# Social Media Discontinuance: A Source of Discrimination?

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## Abstract

Social media platforms have presented individuals with sheer endless possibilities for networking, creating and exchanging information. Yet, overwhelming social demands, privacy concerns, and even a lack of access to new technologies have led many users to discontinue social media usage. Simultaneously, companies screen and select applicants on social media. As previous research suggests that employers may view missing social media information with suspicion, we ask if non-users of social media face disadvantages in hiring: Are they discriminated against? In this study, we employ a 2 x 2 experimental survey design to verify whether absence from social media may result in discriminatory behaviour towards job applicants. We conduct the study with two samples: The first comprises business students, and the second consists of more senior members of the workforce. Although this study does not confirm discrimination against non-users of social media in the selection process, it adds to the literature in two respects: Firstly, it shows differences in call-back between highly and less qualified candidates as a result of social media information. Secondly, it suggests unintentional, systemic rater biases. Against these findings, we formulate recommendations for applicants and employers and give recommendations for future research in this field.



## Keywords

Decision-making; selection-methods; social networks

## Introduction

During the COVID-19 pandemic, mass media like social networks became one key source of information for individuals (Soroya et al. 2021). At the same time, the crisis also led some people to abandon social media usage altogether because of information overload and distress (Siebenhaar et al. 2020), misinformation, and fake news (Apuke and Omar 2021; Cinelli et al. 2020). Moreover, even before the crisis, some people decided to quit social media usage as a reaction to an overwhelming volume of social demands (Lee et al. 2016) and concerns about privacy invasion (Wang et al. 2021; Xiao et al. 2022). Others may never have used social media due to limited online access, such as certain minority groups (Black and Johnson 2012), or older, less technology-proficient individuals (Chauhan et al. 2013). At the same time, companies make increasing use of social media to screen and select new applicants (Henderson 2019; Kluemper et al. 2012; Lam 2016). While this practice makes valuable low-cost information about job candidates accessible to employers (Brown and Vaughn 2011; Chauhan et al. 2013; Jeske and Shultz 2016), research suggests that candidates who do not maintain a social media profile can be at a disadvantage in the hiring process (Alexander et al. 2019; Black and Johnson 2012; Slovensky and Ross 2012).

Yet, empirical research on the downsides of digitalization is still at an early stage (Turel et al. 2021). While authors like Clark and Roberts (2010) associate social media screening with privacy invasions, therefore deeming it a socially irresponsible practice, generally, the use of social media in selection does not seem to be sufficiently understood by researchers and practitioners (Roth et al. 2016). While a number of existing studies on the use of social media in selection report negative applicant reactions towards this practice (e.g., Drake et al. 2016; Hurrell et al. 2017; Jeske and Shultz 2019; Stoughton et al. 2015), clear guidelines or best practices are lacking in that respect (Davison et al. 2012). A number of studies suggest that the intensive use of social media in hiring decisions may inadvertently lead to discrimination against candidates (Acquisti and Fong 2019; Manant et al. 2019; Wade et al. 2020) – an

ethical issue that has largely remained under-researched (Manant et al. 2019). Especially research on social media discontinuance behaviour has mainly concentrated on its antecedents (e.g., Cao and Sun 2018; Luqman et al. 2017; Maier et al. 2015a, 2015b; Wang et al. 2021; Zhang et al. 2016), thereby neglecting the potential of discrimination against individuals who are not present on social media at all.

The present article, therefore, strives to contribute to the existing literature by examining whether the absence from social media may effectively result in unfair discrimination. This would be the case if less qualified social media champions outperformed “abstinent” but superior candidates in the selection process. Thereby, we investigate this question through a 2 x 2 experimental survey design, examining the likelihood of call-backs for fictitious candidates based on their degree of qualification and their social media presence. For that purpose, we establish two different samples, whereby study 1 is comprised of business students and study 2 consists of members of the workforce with some years of working experience. Our results show that, although there is no evidence for discrimination against highly qualified candidates without a social media presence, differences in the results between the highly and the less qualified group nevertheless suggest unintentional, systemic rater bias (see Alder and Gilbert 2006).

Hence, our results add to the literature on selection fairness in several respects: First, we contribute to the more general question about the ethicality and fairness of conducting web searches on job candidates (see Clark and Roberts 2010) by showing that the practice can be considered as socially acceptable under certain circumstances. Therefore, our second main contribution to the literature is a set of recommendations and implications for applicants, as well as hiring managers to design the selection process in a fair and ethical manner. Thereby, we highlight the possibility of social media screening to induce more unconscious, systemic biases that employers need to avoid in the hiring process. Third, as our study employs two different samples, it helps to understand the differences in the assessment

criteria applied by students and more experienced workers. Furthermore, our findings invite future research to investigate the differences between the two groups in more detail.

## Literature Review, Theory, and Hypotheses

### Literature Review

As noted by Riach and Rich (2002), studies on discrimination in the labour market usually concentrate on applicant ethnicity (Blommaert et al. 2014), sex (Cecil et al. 1973), age (Faley et al. 1984; Singer and Sewell 1989), disability status (Rose and Brief 1979), sexual orientation (Drydakis 2009; Tilcsik 2011), religious beliefs (King and Ahmad 2010), physical attractiveness (Hosoda et al. 2003; Tu et al. 2022), or bodyweight (King et al. 2006; Roehling 1999). However, an emerging stream of research examines discrimination based on the online screening of applicants in the selection process. Thereby, discrimination often occurs on the basis of demographic information presented on social media (Kluemper and Rosen 2009). For example, Acquisti and Fong (2019) researched discrimination against applicants in a social media screening scenario on the grounds of religion and sexual orientation. Thereby, the authors submitted fictitious applications to job postings, along with personal websites of social networking profiles. Their findings suggest that the online disclosure of certain personal traits has the potential of influencing hiring decisions. A similar experiment was conducted by Manant et al. (2019), examining the call-back rates for applications of two fictitious applicant profiles. The experiment showed a significant difference in call-backs between French and Arabic applicants, leading to the conclusion that social media have great potential for discrimination based on ethnicity. Applicant sex has also been found to influence the way information from social networks is used by recruiters during selection (Alder and Gilbert 2006; Becton et al. 2019). Furthermore, a study by Pu et al. (2022) on the stigmatization of veterans suffering from post-traumatic stress disorder (PTSD) visible on social networks shows that mental health issues can also impact call-back to a great extent. However, making employment decisions based on such restricted information can lead to adverse hiring (Jones and Behling 2010) and is often prohibited by law (Bentley 2013; Black and Johnson 2012;

Roth et al. 2016). Generally, such information on social media represents answers to questions that are illegal to be asked during job interviews (Zhang et al. 2020).

In addition to discrimination based on restricted information, Alder and Gilbert (2006) point out the role of unintentional systematic bias in hiring decisions, which tends to be less obvious than discrimination based on race or age. While government bodies like the U.S. Equal Employment Opportunity Commission advise firms to assess only information relevant to determining applicant qualifications, social media screening allows raters to make judgments on candidates based on job-irrelevant factors (Wade et al. 2020). According to Jones and Behling (2010), hiring managers may, therefore, also reject a candidate when they find a piece of personal information that corresponds to their stereotypes. Such stereotypes often result from non-job-related factors (Davison et al. 2016), such as political views, values, and beliefs displayed on social media (Wade et al. 2020). Likewise, physical attractiveness based on photos posted on social media may lead to unfair biases (Alder and Gilbert 2006; Black and Johnson 2012; Jones and Behling 2010). A study by Becton et al. (2019) also highlights the influence of unprofessional social media content on employers' potential negativity biases: Thereby, the authors demonstrate that negative information generally has a stronger influence on people's perceptions than comparably extreme positive information.

Nonetheless, the absence of social media information on applicants may also be a source of discrimination: Previous research suggests that applicants maintaining a social media profile may be perceived more positively than those without it (Alexander et al. 2019; Black and Johnson 2012; Slovensky and Ross 2012). For example, members of minoritity groups with only limited access to social media (Black and Johnson 2012) or older individuals who are less proficient in the use of technology (Chauhan et al. 2013) may find themselves at a disadvantage. However, being absent from social media usage does not necessarily depend on access or proficiency, but also represents a matter of choice. In this sense, the term "social media discontinuance" refers to users' intentions to cease using a certain social media service

either temporarily or permanently (Zhang et al. 2016). It is widely explained by adaptation behaviours towards negative perceptions resulting from social media use (Wang et al. 2021), such as overload that can induce social media exhaustion (Maier et al. 2015b), social media fatigue, as well as user dissatisfaction (Cao and Sun 2018; Luqman et al. 2017; Maier et al. 2015a; Zhang et al. 2016). Studies by Wang et al. (2021), as well as Xiao et al. (2022) also found the invasion of privacy to trigger social media discontinuance behaviour.

Previous empirical research in the field of social media screening suggests that missing information is often seen negatively in the selection process: A study by Berkelaar and Buzzanell (2015) shows that job candidates may be required to display interests and passions for particular types of work in order to be considered valuable to employers. Thereby, the authors conducted in-depth interviews with employers on the use of social media screening in hiring. They found almost half of these employers expect candidates to have an online presence for various reasons: First, a social media profile seems to suggest proficiency in certain work-related attributes. While online presence was considered clearly necessary for particular positions, such as communication, the study by Berkelaar and Buzzanell (2015) also revealed that the absence of online information was frowned upon based on lacking communication of interests and passions. Therefore, the second reason was that the display of interests and passions was seen as a cue for commitment. As a result, job candidates who did not disclose any online information were regarded as less committed, with the lack of online presence creating an information void that was viewed as equally negative as a red flag (Berkelaar and Buzzanell 2015). These findings are consistent with a study by Melton et al. (2018), showing that a positive social media profile enhances positive perceptions of qualifications, even if the candidate's qualifications were indeed below average. Third, job candidates with no online information were not only regarded as less committed by the display of hobbies and interests. Rather, they seemed even less honest, as the presence of online information was perceived as a cue for a candidate's normal and socially conform lifestyle with nothing to hide (Berkelaar and Buzzanell 2015). In a similar vein, in the study by Melton et al.

(2018), the lack of social media was also observed with suspicion. More precisely, participants feared that a candidate with no social media had something to hide. The majority of the respondents in their study rated the lack of social media as negative, but not as disqualifying; rather it was also perceived as evidence of good work ethic, seriousness, and a sense of focus towards the things that matter.

## Theoretical Foundations

### *Lack of Candidate Information as a Devaluation Factor*

If social media information about a candidate is missing, this may lead to increased uncertainty about his or her attributes, potentially resulting in the devaluation of that person's skills as compared to others who provide such information (Roth et al. 2016). This phenomenon can be explained according to different theories: Thereby, the inferred information model (Johnson 1987; Johnson and Levin 1985) suggests that missing information is often viewed with suspicion. Similarly, according to the theory of reasoned action (Jaccard and Wood 1988), the lack of information causes a rater to set the value of unknown information at some subjectively determined average level. However, the uncertainty about the value or quality of a target often leads to an additional "devaluation parameter", whereby applicants who do not disclose information on their social media sites might be perceived as performing below average on a particular attribute (Roth et al. 2016). Authors like Jagacinski (1991, 1995) show that in employment situations, missing information can even be sanctioned substantially. The inferred information model (Johnson 1987; Johnson and Levin 1985) also suggests that decision-makers might also be suspicious about why a certain piece of information is missing. Thus, they try to deal with incomplete information by making assumptions based on the information they have. As shown by Cascio (1987) and Jagacinski (1991), decision-makers tend to view erroneous acceptances as more serious than erroneous rejections. Thus, in a hiring situation in which candidate information is missing or incomplete, the risk of hiring an unqualified candidate seems to be more severe than the risk of rejecting a qualified candidate.

### *Discrimination in Hiring*

For the purpose of this study, we want to assess whether discrimination against candidates who do not disclose social media information exists in the hiring process. For this, it is necessary to specify the circumstances under which discrimination against a candidate occurs. According to Gutek et al. (1996), discrimination arises when employment decisions are taken on the basis of individuals' immutable characteristics like age, appearance, sex, or skin colour as opposed to qualifications. As noted by Ewens et al. (2014), the literature on racial discrimination differentiates between taste-based and statistical discrimination, whereby both forms result in different outcomes for similar individuals who differ only by race. According to Heckman (1998), racial discrimination occurs in a ceteris paribus condition with varying race, while keeping all else constant: "Discrimination is said to arise if an otherwise identical person is treated differently by virtue of that person's race or gender, and race and gender by themselves have no direct effect on productivity" (Heckman 1998, p. 102). Bertrand and Duflo (2017) offer a similar definition of discrimination against minority groups as an unequal, less favourable treatment of members of such groups compared to members of a majority group with otherwise identical characteristics and similar circumstances. However, Heckman's definition adds the requirement that the differentiating factor (in this case race or gender) does not have a direct effect on productivity. Thus, we intend to test whether the lack of job-irrelevant information displayed on social media acts as a disqualifying factor that excludes candidates from further consideration as compared to equally qualified candidates who provide such information. We will proceed by developing the hypotheses suggesting an adverse selection as a result of missing social media information.

## Hypothesis Development

At the stage of evaluating application documents, employers may erroneously eliminate highly qualified applicants based on social media searches (Reinsch et al. 2017). Despite the presence of job-relevant information, job-irrelevant information discovered on social media can impact hiring managers' perceptions in such situations (Wade et al. 2020). Thus, in this

study, we apply Heckman's (1998) definition of discrimination as differential treatment based on factors that have no direct effect on productivity in a social media screening context. Thereby, the distinguishing factor is not race, but the presence or absence of job-irrelevant social media information. While the study by Berkelaar and Buzzanell (2015) suggests that an online presence was in some cases considered necessary for particular positions, we are interested in the case in which the lack of online presence created an information void that led to conclusions about the applicant's lifestyle or honesty (Berkelaar and Buzzanell 2015), rather than any job-specific traits. As discussed previously, missing information is often viewed with suspicion (Johnson 1987; Johnson and Levin 1985; Roth et al. 2016), leading to a potential devaluation of candidates in a hiring situation (Jagacinski 1991, 1995). Thus, we posit that discrimination occurs when candidates who possess a positive social media presence are more likely to be invited to an interview than candidates who are *equally* qualified according to relevant criteria but lack a social media presence. The first hypothesis is, therefore, formulated as follows:

**H1:** *Candidates with no social media presence are less likely to be invited to employment interviews than similarly qualified candidates who provide social media information.*

Taking one step further, the non-job-relevant factors displayed on social media profiles may even *outweigh* a superior performance based on job-relevant criteria as stated in the CV: As pointed out by Wade et al. (2020), managers may be even tempted to prefer less qualified applicants over more qualified applicants by using social media in selection, thereby leading to suboptimal employment decisions. Moreover, Melton et al. (2018) also showed that a positive social media profile enhances positive perceptions of qualifications, even if the candidate's qualifications were below average. We, thus, propose that discrimination also occurs when candidates who are qualified *inferior* according to job-relevant criteria but possess a positive social media presence, are preferred over candidates who are superior

according to relevant criteria but lack a social media presence. Accordingly, we formulate Hypothesis 2 as follows:

**H2:** *Highly qualified candidates with no social media presence are less likely to be invited to employment interviews than less qualified candidates who provide social media information.*

## Research Method

### Experimental Survey Design

The labour market literature differentiates between two types of field experiments: audit testing and correspondence testing (Riach and Rich 2002). While in an audit testing, real people allegedly apply for job openings and present themselves for job interviews, correspondence tests are experiments involving written approaches to advertised vacancies. In contrast to audit studies, correspondence testing involves fewer methodological issues, as it gives the experimenter more control over the experimental environment (Riach and Rich 2002). The method is also less costly, less time-consuming, and easier to reproduce. As it represents a type of randomized experiment, it also provides the most convincing method to allow causal inferences (Bursell 2007). Against this background, this study takes the form of a 2 x 2 factorial between-subjects design survey experiment that simulates a correspondence situation. By choosing a survey experiment over a field correspondence study, we attempt to avoid the deception of actual employers dedicating their scarce time towards reviewing fictitious applications, along with a number of other ethical concerns raised by Bertrand and Duflo (2017). Furthermore, we chose the between-subjects design over the within-subjects design to avoid the effect that participants more directly compare the treatments to each other, which would lead to decreased levels of detected discrimination (Lahey and Beasley 2018). In the experiment, we asked each participant to evaluate a fictitious application to a job posting: By manipulating candidates' qualification and social media information, we created two treatment groups with low- and highly-qualified applications. For the treatment groups, we designed Twitter profiles, whereas the control groups received a notification that no social media

information on a candidate was available. See Figure 1 for an overview of the treatment groups and the manipulations.

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Insert Figure 1 about here

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**Procedure and Experimental Material**

Each participant was asked to assume the role of a hiring manager of the Human Resource department at a university in Bavaria, Germany, and to assess fictitious candidates for a job position as an accountant. We chose an accounting position because it is a back-office position, which involves no direct customer contact (see Manant et al. 2019). Thus, the position mainly requires proficiency in accounting and finance, as well as software skills rather than social skills or marketing skills which are generally associated with social media profiles (see Berkelaar and Buzzanell 2015). This way, we intended to make sure that the information displayed on social media profiles in our experiment was not related to the job position advertised. Prior to designing the study, we conducted semi-structured interviews with recruiters for the purpose of assessing the role of social media in recruitment. Furthermore, the information from the pre-experiment interviews allowed us to represent the hiring process in the most realistic way possible. We also conducted two pre-tests with $n$=20 and $n$=46 involving colleagues, industry experts, and students. This preliminary analysis provided us with the assurance that the survey instrument and the scales used were appropriate for application to the full sample.

The experiment took place online via the online survey tool Qualtrics and started with general instructions and a request for consent to participate in the study. In the first part, we measured a set of control variables (gender, age, profession, familiarity with accounting and human resource management, as well as proficiency in German). In the second part, participants

were shown a job description, specifying the qualifications and traits necessary for the position. After viewing the job description, each participant reviewed the application documents of one job candidate. In order to avoid template bias (Lahey and Beasley 2018), the résumé information was presented as extracts from an internal applicant management tool, which standardized the presentation of the applicant information in the Qualtrics environment. Each fictitious application contained the candidate's name, date of birth, e-mail address, and place of residence. All high-qualification and low-qualification profiles were identical, with the exception of their name and sex: We tested for applicant sex by creating a male and a female version of each candidate profile. The candidates' first names were randomly selected from the top ten German first names for the year of birth. The last names were randomly selected from the top ten surnames in Germany. Thereby, we tested for different names for each candidate profile, i. e. two male and two female names. In terms of qualification, the low-qualification candidates exhibited slightly inferior university and grammar school grades than their highly qualified counterparts. Furthermore, low-qualification candidates had only about one and a half years of experience in accounting positions instead of the two years that were required in the job opening. Their high-qualification counterparts had almost eight years of experience in accounting and displayed more skills and qualifications, such as a chamber of commerce certificate in accounting, as well as proficiency in accounting software, neither of which was included in the low-qualification profile. All fictitious applicants spoke German as their mother tongue, as well as English as a foreign language, plus an additional European language with equal proficiency levels. See Table 1 for an overview of the differences in the candidates' qualification profiles. In addition to their demographic information, qualification and employment histories, all applicants were presented as outdoor and sports enthusiasts in a separate "hobbies" section of the application. After viewing the official application documents of each candidate, the participants in the treatment groups were informed that their student assistant found the applicant's Twitter profile. These participants were then shown screenshots of the Twitter profile, which also contained outdoor- and sports-related postings and photos. Again, apart from the candidates'

names and sex, all Twitter profiles contained identical content. Participants in the control groups received a message saying that their student assistant did an online background check on the candidate, but could not find any information.

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Insert Table 1 about here

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In the third section, participants were asked to provide an assessment of how likely they would call the candidate back. As opposed to similar correspondence studies (e.g., Acquisti and Fong 2019; Manant et al. 2019), the likeliness of call-back in our study is not expressed as a number of invitations per fictitious candidate (call-back rate), but as the participants' individual likeliness of calling the candidate back. Thereby, the participants were asked to assess the likeliness of inviting the candidate to a job interview on a 6-item Likert scale with 1=very unlikely and 6=very likely. To check for internal validity, we included an inverted question, asking participants to state the likeliness of dismissing the candidate from the selection process. Participants were also asked to provide a short free-text explanation for their assessment of the candidate to draw conclusions on the importance of social media and other non-job-related criteria, as opposed to job-related criteria.

**Participants**

We performed our experiment with two different samples, henceforth study 1 and study 2, which included business students and more experienced members of the workforce: In study 1, the Qualtrics link was distributed to all universities in Bavaria (Germany), targeting students in business administration or related fields. Although we acknowledge that the use of students in experimental research is controversial (see Marriott 2014 for discussion), the subjects for this study were deliberately chosen for their ability to put themselves in an application situation, as they are likely to enter the job market and find themselves in the position to conduct

selection interviews themselves after their graduation. We, furthermore, justify the use of students by referring to previous experimental research in which students were used: For example, in the study by Melton et al. (2018), students evaluated hypothetical job candidates' social media presences. In other research streams, they are often used to proxy for non-professional investors (e.g., Baier et al. 2022; Elliott et al. 2007; Libby et al. 2002), or taxpayers (e.g., Alm et al. 1992).

Study 2 was designed to replicate the findings of study 1 in a non-student sample, which was expected to be more familiar with the labour market. These participants were likely to be already in a job position and may have already been confronted with personnel decisions. Similar to our study, a combination of students and more experienced individuals has also been used in previous research to examine applicant reactions to social media screening (Stoughton et al. 2015), the effect of age-related information exposure on selection decisions (Singer and Sewell 1989), or to assess taxpayers' attitudes about the fairness of income tax (Roberts 1994). Moreover, the combination of a student and non-student sample allows us to draw conclusions as to the replicability of the study and potential differences between the two groups. To recruit participants who met our selection criteria, we used the platform *Clickworker*, as it allows the segmentation of the target group to a certain extent. Thus, we required participants to be German speaking, between 25 and 40 years old and proficient in fields such as business studies, taxes and finance, marketing, and insurance. We paid each participant 2 € for the completion of the questionnaire – a value calculated on the basis of the minimum wage in Germany, assuming that the completion of the questionnaire takes no more than 10 minutes. All participants in both studies were randomly assigned to one of the four treatments. We used stratified sampling according to participants' gender (male, female, diverse, and no information), level of study for study 1 (graduate and postgraduate students), as well as profession and industry for the participants in study 2. Furthermore, we measured two control variables (familiarity with accounting and human resources, German proficiency, and gender) for both samples.

## Results

### Descriptive Statistics

In study 1, we collected 157 responses in total. However, a number of observations were excluded from the sample for various reasons: 37 observations were dismissed because participants did not finish the questionnaire. 12 were excluded because participants did not study business, while another 9 did not belong to the target group of students at all. We removed another 8 observations on the basis of the inverted question on the dismissal of a candidate: Those who reported identical values for dismissal and invitation of a candidate were excluded due to inconsistency. Finally, one observation was eliminated due to very low proficiency in German. The final sample size in study 1 was 91. Participants in this sample were between 18 and 30 years old. Their gender (female 45.1 %; male 54.9 %) and level of study (graduate students 30.8 %; postgraduate students 69.2 %) were also randomly distributed across the treatments. However, participant demographics showed no effects on our main results in the aftermath of the experiment. Furthermore, familiarity with accounting and human resources, as well as German proficiency did not produce any changes regarding our main results in this sample. We also tested whether the fictitious job candidates' gender and name had any effects on the two dependent variables. In both studies, neither candidate gender, nor name showed any effect.

In study 2, we collected 257 responses from the platform *Clickworker*. In this sample, 27 observations were excluded because participants did not belong to the target group of workforce members. 9 observations were removed from the sample because participants did not finish the questionnaire, and another 6 were excluded on the basis of their responses to the inverted question on the dismissal of a candidate. Furthermore, one observation was dismissed, as it appeared to be a test run. The final sample size was 214. Participants in this sample were between 22 and 48 years old. Participants were, again, randomly assigned to one of the four treatments and their characteristics, such as gender (female 51.4 %; male 47.7

%; diverse 0.9 %), professional status (employee 82.2 %; civil servants 8.9 %; freelancers 6.5 %; others 1.4 %; research associates 0.5 %; apprentices 0.5 %), as well as industries were also randomly distributed across the treatments. Participant demographics, again, showed no effects on our main results in the aftermath of the experiment. We also included familiarity with accounting and human resources, as well as German proficiency as control variables in study 2. Here, there were no observable effects related to accounting and human resources proficiency. Yet, the Spearman test revealed a positive correlation between proficiency in German and the two dependent variables. We, therefore, conclude that the better a participant understood German, the better he or she rated the fictitious job candidate in the experiment. For a comparison between the descriptive statistics of study 1 and 2, see Tables 2 and 3. In both studies, the measure for the likeliness of callback consisted of 2 items and the value for Cronbach's Alpha was α =.793 in study 1 and α =.864 in study 2.

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Insert Tables 2-3 about here

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**Hypothesis Testing**

The hypotheses were tested using a one-way ANOVA, comparing the mean responses for high- and low-qualification job candidates, differentiating between candidates who did or did not display a Twitter profile. Tables 4-7 summarize the results of the one-way ANOVA. The dependent variables were the likeliness of inviting a candidate to an interview and the likeliness of dismissing a candidate from the selection process (the latter is reversely coded). To test H1, we compared the differences between the treatment (candidates with a Twitter profile) and control groups (candidates without a Twitter profile) within the high- and low-qualification group.

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Insert Tables 4-7 about here

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The results for both samples indicate heterogeneity of variances ($F$=6.391, $p$=0.001 in study 1; $F$=18.213, $p$=0.000 in study 2) for the likeliness of inviting a candidate to an interview. It follows that there is a statistically significant difference in the mean likeliness of invitation between the groups. Both studies reveal that, within the high-qualification group of candidates, the treatment candidates were slightly more likely to be invited to an interview ($M$=5.63 in study 1; $M$=5.49 in study 2) than the control candidates ($M$=5.31 in study 1; $M$=5.39 in study 2). However, among the low-qualification candidates, the control candidates were slightly more likely to be invited to an interview ($M$=4.57 in study 1; $M$=4.49 in study 2) than candidates in the treatment group ($M$=4.40 in study 1; $M$=4.43 in study 2).

For the likeliness of being dismissed from the selection process, again, both studies indicate heterogeneity of variances ($F$=10.990, $p$=0.00 in study 1; $F$=14.070, $p$=0.000 in study 2). In both studies, within the high-qualification group of candidates, the treatment candidates were slightly less likely to be dismissed from the selection process ($M$=5.68 in study 1; $M$=5.35 in study 2) than the control candidates ($M$=5.27 in study 1; $M$=5.11 in study 2). In the low-qualification group, study 1 revealed a higher likeliness of a dismissal of the treatment candidates ($M$=4.28) than the control candidates ($M$=4.48), whereas, in study 2, the treatment candidates were slightly less likely to be dismissed from the selection process ($M$=4.39) than the control candidates ($M$=4.29). Thus, Hypothesis 1 can only be partially accepted, as the social media information only leads to increased likeliness of invitation for the highly qualified candidates in both, study 1 and study 2, whereas the low-qualification candidates with a Twitter profile were only less likely to be dismissed from the selection process in study 2, but not in study 1.

To test H2, we proceed by analysing the differences between the treatment group assessing the low-qualification candidate with the Twitter profile, and the control group assessing the high-qualification candidate without the Twitter profile. In both studies, the highly qualified candidates without a Twitter profile still performed better than the low-qualified candidates who did provide a Twitter profile: The highly qualified control candidates were more likely to be invited to an interview (*M*=5.31 in study 1; *M*=5.39 in study 2) than the low-qualified treatment candidates (*M*=4.40 in study1; *M*=4.43 in study 2) and less likely to be dismissed from the selection process (*M*=5.27 in study 1; *M*=5.11 in study 2) than the low-qualified treatment candidates (*M*=4.28 in study 1; *M*=4.39 in study 2). Thus, H2 is rejected in both studies.

**Free-Text Analysis**

In the open-ended question at the end of the questionnaire, we asked participants for a justification of their decision on the candidate. To analyse this question, we used hybrid descriptive coding to identify patterns in the participants' responses. These allowed us to draw conclusions on the importance of social media and other non-job-related criteria, as opposed to job-related criteria in both studies. Therein, we assessed the free-text responses in study 1 and 2 according to five categories. Each category is composed of a set of codes that were applied to the text responses. Please see Table 8 for an overview of the categories with the respective codes.

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Insert Table 8 about here

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Overall, the analysis of the free-text responses supports our findings from the hypothesis tests as follows: The distribution of the aspects mentioned as reasons for the candidate assessment shows that indeed, in both samples, the majority of participants appeared to evaluate the candidates mainly according to job-related factors such as professional competence, followed

by employment history and soft skills (see Figures 2-3). Only 13 % of the decision factors mentioned in study 1, and 9 % in study 2, were related to the candidates' private life, including lifestyle, outside interests, and social media. These findings strongly support our proposition that the mere existence of a non-job-related social media profile as such does not result in a higher likelihood of being called back. With participants relying mostly on job-related factors, the free-text responses also provide evidence against the discrimination of highly qualified candidates.

However, we also took a closer look at the participants' comments that were directly related to the candidates' Twitter profiles to verify the observed differences in the call-back results for the highly and less qualified candidates. In study 1, the comments on the candidates' social media presence in the high-qualification group were exclusively positive. Thereby, the majority of participants mainly commented on the absence of red flags, as they did not detect any negative aspects on the candidates' profiles ("No obnoxious eye-catching social media posts"). Others described the profiles as "well-balanced", or "neutral". In this sample, one participant stated: "Work experience, degree focus, and skills/knowledge fit the job posting perfectly; candidate seems like an excellent fit on paper. Social media made a good impression but did not influence the decision."

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Insert Figures 2-3 about here

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In the low-qualification group in study 1, positive comments about a lack of red flags ("No image-damaging posts at first glance") were mixed with participants making inferences about possible soft skills, as one comment stated that the candidate "seems to be communicative and motivated". Some participants evaluated the profile as "sympathetic" and "down to earth". Interestingly, in the low-qualification group, participants voiced negative comments stating that

the candidate was “too much in need of communication” and was “posting too much on social media” in general. In study 1, only two participants mentioned the lack of social media information along with little professional experience as one reason to dismiss low-qualified candidates (“strangely, no social media profile existent”). In the high-qualification group, the lack of social media presence was not criticised.

In study 2, only a few participants who evaluated the high-qualification group referred to the Twitter profile explicitly. Some expressed an overall impression of an “active”, “sporty”, “persevering”, and “ambitious” candidate. Those comments that were directly related to the Twitter profile were rather neutral, or just slightly positive (“good social media presence”), or pointed to the absence of negative information on the candidate (“The internet research did not suggest anything negative”). In the low-qualification group in study 2, participants again mainly pointed to the lack of scandals and negative posts, calling the Twitter presence “unobtrusive” or “solid”. In the low-qualification group in this study, two aspects stood out that were not mentioned in the other groups: Some participants raised the concern that the candidate will be frequently injured and will probably often call in sick based on the sports activities displayed on the Twitter profile. Another aspect that did not emerge in the other groups was “authenticity”, as some participants highlighted the consistency between the application and the Twitter profile. Within the high-qualification control group, none of the participants mentioned the lack of social media as a reason to dismiss a candidate. On the contrary, the lack of social media was seen positively among some participants for the high-qualification candidate. One even stated that:

> All formal hiring requirements met – solid academic performance – social media should not normally have any influence on such processes. However, the fact that there is no easy-to-find online presence for Mr Hoffmann certainly shows professionalism and raises my expectations that he will also behave in a data protection-compliant manner online.

## Discussion

In this study, we examined whether the presence of a candidate's social media profile in the selection process leads to a higher likelihood of being invited to a job interview and a lower likelihood of being dismissed from the selection process. We assumed that the latter would suggest discrimination of equally (H1) or even better-qualified candidates (H2) based on non-job-related factors. However, the comparison of means between the groups did not reveal any discriminatory practice on the basis of job-irrelevant information displayed on candidates' profiles: In both studies, the highly qualified candidates who did not have a Twitter profile still performed better than the less qualified candidates with a Twitter profile, which led to a rejection of H2. Thus, we do not confirm the proposition that managers prefer less qualified applicants over more qualified applicants by using social media in selection, thereby leading to suboptimal employment decisions (Wade et al. 2020). Contrary to previous findings whereby job-irrelevant information discovered on social media impacts hiring managers' perceptions, despite the presence of job-relevant information (Wade et al. 2020), in this study, participants mostly neglected the job-irrelevant social media information in the presence of sufficient job-relevant information. This finding was also confirmed by the free-text responses, which mainly concentrated on job-relevant factors like work experience, qualifications, hard skills, and education.

However, although we could not verify an overall higher likeliness of call-back of candidates who maintain a social media profile than equally qualified candidates without a social media profile (H1), the study provides the following relevant insights: We were able to show that a positive or neutral social media profile raises the chances of advancing in the selection process for highly qualified candidates, but less so for low-qualified candidates. This is supported by the free-text responses, showing exclusively positive reactions to the Twitter profiles in the high-qualification group and less positive reactions in the low-qualification group. Also, the lack of social media information was more likely to be forgiven, or even seen

positively among the highly qualified candidates, but was more likely to be criticised in the low-qualification group.

These differences in the assessment of the highly qualified and the less qualified candidates, thus, still suggest unintentional biases (see Alder and Gilbert 2006). The observation that low-qualified candidates are less likely to succeed in the selection process despite a neutral or positive social media profile may be explained by a negativity bias (Becton et al. 2019) on the basis of the already negative perception of the candidate due to insufficient qualifications in the application documents. Earlier studies in the field suggest that negative information has a stronger effect on others' impressions of individuals (e.g., Baumeister et al. 2001) and greater diagnostic power than positive or neutral information (Taylor 1991). Against this background, the study by Becton et al. (2019) revealed that unprofessional social media profiles negatively influence recruiter evaluations while professional content had little to no effect on evaluations. While in the findings of Melton et al. (2018), positive social media content enhanced the perception of lesser qualified candidates, our findings suggest the opposite, namely that an overall negative impression of a candidate's qualifications made the raters also evaluate the social media profile more negatively, although the content was identical with the high-qualification group. In this case, the negative performance of the low-qualified candidates could not be offset by the social media profile, which was shown to the participants after the qualifications. In the study by Becton et al. (2019), positive social media content did not enhance the employers' overall assessment of the candidate, irrespective of their qualifications. However, in our study, the positive or neutral social media content seemed to heighten the high-qualified candidates' performance a bit. Thus, this study agrees to some extent with the findings of Melton et al. (2018). Therefore, the negativity bias would only explain half of our findings.

Another relevant concept that may help explain the differences in the assessment of highly and less qualified candidates is the "halo effect". In general terms, the halo effect is defined

as a rater bias that “occurs when a rater does not differentiate among distinct items or dimensions in his evaluation of the ratee but evaluates the ratee according to a global or overall judgment” (Holzbach 1978, p. 580). More recently, scholars have differentiated between a “halo effect” which leads individuals to draw a more positive conclusion by looking at one positive characteristic rather than the actual attribute, and a “horn effect”, which leads to a negative conclusion about all characteristics of a person based on one negative characteristic (Shin and Ki 2019; Turkmenoglu 2020). Therefore, the halo effect may have led participants in our study to view the social media contents in the high-qualification group even more positively after reviewing the candidates’ excellent qualifications, while the horn effect may have led participants to a more negative impression of the social media content after realizing that the candidates did not have the necessary qualifications for the position.

## Practical Implications

Although the findings from this study do not confirm discrimination against applicants based on a lack of social media information, our results give rise to practical implications for employers and applicants: First of all, despite the concerns raised by Clark and Roberts (2010), the overall practice of social media screening can be regarded as a socially acceptable practice under certain circumstances. However, this requires careful attention to the design of the selection process and standardization of the social media screening to avoid differential treatment of job candidates (Davison et al. 2016; Landers and Schmidt 2016; Tews et al. 2020; Wade et al. 2020). Also, to minimize rater bias, it should be ensured that the information obtained through social media screening is relevant for the position that needs to be filled. This can be achieved through job analyses (Davison et al. 2016; Landers and Schmidt 2016) and standardized rating systems, as well as clearly predefined criteria (Tews et al. 2020; Wade et al. 2020). The present results also show that, if the screening is used late in the selection process when basic qualifications are already known, the influence of the social media content only seems to confirm the first impression based on the formal application. Thus, in accordance with Davison et al. (2016), we recommend performing the social media screening

late in the selection process. Overall, the inclusion of such recommendations in the organization's social media guidelines (Lam 2016; Opgenhaffen and Claeys 2017) could help establish best practices for responsible use of social media in selection.

For applicants, our study results imply that having no social media profile does not lead to a negative impression in the selection process per se. Rather, it depends on professional content made available to the employer. Thus, one piece of advice for applicants is to provide as neat and complete professional information as possible, perhaps supplemented by a professional online profile, for example, on LinkedIn, which is focused almost exclusively on building professional relations (Zide et al. 2014). As it is exactly for this reason that some authors recommend to employers to limit social media screening to professionally-oriented networks (Cook et al. 2020; Hurrell et al. 2017; Thomas et al. 2015), job candidates may benefit from providing a comprehensive picture of themselves on such professional platforms. As one interviewee from the pre-experiment interviews put it: "The more professional, more complete, and better structured such a profile is, the easier it is for me as a recruiter". This observation shows consistency with a study by Roulin and Levashina (2019) who found that more extensive LinkedIn profiles with a picture and more connections are viewed more positively among raters. Thus, a complete and professionally-looking online appearance on a platform like LinkedIn may even make it less likely that the employer turns to unprofessional sites to search for additional information on candidates.

## Conclusion

In this study, we examined whether the presence of a candidate's social media profile in the selection process leads to a higher likeliness of a call-back, which would suggest discrimination of equally (H1) or even better-qualified candidates (H2) who are not present on social media. However, we did not find any proof that missing information results in the devaluation of a highly qualified candidate's skills due to increased uncertainty about the candidate's attributes (Roth et al. 2016). Neither did our results suggest that missing

information was seen with suspicion towards the candidate (Melton et al. 2018), nor as a cue for less honesty (Berkelaar and Buzzanell 2015). As means analysis and free-text analysis show, participants in our study relied mainly on job-related criteria when evaluating candidates for the job opening. Thus, the study does not suggest any discrimination based on non-job-related factors displayed on social media. Therein, our article contributes to the literature in several ways:

First and foremost, our results challenge the view that social media screening as such represents a socially irresponsible practice: It appears that social media screening has become more professional and mindful since Clark and Roberts criticised the practice in 2010 for transgressing the boundaries between private and professional life. Our study agrees with authors like Kluemper et al. (2015) and Vosen (2021) concluding that applicants may not always react negatively to social media screening, depending on the way it is performed. Taking into account the limitations of our study and the risks associated with privacy and discrimination issues, we, therefore recommend proceeding with great care when carrying out social media background checks. While the differences in the likeliness of recall do not suggest discrimination, the different perceptions of highly qualified and less qualified candidates in this study have important implications for research and practice. Some of the results for different qualification groups may still suggest unintentional biases (see Alder and Gilbert 2006), such as a negativity bias (Becton et al. 2019), or halo/horn effects (Holzbach 1978; Shin and Ki 2019; Turkmenoglu 2020). This makes it necessary to design the selection process in a way to minimize differential treatment of job candidates, as laid out in our recommendations to employers.

However, the findings of this study have to be seen in light of the following limitations: While we did not test explicitly for desirability bias in this study in order not to dilute the results, some occasional free-text responses indicate that basing employment decisions on social media screening was seen as a non-desirable selection procedure by some respondents (“social

media should not normally have any influence on such processes"). Furthermore, as opposed to other studies that tested the effect of negative social media posts (Becton et al. 2019; Melton et al. 2018), our experiment concentrates on posts that showed no indication of reduced or increased productivity in relation to the job ad. However, while the skills needed for the fictitious accounting position advertised in this study were unrelated to the interests displayed on the social media sites, some respondents clearly made inferences about a job candidate's soft skills and job motivation based on the sportive social media appearance.

The limitations of this study also offer opportunities for further research. Such research could, for example, investigate participants' inferences about a candidate's (soft) skills based on different social media information, including negative posts. Furthermore, the effect of the mere existence of a social media profile could be studied, whereby the social media appearance would not reveal any information about the candidate at all. Thereby, it could be examined to what extent the mere existence of a candidate's social media profile leads to inferences about that candidate's qualities. Another aspect that requires more research attention concerns the unintentional implicit biases that may have caused participants to make an even higher assessment of the highly qualified candidates with a social media profile and an even lower assessment of less qualified candidates. While we explain this observation with a negativity bias or a halo/horn effect, future studies could look more deeply into the explanation for this behaviour. Although the results of this study were consistent for both samples with respect to the potential discrimination of candidates, the student and employee samples displayed slight differences in the assessment of candidates' qualifications and the absence of social media. Thus, future research could provide a more rigorous examination of the assessment criteria, for instance, of different age groups, study fields, and professions.

# Appendices

## Appendix 1: High-Qualification Candidate Application Documents

| Persönliche Angaben | |
|---|---|
| Name | Schneider |
| Vorname | Julia |
| Geburtsdatum | 03.02.1991 |
| Wohnort | 85049 Pettenhofen, Deutschland |
| E-Mail-Adresse | Juleschn.91@gmail.com |

| Beruflicher Werdegang | | |
|---|---|---|
| Beschäftigungszeitraum | Firma | Art der Beschäftigung |
| 01.2017- | Ingolstädter Kommunalbetriebe AöR Ingolstadt | Sachbearbeiterin Buchhaltung |
| 09.2014-12.2016 | Kagerer & Co. GmbH München | Sachbearbeiterin Buchhaltung - Schwerpunkt Personal |
| 10.2012-03.2013 | Rödl & Partner München | Praktikum im Bereich Steuerberatung |
| 02.2011-09.2012 | Bertrandt AG München | Werkstudentin im Bereich Buchhaltung/Lohnsteuer |

| Bildungsweg | | | |
|---|---|---|---|
| Jahr | Abschluss | Note | Bildungseinrichtung |
| 2014 | B. Sc. Finance & Management | 1,9 | ISM München |
| 2010 | Allgemeine Hochschulreife | 2,0 | Katharinengymnasium Ingolstadt |

| Kenntnisse und Interessen | |
|---|---|
| Fähigkeiten und Qualifikationen | Bilanzbuchhalter IHK<br>Bilanzierung nach IFRS und HGB<br>Kenntnisse im Bereich Steuerrecht<br>Erfahrung im Personalwesen |
| EDV-Kenntnisse | MS Office<br>SAP-Anwendungen<br>Datev-Buchhaltung |
| Sprachkenntnisse | Deutsch (Muttersprache)<br>Englisch (fließend in Wort und Schrift)<br>Französisch (gute Grundkenntnisse)<br>Portugiesisch (Grundkenntnisse) |
| Persönliche Interessen | Wandern<br>Ausdauersport<br>Natur<br>Bouldern |

**Appendix 2: Low-Qualification Candidate Application Documents**

| Persönliche Angaben | |
|---|---|
| Name | Schneider |
| Vorname | Julia |
| Geburtsdatum | 03.02.1991 |
| Wohnort | 85049 Pettenhofen, Deutschland |
| E-Mail-Adresse | Juleschn.91@gmail.com |

| Beruflicher Werdegang | | |
|---|---|---|
| Beschäftigungszeitraum | Firma | Art der Beschäftigung |
| 12.2020- | Dr. Wack Holding GmbH & Co. KG Ingolstadt | Sachbearbeiterin Rechnungswesen |
| 03.2016-11.2020 | Kohlpharma GmbH München | Vertriebsmitarbeiterin |
| 09.2014-03.2015 | Müller Service GmbH Aretsried bei Augsburg | Praktikantin Active Sourcing & Recruiting |

| Bildungsweg | | | |
|---|---|---|---|
| Jahr | Abschluss | Note | Bildungseinrichtung |
| 2014 | B. Sc. Finance & Management | 2,3 | ISM München |
| 2010 | Allgemeine Hochschulreife | 2,4 | Katharinengymnasium Ingolstadt |

| Kenntnisse und Interessen | |
|---|---|
| Fähigkeiten und Qualifikationen | Bilanzierung nach HGB und IFRS<br>Organisationstalent<br>Unternehmergeist<br>Aufgeschlossenheit |
| EDV-Kenntnisse | MS Office |
| Sprachkenntnisse | Deutsch (Muttersprache)<br>Englisch (fließend in Wort und Schrift)<br>Französisch (gute Grundkenntnisse)<br>Portugiesisch (Grundkenntnisse) |
| Persönliche Interessen | Wandern<br>Ausdauersport<br>Natur<br>Bouldern |

**Appendix 3: Treatment Group Social Media Profile Excerpt**

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## Tables

*Table 1. Differences in Qualification Profiles*

| **High-Qualification Candidate** | **Low-Qualification Candidate** |
|---|---|
| Completed business studies with a graduation grade of 1.9 | Completed business studies with a graduation grade of 2.3 |
| Almost eight years of experience in accounting | One and a half years of experience in accounting |
| Knowledge of MS Office | Knowledge of MS Office |
| Knowledge of two different accounting software systems | No particular knowledge of accounting software displayed |
| Certified accountant by the chamber of commerce | No certification |
| Very good language skills in German and English | Very good language skills in German and English |
| Basic proficiency in an additional European language | Basic proficiency in an additional European language |

*Table 2. Comparison of Descriptive Statistics for Likeliness of Invitation*

| **Group** | **Study 1 (*N* = 91)** | | **Study 2 (*N* = 214)** | |
|---|---|---|---|---|
| | Mean | *SD* | Mean | *SD* |
| High qualification, high social media | 5.63 | 0.761 | 5.49 | 0.893 |
| Low qualification, high social media | 4.40 | 1.155 | 4.43 | 1.021 |
| High qualification, low social media | 5.31 | 1.225 | 5.39 | 0.802 |
| Low qualification, low social media | 4.57 | 1.076 | 4.49 | 1.136 |

*Table 3. Comparison of Descriptive Statistics for Likeliness of Dismissal*

| **Group** | **Study 1 (*N* = 91)** | | **Study 2 (*N* = 214)** | |
|---|---|---|---|---|
| | Mean | *SD* | Mean | *SD* |
| High qualification, high social media | 5.68 | 0.478 | 5.35 | 0.903 |
| Low qualification, high social media | 4.28 | 1.100 | 4.39 | 1.036 |
| High qualification, low social media | 5.27 | 0.827 | 5.11 | 0.928 |
| Low qualification, low social media | 4.48 | 1.123 | 4.29 | 1.149 |

*Table 4.One-way ANOVA for Likeliness of Invitation in Study 1*

| | SS | Df | MS | *F* ratio | *p* value |
|---|---|---|---|---|---|
| Between groups | 22.722 | 3 | 7.574 | 6.391 | 0.001 |
| Within groups | 103.102 | 87 | 1.185 | | |
| Total | 125.824 | 90 | | | |

*Table 5. One-way ANOVA for Likeliness of Dismissal in Study 1*

| | SS | Df | MS | *F* ratio | *p* value |
|---|---|---|---|---|---|
| Between groups | 28.611 | 3 | 9.537 | 10.990 | 0.000 |
| Within groups | 75.499 | 87 | 0.868 | | |
| Total | 104.110 | 90 | | | |

*Table 6. One-way ANOVA for Likeliness of Invitation in Study 2*

| | SS | Df | MS | *F* ratio | *p* value |
|---|---|---|---|---|---|
| Between groups | 51.659 | 3 | 17.220 | 18.213 | 0.000 |
| Within groups | 198.551 | 210 | 0.945 | | |
| Total | 250.210 | 213 | | | |

*Table 7.One-way ANOVA for Likeliness of Dismissal in Study 2*

| | SS | Df | MS | *F* ratio | *p* value |
|---|---|---|---|---|---|
| Between groups | 43.142 | 3 | 14.381 | 14.070 | 0.000 |
| Within groups | 214.638 | 210 | 1.022 | | |
| Total | 257.780 | 213 | | | |

*Table 8. Free-Text Analysis Categories and Codes*

| **Category** | **Codes** |
|---|---|
| Professional competence | Job fit |
| | Qualifications |
| | Hard skills |
| | Education |
| Soft skills | Interpersonal skills |
| | Motivation |
| | Professionalism |
| | Personality |
| | Applicant information |
| Employment history | Work experience |
| | Curriculum vitae |
| Demographic information | Gender |
| | Age |
| | Family status |
| | Location |
| Private life | Lifestyle |
| | Outside interests |
| | Social media |

## Figures

*Figure 1. Overview of Treatment Groups*

| *Qualification* | *Social Media Information* | |
|---|---|---|
| | High Qualification<br>High Social Media Information | High Qualification<br>Low Social Media Information |
| | Low Qualification<br>High Social Media Information | Low Qualification<br>Low Social Media Information |

*Figure 2. Free-Text Analysis Study 1*

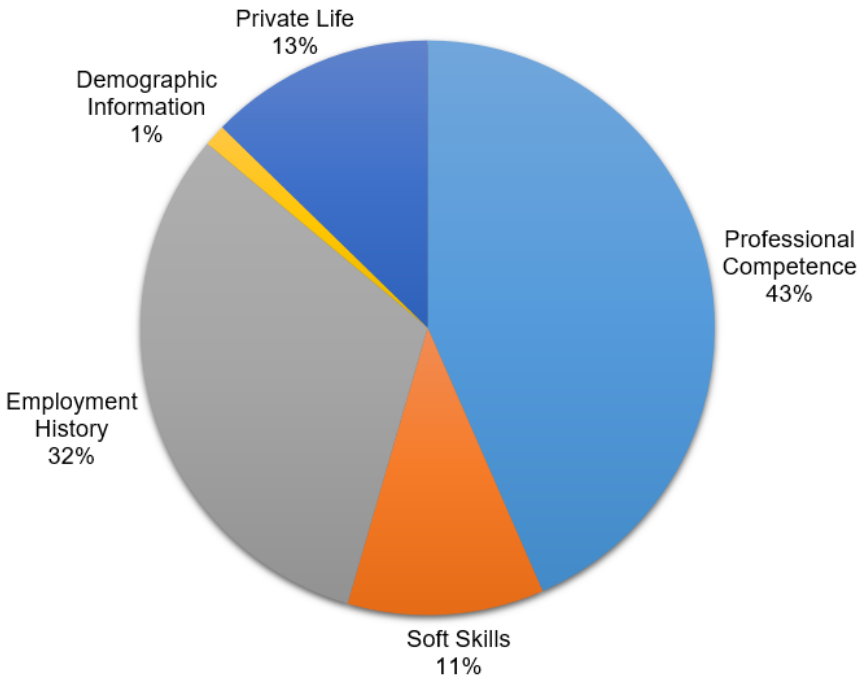

*Figure 3. Free-Text Analysis Study 2*