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Social networks in personnel selection: profile features analyzed and issues faced by hiring professionals

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Abstract

Employers are increasingly using Social Networking Sites (SNS) to support hiring decisions, and yet the knowledge of their practice patterns remains limited. This paper aims to (a) examine which and to what extent selectors analyze applicant's profile features to support hiring decisions, and (b) explore the issues selectors perceive as being important while using SNS in personnel selection. It employs a two-phase methodology: a questionnaire-based survey, and a semi-structured interview study. Selectors report to examine more often job-related features, though they also admitted to analyze protected personal details and non-job related features. From the statistical analysis of the profile features being analyzed, three different patterns emerged, suggesting that selectors (a) exclude applicants during pre-selection and after a face-to-face interview, and (b) collect additional information about applicants to know them more deeply. Practitioners highlighted, among others, privacy, impression management, standardization, and possible bias issues. Conclusions and implications of these findings are discussed.

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1. Introduction

It is increasingly common for Human Resource (HR) professionals to analyze job applicants' social networking profiles to assist in selection decisions. For example, a survey carried out in 2018 in the USA found that 70% of employers mentioned using Social Networking Sites (SNS) during the hiring process, and 47% reported being less likely to call an applicant for an interview if they could not find that applicant online [1]. In contrast, the academic community has been much less enthusiastic about this phenomenon, generally recommending, for the moment, against this practice, given the lack of solid evidence on its validity to make inferences on job-related skills, as well as the risks of negative effects on the selection process like discrimination, and violations of privacy and laws. It is not surprising, thus, that a significant amount of research in this area has been devoted to tackling these issues [2, 3, 4, 5, 6].

While the investigation of issues such as validity, discrimination, and invasion of privacy are a key endeavor, it is also important to examine current practice in the use of SNS in personnel selection because the way practitioners conduct SNS assessments have implications on those issues. Berkelaar [7], Caers and Castelyns [8], Henderson [9], and Hoek et al. [10] are notable efforts in this regard. However, extant literature devotes little attention to the features from profiles that selectors assess, and how the information from such features is used to support hiring decisions. Furthermore, little is known about the issues, from a selector's perspective, on the use of SNS in personnel selection. This research addresses these gaps in the literature.

This paper has a twofold objective: first, it investigates which and to what extent selectors analyze applicants' profile features to assist making hiring decisions; second, it uncovers the issues that selectors believe are central while using SNS in personnel selection. To meet these objectives, it reports on the findings of a survey and interview-based study conducted with Portuguese employers.

2. Literature review

SNS have pervaded organizational life and changed many functional areas [11]. HR management is no exception to this. Specifically, recent times have seen many organizations incorporating the use of SNS, such as LinkedIn and Facebook, in their personnel selection practices [12]. According to Berkelaar and Harrison [13], several reasons are behind this phenomenon, notably because (a) SNS information is effortlessly available, (b) information from traditional sources is inaccessible, unreliable or not enough, (c) employers wish to reduce negligent hiring risks, (d) employers seek to minimize the risks of hiring applicants with potential negative impacts on the organization's reputation, and (e) employers intend to streamline staffing processes. Kluemper et al. [14] and Roth et al. [15] provide literature reviews on this relatively new body of knowledge that spans several disciplines such as information systems and technology, human resource management, and psychology.

A considerable number of studies have investigated whether SNS assessments can be used to make valid inferences about applicants' job-related skills. An early study is Back et al. [16], who find that Facebook profiles provide, under certain conditions, valid inferences about applicant's personality. However, Van Iddekinge et al. [6] uncover that Facebook profiles were unrelated to supervisor ratings of job performance and turnover, recommending caution about using Facebook profiles to assess applicants. More recently, Roulin and Levashina [17] find that LinkedIn profiles can provide valid and reliable inferences about extraversion, planning and communication skills, and cognitive abilities. Although this line of research is key to the development of the field, it tells us little about actual practice from HR professionals.

Many researchers have been also devoting efforts to study the effects of using SNS in personnel selection. For example, reporting on the results of a field experiment, Baert [2] reveal that applicants with a beneficial picture in the Facebook profile obtained significantly more interview invitations than applicants with the least beneficial picture, supporting the view that SNS can incorporate bias in the selection process. Focusing on applicant reactions, Suen [5] find that passive applicants are more likely to withdraw from a selection procedure when employers use SNS in screening, mainly when applicants are not able to control their privacy settings on SNS. However, this negative perception is improved when employers make a transparent use of SNS in screening. Pike et al. [3] conduct a survey-based experiment, having found that information from SNS with high context collapse, such as Facebook, can increase the ambiguity in the assessment of applicants. Clearly, this line of research is important to understand the impacts of

SNS on individuals and organizations, but again it says little about how professionals in organizations conduct SNS assessments in hiring decisions.

Another stream of research, which is the focus of attention of this paper, has been investigating the practice of SNS usage in personnel selection. A relevant study is a survey of Belgian HR professionals conducted by Caers and Castelyns [8], who find that many of them report using SNS before an interview to gather more information about applicants, and a smaller number of them report using SNS to decide who should be invited to an interview. They find supporting evidence that the use of SNS may introduce biases in the early stages of the selection process. Using a similar research methodology, Henderson [9] survey 195 recruiters in the USA to investigate (a) what types of constructs are inferred while assessing social media activity, and (b) what kind of "red flags" found in social media cause recruiters to exclude applicants from the selection process. Most participants reported to infer professionalism, followed with a much lower percentage by work experience, communication skills, discrepancies between resumes and social media information, and interests. The most frequently mentioned "red flag" that led recruiters to weed out applicants was inappropriate behavior (e.g. unprofessional photos and inappropriate posts), and to a much lower extent information indicating that the applicant was unqualified for the position (e.g. lack of experience, poor communication skills).

Within this latter research stream, two further studies are worth discussing here that adopted qualitative methodologies. Hoek et al. [10] report on an interview-based study of 15 New Zealand HR professionals so as to discover how and why organizations are using SNS in personnel selection. An important finding is that when the profile is analyzed before an interview, practitioners mentioned using SNS information to identify aspects worth further exploration in the interview; if the profile is analyzed after an interview, practitioners reported using SNS information for validation purposes. They also uncover three issues from a selector's perspective. Participants reported that applicants often engage in impression management and, thus, selectors need to be careful when interpreting the profiles. The second issue refers to the extent to which selectors should access an applicant's information without violating her privacy. While aware of privacy and ethical issues, participants stressed the legality of accessing applicant profiles. The last issue concerns the potential discrimination that may happen when applicants are excluded in the initial stages of the selection process without giving them the opportunity to present themselves face-to-face.

In a similar vein, Berkelaar [7] interview 45 HR professionals in the USA, but focus on how SNS and search engines have changed conventional practices in HR selection. Participants viewed these tools as fulfilling three different roles in HR selection. First, they offer a means to weed out applicants with behavioral issues, and, thus, reducing risk. In particular, participants believed that SNS information is valuable to assess relational abilities. Second, they improve selection by enabling to gather further information about applicants and to streamline processes. Third, they enable to expedite and develop rapport with applicants. The majority of respondents, though, viewed SNS and search engines as complementary to curriculum screening and background checks.

Although the four aforementioned papers have advanced our knowledge in many ways, there are still many gaps in our understanding about the practice of SNS in personnel selection. First, there is scant research about the applicant's profile features that practitioners examine and how do they use the information collected from those features to make hiring decisions. Second, Hoek et al. [10] focused mainly on legal and ethical issues, but it would be also interesting to uncover other issues that affect the work of selectors. Third, all the authors above stress the need for additional studies in other geographical settings than those reported that could validate and extend previous research. Addressing these gaps is important because it provides insights into how selectors conduct profile assessments and informs the ongoing debate about the implications of the use of SNS on the life of individuals, organizations and society.

- In light of the above discussion, this research addresses the following research questions:
- *RQ1:* Which and to what extent are applicants' profile features being examined?
- RQ2: How do selectors perceive the issues arising from the use of SNS in personnel selection?

3. Methodology

This study followed a sequential mixed methods design [18]. To address RQ1, a questionnaire-based survey was employed, as this method is more appropriate to answer what, how many, and how much questions. The sample frame came from the SABI (Iberian Balance sheet Analysis System) database, at the date of July 7th, 2017, which listed a

total of 28 007 active Portuguese organizations with a registered email address and at least 10 workers. From this initial pool, a final random sample of 10 000 organizations was extracted.

	n=429	%
Gender		
Female	292	68.1%
Male	137	31.9%
Education		
Master's or doctorate degree	117	27.3%
Bachelor's degree	274	63.9%
Other	38	8.9%
Role		
HR assistant	99	23.1%
HR manager	271	63.2%
Applicant's supervisor	59	13.8%
Number of employees		
Under 50 (small)	165	38.5%
50-249 (medium-sized)	138	32.2%
250 or more (large)	126	29.4%
Stage of the selection process		
Before interviewing applicants	304	70.9%
After interviewing applicants but before job offer	62	14.5%
After a contingent job offer	5	1.2%
N/a	58	13.5%

Table 1. Demographics of the survey sample.

A literature review preceded this empirical work in order to inform the questionnaire design. As part of a larger project [19, 20], the final web-based instrument included six sections: organization/participant profile; use of SNS; elements of profile analyzed; knowledge, skills and abilities assessed; assessment outcomes; and other comments. Only the results of section 3, i.e. those addressing RQ1, will be reported here.

The questionnaire was first pilot-tested with three academics and ten HR professionals, after which it was revised accordingly. The first round of emails was distributed in July inviting HR managers or personnel with hiring responsibilities to take part in the study, followed by a second round after 15 days. Data was analyzed in SPSS using simple descriptive statistics, inferential statistics (Kruskal-Wallis tests, with pairwise comparisons using Bonferroni corrections) and multivariate statistics (namely, exploratory factor analysis with polychoric correlations).

From a total of 1 052 (10.5% response rate) replies received, 429 professionals reported using SNS in personnel selection. Table 1 displays their demographic characteristics.

RQ2 was addressed through qualitative interviews because of its suitability to provide an in-depth understanding of the issues faced by selectors while using SNS in personnel selection. We recruited participants from three different sources, namely survey respondents, personal contacts known to the authors, and contacts recommended by the previous sources. The interviews followed a semi-structured format, and were based on a protocol covering, as part of a larger project, other topics than just the issues associated with the use of SNS in personnel selection.

We conducted 24 interviews between March and June 2018 with a duration of 30-64 minutes. Table 2 shows the demographics of the interviewees. These interviews were recorded and transcribed for analysis in NVivo 11. We used a three-stage process, adapted from Miles et al. [21], to analyze interview data. First, we read the interviews several times to get an understanding of the whole text. Second, we assigned descriptive codes to segments of text, and organized these codes into categories. The coding scheme was not purely inductive, as codes were informed by the literature review. Third, we sorted codes and categories into higher-level patterns or themes.

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	n=24	%
Gender		
Female	19	79.2%
Male	5	20.8%
Education		
Master's or doctorate degree	13	54.2%
Bachelor's degree	11	45.8%

Role		
HR assistant	15	62.5%
HR manager	6	25.0%
Applicant's supervisor	3	12.5%
Number of employees		
Under 50 (small)	3	12.5%
50-249 (medium-sized)	8	33.3%
250 or more (large)	13	54.2%

4. Results

4.1. Features analyzed from applicant profiles

The most frequently analyzed profile features were work history (M=4.21), education (M=3.90), professional awards and distinctions (M=3.74), and content inserted by the applicant (M=3.64). Less frequently analyzed included pictures and videos (M=2.42), commentaries on controversial topics (e.g. illegal drugs) (M=2.46), and controversial photos (e.g. drinking alcohol) (M=2.49). Selectors indicated examining applicant's personal information (e.g. age, gender) (M=3.07) with moderate frequency.

Kruskal-Wallis tests indicated significant differences in the analysis of profile features by stage of the selection process, organizational role, organization size, and education level. Pairwise comparisons showed that selectors reported examining education, work history, and professional prizes and awards features more often before face-to-face interviews than after such interviews (p=0.036, p<0.000, p=0.015), suggesting that they use those features to decide which applicants to invite to the interview and/or to gather cues to conduct the interview. On the other hand, comments on controversial topics, discriminatory comments, pictures and videos were reported to be more often examined after a face-to-face interview (p=0.008, p=0.040, p=0.015) than before the interview, indicating that those features may be used to make some kind of background check.

Selectors with a master or doctorate degree mentioned examining personal information and informal photos less frequently than selectors with a bachelor degree (p=0.028, p=0.026) or with a lower level of education (p=0.010, p=0.013). This finding suggests that selectors with higher levels of education are less prone to access information that may violate the applicants' privacy or incorporate biases in the selection process. Selectors from small and medium-sized organizations indicated analyzing comments on controversial topics (p<0.001, p=0.008), discriminatory comments (p<0.001, p=0.032), and pictures and videos (p=0.001, p=0.020) more often than selectors from large organizations. Likewise, selectors from small organizations reported examining controversial photos more often than selectors from large organizations (p=0.009).

To discover the underlying structure among these variables, an Exploratory Factor Analysis (EFA) using Principal Axis Factoring with Varimax rotation was performed. The Kaiser-Meier-Olkin statistic (0.862) and the Bartlett test ($\chi^2 = 3282.7$, p=0.000) supported the suitability of the data to conduct a factor analysis. Based on the Kaiser criterion and scree plot, three factors were extracted, explaining a cumulative variance of 59.2%. Table 3 shows the factor loadings after rotation that have significant values higher than 0.4. For each factor, the Cronbach's alpha ranged between 87.1% and 66.4%, which are above the lower limit of acceptability of 60% [22]. Factor 1 was labelled "assessing disqualifying behavior" as it clearly represents items that can be typically used to assess disqualifying behavior after a face-to-face interview. Factor 2 appeared to reflect items that allow selectors to know better the applicants, and, thus, was named "knowing the applicants". Factor 3 was labelled "screening" as it includes items that are likely to be examined before a face-to-face interview (pre-selection) to screen out applicants. These three clear patterns of variables may be interpreted as different modes of use of SNS in personnel selection.

Table 3. Factor analysis for the SNS features analyzed by selectors.

Itens	Factor 1- Assessing disqualifying behavior	Factor 2 – Knowing the applicants	Factor 3 - Screening
Personal information (e.g. age, gender)	0.444		
Informal photo (e.g. wearing shorts)	0.789		
Controversial photo (e.g. drinking alcohol)	0.886		

Comments on controversial topics (e.g. illegal drugs)	0.901		
Discriminatory comments (e.g. race, discrimination)	0.794		
Education		0.409	0.599
Pictures and videos	0.688		
Work history		0.624	0.601
Number of contacts		0.587	
Professional prizes and awards		0.696	
References and comments posted by others		0.704	
Hobbies and personal interests		0.557	
Content posted by the applicant		0.640	
КМО	0.862		
Bartlett's test	0.000		
Explained variance by factor (%)	29.1%	21.9%	8.3%
Cronbach's alpha by factor (%)	87.1%	79.7%	66.4%

4.2. Issues perceived by selectors in using SNS

Four participants considered that a crucial issue is to determine the extent to which personal privacy should be protected. E17 argued that selectors "should only analyze the information that the applicant decides to share in the selection process. We aren't here to do an investigation into the personal life of the applicant...", considering that personal privacy is invaded when selectors use personal SNS, such as Facebook, to know more about an applicant. In turn, E12 considered that it is legitimate to access personal information in SNS from the moment that it is public in the internet. Somewhat in the middle way, E4 advocated that personal SNS should only be used when "there are legitimate concerns about the applicant". The issue, however, is what constitutes legitimate in this context. Related to this, one selector from a large IT company stated that there is an extensive unauthorized transfer over LinkedIn of personal data (telephone numbers, email addresses) between applicants and selectors and vice versa. She added that "there's so much competition and so much need for IT profiles... that we end up running over each other" (E3). According to her, thus, an issue is how to control the flow of information within a SNS.

Three participants identified that an important issue is to know the extent to which the information presented by applicants is real and mirrors their actual experience. They mentioned that applicants are sometimes very creative in how they describe their roles and competencies, often using pompous designations for their functions that may be misleading, and sometimes end up writing experiences that are from others or which do not correspond to the truth. According to E5, the implication of this is "that selectors need to conduct lengthy interviews to really ascertain the knowledge and experience that the applicant claims to have in the profile."

Three participants reported difficulties in comparing profiles because applicants had incomplete or outdated data. This issue was not entirely consensual, as some interviewees also acknowledged that there is an increasing awareness from applicants about the importance of having a profile if they wish to appear in online search results. E17 also mentioned that it is easier to compare profiles in LinkedIn than curricula since the former imposes some structure.

Three respondents expressed concerns that their decisions may be unintentionally influenced by information that is exposed on SNS, which may not be predictive of the applicant's job performance. As E5 stated:

"we end up being confronted with photos, comments and posts in LinkedIn... we shouldn't evaluate people by their personal experiences, or by their image, and the truth is that, being humans, we often have

difficulties in totally alienating ourselves... and we may unintentionally value a person for factors that aren't predictive to us."

While acknowledging that it is difficult to keep a distance from this information, participants suggested three measures to mitigate this challenge: training (E12), internal policies in organizations limiting the access to personal SNS (E5), and common sense (E9).

Two interviewees stated that job-related SNS like LinkedIn, by publicly exposing professional profiles (from both active and passive applicants), have increased the competition for talent. As a result, selectors need to perform the selection processes in a short time, or run the risk of losing promising applicants to competitors:

"If I've an interesting applicant, and if in a short time I don't contact the applicant, interview, validate and make an offer, someone else will pick up this applicant. The whole process has to be at this moment much faster." (E21)

Thus, SNS have made the selection process more dynamic requiring a greater effort from selectors to keep pace, and organizations to streamline their processes.

Two interviewees pointed out that the use of SNS in personnel selection raises the issue of dealing with excess of information. E10 declared that most of the time she receives applications that do not match the required profile, increasing the workload and widening the focus in screening. E26 further added that "I've to define filters and approaches because if we don't know very well what we need, we have too much information at hand".

One interviewee acknowledged that "the evaluation of profiles is informal, spontaneous and doesn't follow a uniform procedure for all applicants (e.g. use of a scale)" (E1), which in turn requires the selector to exercise great care in the use of any information extracted from SNS.

A participant (E19) who used Facebook to assess the applicant's adjustment to the organization's culture said that it was a challenge to make inferences about an applicant's personality. In her opinion, this is because profiles can be manipulated and tarnished by less happy episodes that the applicant has had in the past. However, she believed that this challenge is also somewhat present in interviews when, for example, an applicant can successfully convey a persona that may not correspond to reality.

5. Discussion

Selectors reported that the profile features most frequently analyzed were job-related, which is an encouraging result. However, this was somewhat softened by the finding that selectors indicated analyzing personal information (e.g. age, gender) with moderate regularity. Indeed, this practice increases the risks of unintended effects in the selection process such as discrimination, legal and ethical concerns. Based on selectors' replies, it also emerged that they analyze profile features with three distinct purposes. First, they examine information from education and work experience features, in pre-selection, to exclude applicants that do not meet the job requirements. Second, they analyze profile features, such as, comments, photos, pictures and videos, after a face-to-face interview, to identify applicants with problematic behavior. Third, they examine various profile features (namely, references and comments posted by others, professional prizes and awards, posts, work history, number of contacts, hobbies and personal interests, and education), either before or after a face-to-face interview, to know better the applicant. While the former two purposes are consistent with the weeding out function of SNS suggested by Berkelaar [7], the latter purpose has some resemblances with the relational function of SNS proposed by Berkelaar [7].

The findings about the issues surrounding the use of SNS in personnel selection are engaging and thought provoking. The results regarding privacy protection are consistent with previous literature in that the ethics of the professional greatly influences the extent to which this privacy is respected [10]. However, this study suggests that there may be a higher risk for privacy violation in environments where there is a high competition for talent. Similarly, the issue that selectors often have to deal with impression management in profiles is not new and has been discussed elsewhere [10], but the report that it may lead to lengthier interviews is intriguing. Although this may also occur with traditional curricula, it remains to be seen whether this situation is more severe with online profiles. The issue of lack of standardization in SNS was mentioned in the interviews and has been discussed in the scholarly literature [4, 14]. Nevertheless, the reported practice of comparing profiles side-by-side when there is a short number of applicants is less known. Compared with traditional curricula, this practice may eventually exhibit a higher level of standardization when profiles have a similar level of detail, but that still needs to be investigated. In addition, interview participants highlighted the adverse impacts of excess of information and access to non-job related information, which are in line with some recent scholarly works [3]. Nevertheless, the fact that they were mentioned is important because this denotes not only that practitioners are aware of them, but also that they need to be addressed.

6. Conclusion

Overall, this paper contributes to understanding the extent to which selectors analyze certain SNS features from applicant profiles, as well as how selectors intend to use the information collected from those features in the selection process. Furthermore, it provides a comprehension of the issues that selectors believe to be most relevant when using SNS in personnel selection.

An important conclusion is that SNS are used to collect additional information about applicants during the selection process, as well as to exclude applicants, either for not meeting job requirements or for not adjusting to organizational culture. The implication for theory is that SNS can be not only a complementary selection tool, but also can be a selection tool per se, mainly during pre-selection. The use of SNS in pre-selection, though, is little investigated, and this study highlights the need for researchers to address this gap. In addition, the findings about the issues faced by selectors raise interesting leads for pursuing further research, including, for example, the study of privacy issues in different external organizational environments, and the examination of the impacts of impression management in profiles.

Another conclusion is that whilst analyzing SNS features such as education and work experience features, selectors may come across accidently with personal protected information (such as, gender, age, race, sexual orientation, etc.) or non-job related content that can contaminate hiring decisions. Although some interview participants reported to be aware of ethical, privacy and discrimination risks, they seemed to play down those risks or believed that those risks are worth the benefits. The implication for practice is that this begs HR managers due attention to provide adequate training of all those involved in the hiring process, and to define clear rules on what information are selectors allowed to collect and analyze.

This work has some limitations, which in turn present opportunities for further research. First, although this work is based on an extensive dataset, it comes from a single country. Studies comparing the findings across multiple countries while highlighting different cultural and legal contexts would seem to be a worthwhile addition to this body of knowledge. Second, this work focused on SNS as a whole. However, it would be useful to extend this research by explicitly considering different types of SNS, specifically personal SNS (e.g. Facebook) and professional SNS (e.g. LinkedIn). Third, our work is mainly exploratory. While exploratory research plays an important role in this field [15], future research needs, as the field matures, to move on to theory building and testing.

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