relationships with existing contacts on SNSs (Kumar, Novak, & Tomkins, 2006; Zhang & Leung, 2015; see also Utz & Breuer, 2016). Third, SNSs also allow users to browse the profiles of their contacts to learn about others' weak ties and potentially make a connection. Furthermore, the news stream provided by the algorithms of SNSs creates ambient awareness of what resources contacts might possess (Burke, Kraut, & Marlow, 2011; Leonardi, 2015; Schmidt, Lelchook, & Martin, 2016).

1.2. Research on professional networking using social networking sites

Despite the growth of SNSs, relatively little research has been completed on the use of these sites for professional reasons. Most studies have examined the determinants, usage, and consequences of social networking for personal aims. Zhang and Leung's (2015) review of research on SNSs from 2006 to 2011 found that the majority of studies examined Facebook (44%) and used student samples (54%). Less than 10% of studies have examined LinkedIn, the largest social networking site for professionals.

The few studies that focused on professional usage of SNSs show that it is associated with career outcomes and resource attainment. With regard to career outcomes, Nikitkov and Sainty (2014) demonstrated in a sample of accounting alumni that both

possession of a LinkedIn account and the number of LinkedIn contacts were positively related to career outcomes such as rank in an organization. These relationships were absent or even negative for other SNSs such as Facebook, Twitter, and MySpace. In another study, [Sullivan, Forret, and Agrawal \(2014\)](#) found that the assistance unemployed and employed job seekers received from social networking contacts on sites such as Facebook and LinkedIn were related to obtaining job interviews, but not job offers. [Barrufaldi et al. \(2017\)](#) showed that for engineering PhDs, membership and number of contacts on LinkedIn were related to job moves into industry positions.

With regard to resource attainment, [Utz \(2016\)](#) found that LinkedIn and Twitter membership were associated with higher informational benefits, whereas Facebook membership was negatively related to informational benefits. Active behaviors, such as posting professional content and “strategic networking” (a measure limited to using SNSs to invite and build new online contacts) were positively related to information benefits for all three SNSs. In addition, for Facebook and LinkedIn, activities in groups (a feature not available on Twitter) as well as the number of contacts predicted informational benefits. Passive reading of posts yielded informational benefits only for LinkedIn use, presumably because Facebook posts include much on individuals' leisure activities. In a follow-up study, [Utz and Breuer \(2016\)](#) found longitudinal effects only for strategic networking on informational benefits; they concluded that other social networking activities “affect informational benefits concurrently, but not several months later” (p. 11). In sum, prior research provides initial evidence that usage of SNSs is associated with resource attainment and career outcomes.

1.3. Model of social networking site usage from a careers perspective

To further understand the potential career benefits of the usage of SNSs, it is important to consider if key career constructs influence the use of these sites. While prior studies on SNSs have been based upon the social media and communication literatures, instead we use a careers lens as a starting point and apply career theory and research to the study of SNSs. Specifically, we consider the theory on career competencies, in particular, the knowing-whom career competency of the intelligent career ([Arthur, Inkson, & Pringle, 1999](#); [Arthur, Khapova, & Richardson, 2017](#)). The knowing-whom career competency refers to an individual's ability to relate to other people, establish contacts, and develop professional networks both within and outside of organizations ([Akkermans, Brenninkmeijer, Huibers, & Blonk, 2013](#); [Arthur et al., 1999](#); [Beigi, Shirmohammadi, & Arthur, 2018](#)). This competency helps individuals obtain information and resources easier and faster ([Eby et al., 2003](#)), and may provide opportunities such as jobs or challenging assignments as knowing many contacts increases a person's visibility ([Forret & Dougherty, 2001](#)) and reputation ([Parker, Khapova, & Arthur, 2009](#)).

Studies employing the intelligent career framework have supported the importance of the knowing-whom competency for career success ([Suutari & Mäkelä, 2007](#); [Van den Born & Van Witteloostuijn, 2013](#)). For example, the distinguished academics employed at a U.S. university interviewed by [Beigi et al. \(2018\)](#) discussed how collaborating with current and former doctoral students and networking at professional conferences contributed to their research achievements. The academics noted how these relationships, especially with international colleagues, offered them unique experiences and access to resources they lacked. Similarly, [Beigi, Nayyeri, and Shirmohammadi \(2019\)](#) delineated how the relationships between female internet taxi drivers in Tehran and family members afforded vital resources, including the use of a car and money for insurance premiums, necessary for job performance. [Dickmann and Watson \(2017\)](#) found that expatriates working in hostile environments (e.g., those characterized by high risks to their person, health, or family) believed that these postings allowed for the more rapid “maximization” of their knowing-whom competency. Due to the high stakes involved in these risky assignments, the expatriates were able to quickly build networks that included high-ranking government officials in both the home and host country.

Drawing from past research on the knowing-whom competency and heeding [Utz and Breuer's \(2016\)](#) call for research on personality differences and the professional use of SNSs, we examine how dispositional and career constructs are related to LinkedIn usage and the career benefits individuals may obtain. [Fig. 1](#) depicts the proposed conceptual model.

With regard to usage of SNSs, studies in general support a Matthew effect (i.e., the biblical “who has will be given more,” cf. Matthew 25:29) in that those who are socially adept at and active in offline social activities are also more likely to use SNSs. For example, studies have found that Facebook users (vs. non-users) are more extraverted ([Correa, Hinsley, & Gil de Zúñiga, 2010](#)) and have higher standing in sensation seeking ([Sheldon, 2008](#)). In this study, we suggest that extraverted individuals possess an advantage in developing their knowing-whom career competency in light of the greater ease they experience in building relationships. Compared to other traits from the Big Five Personality model, extraversion exhibits the strongest relationship with networking

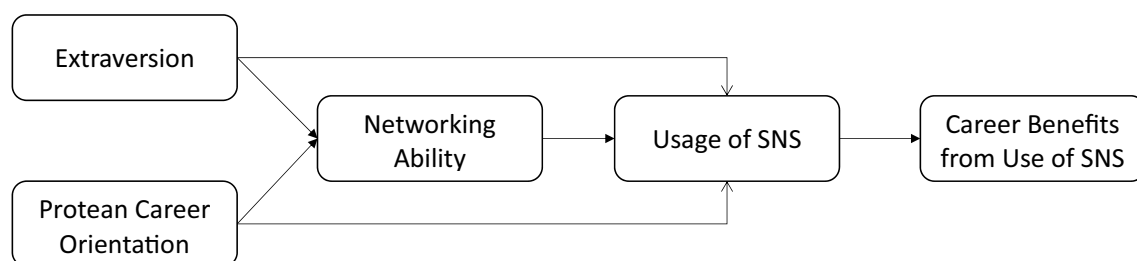


Fig. 1. Conceptual model of predictors and consequences of professional usage of SNSs.

($r_c = 0.35$, see Bendella & Wolff, 2019). Likewise, research has found positive relationships between extraversion and other measures of social activity with general use of SNSs (e.g., Correa et al., 2010). Here we extend these past research findings by suggesting that extraverts, who feel comfortable around others and prefer social activities (Bendella & Wolff, 2019), are also more likely to use SNSs for professional purposes.

Hypothesis 1. Extraversion is positively related to professional usage of social networking sites.

Effective usage of SNSs may also be important to protean careerists. Individuals with a high protean career orientation do not rely on an organization or others to manage their career; instead, they chart their own destiny (Hall, 2002; Hall & Mirvis, 1996; Waters, Briscoe, Hall, & Wang, 2014). Quantitative research has found that the protean career orientation is related to the use of social capital (Grimland, Vigoda-Gadot, & Baruch, 2012), networking as a job search behavior (Waters et al., 2014), and networking and other proactive career behaviors (e.g., career self-management) (De Vos & Soens, 2008; Herrmann, Hirschi, & Baruch, 2015). Qualitative research has found that protean careerists use networking to obtain employment (Bridgstock, 2005) as well as to get work done and rise through the ranks while working in a foreign country (Crowley-Henry & Weir, 2007).

Because those with a higher protean career orientation are more self-directed in their careers (Briscoe & Hall, 2006), we expect they will actively seek to build relationships with others who may have the potential to provide assistance or career opportunities. Prior research suggests that protean careerists are likely to recognize the importance of developing their knowing-whom competency (e.g., De Vos & Soens, 2008; Herrmann et al., 2015), and hence will be more motivated to build their network of contacts. Because SNSs provide another tool to support these behaviors, we propose that those with a higher protean career orientation will be more likely to use SNSs for professional purposes.

Hypothesis 2. Protean career orientation is positively related to professional usage of social networking sites.

In addition to extraversion and protean career orientation, we propose networking ability is related to usage of SNSs. In contrast to a behavioral perspective on networking (e.g., Porter & Woo, 2015), networking ability denotes the capability or competency to develop diverse social networks and utilize them to one's advantage (Akkermans et al., 2013; Ferris et al., 2005). We chose this ability perspective to clearly distinguish networking (i.e., competency) from actual usage of SNSs (i.e., behavior) on a conceptual level. Individuals higher in networking ability are adept at developing and maintaining contacts (Ferris et al., 2007) and are better equipped to influence decisions within their coalitions by virtue of their connections and alliances (Ferris et al., 2005). We thus suggest that individuals with higher networking abilities are more likely to use SNSs, for example, to search for people with specific resources, to glean news from browsing contacts' profiles, and to directly communicate with their contacts.

Hypothesis 3. Networking ability is positively related to professional usage of social networking sites.

In taking the theoretical proximity of the three constructs to usage of SNSs into account, we predict that networking ability mediates the relationship between extraversion and professional usage of SNSs as well as the relationship between protean career orientation and professional usage of SNSs. Research shows that extraversion affects networking behavior because it facilitates social activities (Bendella & Wolff, 2019). Likewise, De Vos and Soens (2008) report that a protean orientation affects networking and Hall, Yip, and Doiron (2018) argue that individuals with a higher protean career orientation will develop stronger networking ability in order to proactively manage their career.

Hypothesis 4. Networking ability mediates the relationship between extraversion and professional usage of social networking sites.

Hypothesis 5. Networking ability mediates the relationship between protean career orientation and professional usage of social networking sites.

In line with prior research (Burke, Marlow, & Lento, 2010; Utz, 2016), we distinguish between active and passive use in describing professional usage of SNSs. It is important to note that we explicitly focus on indicators of *use* of SNSs that are at the discretion of the individual. We acknowledge that SNSs contain more information (e.g., biographical information on education, previous employers, see e.g., Roulin & Levashina, 2019) that reflects career histories, rather than current use. While career histories affect network structure (e.g., former colleagues) they are static and cannot be changed by current behaviors. Our measures of professional usage of SNSs focus on more proximal indicators and thus how individual differences may be related to current usage.

Active use consists of behaviors such as building new contacts, posting news about oneself, participating in groups, or communicating with others. Such behaviors foster visibility and self-presentation and include the active development of contacts (Barrufaldi et al., 2017; Utz, 2016). Number of contacts has been the most prominent indicator of active usage of SNSs and research on networking abilities has shown that, concerning traditional contacts, it yields larger and more diverse networks (Wolff & Moser, 2006). In contrast to this active development of relationships, passive use includes more consumptive behaviors, such as skimming the news stream provided by the algorithm or visiting contacts' personal pages. Leonardi (2015) argues that passive use enhances meta-knowledge of *who knows what* and *who knows whom* and thus creates ambient awareness. Utz (2016) further states that passive use might also create ambient intimacy and trust, and thus facilitates approaching contacts to attain resources. Passive use, ambient awareness, and trust can further develop one's knowing-whom career competency (Arthur et al., 1999; Inkson & Arthur, 2001).

While researchers have found numerous career benefits associated with the use of traditional face-to-face networking (Forret, 2018), little is known about the benefits of utilizing SNSs for professional gain. We anticipate that professional usage of SNSs will yield benefits similar to those from traditional contexts. In line with the notion of active usage, the number of contacts represents an indicator of social capital and provides individuals with opportunities to tap into resources held by their contacts. Research has

shown that traditional networking is associated with access to resources, information, and ideas from multiple sources that can help individuals to more effectively accomplish work tasks, gain entry to challenging projects and developmental experiences, and learn of job opportunities (Brass, 2004; Granovetter, 1995; Van Hoye et al., 2009). Furthermore, by passive usage, i.e., spending more time simply viewing updates and information about their contacts, individuals become more aware of what their contacts do and what resources they might possess. Hence, through their professional usage of SNSs, individuals should be able to obtain a broad array of benefits (e.g., job search assistance, career sponsorship) from the contacts they have developed.

Hypothesis 6. Professional usage of social networking sites will be positively related with networking benefits.

2. Method

2.1. Participants and procedure

We conducted a mixed-mode survey (Dillman et al., 2014) combining a paper and pencil survey with a request to collect additional data from the LinkedIn profiles of respondents. We surveyed graduate students attending evening classes at a private Midwestern U.S. university earning business administration or business-related (e.g., accounting, organizational leadership) degrees. According to Roulin and Levashina (2019), business students are a highly relevant group because they represent a significant proportion of platform users that LinkedIn is targeting for future growth. These students possessed a significant amount of work experience, and as they were aiming for an advanced degree, were actively involved in developing their careers. Two of the study's authors obtained permission to visit classes and invite students to participate in a survey on career attitudes and behaviors. The authors explained the purpose of the study, informed students that their participation was voluntary, and gave students a statement of informed consent to read. Students received a copy of the survey instrument along with an envelope to insert the survey for privacy, and completed the survey during class time. Of the 335 graduate students, there were 322 surveys returned for a response rate of 96%. We excluded 41 individuals because they worked fewer than 20 hours per week, and 12 individuals because they did not have any accounts on SNSs.

Participants indicated the social networking tool they used the most for their professional networking, with the options of LinkedIn, Facebook, and other (where participants could write in the social networking tool). Next, we asked participants to provide information on the benefits from this SNS. If participants were not a member of any SNS, or had a SNS account but did not use it for professional networking (e.g., they did not use it or used it for communications of a personal nature), they were asked to skip the questions pertaining to benefits received. The majority ($n = 133$) indicated they used LinkedIn the most for their online professional networking; some indicated using Facebook ($n = 56$) and a few used other SNS tools such as Yammer or Twitter for their professional networking. We compared those who used SNSs for professional networking ($n = 199$) with those who did not ($n = 70$) using logistic regression. Including our predictors of SNS usage (i.e., extraversion, protean career orientation, and networking ability) and some work variables (i.e., hours worked per week, years of work experience, number of employers in work history, organization level) and demographic variables (i.e., gender, age, children, marital status), we found that those who used SNSs for professional networking significantly differed from nonusers on only one variable. The users of SNSs had significantly higher protean career orientations than the nonusers. The odds ratio was 1.90, $z = 8.18$, $p = .003$.¹

As our focus was on professional usage of SNSs, we limited our analysis sample to the 133 participants who used LinkedIn for their professional social networking. There were 69 (53%) men and 62 (47%) women in the sample (2 missing values). The average age of respondents was 33.31 ($SD = 9.14$); slightly over half were married (55%) and had children (56%). They worked an average of 44.41 hours per week ($SD = 11.58$) and had an average of 12.13 years of full-time work experience ($SD = 9.37$).

In order to further corroborate the model, we obtained data from the LinkedIn profiles of a subset of the survey respondents. At the end of the survey instrument, we asked individuals for permission to view their LinkedIn profiles. Sixty-one individuals (46%) gave their permission, writing their names on the survey. Of these, three names were not identifiable and two had missing values in survey variables. To examine whether the resulting subsample of 56 individuals differed from those who did not permit us to access their LinkedIn profile, we conducted a logistic regression. We regressed permission vs. no permission (i.e., inclusion vs. exclusion into the profile data analyses) on our study predictors (extraversion, protean career orientation, and networking ability), a range of demographic (i.e., age, gender, marital status, children) and organizational variables (organizational tenure, years of work experience, organization level, hours worked per week, and number of employers in work history). None of these significantly predicted inclusion into the analyses.

2.2. Survey measures

2.2.1. Extraversion

We measured extraversion with John and associates' (John, Donahue, & Kentle, 1991; John, Naumann, & Soto, 2008) eight-item scale ($\alpha = 0.88$; all reliabilities refer to this study). Respondents indicated their level of agreement on a five-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*. A sample item is "I am someone who is talkative."

¹ We additionally compared the means for groups using specific SNSs (i.e., Linked, Facebook, other) with those not using SNSs for professional purposes. The dominant difference is between users vs. non-users ($d = 0.42$) and not between users of different SNSs (max $d = 0.11$).

2.2.2. Protean career orientation

We used Baruch's (2014) seven-item scale ($\alpha = 0.75$). Respondents indicated their level of agreement with items such as "For me, career success is how I am doing against my goals and values" on a seven-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*.

2.2.3. Networking ability

We employed Ferris et al.'s (2005) six-item scale ($\alpha = 0.90$). This scale assesses networking ability as opposed to networking behaviors (e.g., Forret & Dougherty, 2001) and is thus conceptually distinct from usage of SNSs that in part may be indicators of networking behaviors (e.g., Roulin & Levashina, 2019). Using a seven-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*, respondents indicated their level of agreement with items such as "I am good at building relationships with influential people at work."

2.2.4. Professional usage of SNSs

We constructed two indices that are typically used to assess SNS usage (e.g., Barrufaldi et al., 2017; Burke et al., 2011; Utz, 2016) and that have been found to sufficiently assess use intensity of SNSs (Burke et al., 2010). First, because this is an indicator of the extent to which people exploit SNSs to maintain and expand networks, we asked respondents to indicate their *number of contacts* on LinkedIn. In line with prior research, we log transformed this variable (adding 1 to incorporate zero contacts). Second, we asked respondents to indicate how many times per week and how many hours per week they used LinkedIn. Because these latter two variables were highly correlated, we averaged their z-scores (log-transformed after adding one to reduce skewness) into a single *frequency of usage* measure ($\alpha = 0.86$). Although self-report measures of usage were utilized, prior research has shown that these are reliable and exhibit negligible bias (Burke et al., 2010). In the present study, the correlation between self-reported number of contacts and the actual number collected from LinkedIn profiles (see LinkedIn profile measures below) was $r = 0.85$, $p < .001$.

2.2.5. Networking benefits

We used Forret and Dougherty's (1997) 38 item networking benefits scale. The stem of the networking benefits scale was modified slightly to state "Using this social networking tool, to what extent have your contacts..." Participants indicated their responses on a seven-point Likert scale from 1 = *not at all* to 7 = *to a very large extent*. The scale measures seven networking benefits: *work-related assistance* (seven items, e.g., "helped you accomplish your work faster," $\alpha = 0.92$); *career sponsorship* (seven items, e.g., "helped you get a salary increase," $\alpha = 0.91$); *social support* (five items, e.g., "provided you with emotional support," $\alpha = 0.91$); *job search assistance* (five items, e.g., "recommended you for a job," $\alpha = 0.91$); *business assistance* (six items, e.g., "provided you with new business or sales leads," $\alpha = 0.93$); *protection and political guidance* (five items, e.g., "helped you achieve political clout," $\alpha = 0.82$); and *information and ideas* (three items, e.g., "provided you with new ideas and knowledge," $\alpha = 0.93$).

To further corroborate the factorial validity of the scales, we conducted a confirmatory factor analysis (CFA) using MPlus 8.3 (Muthén & Muthén, 2019, robust ML estimation). As we did not expect differences in inter-item correlations across SNSs, we used all participants who indicated the SNS they used most for professional networking. A correlated seven-dimensional structure replicating the original structure reported by Forret and Dougherty (1997) fit the items well, $\chi^2(645) = 1185.944$, RMSEA = 0.067, CFI = 0.967, SRMR = 0.064.² The seven-factor model also fit significantly better than a single factor model, $\chi^2(665) = 2422.104$, RMSEA = 0.119, CFI = 0.894, SRMR = 0.103; $\Delta\chi^2(20) = 640.591$, $p < .001$.

2.2.6. LinkedIn profile measures

Even though prior research has shown that number of contacts and frequency of use typically suffice to examine usage of SNSs (e.g., Burke et al., 2010), we collected a wider range of variables based on individuals' LinkedIn profiles. There are many suggestions in the popular press for creating a social networking profile that will contribute to one's professional success (e.g., Arruda, 2014; Quast, 2015). Yet the relationship of profile content to other constructs has not been examined. We did not code items that reflect career histories (e.g., number of organizations worked) or outcomes (e.g., number of publications) as these are more important in recruitment settings (e.g., Roulin & Levashina, 2019). Instead, we chose to limit the data collected to those variables under more discretionary user control. The following nine characteristics were coded: photograph (0 = *no*, 1 = *yes*), number of connections, number of recommendations received, number of endorsements received, number of group memberships, and the number of organizations, influencers, volunteer organizations, and causes individuals followed. We used the log transformation (adding 1 to include zero counts) for the latter eight count variables, because they were highly skewed.

Lacking a strong theoretical rationale for the underlying structure of these variables, we conducted a principal components analysis with an oblique promax rotation ($Kappa = 4$, see e.g., Gorsuch, 1983) to identify profile dimensions. The scree plot as well as a parallel analysis (5000 random datasets, 99th percentile) indicated a two-dimensional solution. Rotated loadings are shown in Table 1. Component 1 has high loadings of variables indicating that users followed some entity to receive updates (i.e., organizations, influencers, volunteer organizations, and causes). We labeled this component "passive consumption," because following other entities represents a convenient way to keep up with these entities (e.g., their posts appear on users' news pages), and requires only a few clicks. This component appears closely related to the consumption and ambient awareness concepts (Leonardi, 2015) that refer to the

² One item assessing business assistance ("...helped you gain access to financial resources") had a negative error variance. We fixed this error variance at zero.

Table 1
Principal components solution (pattern matrix) for two-dimensional solution of LinkedIn profile data.

	Component 1 Passive consumption	Component 2 Active scope
Photo posted (0 = No, 1 = Yes)	−0.26	0.74
Log transformed counts		
Connections	0.09	0.83
Recommendations	0.13	0.35
Endorsements	−0.06	0.85
Group memberships	0.25	0.69
Organizations following	0.74	0.17
Influencers following	0.81	−0.00
Volunteer organizations following	0.93	−0.08
Causes following	0.88	−0.10

Note. $N = 58$. Factor loadings > 0.30 are in boldface. Promax rotation with $Kappa = 4$. Eigenvalues for the unrotated components are 3.99 and 1.64, respectively. Correlation between factors is $r = 0.41$.

more passive skimming of news. On component 2, having a photo on LinkedIn, the number of connections, recommendations, endorsements, and group memberships had high loadings. We labeled it “active scope,” because these variables require more effort and activity (e.g., building new connections). We computed component scores by averaging the standardized score for variables of each component. Reliabilities were acceptable with $\alpha = 0.87$ and $\alpha = 0.76$ for passive consumption and active scope, respectively. These two component scores were highly correlated with two comparable self-report variables (i.e., active scope and self-reported number of contacts: $r = 0.72$, $p < .001$; passive consumption and self-reported frequency of usage: $r = 0.68$, $p < .001$) and thus likely represent similar constructs.

2.3. Analyses

We used factor analyses to gauge the threat of common method variance of our survey data. As a first step, we employed Harman's single factor test examining the number of substantive factors. There were 13 eigenvalues > 1 indicating that a single (common method) factor is unlikely to account for the covariance structure of our survey items. Moreover, we used CFA to examine whether our hypothesized 12-factor model (i.e., extraversion, protean career orientation, networking ability, number of contacts and frequency of usage, and seven networking benefits) fit the data or whether items from closely related measures would be better represented by single constructs. A 12-factor CFA exhibited satisfactory model fit, $\chi^2(1765) = 2117.376$, $p < .001$, RMSEA = 0.039, CFI = 0.972, SRMR = 0.080. We also examined several alternative models with 11 factors, each collapsing two measures into a single factor. First, we examined whether networking ability and frequency of SNS usage form a unitary construct, because they both pertain to professional social contacts. Even though this model exhibited adequate fit, $\chi^2(1776) = 2296.735$, $p < .001$, RMSEA = 0.047, CFI = 0.959, SRMR = 0.092, its fit was significantly worse than that of the 12-factor model, $\Delta\chi^2(11) = 91.664$, $p < .001$. Also, modeling the number of LinkedIn contacts (i.e., a result of networking activities) and networking ability as a single factor significantly decreased model fit, $\Delta\chi^2(10) = 40.608$, $p < .001$.

Next, we examined whether networking ability and all seven networking benefits represented a single construct, but the resulting 5-factor model did not fit the data well, $\chi^2(1821) = 3535.455$, $p < .001$, RMSEA = 0.084, CFI = 0.864, SRMR = 0.130. To further examine whether networking ability and the benefits resulting from networking form a single factor, we used an 11-factor model where we collapsed networking ability and the most highly correlated benefit, business assistance, into a single factor. Although the resulting model exhibited adequate fit according to some indices, $\chi^2(1776) = 2728.972$, $p < .001$, RMSEA = 0.063, CFI = 0.925, SRMR = 0.111, it fit worse than our hypothesized 12-factor model, $\Delta\chi^2(11) = 211.859$, $p < .001$. In several other models, we also checked whether the variables for SNS usage and specific benefits form a single factor, but model fit was always significantly poorer than that of our 12-factor model. These analyses provide evidence for the factorial validity of our measures and that they represent discriminant constructs that are not dominated by common method variance.

To examine our study's hypotheses, we used path analysis as implemented in Mplus 8.3 (Muthen & Muthen, 2019, robust ML estimation). In the first step, we examined our hypothesized model and tested [Hypotheses 1 through 6](#). We used one-tailed tests of significance ($\alpha = 0.05$) for hypotheses that predicted a direction of effects and two-tailed tests otherwise. With these specifications, the power of our samples to detect medium-sized effects (i.e., $\beta = 0.30$) is 0.97 for the survey data ($N = 133$), and 0.75 for the LinkedIn profile data ($N = 56$). To test mediation, Mplus uses the indirect effects derived from the product of the path coefficients (denoted by $\alpha\beta$). We used nonparametric bootstrapping (10,000 bootstraps) and examined significance via the confidence intervals of the indirect effects. To maintain power in our mediation analyses of the LinkedIn profile data, we used 90% confidence intervals.

3. Results

[Table 2](#) contains the descriptive statistics and zero-order correlations of the study variables. Significant positive correlations were obtained between extraversion, protean career orientation, and networking ability. The number of contacts on LinkedIn and the frequency of usage of LinkedIn had significant positive correlations with both protean career orientation and networking ability;

Table 2
Descriptive statistics and correlations for study variables.

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Extraversion	3.42 (0.83)	–													
2. Protean career orientation	5.43 (0.70)	0.27 ^{††}	–												
3. Networking ability	5.08 (1.03)	0.43 ^{***}	0.41 ^{***}	–											
Networking benefits															
4. Work-related assistance	2.07 (1.09)	0.07	0.15 [†]	0.24 ^{†*}	–										
5. Career sponsorship	1.97 (1.16)	0.03	0.14	0.16 [†]	0.77 ^{***}	–									
6. Social support	2.33 (1.47)	0.02	0.11	0.14	0.67 ^{***}	0.68 ^{***}	–								
7. Job search assistance	2.72 (1.60)	–0.05	0.15 [†]	0.16 [†]	0.62 ^{***}	0.75 ^{***}	0.57 ^{***}	–							
8. Business assistance	1.79 (1.32)	0.13 ^{†*}	0.24 ^{†*}	0.31 ^{***}	0.63 ^{***}	0.52 ^{***}	0.39 ^{***}	0.58 ^{***}	–						
9. Political guidance	1.59 (0.93)	0.02 [†]	0.12 [†]	0.17 [†]	0.75 ^{***}	0.79 ^{***}	0.66 ^{***}	0.61 ^{***}	0.60 ^{***}	–					
10. Information & ideas Usage of LinkedIn	2.62 (1.70)	0.11	0.19 [†]	0.21 ^{†*}	0.64 ^{***}	0.65 ^{***}	0.54 ^{***}	0.61 ^{***}	0.55 ^{***}	0.63 ^{***}	–				
11. Number of contacts (log)	4.47 (1.25)	0.22 ^{†*}	0.18 [†]	0.29 ^{†*}	0.33 ^{***}	0.27 ^{†*}	0.15 [†]	0.24 ^{†*}	0.28 ^{†*}	0.23 [†]	0.26 ^{†*}	–			
12. Frequency of usage	–0.03 (0.91)	0.05	0.27 ^{†*}	0.30 ^{***}	0.52 ^{***}	0.47 ^{***}	0.27 ^{†*}	0.40 ^{***}	0.40 ^{***}	0.50 ^{***}	0.43 ^{***}	0.45 ^{***}	–		
LinkedIn profile data															
13. Active scope	0.03 (0.66)	0.15	0.21	0.52 ^{***}	0.31 ^{†*}	0.19	0.10	–0.06	0.30 [†]	0.12	0.10	0.72 ^{***}	0.25 [†]	–	
14. Passive consumption	0.00 (0.85)	0.02	0.07	0.16	0.39 ^{†*}	0.37 ^{†*}	0.16	0.08	0.39 ^{†*}	0.40 ^{†*}	0.30 [†]	0.50 ^{***}	0.68 ^{***}	0.42 ^{†*}	–

Note. 128 < N < 133 for all variables except the LinkedIn profile data where 57 < N < 58.

[†] p < .10.

* p < .05.

** p < .01.

*** p < .001.

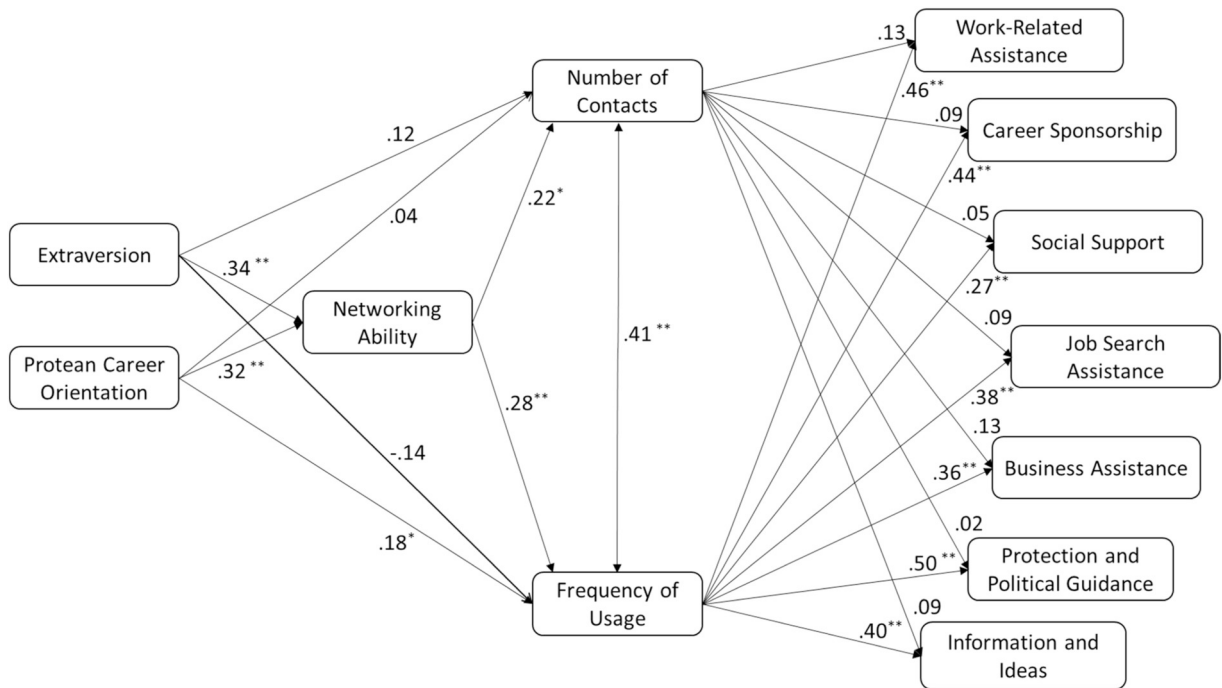


Fig. 2. Hypothesized model for determinants and consequences of usage of LinkedIn for the survey data ($N = 133$).

* $p < .05$. ** $p < .01$.

however, extraversion had a significant positive relationship with number of contacts but not frequency of usage. Both number of contacts and frequency of usage were positively and significantly related to the seven networking benefits, except for a marginally significant relationship between number of contacts and social support.

3.1. LinkedIn survey variables

We conducted path analyses to examine our model with regard to professional usage of SNSs. The hypothesized model, depicted in Fig. 2, fits the data well, $\chi^2(21) = 17.051$, $p = .708$, RMSEA = 0.00, CFI = 1.00, SRMR = 0.031. However, some hypothesized paths were not significant. **Hypothesis 1** predicts that extraversion positively affects professional usage of SNSs. **Hypothesis 1** received no support, as extraversion was neither significantly related to the number of contacts, $\beta = 0.12$, $SE = 0.09$, $p = .101$ (one-tailed) nor to the frequency of usage of LinkedIn, $\beta = -0.14$, $SE = 0.09$, $p = .128$. **Hypothesis 2**, that protean career orientation will be positively related to professional usage of SNSs, received partial support. Although the relationship between protean career orientation and number of contacts was not significant, $\beta = 0.04$, $SE = 0.09$, $p = .319$ (one-tailed), protean career orientation was significantly related to frequency of usage in the predicted direction, $\beta = 0.18$, $SE = 0.09$, $p = .021$ (one-tailed). **Hypothesis 3**, that networking ability will be positively related to professional usage of SNSs, received full support. Networking ability was significantly and positively related to both the number of contacts, $\beta = 0.22$, $SE = 0.10$, $p = .014$ (one-tailed) and frequency of usage, $\beta = 0.28$, $SE = 0.09$, $p < .01$ (one-tailed).

Next, we examined whether networking ability mediated the relationships between both extraversion and protean career orientation and professional usage of SNSs, as stated in **Hypotheses 4 and 5**. With regard to extraversion, networking ability mediated its relationship with number of contacts $\alpha\beta = 0.07$, 95%CI [0.014:0.148] and also with frequency of usage, $\alpha\beta = 0.096$, 95%CI [0.033:0.179]. Thus, **Hypothesis 4** received full support. Likewise, **Hypothesis 5** was fully supported. Networking ability mediated the relationship between protean career orientation and number of contacts, $\alpha\beta = 0.069$, 95%CI [0.012:0.148] as well as frequency of usage, $\alpha\beta = 0.090$, 95%CI [0.031:0.169]. In sum, extraversion and protean career orientation exhibited only one direct relationship (i.e., protean career orientation with frequency of usage), but exerted significant indirect effects via networking ability.

Hypothesis 6, that professional usage of SNSs will be positively related with networking benefits, was partially supported. Although none of the relationships between number of contacts on LinkedIn and the seven benefits reached statistical significance, frequency of LinkedIn usage was significantly related to all seven benefits at the $p < .01$ level, ranging from protection and political guidance ($\beta = 0.50$), work-related assistance ($\beta = 0.46$), career sponsorship ($\beta = 0.44$), information and ideas ($\beta = 0.40$), job search assistance ($\beta = 0.38$), business assistance ($\beta = 0.36$), to social support ($\beta = 0.27$).

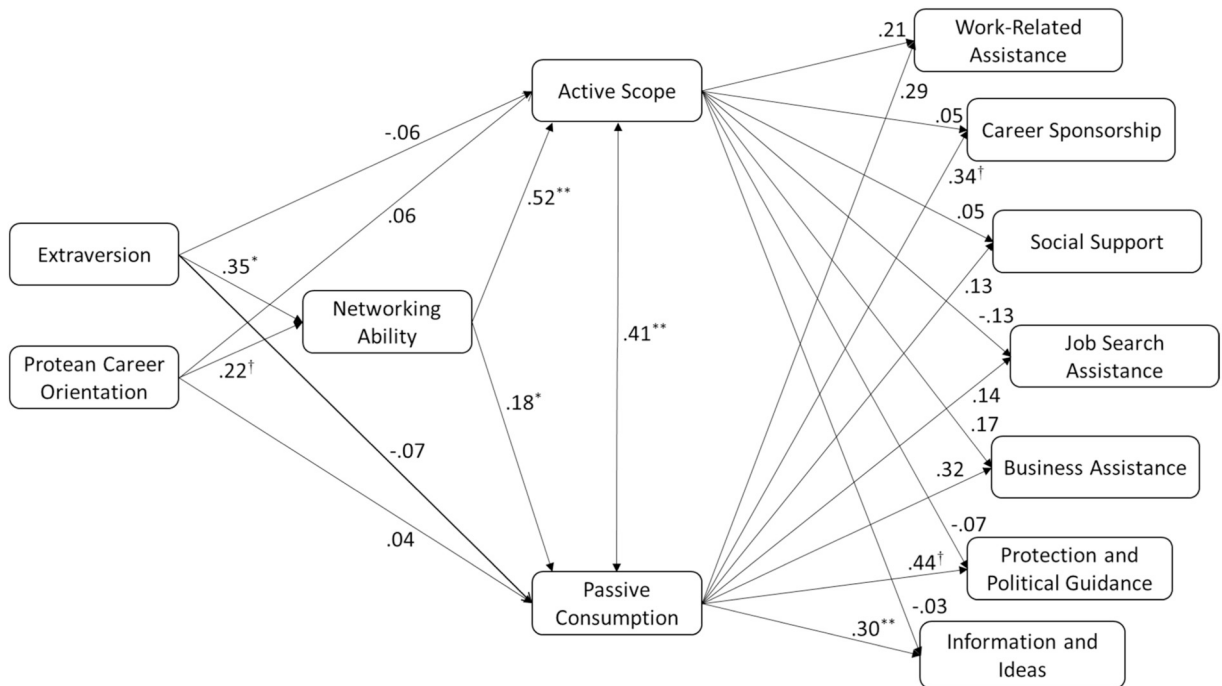


Fig. 3. Final model for determinants and consequences of professional usage of LinkedIn using profile data ($N = 56$).

* $p < .05$, (two-tailed). ** $p < .01$, (two-tailed). $^\dagger p < .05$, (one-tailed).

3.2. LinkedIn profile variables

Next, we used the LinkedIn profile data in an attempt to estimate our hypothesized model. Even though the sample size is small, the data can further corroborate our model using slightly different variables (i.e., the active scope and passive consumption variables) in part based upon non self-report data. Given that the LinkedIn profile data comes from a different source, this analysis focuses on the validity of professional usage of LinkedIn and its relationship with antecedents and networking benefits. Again, the hypothesized model fit the data well, $\chi^2(21) = 27.591$, $p = .152$, $RMSEA = 0.075$, $CFI = 0.953$, $SRMR = 0.077$.

Fig. 3 shows the resulting model. **Hypotheses 1 and 2** received no support as neither extraversion nor protean career orientation were significantly related to the active scope and passive consumption variables. However, in support of **Hypothesis 3**, networking ability was significantly related to both SNS variables, active scope: $\beta = 0.52$, $SE = 0.11$, $p < .001$ (one-tailed), and passive consumption: $\beta = 0.18$, $SE = 0.08$, $p = .014$ (one-tailed). Also, **Hypothesis 4** was fully supported. Networking ability mediated the relationship of extraversion with both active scope and passive consumption. Specifically, the standardized indirect effect of extraversion via networking ability on active scope was $\alpha\beta = 0.18$, 90%CI [0.043:0.323], and $\alpha\beta = 0.064$, 90%CI [0.004:0.152] for passive consumption. **Hypothesis 5** received only partial support. While the indirect effect of protean career orientation on active scope via networking ability was significant, $\alpha\beta = 0.116$, 90%CI [0.008:0.236], the indirect effect on passive consumption failed to reach significance, $\alpha\beta = 0.041$, 90%CI [-0.001:0.114].

There was partial support for a relationship between professional usage of SNSs and networking benefits as predicted in **Hypothesis 6**. Passive consumption was significantly related to career sponsorship, $\beta = 0.34$, $SE = 0.19$, $p = .035$ (one-tailed), protection and political guidance, $\beta = 0.44$, $SE = 0.24$, $p = .034$ (one-tailed), and information and ideas, $\beta = 0.30$, $SE = 0.11$, $p = .004$ (one-tailed). Passive consumption was also marginally related to work-related assistance, $\beta = 0.29$, $SE = 0.20$, $p = .076$ (one-tailed) and business assistance, $\beta = 0.32$, $SE = 0.22$, $p = .075$ (one-tailed). Although there were no significant relationships between active scope and the networking benefits, active scope did exhibit a marginally significant relationship with both business assistance, $\beta = 0.17$, $SE = 0.11$, $p = .055$ (one-tailed) and work-related assistance, $\beta = 0.21$, $SE = 0.13$, $p = .058$ (one-tailed). The LinkedIn profile variables were unrelated to both social support and job search assistance.

Taken together, these findings from the LinkedIn profile data further support and refine our model. Networking ability is related to LinkedIn measures from both survey and profile data sources. Moreover, networking ability mediates the relationship of extraversion and protean career orientation on professional usage of LinkedIn. Interestingly, both the frequency of usage and passive consumption measures were more strongly related to networking benefits than the number of contacts and active scope measures.

4. Discussion

This study answers calls for more empirical research on the potential benefits of networking using SNSs (Forret, 2018; Sullivan &

Al Ariss, 2019). With the digital revolution, SNSs provide opportunities to network, that is, to establish, maintain, and benefit from professional relationships electronically. We argued that SNSs yield specific advantages such as visibility, articulation of connections, and the ability to browse news posted by one's connections (Boyd & Ellison, 2008). Although scholars have studied how organizations use these sites to evaluate job applicants (e.g., Roulin & Levashina, 2019) and studies have shown how these sites impact nonwork aspects of our lives (e.g., stress, depression) (Wilson, Gosling, & Graham, 2012), little research has examined whether SNSs can have a beneficial impact on one's career (Forret, 2018; Nikitkov & Sainty, 2014; Sullivan & Baruch, 2009). Those who utilize social media effectively should be able to enhance their knowing-whom competency (Arthur et al., 2017) by expanding and developing their professional network. Moreover, through passive consumption behaviors, SNSs can help individuals know whom to ask when they need particular advice, expertise, or resources. As the work environment has become more boundaryless (Arthur & Rousseau, 1996; Sullivan & Arthur, 2006), it is essential that we understand how individuals are using SNSs in their efforts to navigate an increasingly complex career landscape.

Our results showed that extraversion and a protean career orientation significantly predicted networking ability, which in turn predicted both the number of contacts on LinkedIn and the frequency of LinkedIn usage. Networking ability is an important mediator of the above relationships. Because extraversion has consistently been found to be related to face-to-face networking behavior (Bendella & Wolff, 2019; Forret & Dougherty, 2001; Van Hove et al., 2009), it is noteworthy that extraversion was indirectly related to number of contacts and frequency of LinkedIn usage, demonstrating the importance of extraversion for networking online as well as in-person. This finding stands in contrast to recent popular writing that online networking is the great equalizer for introverts (Johnston Osburn, 2018; Stewart, 2015) and provides a firmer evidence-based perspective on personality and use of SNSs. In addition, it is notable that the frequently used networking ability scale, which was developed before the widespread usage of SNSs, was broad enough to capture these relationships indicating that it is to some extent independent from media channels and appropriate to use when examining in-person or online networking. Moreover, those with a stronger protean career orientation should be particularly motivated to use social media to further develop their knowing-whom competency (Arthur et al., 1999; Inkson & Arthur, 2001), and may find networking using SNSs helps them adjust to the realities of the marketplace quicker and more efficiently (Briscoe & Hall, 2006).

Furthermore, this study's results demonstrate that networking online is associated with a wide variety of career benefits. Frequency of LinkedIn usage was significantly related with all seven of the networking benefits in the survey data. Although relationships were weaker for the LinkedIn profile data (possibly due to the small sample size), there were significant findings between passive consumption and the receipt of protection and political guidance, career sponsorship, and information and ideas. Taking only effect size into account, there appears to be a hierarchy of available benefits, where those referring to work and career resources or information and ideas represent medium to strong effects and might be more easily attainable from networking using SNSs. Job search assistance may be harder to gauge in light of the lower frequency in which individuals embark on a job search. Furthermore, although research has found networking to be a source of social support (e.g., McCallum-Ferguson & Forret, 2018), the lower effects for social support may indicate it might be more available from richer face-to-face interactions. Strong ties that typically yield social support likely represent only a small number of an individual's LinkedIn contacts. Clarification of the availability of social support and its dependence on communication channels is needed.

Our findings further show that while the number of contacts may be a highly salient feature of LinkedIn profiles, it is not a dominant predictor of benefits attainment. This held for the self-reported as well as for the active scope measure of the profile data, which included the number of connections. Many contacts may be more or less dormant ties as opposed to weak ties that require a minimum of exchange. Rather, while a high number of contacts may represent the potential to reap benefits, it is usage frequency that drives benefit attainment on SNSs. It is thus not just knowing many contacts, but the visibility affordance (Treem & Leonardi, 2012) that allows for passive consumption, that is, the awareness of the knowledge, resources, and connections held by one's contacts that is important (i.e., what individuals would learn from listening to their face-to-face contacts).

SNSs provide a tremendous opportunity for individuals to learn information about their contacts, so they know who to approach when seeking assistance. This also implies that individuals need to broadcast their interests and activities on their SNS accounts so that others can skim through their information to see what is interesting or useful to them. While suggestions exist for creating a social networking profile (e.g., Arruda, 2014; Quast, 2015), our results indicate that more emphasis needs to be placed on learning about others on SNSs through passive consumption behaviors and how best to reach out to them. The relationships between frequency of LinkedIn usage and networking benefits were consistently higher in the survey data than the relationships with networking benefits using the passive consumption measure in the LinkedIn profile data. This may be due to the slightly different measures used, although their pattern was largely similar (i.e., Spearman's rank order correlation = 0.64). We acknowledge that the benefits from SNS usage might be understated due to some range restriction in our sample. Those who did not have a social networking account or who did not use their account for professional purposes had a significantly lower protean career orientation than the respondents in our sample who completed the networking benefits scale.

4.1. Limitations of the study

This study has several limitations that should be acknowledged. First, both the survey data and data from the Linked profiles were collected at one point in time from the participants. A longitudinal study of SNS usage may permit scholars to ascertain how quickly benefits are received, and whether the benefits received come from contacts with whom an individual has a stronger tie (Granovetter, 1983, 1995). Attempting to shadow an individual's social networking as it develops, perhaps through diary studies, would provide a more accurate picture of an individual's experiences and allow investigators to map out the type of online relationships that produce

the most benefits. Our use of both survey and LinkedIn profile data may alleviate concerns for common source bias given the pattern of results obtained from the objective (i.e., profile) data were similar to the self-report data, thus strengthening our findings.

Second, because this study used data collected from graduate students at a private Midwestern university, most of whom were in their early thirties, there may be issues with generalizability. Although including a broader range of participants might yield higher generalizability, generalizability is only limited if the sample of working business students is different from other groups of LinkedIn users (e.g., different norms in different professions). If such differences exist, sampling additional groups would be of little help as it would introduce variance that needs to be explained (i.e., controlled). While additional variance might evade problems of range restriction, range restriction typically attenuates relationships and this makes our findings somewhat conservative. With these considerations and our wish to focus on relationships rather than group differences, we decided not to broaden the sample, recognizing that the findings may not generalize to individuals with less education or less access to technology. Given that the study's participants were mostly in their 20s and 30s and in business-related fields, it is likely they may have been more familiar with and comfortable using SNSs. Future studies might examine how SNS usage and the benefits obtained differ for individuals with varying levels of knowledge of social media.

Third, although we expect our results would generalize to those using other professional social networking platforms besides LinkedIn, more research is needed to make that determination. We focused on LinkedIn in light of its popularity and widespread use. Given that LinkedIn is marketed as the professional SNS, we were surprised that 56 of our participants reported using Facebook the most for their professional networking. SNSs differ in their architecture and may restrict or ease specific usages (Papacharissi, 2009; Utz, 2016). For example, LinkedIn portrays user information in categories similar to a resume whereas Facebook provides more personal categories (e.g., relationship status). Imitating business etiquette, LinkedIn – as opposed to Facebook – provides functions to introduce, recommend, or endorse skills of a contact. Facebook is more casual, allowing people to “poke” their friends. Future research might consider the costs and benefits of using a single SNS such as Facebook for both personal and professional purposes.

4.2. Directions for future research

Much more research is needed on the usefulness of SNSs as career development tools, and there are numerous opportunities for future studies. First, it is unknown whether traditional face-to-face networking, networking using SNSs, or a combination of the two is the most effective for career enhancement purposes. We expect that a ‘Matthew effect’ may occur, such that those who are adept at networking face-to-face in general will be more active and better connected using their SNS accounts and attain more benefits from SNSs. Similar to findings for the importance of extraversion for face-to-face networking, those higher in extraversion had greater networking ability, which was related to number of contacts and frequency of usage. Those higher in introversion who are typically uncomfortable with face-to-face networking may also feel discomfort when it comes to using SNSs. We also note that research on face-to-face networking may benefit from examining concepts such as “passive consumption” and “ambient awareness” that point to under-studied issues in this research field.

Our results also show that the number of online contacts is not comparable to what is often assessed in studies examining traditional social network data where individuals are asked to list names in response to a question, e.g., “In the last 6 months, who has given you strategic information?” Individuals can be connected with others on SNSs with simply a click. For example, in our study the average number of contacts was 226 people (213 according to the profile data). Measuring the size of an individual's social network for career purposes is difficult; studies examining face-to-face networking effectiveness may underestimate the size of an individual's network and studies investigating SNSs may overestimate the size (i.e., individuals may have connections with others who they do not know personally and who would be hesitant to assist them if requested).

Second, the use of niche sites such as GitHub (for software developers), Efactor (for entrepreneurs), and SpiceWorks (for IT professionals) (Bischke, 2014) is deserving of future study. It is unknown whether it is more advantageous to participate on a niche site specific to an individual's area of expertise or to maintain an active presence on a broader professional SNS such as LinkedIn. Niche sites may provide highly targeted information (e.g., on Academia.edu individuals post published papers and discuss research ideas); however, broader networking platforms may present individuals with career opportunities they might not have considered previously.

Third, research is needed to examine if the benefits of using SNSs change as individuals progress through their careers. For instance, is it more beneficial to participate in SNSs during early career stages in order to more cost effectively increase the number of contacts? Or, is it more beneficial to use SNSs later in one's career to maintain relationships that were established face-to-face but now must be conducted virtually because colleagues have crossed organizational, occupational, or geographical boundaries? It may also be easier to make connections and to benefit from them by using SNSs later in an individual's career after developing a reputation for having a particular expertise. Overall, more study is needed in order to provide research-based career guidance to individuals on the best use of SNSs.

Fourth, research on the drawbacks of using SNSs is needed. For example, studies should explore ways in which use of social networking may result in unfavorable impressions by contacts on SNSs. Also, while we found evidence for the effectiveness of attaining benefits from LinkedIn, our study did not examine efficiency, i.e., whether face-to-face networking yields better cost-benefit ratios than SNS usage. Given the present findings of higher benefits from passive consumption and frequency of use, face-to-face interactions might be more efficient in building contacts, whereas maintaining and keeping up-to-date with contacts might be efficiently managed using SNSs.

4.3. Implications for managers and professionals

Our study's findings suggest a number of implications for how individuals may better self-manage their careers through the use of SNSs. Frequency of usage (passive consumption in the profile data) was more strongly related to networking benefits than number of contacts (active scope in the profile data). The sheer number of contacts might be a misleading figure. To benefit from contacts, individuals must know what their contacts have to offer and must invest time skimming others' profiles to keep abreast of who knows what. Meanwhile, enlarging one's social network by adding a new contact may not have much present value, but might have high future value because building contacts is an investment under uncertainty. Individuals may develop and maintain a larger social network but they may never obtain work or career-related benefits from members in their network. Furthermore, our results show that utilizing LinkedIn is related to the receipt of benefits; however, the mean scores of the benefits received were on the lower end of the scales. This indicates that individuals should not forsake their face-to-face networking efforts in favor of networking solely through SNSs.

In addition, individuals should consider how organizations are using SNSs. Surveys conducted by the [Society for Human Resource Management \(2015\)](#) indicate that employers are increasingly using LinkedIn and other SNSs to search for job candidates and advertise open positions. An individual's lack of active participation on SNSs may result in the loss of potential job opportunities. The absence of a social networking profile may also give off unintended and misleading signals that individuals are not up-to-date with technology or are not interested in further career opportunities, thus creating an unfavorable impression. Individuals should maintain an active, up-to-date social media profile for professional purposes to enhance their career opportunities and to promote a positive image. Furthermore, those who may not have the financial resources to participate in costly types of networking opportunities (e.g., attending professional conferences) or who may live in rural areas in which face-to-face networking events are few, may especially benefit from the use of SNSs. Additional research is needed so that individuals know the most effective and efficient ways to manage their presence on social media.

5. Conclusion

Technology has had a widespread impact on the careers of individuals ([Sullivan & Baruch, 2009](#)). Although the importance of networking for career success has been well documented ([Blickle et al., 2012](#); [Forret & Dougherty, 2004](#); [Michael & Yukl, 1993](#); [Thompson, 2005](#); [Van Hove et al., 2009](#); [Wolff & Moser, 2009, 2010](#)), this study is unique in that it examined the potential benefits of using LinkedIn as a professional networking tool instead of concentrating on more traditional forms of face-to-face networking. We hope this study encourages greater research given the growth of SNSs and the potential benefits of using SNSs for career development.

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CRedit authorship contribution statement

Joanna Davis: Conceptualization, Project administration, Methodology, Resources, Investigation, Writing - original draft. **Hans-Georg Wolff:** Conceptualization, Methodology, Visualization, Formal analysis, Writing - original draft. **Monica L. Forret:** Conceptualization, Supervision, Project administration, Investigation, Writing - review & editing. **Sherry E. Sullivan:** Conceptualization, Methodology, Writing - review & editing.

Declaration of competing interest

None.

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