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# Employer Branding and Recruitment: Social Media Field Experiments Targeting Future Public Employees

Symposium Article

**Abstract:** *Public sector recruitment is an urgent and prevailing challenge in both research and practice. Public employer branding is an important subject in the theoretical debate, but the mechanisms behind how certain signals of public employers affect individuals' interest in a job are under-researched. By bridging signaling theory, social identity theory, and personnel economics, this study analyzes the effects of signals in advertisements related to societal impact, job security, and performance orientation on different gender/age-based target groups. This series of pre-registered social media field experiments (n = 196,822 persons) with four public employers examines the degree to which these signals affect individuals' interest in a job at a public employer. The results do not show an overall impact of the signals but target group-specific effects—gender has a significant effect and age for certain public employers. Compared with the societal impact signal, the job security signal has a slightly stronger effect.*

## Evidence for Practice

- For public employer branding, sending convincing signals during the earliest stage of recruiting is important—otherwise potential recruits might give their attention to other employers.
- When designing public employer branding measures, potential target-group differences related to, for example, gender or age deserve more attention and need to be tested before the implementation of employer branding campaigns.
- Signaling factors of public employer attractiveness do not function the same for all public employers. For recruiters, social media platforms offer cost-efficient tools for testing the effectiveness of signals in the public employer branding process for targeting future public employees.
- A public employer branding strategy relying only on societal impact is not effective in responding to the competition in the labor market.
- Public employers should assess whether an integrated recruitment strategy (i.e., coordinated for several public employers that belong to the same public authority or region) might be more effective than isolated efforts of single public employers.

Public sector organizations in OECD countries face severe challenges related to recruitment. The number of job vacancies has been increasing as the United States and many European countries experience a wave of baby boomers retiring from public employers (Linos and Riesch 2020; OECD 2016). Simultaneously, the number of people interested in public sector jobs has been decreasing (Bright and Graham 2015), and the resulting personnel gaps threaten the provision of basic public services. The COVID-19 pandemic has made the demand for public employees who do their work with “concern, care, and compassion” even more urgent (Hall and Battaglio 2020, 345). To recruit a highly qualified and diverse workforce, effective recruitment and public employer branding has become an urgent issue (Bromberg and Charbonneau 2020; Linos 2018).

As a relevant domain in the growing body of research on public sector branding (Fay and Zavattaro 2016), *employer branding* can be defined as an “approach to recruitment and retention that involves internally and externally promoting a clear view of what makes an organization uniquely attractive as an employer” (Theurer et al. 2018, 155; Weske et al. 2019). Public employer branding helps to call attention to job vacancies and stimulates job seekers and job shifters to apply for public sector jobs.

Recent studies in public administration journals have addressed recruitment, focusing on identifying the factors that are effective in attracting recruits (for example Linos 2018; Linos and Riesch 2020; Weske et al. 2019). However, explorations of the mechanisms behind employer branding—how the promotion and information processing of these factors

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works and for which target groups they are suitable—have only recently begun (Asseburg et al. 2020).

Understanding what makes public employers uniquely attractive is crucial because asymmetric information is a critical feature of the labor market: Potential recruits must first extract information from the “noisy” labor market environment by taking notice of a potential public employer and its signals (Lazear and Oyer 2012, 494). Before potential recruits can judge whether there is a fit with an employer, a theoretical signaling mechanism is at work. However, the recent review of Korac, Saliterer, and Weigand (2019) shows that the well-established signaling theory is almost unused within the context of public sector recruitment. This is an important gap in the theoretical understanding, as signaling theory is one of the most widely used theories in the management and branding literature (Lievens and Slaughter 2016; Sievert, Vogel, and Feeney 2020). How signals of attractiveness are effective in drawing the attention of potential recruits in the first stage of the recruitment process is not yet understood. Moreover, it is unclear how they affect certain target groups differently, and the digital employer branding of public employers has not been researched despite its relevance as a source of external recruits and its scalability (Marland, Lewis, and Flanagan 2017; Sivertzen, Nilsen, and Olafsen 2013).

The present study applies signaling theory in this context, combining its presumptions with a discussion on the use of organizational characteristics, such as societal impact, job security, and performance orientation, as cues to signal attractiveness to potential recruits. The use of such signals in employer branding should lead to an increased number of interested potential recruits.

The research question is as follows: To what degree do signals of employer branding in digital advertisements related to societal impact, job security, and performance orientation affect individuals’ interest in a job at a public employer?

This study tests the signaling effects of three textual amendments as well as two moderators—the gender and age of potential recruits—using data from a series of pre-registered<sup>1</sup> large-scale social media field experiments. Each of the four trials reached about 45,000–55,000 individuals (196,822 individuals overall), resulting in about 1,100 to 1,250 clicks per experiment (4,690 clicks overall). The trials were conducted in cooperation with German public employers, specifically four state-owned enterprises (SOEs) that are fully publicly owned by cities and provide basic public services with regular contact to citizens.

This study offers three contributions: First, it provides a theoretical framework bridging signaling theory, social identity theory, and personnel economics. This bridge contributes to the understanding of signals during the earliest stage of recruiting in the digital context because, if potential recruits are not initially convinced of an employer’s attractiveness, they might give their attention to other employers. Before a potential recruit can judge the attractiveness of an employer, the theoretical mechanism of signaling is at work, with social identity theory and personnel economics explaining the effects of age and gender in this context.

Second, the study adds to the mutual enhancement of both public service motivation (PSM) and human resource management (HRM) literature. It examines the PSM-related signal societal impact in a multi-incentive setting (Christensen, Paarlberg, and Perry 2017)—here, in the context of employer branding. While a relevant number of studies have recommended that PSM-related signals should be used in the recruitment of public employers (cf. review of Ritz, Brewer, and Neumann 2016), the present field experimental findings in a digital context challenge this idea. The results indicate that the PSM-related signal is relatively weak. A slightly smaller share of the examined population is attracted to a societal impact signal compared with a job security signal.

Third, by conducting large-scale social media field experiments, this study is one of the first to apply a recent methodological advancement in public administration research, as demanded by several scholars (Battaglio and Hall 2018). It aims at inviting researchers and practitioners to place more focus on public employer branding in a digital context (Lievens and Slaughter 2016; Weske et al. 2019). The results indicate that the use of social media field experiments is helpful when seeking to understand group-specific perceptions and behaviors in the context of employer branding.

The article is organized as follows: The next section presents the conceptual framework for employer branding mechanisms in the public sector. Next, the findings are analyzed, followed by a discussion of the results. Finally, implications are offered for public employer branding in research and practice.

## **Literature Review and Theoretical Framework: Bridging Signaling Theory, Personnel Economics, and Social Identity Theory**

### ***Signaling Theory***

Signaling theory is an established framework in several fields (Connelly et al. 2011). Applied to employer branding, the mechanism behind signaling theory is that potential recruits use the limited information available from image characteristics—here, of an ad—as signals of what it might be like to work for an employer (Lievens and Slaughter 2016). Signals are important for recruits, who often have little information about employers due to information overload in the “noisy” labor market (Spence 1973). This aspect of limited information is in line with social cognition and decision sciences, which argue that it leads to decisions being made with a high degree of uncertainty (Battaglio et al. 2019). Potential recruits rely on signals that are conveyed from any information they do have, from which they infer an organization’s working conditions and characteristics (cf. figure A1 in the Appendix). Digital ads are one source that provide signals affecting potential recruits’ interest in an employer.

Signaling theory offers explanations for the particularly relevant earliest stage of recruitment as well as the digital ad context, in which information overload is strong. Employer branding in the online context of social media ads is important for attracting external recruits, especially because of scale effects and advanced capabilities in sending specific signals to certain target groups (Lievens and Slaughter 2016; Marland, Lewis, and Flanagan 2017). In employer branding, sending convincing signals during the earliest

stage of recruiting is important because, if potential recruits are not initially convinced of an employer's attractiveness, they might give their attention to other employers. Social media is an effective tool for employer branding because it helps to build a positive employer brand, positively influences the job seeker's intention to apply for a job (Sivertzen, Nilsen, and Olafsen 2013), and offers rich data that facilitate robust analysis for employer branding campaigns.

Signal-based models used in research have been criticized for being underdeveloped with regard to the mechanisms that link signals to outcomes; for example, the inferences that people draw from signals are under-researched. The precise signal effects are not well delineated (Jones, Willness, and Madey 2014), especially for public employers, which offer different factors of employer attractiveness than private firms (Korac, Saliterer, and Weigand 2019).

To understand whether the organizational characteristics of public employers presented in an ad are used by potential recruits as signals of these characteristics, this study tests the relative importance of three cues as signals of organizational characteristics that should positively affect the interest in a job with a public employer (Korac, Saliterer, and Weigand 2019). These cues provide new, realistic, and nontrivial information, signaling organization-wide attributes in the absence of more information (Linos 2018). The signal-based mechanisms may help explain the degree to which potential recruits are attracted to organizations that exhibit certain signals compared with those that do not (Jones, Willness, and Madey 2014). The presumed signal-based mechanisms of the three factors and the derived, pre-registered hypotheses are discussed below.<sup>2</sup> Each signal-based mechanism reflects an organizational characteristic that potential recruits might value and desire:

- To enjoy being a member of an organization that provides public services and offers the opportunity to work for the benefit of others and society (societal impact signal);
- To be treated well as an employee with the understanding of having a safe and reliable job (job security signal); and
- To work at an organization that shares the value of performance orientation (performance orientation signal).

The specific hypotheses are delineated in the following.

**Societal Impact Signal.** The research on PSM—that is, the willingness to contribute to society at large and serve the public interest—recommends using PSM-related signals to attract recruits to public employers (Christensen, Paarlberg, and Perry 2017). Indeed, PSM-related signals could be a factor that successfully differentiates public employers from private competitors in the labor market (Asseburg and Homberg 2020) by activating individuals' PSM (Pedersen 2015). This implies that, in ads, public employers should place more emphasis on the PSM aspects of public service provision—especially for jobs featuring contact with citizens (Ritz, Brewer, and Neumann 2016).

Besides the job-related aspects, such as citizen contact, other studies highlight that PSM is also related to the public sector (Wright and Christensen 2010). This implies that PSM-related signals should not only be effective for administrations but also for SOEs—especially in the four examined SOEs, which provide public

services for society, are in full public ownership and offer jobs featuring citizen contact (for comparable arguments, see Kjeldsen and Jacobsen 2013). A PSM-related organizational attribute sends signals to potential recruits about specific organizational goals, such as societal impact (van Loon et al. 2018). The societal impact signal triggers a signal-based mechanism that links PSM with employer branding for potential recruits: a perception of goal congruence between the employer and the individual. However, recent experimental studies have opened a controversial discussion on whether the effect of a PSM-related signal could be weaker than expected. Specifically, it may be a *relatively* weak factor of employer branding for many potential recruits (Linos 2018) when compared with, for example, a job security signal or other motivational factors. Regarding these controversial findings, further research on PSM in the context of employer branding is needed (Weske et al. 2019). This study hypothesizes that a higher number of individuals are attracted to ads that signal public service and its impact on the work of the SOE compared with the control condition:

**H1a:** Individuals are more likely to show interest in a job at a SOE if ads emphasize public service and its societal impact on the work of the SOE.

**Job Security Signal.** As a second attribute of employer branding, this study focuses on job security, which is a typical characteristic of public employers that often shows a strong attractiveness effect (Korac, Saliterer, and Weigand 2019). In terms of collective labor agreements, public personnel laws, and the often-argued role-model status of public employers, SOEs can offer job security as a key factor of their employer branding, which differentiates them from private firms (Papenfuß 2020). Signaling job security might lead to a signal-based mechanism that indicates recruits' expected treatment at the public employer. Such signaling might imply that the organizational climate is secure and reliable. Potential recruits hold expectations regarding the ways in which an organization treats its employees (Jones, Willness, and Madey 2014); thus, potential recruits interpret the signal of job security as not only promising a safe job but also a reliable employer that desires long-term cooperation (Linos 2018). Accordingly, the following hypothesis is offered:

**H2a:** Individuals are more likely to show interest in a job at a SOE if ads emphasize its job security.

**Performance Orientation Signal.** Potential recruits may be prejudiced against working for public employers (Asseburg et al. 2020; de Boer 2020) due to stereotypes of lethargy and contempt for—or at least no appreciation for—organizational performance orientation (Korac, Saliterer, and Weigand 2019). This study attempts to counter this perception with a third ad emphasizing the organizational attribute of performance orientation to generate interest in a target group, which might otherwise be more focused on private sector jobs. Such an ad could signal a person–organization fit (Chapman et al. 2005) between potential recruits who enjoy a high-performing work environment. Signaling performance orientation would inform potential recruits about the organizational values of the SOE. Further, signaling specific organizational values informs a signal-based mechanism that links performance orientation with organizational attractiveness.



Organizational performance orientation might give potential recruits a perception of supplementary fit—that is, a perceived similarity between personal performance orientation and a performance-oriented work environment (Jones, Willness, and Madey 2014). This study hypothesizes that, when public employers signal an organizational performance orientation, a greater number of individuals will be attracted by their employment ads:

**H3a:** Individuals are more likely to show interest in a job at a SOE if ads emphasize its performance orientation.

### ***Personnel Economics and Social Identity Theory: Effects of Age and Gender***

This study specifically analyzes the age- and gender-related effects in the context of employer branding, as little is known about how certain signals affect age and gender groups differently (Korac, Lindenmeier, and Saliterer 2020; Lievens and Slaughter 2016). It helps close this gap by using signaling theory as an overarching framework and bridging it with the personnel economics literature (Lazear and Oyer 2012) and social identity theory (Korac, Lindenmeier, and Saliterer 2020; Tajfel 1978).

**Age.** The presumed moderation effect of age is inferred from the personnel economics literature, which has a long tradition of analyzing incentive signals and how they influence the perceptions of population subgroups. One core finding in this context is age-based variation in the understanding of incentives: As older workers are more often job shifters, they are more likely to prefer employers with more instrumental benefits, such as job security. In addition to the age-related preference for certain organizational characteristics, changing employers does not come without transaction costs; thus, job searching and job shifting need to result in gains that are larger than the transaction costs (Lazear and Oyer 2012).

This study examines the difference between three age groups, arguing that the youngest group (20–26 years old)—mainly consisting of job seekers (as the median graduation age in Germany is 23 years)—perceives the signals differently than the oldest age group (34–40 years old)—mainly consisting of job shifters. The median age group (27–33 years old) consists of those who are shifting jobs for the first time, as the average tenure of an individual's first job in Germany is about 2–3 years; for subsequent jobs, the average tenure is about 10 years.

This study presumes that the societal impact signal is weaker for older potential recruits, who might be looking for more instrumental characteristics, such as job security (e.g., to provide a stable household income). While some empirical studies have found that PSM-related signals seem to be more appealing to younger people (Parola et al. 2019), others argue that PSM does not predict first job choice but is rather impactful later in an individual's career, as material needs might be more urgent for the young, and their position when bargaining for a job is weak without work experience (Wright, Hassan, and Christensen 2017). To empirically examine these contradicting positions, this study hypothesizes the following:

**H1b:** Age moderates the relationship between interest in a job at a SOE and societal impact in ads in that it is weaker for older individuals.

**H2c:** Age moderates the relationship between interest in a job at a SOE and the emphasis on job security in ads in that it is stronger for older individuals.

**Gender.** Potential recruits' social identities interact with the inferences they make from organizational signals (Highhouse, Thornbury, and Little 2007). According to social identity theory (Korac, Lindenmeier, and Saliterer 2020; Tajfel 1978), gender plays a key role in the concept of self and behavior. The gender of potential recruits influences their individual motivation, job choice (Kjeldsen and Jacobsen 2013), and, presumably, reactions to signaled organizational characteristics. This study examines the different receptions to signals between women and men, arguing that they perceive signals differently due to differing social identities. Linos (2018, 5 f.) argues that, for female job seekers, emphasizing personal benefits, such as job security, will be effective if their alternative options in the private sector job market are less stable:

**H2b:** Women are more likely to show interest in a job at a SOE if ads emphasize job security.

Moreover, female recruits might be less attracted to ads signaling organizational performance orientation. Studies indicate that women tend to be less satisfied with overly performance-oriented management practices (Festing, Knappert, and Kornau 2015):

**H3b:** Women are less likely to show interest in a job at a SOE if ads emphasize its performance orientation.

### ***Methods: Four Social Media Field Experiments***

To test the outlined hypotheses, this study conducts a series of four large-scale, online field experiments on Facebook, which is one of the most commonly used social media platforms worldwide. Social media platforms have become “ubiquitous” and promise insights for public administration research because of their “largely untapped” potential (Jilke et al. 2019, 89). Social media field experiments have been used across several disciplines (cf. for an overview: Aral 2016; further examples: Aral and Walker 2014; Bond et al. 2012; Ryan 2012). Using Facebook's advertisement facilities, this study places ads to attract attention and clicks leading to the career webpage of four public employers. The design follows the guidelines for field experiments in public administration research (James, John, and Moseley 2017; Jilke et al. 2019).

### ***Experimental Context: SOEs as Public Employers***

The four public employers tested in this study are all German SOEs. SOEs can be defined as enterprises that are under the control of public authorities at all government levels, either by the majority ownership of one or more public authorities or by exercising an equivalent degree of control (Andrews et al. 2020; Papenfuß and Keppeler 2020). They employ up to 50% of public employees at all government levels and are a relevant part of the public sector in Germany and many other countries (Expert Commission G-PCGM 2020; Grossi, Papenfuß, and Tremblay 2015).

SOEs offer a useful case for studying public employer branding for five reasons. First, studying SOEs with comparable organizational goals (same task in different municipalities to keep the service aspect

constant) makes it possible to control for a number of potentially confounding variables that may affect employer branding, such as differences in organizational goals (Papenfuß and Keppeler 2020). Second, the examined SOEs are all in fully public ownership, and they all have a social media account. Third, they perform typical tasks in public service provision, as they operate in the public service industry of municipal utilities (i.e., infrastructure and grid operation).<sup>3</sup> Fourth, there is an increasing demand in literature to consider them as research objects (Andrews et al. 2020) because a significant share of public services worldwide are provided by SOEs (Bruton et al. 2015). Fifth, in the specific German case, SOEs have regular contact with citizens through providing public services, and their collective labor agreements are partly comparable to those of public administration.

### Experimental Design, Subject Recruitment, and Treatment

The four trials were conducted from November 2018 to February 2019. Social media ads were designed to attract clicks to the career webpages of these four SOEs. The experimental design and hypotheses were pre-registered, and the design received ethics approval from the ethical committee of the authors’ university.

Groups of Facebook users were randomly allocated to four different ads for one SOE. Depending on the treatment conditions, these ads included information cues regarding societal impact, job security, and performance orientation (treatment conditions 1–3); no such information was provided in the measures for the control condition (cf. figure 1). For each SOE, the same design was executed separately. The series of the four independent field experiments is depicted in figure A2 in the Appendix. For each experiment, 1,020 ads were purchased (for a sum of 1,000 Euros per experiment, constructed to pay per impression) and targeted to the specific

clusters. All ads ran for 30 days, were exclusively developed for the four field experiments, and were pre-tested with university students.

Once users clicked on the ads, and depending on the experimental group, they were directed away from Facebook to the career webpage of the particular SOE. The career webpages were not manipulated; each experimental group saw the identical SOE’s career webpage and had the opportunity to apply for real jobs.

The trial involved placing ads for targeted groups of Facebook users in the above-described age groups, who were both female and male, within a 100 km area around the registered office of each SOE. This appeared to be a natural setting offering a sensible commute distance and an eligible sub-population.

### Cluster Randomization

Randomization into the experimental groups was performed at the level of the Facebook user clusters—a common approach for social media field experiments (Jilke et al. 2019). Facebook users were classified into clusters by age, gender, and postal code. For each experiment, 170 postal codes from the circular periphery of each SOE were collected. Individuals who were 20–40 years old were grouped into the three above-described age categories. A total of 1,020 clusters were created by taking 170 postal codes × 3 age categories × 2 gender categories (table A2 in the Appendix provides a description of the blocked cluster randomization).

### Outcomes

The outcome of interest was subjects’ revealed interest in a job at a public employer. This interest was measured by whether the ad encouraged people to click on it and whether societal impact, job security, or performance orientation had an effect on interest. In



Notes: The control condition ad was taken as a baseline. The treatment and control ads looked exactly like the control condition (i.e., logo of the SOE, picture, and call to action below picture), except for a difference in the two-sentence heading description.

**Figure 1 Social Media Ads (Left to Right: Control, Societal Impact, Job Security, and Organizational Performance Orientation) in the Original German Version.**

line with an established branch of the literature, a link click can be interpreted as a sign of interest because the ads encourage people to click and visit the career webpage of the public employer. Clicking is commonly seen as a proxy for the pursuit of intention in literature (Zhang and Mao 2016).

The unique outbound link click was used as the primary dependent variable (respectively, the unique outbound link-click rate [CTR]). The CTR describes the number of people who performed a click that took them from Facebook to the SOE’s career webpage.

Results

Analysis of the Main and Moderating Effects

As the trials were conducted in cooperation with four SOEs, the ads were placed using their separate social media accounts. Overall, among the four field experiments, a total of 196,822 Facebook users (557,492 impressions) were reached, resulting in 4,690 unique outbound clicks (cf. overview of variables in table A1, Appendix). This means that, of the 196,822 Facebook users who saw the ads once, 2.38% (4,690 users) performed at least one click (cf. tables 1 and 2).

The number of reached users is comparable across the experimental groups and across age and gender (tables A3 and A4, in the Appendix). The mean reach of the treatments is 49,205 Facebook users (SD = 1,384). A descriptive data analysis provides counterintuitive results: For the field experiments of SOE 1, 2, and 4, the absolute number of clicks for the societal impact signal is even lower than it is for the control condition. It is important to note here that a small difference of 0.01% between the mean CTRs of two experimental groups can equal about 20 individuals.

Table 3 presents the results of a logistic regression analysis based on the aggregated data of the four field experiments and shows the effects of each treatment condition on the individuals’ interest in a job at a public employer.

Column 1 responds to the hypotheses related to whether the three treatment conditions have a significant effect on the revealed interest in a job at a public employer. None of the treatments has

an overall significant effect on clicking behavior in comparison with the control condition. Based on this, H1a, H2a, and H3a are not supported.

Column 2 presents the effects when including the SOE dummy variables, gender, and age groups. The results show that women are significantly less likely than men to click on any of the four ads (odds ratio: 0.939).

Column 3 responds to H1b regarding the interaction of age and the societal impact signal. Fewer Facebook users in the 34–40 age group click as a result of the societal impact signal than those in the younger age groups, but the effect is not significant. Thus, H1b is not supported.

Column 4 addresses H2b and H2c, regarding the moderating effect of age and gender on the job security treatment. Neither the interaction of job security with age, nor with gender, has a significant effect in comparison with the control condition. Based on this, H2b and H2c are not supported.

Column 5 addresses H3b, regarding the moderating effect of gender on the performance orientation signal. No significant effect (and no support for H3b) is found.

Though not pre-registered, exploratory analyses (independent two-sample *t*-test: *t* [96,237] = -2.0029, *p* = .045, Cohen’s *d* = -0.0129; for more detail, see table A7 in the Appendix) show small but statistically significant differences between the effects of the societal impact signal and the job security signal. This is visualized with marginal means plots presented in figure 2. The marginal means describe the probability of an individual showing interest in a job. For example, a marginal mean of 0.0235 for “control” means that the control condition is clicked in 2.35% of all cases.

Robustness Check and Additional Analyses

For robustness checks of the presented regression, additional regression analyses with beta coefficients were performed (cf. table A5 in the Appendix), displaying the same results.

Table 1 Unique Outbound Link Clicks by SOE and Experimental Group

SOE/Experimental Group	Unique Outbound Link Clicks (Users in Brackets)			
	Control	Societal Impact	Job Security	Performance Orientation
SOE 1	273 (11,897)	247 (10,817)	311 (11,245)	275 (11,605)
SOE 2	323 (12,216)	262 (11,082)	303 (11,926)	294 (11,772)
SOE 3	312 (14,331)	297 (12,904)	318 (13,865)	309 (13,790)
SOE 4	285 (12,315)	265 (12,195)	287 (12,207)	329 (12,655)
Total	1,193 (50,759)	1,071 (46,998)	1,219 (49,243)	1,207 (49,822)

Table 2 Mean Click-Through Rate (CTR) of Unique Outbound Clicks by SOE and Experimental Group

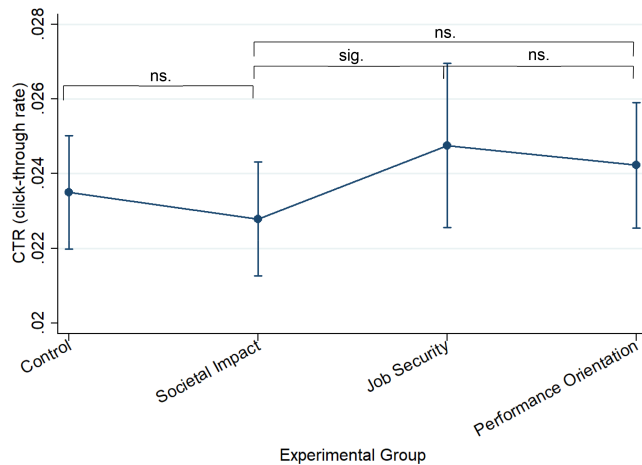
SOE/Experimental Group	CTR in Percentage (Standard Error in Brackets)			
	Control	Societal Impact	Job Security	Performance Orientation
SOE 1	2.295 (.0014)	2.283 (.0014)	2.766 (.0015)	2.370 (.0014)
SOE 2	2.644 (.0015)	2.364 (.0014)	2.541 (.0014)	2.497 (.0014)
SOE 3	2.177 (.0012)	2.302 (.0013)	2.294 (.0013)	2.241 (.0013)
SOE 4	2.314 (.0014)	2.173 (.0013)	2.351 (.0014)	2.600 (.0014)
Mean	2.350 (.0015)	2.279 (.0015)	2.475 (.0016)	2.423 (.0015)

**Table 3** Logistic Regression Analyses: Impact of Each Treatment Condition on the Individuals' Interest in a Job at a Public Employer (Odds Ratios Displayed)

Variables	(1) Applied	(2) Applied	(3) Applied	(4) Applied	(5) Applied
Control	RG	RG	RG	RG	RG
Societal Impact	.987 (.020)	.987 (.020)	.988 (.020)	.987 (.019)	.987 (.020)
Job Security	1.023 (.025)	1.023 (.023)	1.023 (.023)	1.021 (.021)	1.023 (.023)
Performance Orientation	1.014 (.022)	1.015 (.019)	1.015 (.019)	1.014 (.019)	1.014 (.019)
SOE 1		RG	RG	RG	RG
SOE 2		1.015 (.021)	1.014 (.021)	1.015 (.021)	1.015 (.021)
SOE 3		.964 (.023)	.964 (.022)	.964 (.022)	.964 (.023)
SOE 4		.986 (.022)	.986 (.022)	.987 (.021)	.986 (.022)
Female		.939*** (.016)	.939*** (.016)	.939*** (.016)	.939*** (.016)
Age 20–26		RG	RG	RG	RG
Age 27–33		1.003 (.019)	1.003 (.019)	1.003 (.019)	1.003 (.019)
Age 34–40		1.023 (.022)	1.023 (.021)	1.022 (.021)	1.023 (.022)
Age 20–26 × Societal Impact			RG		
Age 27–33 × Societal Impact			.981 (.019)		
Age 34–40 × Societal Impact			.959 (.020)		
Female × Job Security				.984 (.018)	
Age 20–26 × Job Security				RG	
Age 27–33 × Job Security				.997 (.018)	
Age 34–40 × Job Security				1.025 (.022)	
Female × Perf. Orientation					.994 (.016)
Intercept	.024*** (.022)	0.024*** (.000)	.024*** (.000)	.024*** (.000)	.024*** (.000)
Observations	196.822	196.822	196.822	196.822	196.822
Pseudo $R^2$	.0001	.001	.001	.001	.001

Notes: Cluster-robust standard errors are shown in parentheses. This table shows the probability of clicking on the ad (odds ratio) based on being in any of the three treatment conditions.

† $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (RG = reference group of logistic regression,  $p$ -values adjusted for multiple comparisons with the Bonferroni correction).



Notes: Points denote marginal means. Vertical bars represent 95% confidence intervals based on cluster-robust standard errors. The x-axis displays treatment conditions (ad presented in social media field experiment), while the y-axis displays effects on click-through rates (CTR). sig./ns. = significant/not significant at a 95% confidence level.

**Figure 2** Marginal Means Plots of Experimental Groups on the Individuals' Interest in a Job at a Public Employer (Click-Through Rate [CTR] of Unique Outbound Clicks).

An additionally calculated logistic regression shows that being in a treatment condition does not significantly increase the probability of clicking on the ad when compared with the control condition (odds ratio = 1.008,  $\beta = 0.008$ , cluster-robust SE = 0.018,  $p > .1$ , pseudo  $R^2 = 0.00001$ ).

An additionally calculated one-way analysis of variance (ANOVA)— $F(3,196.819) = 2.691$ ,  $p = .045$ ,  $\eta^2 = 0.000041$ —reveals significant, small differences in the signaling effects

between the four SOEs. Analyzing each specific public employer separately, significant effects for several treatments, age- and gender-related groups are detected (for more detail, see table A6 in the Appendix).

### Discussion and Implications for Public Employer Branding

The overall results show that none of the three signals increased the CTR compared with the control condition. As recent methodological studies show, such findings provide meaningful evidential value for the current debate (Vogel and Homberg 2020). Moreover, the signals have significant effects for certain target groups when analyzed separately for each public employer. This indicates that public employer branding strategies that concentrate only on the typical selling points of the public sector, such as a PSM-related signal or high job security, might be limited in their general effectiveness. This is especially relevant given that prior PSM research predicts that PSM-related signals might be advantageous in the context of employer branding (cf. review of Ritz, Brewer, and Neumann 2016). Signaling societal impact alone does not seem to attract a greater number of people than those in the control condition. Although people with high PSM seem to cluster in public employment (Holt 2018), according to the present findings a PSM-related signal does not seem to be a consistently effective signal. Compared with the job security signal, the PSM-related signal appears to be relatively weak in terms of its effect, showing little ability to attract the interest of a broader target group including not-high PSM individuals—a debate that has been prominent in recent studies (Linos 2018; Weske et al. 2019).

According to the results, gender exerts an overall influence on interest in a job. Significantly fewer women than men clicked on an



ad. For public employers striving to increase the representation of women, this study—in line with social identity theory—suggests that this issue could be addressed at the pre-entry level of employer branding. Even small changes to wording or pictures could exert a significant effect in this context (Linos 2018).

With regard to age, the aggregated analysis for all four public employers does not show a significant effect. Still, the additional separate analyses for each social media field experiment show that age groups exert significant but rather small-sized effects for three of the four public employers (see table A6 in the Appendix). From the viewpoint of personnel economics, a reason for this could be that the regional labor markets of the specific SOEs might be different or that the specific public employers send further signals that might be more or less attractive for certain age groups.

The further significant differences between the four SOEs underline the importance of contextual relevance in research on public employer branding initiatives. Aspects like the organizational context, the general branding of the organization, and current staffing policies need to be closely examined as they influence public employer branding.

The data show the relevance of targeting in employer branding. The results do not imply that the signals are ineffective; instead, such signals have effects on certain target groups. In line with personnel economics and social identity theory, target orientation is key for public employer branding in the digital context. Social media platforms not only offer a comparatively cost-efficient way to address a wide audience but also provide options for targeting specific groups to enhance the representation of the organization or attract highly qualified specialists. Targeting is not limited to age, gender, or region but can be refined based on educational level and other qualifiers depending on the platform used.

Moreover, employer branding in social media addresses a “passive” recruitment market; while every social media user might not be urgently looking for a job, many may be unsatisfied with their current one. Still, as transaction costs of job shifting are higher than those for job seekers, longer-term employer branding endeavors with attractive employer branding signals are necessary. Continuous social media ads might support building employer brands and help address negative stereotypical images of public employers (de Boer 2020).

In terms of the external validity and generalizability of the presented findings, the study focuses on four key aspects: the setting, the analyzed population, measurement of the outcome, and the treatments (Mutz 2011).

First, the presented trials examined “ordinary” people in an “ordinary” situation of spending time on social media and clicking on ads. Facing the present recruitment challenges, public employers cannot rely on hiring people with high PSM only; they need to attract many recruits with diverse motivational states. One could argue that people with high PSM might not spend time on social media platforms or click on digital ads and would instead simply apply for more traditional public service jobs. The present results cannot answer these questions, but they can show that societal

impact as a PSM-related signal does not seem to be strong enough to generate interest in SOEs’ public service work for “ordinary” people. This is a novel finding that enriches the discussion on employer branding.

Second, the study presents a measurement of the dependent variable with high external validity, as the real behavior of people who are not aware of the scientific analyses is observed. Using clicks on ads leading to career webpage visits as a proxy for job interest is a realistic setting in the digital context, as online networked experiments are accurate instruments for studying actual social behavior (Aral 2016).

Third, the design of the treatments offers information on “ordinary” people in a very realistic, non-artificial, and non-overstated way using digital ads that have been informed by recent studies (Linos 2018; Weske et al. 2019). Reflecting on the generalizability of SOEs to other public employers, one could argue that SOEs may be a rather unlikely case to make inferences regarding police or schools. However, as relevant studies highlight that PSM is also related to the public sector (Holt 2018; Wright and Christensen 2010) and as the service aspect is kept constant across all four trials (SOEs with similar organizational goals), the present results carefully inform employer branding questions for all employers in full public ownership. Still, future research should consider the differences between public employers and make use of the established categorizations of public sector organizations to account for potential differences related to organizational goals and ownership structure (Papenfuß and Keppeler 2020).

This study is one of the first of its kind to use a social media field experiment in the context of the employer branding of public employers. Like all studies, however, it has some limitations. The methodological approach of a field experiment offers several benefits, such as allowing for testing in a real-world setting, offering significant internal and external validity, and measuring actual changes in behavior. This may be a strength in terms of practical relevance, but future studies should consider what prompts interest in a job, both in the original decision-making process and during the process of applying. Furthermore, measuring other variables at the individual level (e.g., level of PSM) is not possible, and by their very nature, the examined treatments are a combination of scientific choices (e.g., the exact wording used in the experimental groups), which might have an influence on the results. While this study can make a causal claim about the overall impact of an ad, it cannot identify the impact of each element within the treatments.

Additionally, it is important to note that this is a social media (mass) advertising campaign. While the effect sizes and pseudo  $R^2$  are marginal in size, they are in line with what can be expected from any public ad campaign (Jilke et al. 2019; Linos 2018). Still, it offers a practicable and low-cost method for addressing a huge number of individuals for researchers as well as practitioners.

## Conclusion and Outlook

Public employer branding research on social media offers important insights for understanding signaling processes and targeting future public employees. This study shows that the effects of signals in advertisements are target group specific and typically used signals

should be reflected for the specific context. Considering the limits of social media use in public administration (Feeney and Porumbescu 2020), diligent ethical audits are needed as for all types of field experimental research.

Based on the theoretical development and empirical findings of this study, future research could elaborate on the proposed signal-based mechanism and contribute to a better understanding of target-oriented employer branding. This “process-oriented approach” (Luan, Reb, and Gigerenzer 2019, 5) could enrich future research, offering high practical relevance at the same time.

This study offers three distinct implications for future research. First, it is necessary to better understand how potential factors of employer branding are signaled and how they affect receivers. Further analyses of the three presented or other treatments might be useful, for example, changing pictures or signaling further public sector values.

Second, the use of employer branding for positioning relative to labor market competitors is under-researched (Theurer et al. 2018). Specifically, it is not yet understood which signals can help build employer branding that differentiates public employers from their competitors. It is vital for public employers to be visible and distinct in their employer branding, as potential recruits are often simply unaware of potential employers (Baum and Kabst 2014). Employer branding measures should also be compared across channels (Fay and Zavattaro 2016), and the way in which they interact with public employers’ reputation (Overman, Busuioc, and Wood 2020) should be examined.

Third, target group differences have not been adequately researched. The above-developed theoretical framework might help in examining the preferences of different target groups. In this context, future research could investigate the degree to which integrated approaches to recruitment (i.e., coordinated for several public employers that belong to the same public authority or region) might be more effective than isolated efforts of single public employers. It is important to understand whether larger public employer brands can profit from both brand elements that are common among several public employers as well as from attracting specific target groups by signaling special features of single public employers, as specific organizations might be able to better attract certain target groups of recruits than others.

This study seeks to encourage scholars in the field of public administration, as well as in HRM and branding, to engage in employer branding research to inform efforts to improve the recruitment practices of public employers.

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## Notes

1. The anonymized data is available here: <https://osf.io/jbxhp/>. Pre-registration occurred on October 31, 2018 (AsPredicted #15816) and is available here: <https://aspredicted.org/57mq9.pdf>.
2. Further hypotheses are pre-registered but not reported in this article due to the focus of this study.
3. The SOEs are in a German southwestern region (Baden-Wuerttemberg) with nearly full employment (3.2%) at the time of the study and a strong industrial sector—that is, there is high-paying private sector competition with relatively high job security for private sector employees. None of the SOEs had used Facebook ads for employer branding beforehand.

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Appendix A:

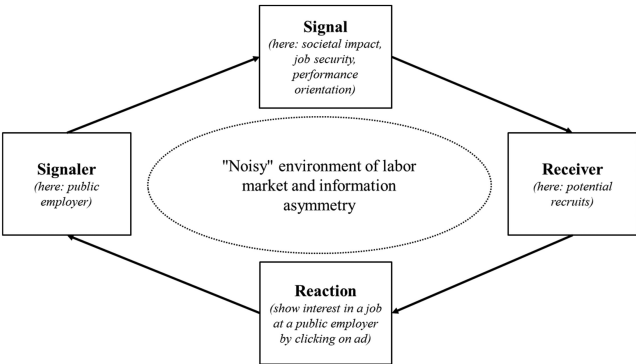


Figure A1 Illustration of Signaling Theory in the Context of Employer Branding

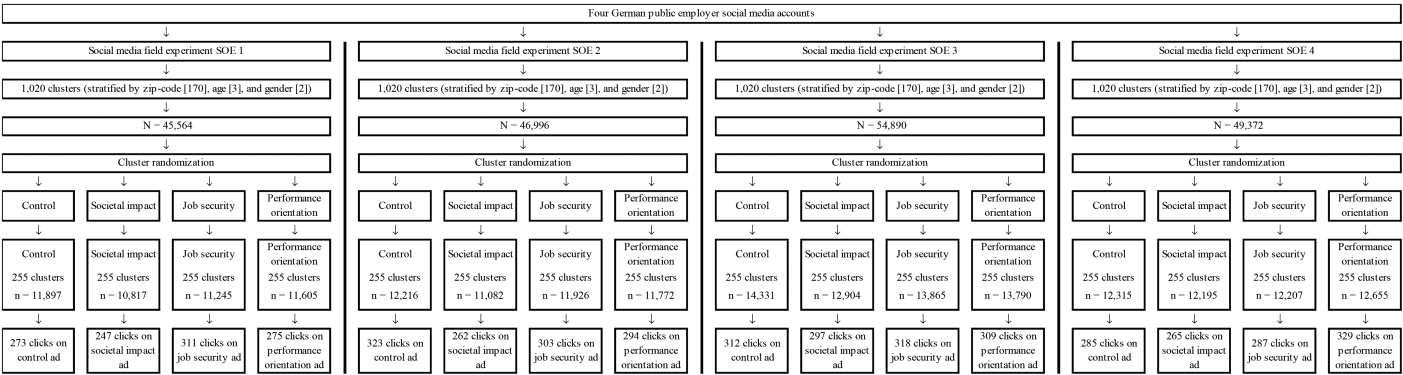


Figure A2 Field Experiment Design, Executed Separately for Each of the Four Public Employers



**Table A1** Overview of Analyzed Variables with Level of Analysis, Number of Users, Mean CTR, and Standard Deviation (Both in Percent; All Variables Shown in the Table Are Binary Coded)

Variable	Level of Analysis	N (Users)	Mean CTR	Standard Deviation
Clicks (Total)	Individual	196,822	2.38%	.15%
Control Condition	Individual	50,759	2.58%	.44%
Societal Impact	Individual	46,998	2.39%	.43%
Job Security	Individual	49,243	2.50%	.43%
Performance Orientation	Individual	49,822	2.53%	.44%
Female	Individual	99,746	2.24%	.15%
Male	Individual	97,076	2.53%	.16%
Age Group 20–26 years	Individual	61,105	2.34%	.15%
Age Group 27–33 years	Individual	68,623	2.36%	.15%
Age Group 34–40 years	Individual	67,094	2.44%	.15%
SOE 1	Organizational	45,564	2.32%	.42%
SOE 2	Organizational	46,996	2.39%	.43%
SOE 3	Organizational	54,890	2.79%	.45%
SOE 4	Organizational	49,372	2.51%	.43%

**Table A2** Overview of the Potential Reaches in the Series of Four Field Experiments

	SOE 1	SOE 2	SOE 3	SOE 4	Total Sum
Clusters	1,020	1,020	1,020	1,020	4,080
Aggregate Potential Reach	269,800	492,000	592,000	390,900	1,744,700
Potential Reach C (Control)	66,500	136,000	166,000	99,000	467,500
Potential Reach T1 (Societal Impact)	64,800	91,000	134,000	105,000	394,800
Potential Reach T2 (Job Security)	69,900	134,000	160,000	88,900	452,800
Potential Reach T3 (Performance Orientation)	68,600	131,000	132,000	98,000	429,600

Notes: Note regarding the blocked cluster randomization: The 1,020 clusters were listed with regard to their potential reach (i.e., the approximate number of social media users who can be exposed to an ad) and block-randomized with regard to one of the three treatment conditions and one control condition. Each of the four groups in all of the four experiments ended up with 255 clusters, with the potential reaches displayed in Table A2. The block randomization in the study follows common approaches in the literature (Jilke et al. 2019). By blocking based on cluster size in the randomization procedure, the difference-in-means estimator can be used without the risk of bias. The blocked cluster randomization was performed using R.

**Table A3** Distribution of Reached Users and Clicks (in Brackets) by Experimental Group

Experimental Group	Female			Male		
	20–26	27–33	34–40	20–26	27–33	34–40
Control	7,803 (177)	9,054 (205)	8,581 (186)	8,181 (193)	8,313 (234)	8,827 (198)
Societal Impact	7,318 (171)	8,178 (172)	8,651 (190)	7,045 (177)	7,554 (185)	8,252 (176)
Job Security	8,057 (177)	8,190 (188)	8,532 (195)	7,139 (181)	8,968 (218)	8,357 (260)
Performance Orientation	7,998 (172)	9,358 (188)	8,026 (212)	7,564 (184)	9,008 (228)	7,868 (223)
Total	31,176 (697)	34,780 (753)	33,790 (783)	29,929 (735)	33,843 (865)	33,304 (857)

**Table A4** Distribution of Mean CTRs by Experimental Group

Experimental Group	Female			Male		
	20–26	27–33	34–40	20–26	27–33	34–40
Control	.0227	.0226	.0217	.0236	.0281	.0224
Societal Impact	.0234	.0210	.0220	.0251	.0245	.0213
Job Security	.0220	.0230	.0229	.0254	.0243	.0311
Performance Orientation	.0215	.0201	.0264	.0243	.0253	.0283
Total	.0224	.0217	.0232	.0246	.0256	.0257

**Table A5** Logistic Regression Analyses: Impact of Each Treatment Condition on the Individuals' Interest in a Job at a Public Employer (Beta Coefficients Displayed)

	(1)	(2)	(3)	(4)	(5)
Variables	Applied	Applied	Applied	Applied	Applied
Control	RG	RG	RG	RG	RG
Societal Impact	-.013 (.021)	-.013 (.020)	-.012 (.020)	-.013 (.019)	-.013 (.020)
Job Security	.023 (.025)	.023 (.022)	.023 (.022)	.021 (.021)	.023 (.022)
Performance Orientation	.013 (.022)	.014 (.019)	.015 (.019)	.014 (.019)	.014 (.019)
SOE 1		RG	RG	RG	RG
SOE 2		.015 (.021)	.014 (.020)	.015 (.021)	.015 (.021)
SOE 3		-.037 (.024)	-.037 (.023)	-.037 (.023)	-.037 (.024)
SOE 4		-.014 (.022)	-.014 (.022)	-.014 (.021)	-.014 (.022)
Female		-.063*** (.017)	-.063*** (.017)	-.063*** (.017)	-.063*** (.017)
Age 20–26		RG	RG	RG	RG
Age 27–33		.003 (.019)	.003 (.019)	.003 (.019)	.003 (.019)
Age 34–40		.023 (.021)	.022 (.020)	.022 (.020)	.023 (.021)
Age 20–26 × Societal Impact			RG		
Age 27–33 × Societal Impact			-.019 (.019)		
Age 34–40 × Societal Impact			-.041 (.021)		
Female × Job Security				-.016 (.019)	
Age 20–26 × Job Security				RG	
Age 27–33 × Job Security				-.003 (.018)	
Age 34–40 × Job Security				.025 (.021)	
Female × Perf. Orientation					-.006 (.016)
Intercept	-3.713*** (.019)	-3.716*** (.017)	-3.716*** (.017)	-3.717*** (.017)	-3.716*** (.017)
Observations	196,822	196,822	196,822	196,822	196,822
Pseudo $R^2$	.0001	.001	.001	.001	.001

Notes: Cluster-robust standard errors are shown in parentheses. This table shows the probability of clicking on the ad based on being in any of the three treatment conditions.

† $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (RG = reference group of logistic regression,  $p$ -values adjusted for multiple comparisons with the Bonferroni correction).

**Table A6** Logistic Regression Analyses: Impact of Each Treatment Condition on Individuals' Interest in a Job at a Public Employer (Separately for Each SOE)

	SOE 1	SOE 2	SOE 3	SOE 4
Variables	Applied	Applied	Applied	Applied
Societal Impact	.998 (.044)	.953 (.028)	1.026 (.036)	.973 (.036)
Job Security	1.087* (.042)	.982 (.028)	1.023 (.035)	1.007 (.046)
Performance Orientation	1.017 (.036)	.975 (.033)	1.014 (.027)	1.056* (.033)
Female	.941† (.032)	.966 (.025)	.957 (.029)	.894*** (.028)
Age 27–33	1.015 (.038)	1.076** (.028)	.919** (.029)	1.013 (.029)
Age 34–40	1.107* (.044)	1.069* (.035)	.914** (.029)	1.023 (.040)
Intercept	.0247*** (.001)	.0258*** (.001)	.023*** (.001)	.024*** (.001)
Observations	45,564	46,996	54,890	49,372
Pseudo $R^2$	.002	.001	.001	.002

Notes: Cluster-robust standard errors are shown in parentheses. This table shows the probability (odds ratio) of clicking on the ad (i.e., individuals' interest in a job at a public employer) based on being in any of the three treatment conditions. Additional note regarding the additional analysis of different effects between the four field experiments: If every field experiment (each SOE) is examined separately using logistic regression analysis, several different results are identified (cf. table A6). For SOE 1, job security has a significant positive influence on an individual's interest in a job, and those in the 34–40 age group are more likely to click on an ad than those in the 20–26 age group; women are less likely to click in the case of SOE 1. For SOE 2 and SOE 3, only age shows significant effects. However, for SOE 2, age positively affects users' interest in a job, while for SOE 3, age negatively affects interest in a job. For SOE 4, performance orientation has a slightly significant positive effect. Moreover, the effect of gender is shown to be significant (i.e., women were less likely to apply). The differences in the significant effects of the employer attractiveness factors across the four SOEs highlight the importance of contextually grounded research on (public) HRM.

† $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (RG = reference group of logistic regression).

**Table A7** Overview of Independent Sample  $t$ -Tests (Welch Test) to Analyze Statistically Significant Differences Between the Mean CTRs of the Treatment Conditions

Treatment	Mean Difference	$t$ -value (df)	$p$ -value	Cohen's $d$
Societal Impact compared with job security	-.0019	-2.0029 (96,237)	.045	-.0129
Societal Impact compared with perf. orientation	-.0014	-1.4767 (96,741)	.139	-.0009
Job Security compared with perf. orientation	-.0005	-0.5381 (99,016)	.590	.0034