

Effects of mixed signals on employer attractiveness: A mixed-method study based on signalling and convention theory

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Abstract

Traditional recruiting activities are marked by information asymmetry and organisational information control, leading to uncertainty among applicants about employer attractiveness. New technologies profoundly change the picture. Recruiting websites provide more thorough, yet controlled information; online employer reviews offer employee-generated information mostly out of organisational control. While this diminishes information asymmetry, applicants have to handle incongruent information. It remains largely unclear how so-called 'mixed signals' affect employer attractiveness and how applicants interpret them. To address the issue, we developed an integrated theoretical framework based on signalling and convention theory to better understand how applicants interpret and evaluate signals about employers. We then conducted a mixed-method study to examine how congruent and mixed signals influence perceived employer attractiveness. Our results show that while congruent signals increase employer attractiveness and mixed-signal situations reduce it, distinct evaluative patterns emerge when potential

Abbreviations: GA, guiding assumptions; GLM, general linear model; HRM, human resource management; HSM, heuristic-systematic model; OnERev, online employer reviews; RecW, recruiting websites.

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applicants reflect and judge employers. Implications for future research and practice are discussed.

KEYWORDS

applicant attraction, convention theory, employee experience, online employer reviews, online recruitment, recruiting websites, signalling theory

Practitioner notes**What is currently known?**

1. Recruiting websites (RecW) and online employer reviews (OnERev) provide more, but also incongruent information
2. It remains largely unclear how so-called 'mixed signals' affect employer attractiveness and how applicants interpret them
3. While the effect of corporate RecW on applicant attraction is well-researched, research on OnERev is scarce
4. Little scholarly attention has been paid to the evaluative dimension of signal interpretation, the credibility of information sources and their interaction

What this paper adds?

1. A better understanding based on signalling and convention theory of how mixed signals from multiple online sources affect employer attractiveness
2. Convention theory expands the view on how potential applicants interpret signals about prospective employers
3. A convention-based analysis reveals a variety of principles to judge online information about employers
4. Evaluative patterns with regard to RecW and OnERev are identified

The implications for practitioners

1. Corporate RecW and OnERev reduce asymmetric information in recruitment processes and may increase the person-organisation fit
2. It is important to be aware of the effects of mixed signals on employer attractiveness
3. Organisations should not only actively manage their RecW, but also OnERev platforms
4. Organisations and potential applicants can benefit from mixed signals as they generate more realistic expectations about employment

1 | INTRODUCTION

Organisations increasingly use their own recruiting websites (RecW) to enhance employer attractiveness (e.g., Williamson, King, Lepak, & Sarma, 2010). Potential applicants retrieve information not only from such organisation-controlled Internet sources, but also from online review platforms such as [glassdoor.com](https://www.glassdoor.com) where employees post reviews of their employers (Dabirian, Kietzmann, & Diba, 2017). The latter source poses a risk for

perceived employer attractiveness as the previously controlled situation—with congruent signals from the organisation—changes to one where multiple sources may generate mixed signals with both congruent and incongruent signals (Drover, Wood, & Corbett, 2018). Research has shown that congruent, usually positive, signals encourage potential applicants to apply for jobs (Jones, Willness, & Madey, 2014) and enhance the effectiveness of RecW (e.g., Williamson et al., 2010). However, it is unclear how mixed-signal effects might influence applicant behaviour.

The Internet is an important tool for both organisations and potential applicants (Cober, Brown, & Levy, 2004; Parry & Tyson, 2008; Stone, Deadrick, Lukaszewski, & Johnson, 2015). Organisations often rely on their own RecW because, unlike job ads in print media, RecW allow organisations to share nearly unlimited information about employment opportunities (Baum & Kabst, 2014). Most empirical studies focus on how website characteristics such as design and content increase applicant attraction (e.g., Cober et al., 2004). Vividness, in terms of sounds or pictures, only becomes relevant in situations where employers with good reputations provide little information on their website (Williamson et al., 2010). Text, on the other hand, affects applicant attraction when companies have a poor image (Lyons & Marler, 2011). For applicants, texts and RecW usability have been shown to be particularly important (Allen, Biggane, Pitts, Otondo, & Van Scotter, 2013).

Potential applicants increasingly rely upon online employer reviews (OnERev). [Glassdoor.com](https://www.glassdoor.com), founded in the United States in 2007, was the first noteworthy OnERev platform, where employees could share their experiences. In the German-speaking countries, [kununu.com](https://www.kununu.com) is a leading platform and provides almost 4 million reviews of over 900,000 companies. So far, few studies have focused on OnERev platforms and their content. Compared to corporate RecW, OnERev are regarded as more credible because they are not controlled by employers (Kaur & Dubey, 2014). A recent analysis of OnERev found that the highest ranked employers received good scores for work atmosphere, teamwork and work content; but poor scores on compensation and leadership (Dabirian et al., 2017). Not only do high-quality reviews with high-quality arguments influence applicant attraction, but those from actual employees are seen as more valuable than those from other applicants (Evertz, Kollitz, & Süß, 2017). Most findings on reviews come from research in marketing and sales. Large numbers of available reviews increase attention, and positive reviews improve customer attitudes (Serra Cantalops & Salvi, 2014). Review quality influences decisions to buy (Matute, Polo-Redondo, & Utrillas, 2016) and a key factor for the review's usefulness is source credibility (Cheng & Ho, 2015), for example, indicated by an expert label.

Building on signalling theory (Spence, 1973) and convention theory (Boltanski & Thévenot, 2006), we analyse effects of mixed signals from RecW and OnERev on perceived employer attractiveness. We also examine potential applicants' signal interpretations and evaluations. Empirically, we apply a sequential mixed-method approach (Creswell, 2014)—using quantitative survey data collected from a lab experiment with 445 initial job seekers, followed by a qualitative investigation of interview data collected in 36 group discussions with participants of the same population.

Our study makes three main contributions. First, it improves the understanding of how congruent and incongruent online information affect perceived employer attractiveness. By combining signalling and convention theory, we present a framework that not only sheds light on signal interpretation, but also identifies evaluative patterns that potential applicants use when dealing with RecW and OnERev. Our results show that initial positive effects of RecW for applicant attraction are counterbalanced by potential applicants' information sharing and critical reflection of RecW and OnERev content. Finally, our study provides insights for organisational recruitment activities by showing how potential applicants' job search strategies are shaped by new technologies. Specifically, we show that potential applicants can reduce organisational information control and information asymmetry by using both RecW and OnERev, potentially gaining a more nuanced impression about the organisation as an employer and increasing the potential for person-organisation fit. The various evaluative patterns allow organisations to enhance information quality and credibility and tailor their recruitment approach.

2 | THEORETICAL FRAMEWORK

We now detail our theoretical framework, which is grounded in signalling and convention theory. We use this framework to formulate research-guiding assumptions about the way signals from RecW and OnERev are processed and interpreted by potential applicants.

2.1 | Signalling theory

Signalling theory (Spence, 1973) deals with situations characterised by information asymmetries and the interplay of signallers, receivers and signals. Signallers typically have information unavailable to outsiders, giving them an advantage in deciding which information or signals to communicate. In situations of uncertainty, receivers rely on signals to reveal underlying attributes of the signaller (Connelly, Certo, Ireland, & Reutzel, 2011). Much of the work on signalling theory to date focuses on the communication of information intended to convey favourable organisational attributes (Bergh, Connelly, Ketchen, & Shannon, 2014; Stern, Dukerich, & Zajac, 2014)—implicitly assuming high signal congruence, that is, an alignment of multiple signals (Gao, Darroch, Mather, & MacGregor, 2008).

In the field of human resource management (HRM), signalling theory has been predominantly used to examine information asymmetry in recruitment and job search (Suazo, Martínez, & Sandoval, 2009). Early studies focused on how organisations judge applicants by taking credentials as signals of the applicants' potential (Spence, 1973). Similarly, applicants rely on signals because they often have limited information (D. Chapman & Webster, 2006) to make quality judgements about prospective employers or about whether joining the company would fulfil their personal needs (Highhouse, Thornbury, & Little, 2007; Rynes, Bretz, & Gerhart, 1991).

While signalling theory helps explain why congruent positive signals on RecW attract applicants, alternative theories may be useful in unpacking the black box of incongruent signals and their interpretation (Drover et al., 2018). Drover and colleagues extend signalling theory by conceptualising the signal receiver's cognitive processes. Their heuristic-systematic model (HSM; Chen & Chaiken, 1999) builds on a dual-process approach that shows how receivers attend to and process multiple signals. While heuristic processing is stimuli-driven and follows a faster route via association, systematic processing demands more cognitive effort as it involves a deeper examination of information (Evans, 2008).

Whether receivers engage in heuristic or systematic processing depends on the signal set. With congruent signals (all positive or all negative) or imbalanced incongruent signals (positive and negative signals are greatly unequal in number) receivers usually employ heuristic processing. Systematic processing is more likely in situations involving incongruent signals, where positive and negative signals are relatively balanced. In these situations, decision-making becomes more complex, goal-driven, deliberate and effortful. While the dual-process model allows one to assume heuristic or systematic information processing, it does not help to illuminate the underlying principles for evaluating signals. To address this concern, we draw on convention theory to expand the view on signal receivers' evaluations.

2.2 | Convention theory

Convention theory (Boltanski & Thévenot, 2006) provides a way to further develop Drover et al.'s ideas about systematic information processing in mixed-signal situations. Specifically, it sheds light on how uncertainty can be reduced through conventions that facilitate decision-making in 'situations subjected to an imperative of justification' (Boltanski & Thévenot, 1999, p. 360) by reducing uncertainty via conventions. Conventions serve as 'shared templates for interpreting situations and planning courses of action' (Biggart & Beamish, 2003,

p. 444). Actors use conventions to evaluate—appreciate or criticise—information they receive. Hence, expressing criticism and appreciation is crucial for a convention-based analysis. When justifying claims or criticising others' positions, actors can draw from a plurality of evaluative principles. At the same time, these actors are informed by situational arrangements and the conventional use of orders of worth in a community. Which conventions are used for evaluating situations is generally an empirical question (Diaz-Bone, 2011); however, investigations within particular fields, for example, for-profit organisations, show distinct patterns (Thévenot, 2001).

Convention theory has been increasingly used to study evaluation processes (Cloutier, Leca, & Gond, 2017; Patriotta, Gond, & Schultz, 2011)—including those related to work and employment situations (Brandl, Kozica, Pernkopf, & Schneider, 2019). A convention-based analysis of recruitment practices, for instance, has shown that recruiters' judgements of applicants' qualifications are not objective and static, but shaped by conventions (Eymard-Duverney & Marchal, 1997). Employees also use various conventions to assess human resource practices such as training and development (Pernkopf & Brandl, 2011). Convention theory thus sheds light on how signal receivers draw from, and are influenced by, their 'evaluative repertoire' (Lamont & Thévenot, 2000).

We apply the 'orders of worth' model (Boltanski & Thévenot, 1999) to understand how potential applicants' evaluation of signals based on conventions to judge employer quality. 'Orders of worth' can be understood as ideal-typical conventions which actors, at least in 'Western communities', have 'learned' to use. They are based on six common moral principles: market, industrial, domestic, civic, inspiration and opinion. Each order of worth serves as an interpretation scheme that is based on a particular evaluative principle (specified in Table 1).

Drawing on the industrial order of worth, for example, the mode of evaluation is efficiency and productivity, the format of relevant information is measurable criteria and statistics, and worthy human qualifications are expertise and professional competency. A worth-related signal about an employer would be precise information about job requirements.

Potential applicants can be seen as actors with a critical capacity (Boltanski & Thévenot, 1999). They are capable of using various orders of worth to evaluate and justify their views in mixed-signal situations. Interacting with others creates a public sphere, triggering a more conscious and systematic processing of information that makes applying orders of worth explicit. Hence, evaluations of employer attractiveness depend on the conventions used. Experience reports, for example, can be seen as supportive for transparency (civic order), appreciated for their local insights (domestic order), but also viewed as a source of bias, for example, scaring off the best qualified applicants (market order).

Using the above streams of research as our theoretical grounding, we examine how perceived employer attractiveness is influenced by signals from RecW and OnERev and expand the views on potential applicants' signal interpretation and evaluation. We focus on signal sets, that is, collections of signals used for interpretation (Drover et al., 2018, p. 218). Rather than formulating hypotheses in this understudied area, we use an exploratory, descriptive approach to identify changes in perceived employer attractiveness that might be attributed to mixed signals. With this approach, we use *guiding assumptions* (GAs) as our starting point—as they reflect our theoretically and empirically grounded expectations.

3 | GUIDING ASSUMPTIONS

Potential applicants process and interpret multiple signals. Signal sets can be marked by uniform congruence, balanced incongruence or imbalanced incongruence (Drover et al., 2018). GAs 1–3 address the effects of different signal sets on employer attractiveness; while GA 4 outlines what we expect to see when individuals discuss and reflect upon their initial judgement of employers' quality with others.

GA 1 *Recruiting websites as sources of uniform congruent signals are beneficial to employer attractiveness.*

TABLE 1 The orders of worth model (based on Boltanski & Thévenot, 1999, p. 368)

Orders of worth						
	Market	Industrial	Domestic	Civic	Inspiration	Opinion
Mode of evaluation (worth)	Price	Productivity and efficiency	Esteem and reputation	Collective interest	Grace, nonconformity and creativeness	Renown
Format of relevant information	Monetary	Measurable criteria and statistics	Oral, exemplary and anecdotal	Formal and official	Emotional	Semiotic
Elementary relation	Exchange	Functional link	Trust	Solidarity	Passion	Recognition
Human qualification	Desire and purchasing power	Professional competency and expertise	Authority	Equality	Creativity and ingenuity	Celebrity
Typical indicator for a 'worthy signal' about an employer	First-hand information that makes individual gains possible	Precise information that allows one to get to know what the job requires	Personal information that gives a sense of locality and cohesiveness	Open-access information that grants fairness and equal opportunities	Authentic information that reveals the underlying cause	Persuasive information that upholds the public image

RecW are typically set up to send out congruent, positive signals to reduce potential applicants' uncertainty about organisations' attributes as employers. If positive signals are easily noticed, potential applicants can engage in heuristic processing with low-effort decision-making based on a few salient stimuli (Evans, 2008). Research on recruitment and job search (Rynes et al., 1991; Turban & Cable, 2003)—and especially empirical studies on RecW effectiveness (Allen et al., 2013; Lyons & Marler, 2011; Williamson et al., 2010)—have consistently shown that signals created by an organisation can enhance applicant attraction. In particular, sufficient information about employment positively affects attitudes toward RecW and the intention to apply (Allen, Mahto, & Otondo, 2007). Our assumption is that perceived employer attractiveness is positively influenced by heuristic processing, wherein applicants rely on a few positive stimuli and are confident in their judgements.

GA 2 *Online employer reviews as sources of balanced incongruent signals are detrimental to employer attractiveness.*

OnERev contain posts from former and current employees, usually revealing a more ambivalent picture. In general, negative reviews 'hurt' more than positive reviews help—a consequence of the so-called 'negativity bias' wherein negative information outweighs positive (Ito, Larsen, Smith, & Cacioppo, 1998). Not only are negative statements remembered more easily (Mitchell, 2008), negative employee voices have been shown to cause disproportionately more harm to an organisation's reputation than negative customer reviews of its products or services (Opitz, Chaudhri, & Wang, 2018). A recent study examining OnERev shows that discrepant reviews, that is, those with a high variance in company evaluations, reduce applicants' intentions to apply (Könsgen, Schaarschmidt, Ivens, & Munzel, 2018). Building upon this, one could assume that a balance between positive and negative signals would actually reflect imbalanced incongruence because of the dominance of negative stimuli. This would then lead to negative judgements of quality after heuristic processing.

GA 3 *Effects of recruiting websites in combination with online employer reviews cancel each other out regarding employer attractiveness.*

In complex environments, receivers tend to be subjected to multiple signals of competing valence from various sources (Drover et al., 2018). Our assumption is that the superior number of positive signals from RecW and OnERev would be offset by the greater weight of negative signals from OnERev (Ito et al., 1998). In other words, an imbalanced incongruent situation transforms into a balanced incongruent situation, thus triggering systematic processing in which decision-making requires a deeper examination of provided information (Evans, 2008). Thus, this signal set has no immediate effect on perceived employer attractiveness.

GA 4 *Critically reflecting with others on recruiting websites and/or online employer reviews leads to modifications of initial judgements about employer attractiveness; however, the direction and degree of these modifications will vary.*

Interaction with others (e.g., in group discussions) may not only trigger more systematic processing and require explicit justification of one's views (Boltanski & Thévenot, 2006), but also lead to a potential modification of previous judgements. Signal receivers exercise a critical capacity and consider various orders of worth and pieces of supporting information, reducing uncertainty and leading to particular quality judgements (Boltanski & Thévenot, 1999). Depending on the situation and degree of confidence in one's judgement, various modifications might occur. For example, reflections on RecW or OnERev can modify evaluations of source credibility, reduce or enhance employer attractiveness, and soften or sharpen judgements of quality depending on one's initial verdict.

Below, Figure 1 shows the intersections of signalling theory, the HSM and convention theory and integrates GA1–GA4.

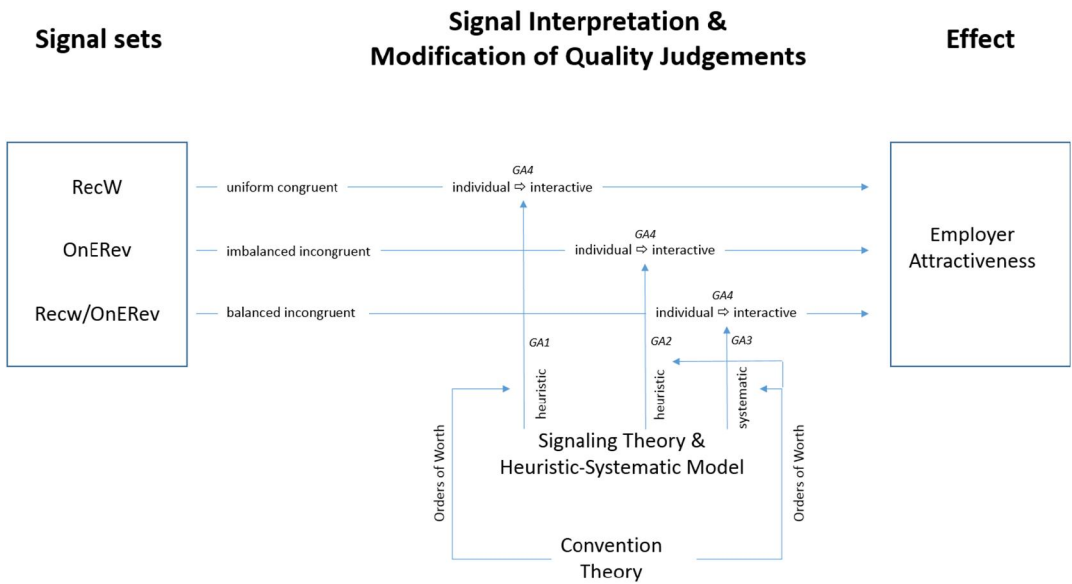


FIGURE 1 Integration of theoretical framework and GA1-GA4. GA, guiding assumption

These GAs motivate our sequential mixed-method approach, which allows for a more comprehensive understanding of the phenomena in question (Creswell, 2014). In the first phase, we measure effects of signals on perceived employer attractiveness when job seekers individually process the information provided. In the second phase, we examine how received signals are discussed and evaluated in group settings immediately afterwards. The integration of these two stages is guided by our theoretical framework (Creswell & Plano Clark, 2011). It is important to note that while our GAs steer our analysis, they still leave room for alternative findings.

4 | EXPERIMENT

4.1 | Study design and data collection

We surveyed 445 initial job seekers from a leading business school in the German-speaking countries. We used a computer lab to show participants the recruitment website of a well-known multinational professional service firm as well as the respective OnERev at kununu.com. We chose the firm because we wanted a situation as close to reality as possible. The firm is present in campus recruitment; thus, we assume that it tends to send out positive signals to students. Furthermore, the firm has an extensive RecW and more than 200 reviews on kununu.com with a score of about 3.5 out of 5. OnERev thus assured the presence of mixed signals with comments ranging from highly positive to extremely negative, with the majority being quite balanced.

We randomly assigned participants to one of four experimental conditions. Participants exposed to condition 1 were presented with congruent signals—that is, only the firm's RecW (RecW_only). Participants exposed to the remaining three conditions received mixed signals. Condition 2 participants were only exposed to the OnERev of this firm (OnERev_only). In conditions 3 (RecW/OnERev) and 4 (OnERev/RecW), participants had access to both information sources in different sequences to control for possible order effects.

Our main interest was to see how these conditions influenced the dimensions of perceived employer attractiveness identified in previous research: reputation, job information, applicant attraction and intention to apply (Table S1). Before exposing participants to the conditions, we asked for a spontaneous first assessment of the employer along these dimensions. We then provided the web links to ensure that participants would get similar first impressions and continue from there with their individual exploration of employer information. On average, participants spent 10 min on one information source. After visiting RecW, OnERev or both, they were asked again to assess employer attractiveness on the same dimensions.

4.2 | Variable measurement and data analysis

Reputation (Cronbach's alpha: 0.92)—as the perception of how others such as friends, family or peers assess the organisation—was measured with four items, for example, 'Other students in my school hold a favourable impression of this company as an employer' (Collins, 2007; Yoo, Donthu, & Lee, 2000). Job information (Cronbach's alpha: 0.91) had eight items covering specific job and organisational attributes, for example, 'This organisation has good opportunities for career advancement' (Collins, 2007). Applicant attraction (Cronbach's alpha: 0.96) was measured with three items, for example, 'For me this company would be a good place to work' (Highhouse et al., 2007). Intention to apply (Cronbach's alpha: 0.84) consisted of two items, for example, 'If I saw a job opening for this organisation, I would apply for it' (Collins, 2007). In order to explore how confident participants were in their assessments, we generated two items for a dimension called informed decision-making, for example, 'I feel certain about the assessment of the organisation' (Cronbach's alpha: 0.82). For a comprehensive list of all items and their dimensions, see Table S1. The established Likert-like scales ranged from 1 (totally disagree) to 7 (totally agree). In addition, participants were asked about previous work experience and prior exposure to the focal firm to ensure that inexperienced full-time job seekers were included in the sample. Additional control variables included gender, age, study duration and employer familiarity (Collins, 2007).

Before investigating the effects of the interventions, we tested for initial group differences in perceived employer attractiveness and the control variables—applying a one-way between-subjects ANOVA and a chi-squared test. Afterwards, the data were analysed using a general linear model (GLM) for each dimension. We tested for differences before and after the respective intervention, focussing on the main effect and the interaction of the experimental condition and intervention. Then, we conducted paired *t*-tests for each condition separately, comparing the means before and after the intervention. In the final step, we applied GLM to those conditions in order to detect whether changes in the same direction (e.g., less favourable assessment in more than one condition after the intervention) differed in their degree.

5 | GROUP DISCUSSIONS

5.1 | Study design and data collection

After the experiment, 216 of the 445 participants in the quantitative study were randomly assigned to groups of six to discuss and reflect upon their experiences. In total, we conducted 36 group discussions: 12 covering experimental conditions with both information sources, 12 covering only OnERev and another 12 covering only RecW. Participants received general and specific questions that helped them address crucial issues such as general strategies to seek employer information or handle a specific online information source—in our case, RecW and/or OnERev. The first set of questions was the same for all groups, while the second set consisted of follow-up questions on the information source/s they had been exposed to (Table 2).

TABLE 2 Group discussion questions

Group setting	Set of questions
General questions for all group discussion settings	<ol style="list-style-type: none"> 1. Which kind of information do you gather before an application? 2. What is particularly useful information? What is not useful? 3. What do you rely on during the application? What is important? 4. What is the basis for your application decision? <p>Please exchange experiences within the group about particularly positive and negative experiences in the process of gathering application information on the Internet</p>
Follow-up questions related to recruiting websites	<ol style="list-style-type: none"> 1. What do you think about recruitment websites? <ol style="list-style-type: none"> 1a. Do they constitute an important source of information for you? For what reason yes or no? 1b. To what extent would you consider information displayed on such a website as credible? 2. What would the ideal recruiting website look like? 3. On the concrete website, what was especially informative, what bothered you?
Follow-up questions related to online employer reviews	<ol style="list-style-type: none"> 1. What do you think about online employer reviews? <ol style="list-style-type: none"> 1a. Do they constitute an important source of information for you? For what reason yes or no? 1b. To what extent would you consider information displayed on such a website as credible? 2. What would the ideal online employer review platform look like? 3. On the concrete website, what was especially informative, what bothered you?

Group discussions provide a way to explore complex issues and discover underlying mechanisms (Bohnsack, 2004). They also encourage open exchange, as the casual atmosphere allows more 'natural' conversations than rigid question–answer sequences. A drawback is that individual views cannot be isolated as participants dynamically engage with and constantly influence each other. However, this method is compatible with convention theory (Diaz-Bone, 2011) as it creates a 'public sphere' where participants state and justify their opinions—for instance: 'I distrust OnERev because they are written by strangers'. Group discussions lasted on average 30 min and were audio-recorded and transcribed.

5.2 | Data analysis

The resulting corpus of text was organised in an Excel spreadsheet along the themes associated with group discussion questions (Table 2). We chose a directed data analysis approach (Hsieh & Shannon, 2007) and conducted theory-driven qualitative categorical content analysis (Mayring, 2004). We started with existing categories while allowing new categories to emerge. We used a keyword catalogue developed by Boltanski and Thévenot (2006) for deductively allocating interview statements to the orders of worth model.

In our analysis, we examined how potential applicants evaluated the information received from the RecW, the OnERev platform or both. As potential applicants draw from a repertoire to interpret signals and make judgements about employer quality, what participants appreciated or criticised in employer information was coded with the market, industrial, domestic, civic, inspiration or opinion order of worth as theoretical categories. Data from the group discussions were first coded by two research assistants. Subsequently, two of the

authors teamed up to cross-check the data coding. All authors met several times to discuss preliminary findings and interpret identified patterns. In the results section, we provide both sequences and typical statements from the various group discussion settings (RecW, OnERev or both) and relate them to orders of worth (Table 1).

6 | RESULTS

We present our results in the order of our GAs, outlining the effects of the three signal sets on perceived employer attractiveness: congruent signals from one source, that is, RecW (GA1), mixed signals from one source, that is, OnERev (GA2), and mixed signals from multiple sources, that is, RecW/OnERev or OnERev/RecW (GA3). GA4 addresses modifications of initial judgements on perceived employer attractiveness and concerns GA1–GA3.

Of the 445 participants, 68% were female, the average age was 24.8 years (SD: 2.8) and the average study duration was 6.96 terms (SD: 3.7). The descriptive statistics of the main dimensions, their intercorrelations and the control variables are shown in Tables S2 and S3. The four groups initially did not differ in the dimensions and control variables (Tables S4 and S5).

The GLM results show significant main effects of ‘before_after’ and interaction effects with the condition for all four employer attractiveness dimensions and informed decision-making, indicating that they changed significantly between the first and the second measurement. The results for interaction effects show that the altered conditions influence the final results (Table S6). Figure 2 illustrates the means before and after the intervention and the *t*-test results for paired samples (Tables S7 and S8) for each condition. Here it is important to note that participants in all conditions felt they could make a more informed decision after engaging with one or both sources.

Below, we integrate the findings for each signal set from our two studies. We begin by presenting the quantitative results and then the qualitative findings. For the latter, we present evaluative patterns in quality judgements about the employer based on convention theory.

6.1 | Congruent signals from one source—RecW only

The quantitative results conform to GA1, which states that congruent signals (i.e., exposure only to RecW) positively influence perceived employer attractiveness. Compared to judgements before the intervention, the *t*-test for paired samples shows that reputation, job information, applicant attraction and intention to apply increase significantly (Figure 2 and Tables S7 and S8).

The qualitative findings, however, provide a more nuanced picture—showing that after participants' initial appreciation, they may have second thoughts about the information provided. While RecW are usually their first point of contact with the potential employer, they may be sceptical about the quality of organisation-controlled information. In group discussions, participants mainly draw on three orders of worth to express their scepticism: opinion, domestic and industrial.

Based on the *opinion order of worth*, a major reason to apply for a job in a particular company is that this work experience makes the curriculum vitae (CV) more appealing. Anything casting doubt on employers' reputations can be problematic. Thus, overly positive information on RecW is seen as imbalanced, which leads to reputational losses:

[Person 1] ‘I think, they would never put something negative on the website. That's why I don't find these recruiting websites so trustworthy. There's only focus on the positive, no matter which company's website you go to. And nowadays every company has such a website’. [Person 2] ‘Which company would write anything negative about itself on its own website? That's not good advertising’.
(RecW, G12, line 11–18)



FIGURE 2 Means before and after the intervention in all four conditions. T0/T1: before and after exposure to the respective source(s). Results of t-tests and p -value: ** $p < 0.01$, * $p < 0.05$, † $p < -0.1$. Error bars indicate the standard deviations

In the first moment I thought ... wow, this is a great company, and then well ... they more or less do advertising ... (RecW, G10, line 434–439)

Scepticism increases when information appears too polished or fake, such as artificial photos or videos. This reflects negatively on the employer:

It really feels as if they have to hide a lot. The website gives that impression. (RecW, G7, line 275)

Videos don't help where people just tell you how great everything is. (RecW, G4, line 331)

[Person 1] 'The photos were unsettling to me'. [Person 2] 'They're just like ads'. (RecW, G5, line 369–371)

In evaluations based on the *domestic order of worth*, establishing social bonds with the potential employer is seen as crucial. Contact persons who provide honest insights are important. As job seekers do not know the people providing the information, most online information is critically questioned. On RecW, potential applicants like to learn about future colleagues and the working climate through current employees' reports about regular work days. However, when reports appear shallow, their reliability is questioned:

[Person 1] I find experience reports particularly helpful – what people tell you about this or that.
[Person 2] These recruiting websites are not [helpful] at all, because there will not be any company that puts up a recruiting website and says: 'We mistreat our employees'. (RecW, G12, line 31–36)

At the same time, a lack of personalisation creates distrust:

I think of course everyone wants to read real reports and hear real experiences, but how can you guarantee that? How can such a website guarantee that these people are real and have worked there? (RecW, G9, line 252)

Getting to know someone personally, this is good information. (RecW, G5, line 35)

Evaluations relying on the *industrial order of worth* see objective information as especially useful. RecW are considered effective if essential information can be found easily, and irrelevant information can be filtered out through selection tools.

[The website is] quite informative, but you have to be able to filter it. (RecW, G5, line 230)

Participants are puzzled by information overload on the one hand and lack of relevant information on the other. Confusing content raises fear of inefficiency throughout the information processing:

I need factual information, not nonsense and I found that the images were in part really provoking. (RecW, G7, line 62)

It's so much information, but it's too vague. And you really notice that it can't be right. (RecW, G6, line 185)

In summary, the dampening of the originally positive effect of RecW is related to the RecW being promotional (opinion order), impersonal (domestic order) and overloaded (industrial order).

6.2 | Mixed signals I: Incongruent signals from one source—OnERev only

Our assumption was that OnERev would have a negative effect on perceived employer attractiveness because of balanced incongruent signals (GA2). Our quantitative *t*-test for paired samples support this assumption, showing a highly significant decrease in reputation, job information, applicant attraction and intention to apply (Figure 2 and Tables S7 and S8).

However, again the picture changes when individuals discuss their initial judgements with others. In group discussions, participants question the credibility of sources. They base their evaluations on three orders of worth: market, domestic and industrial.

Evaluations based on the *market order of worth* tend to prioritise first-hand information. Thus, making their own experiences is more beneficial to them than web content. Furthermore, they appreciate OnERev that are free of emotions and find recently posted reviews more valuable. For the most part, they suspect that online content can be manipulated (e.g., reviews placed by competitors or the organisation) or distorted (e.g., a shit storm caused by frustrated users).

[Person 1] 'Of course, it's always very subjective, what they write, that's clear. There are no objective reviews, are there? They are written by human beings'. [Person 2] 'Mixed reviews are better, where both positive and negative aspects are covered. That's definitely more credible'. [Person 1] 'If it's just positive or negative, it's also suspicious. I don't believe purely positive reviews'. [Person 3] 'It can also be too negative. We saw that. It was a former employee. Maybe he was fired'. (OnERev, G1, line 252–263)

I'd always question what's in there. There're so many people who could create a fake profile or so. In principle everyone, also competitors, can rate you. (OnERev, G5, line 288)

Ultimately they prefer to rely on their own individual assessment:

To get an overview, such an evaluation platform is certainly not bad, but to make a final decision, you have to go there yourself; even if 10 say it's bad, it can still be good for me. (OnERev, G4, line 229)

Based on the *domestic order of worth*, participants are critical of the anonymity of OnERev—as OnERev platforms protect their users' identities to ensure that reviews can be written without consequences. Participants, however, show limited appreciation for this anonymity:

[Person 1] 'Difficult, because they remain anonymous. I think it says a lot, whether you write it anonymously or you use your real name'. [Person 2] 'Nobody would do that using their real names'. [Person 1] 'But it would be more credible'. [Person 2] 'Fine, but if there was a name, it would not change anything, because you wouldn't know the person anyway'. [Person 1] 'But I would think: Ok, s/he stands by what s/he says'. [Person 2] 'If it is signed Hans Huber ... that would not change anything'. (OnERev, G4, line 251–263)

Hence, participants are uneasy about trusting strangers and find information from personal contacts more reliable:

I find it simply very difficult because you never know who's writing [the review] and for what reason. (OnERev, G8, line 145)

Because of the anonymity you can write what you want. (OnERev, G4, line 199)

You should rather contact friends, relatives and others with experience in the company. I don't believe you'll get that on the Internet. (OnERev, G7, line 50)

In evaluations using the *industrial order of worth*, OnERev are perceived as too chaotic, making it difficult for participants to search and analyse information:

[Person 1] 'I thought it was totally strange. Reviews were extremely negative or extremely positive. I think I saw two reviews that were really middle ground'. [Person 2] 'I found the structure of the whole website messy. I needed to understand where I had to click. Then I read, then I clicked again. I wasn't sure if it was still about the same company, because below there were reviews about other companies. I found that totally confusing. Basically, I didn't find the structure of the platform to be very user-friendly'. [Person 3] 'It took me a long time to see that there were employees and applicants [who would write reviews]'. [Person 4] 'I did not find an overview providing company information'. [Person 1] 'There was no [company profile]. Maybe they didn't want that'. (OnERev, G5, line 377–392)

While personal insights are informative, they are still imprecise. A lack of-facts and poorly organised content are considered unhelpful:

You cannot be sure of anything. (OnERev, G8, line 90)

Difficult to learn how it really works there ... (OnERev, G2, line 152)

Based on the above evaluative pattern, we conclude that participants are critical of OnERev for potentially distorting information about actual working conditions (market order), being written by strangers (domestic order) and being unsystematic (industrial order).

6.3 | Mixed signals II: Incongruent signals from multiple sources—Both RecW and OnERev

In the mixed-signal situation, we started with the premise that exposure to OnERev and RecW would not affect employer attractiveness (GA3). Our quantitative results show, however, that combining information sources decreases perceived employer attractiveness—compared to judgements before the interventions. The *t*-test for paired samples revealed significant changes in reputation, job information, applicant attraction and intention to apply. We also tested whether there were any differences among conditions in which perceived employer attractiveness decreased (2, 3 and 4). The results show that interactions are no longer significant (Table S9), indicating that the three conditions reveal similar before_after differences. Consequently, the order in which participants had been exposed to OnERev and RecW had no effect on perceived employer attractiveness. Still, participants with access to both sources faced a fundamentally different situation as they could compare information on specific employment aspects such as work–life balance, work load or team spirit. Altogether, negative signals had greater weight in participants' judgements on employer attractiveness.

A look at subsequent group discussions brings further clarity in confirming GA4, that is, group discussions modify initial judgements on employer attractiveness. However, we found that the direction and degree of these modifications varied. Although the change in participants' evaluation of employer attractiveness could go either way, participants in group discussions appreciate the mixed-signal situation because it provides contrasting information from both RecW and OnERev. This appreciation mainly builds on three orders of worth: industrial, civic and market.

When participants base their evaluation on an *industrial order of worth*, they see it as self-evident and promising to consider multiple information sources. They perceive reviews covering both positive and negative aspects as balanced—although OnERev are viewed as more objective than RecW:

I think [OnERev] are more objective than, for example, the official website of the company. Because, of course, the company itself tries to sell itself as much as possible. And experience reports of employees and ex-employees just have higher credibility ... Both positive and negative points are brought up and from that perspective. I believe it is really a good option. (Both, G5, line 90–94)

Participants like the opportunity for cross-checking, and prefer more information samples on OnERev platforms to help identify general tendencies:

I also think you can't just read two or three [reviews], rather you have to read many. (Both, G11, line 161)

The average score provides a good orientation. (Both, G9, line 204)

Evaluations based on the *civic order of worth* focus on third-party information. Such sources are taken more seriously, because employers do not directly influence them. OnERev are thus perceived positively—as they display a variety of opinions and participants expect statements to be more subjective. Still, however, participants question extremely negative or positive user comments.

In principle, I think these platforms are a good idea. But they are still underdeveloped. You will need to make them more transparent to gain real credibility. That is still a disadvantage. (Both, G12, line 82–84)

Regarding the star ratings, there were a few very overstated, a few really negative. That's when I think: How objective is that? (Both, G12, line 337–338)

[Person 1] 'Of course that's also very, very, very subjective. But there are good and bad comments, because I don't believe the company will reveal anything negative on their website. And you will find that on the online employer review platform'. [Person 2] 'I think so too. And above all, you can look at many different posts from many different people. And I find that even more informative than the recruiting website. Because you have different views of the employees, and get a different perspective on the company. After looking at the recruiting website I thought: Ok, the company should actually be the perfect employer, as put on the website. And then I looked at the employer reviews and then I thought ...' [Person 1] 'Ok, maybe not'. [Person 2] 'Ok, it's not so good'. (Both, G4, line 290–302)

In terms of transparency and the independent nature of information, participants tend to appreciate OnERev more than RecW. They value a mix of views beyond mere positive statements and the democratisation in the recruiting process that makes the situation fairer:

Naturally, this is subjective information, and you have to consider different opinions. (Both, G9, line 35)

Of course the companies present themselves in a good light, but it would be interesting to see how organisations deal with criticism. (Both, G1, line 268)

In evaluations based on the *market order of worth*, participants see the availability of both sources as an added value, and an opportunity to counteract competitive distortion:

I like to receive all available information. (Both, G9, line 15)

An advantage is ... that you have the opportunity to get employees' and former employees' points of view. (Both, G8, line 182)

The recruiting website is just positive, a bit inflated ... so it is useful to be aware of some negative and contradictory aspects. (Both, G9, line 32)

To summarise, the evaluative pattern above reveals that the combined information from both sources is seen as helpful because it allows for a balanced view via fact checking (industrial order), more transparency (civic order) and promotes free competition among applicants (market order).

7 | DISCUSSION

The aim of our study was to explore the effects of mixed signals on perceived employer attractiveness. Using a mixed-method approach, we examined and contrasted how congruent signals from one source (RecW only) and mixed signals—incongruent signals from one (OnERev only) or multiple sources (both RecW and OnERev)—influence quality judgements about employers. Our results shed light on signal interpretation and evaluation by

combining insights from signalling and convention theory. We now discuss our results in relation to our GAs (GA1–GA4) to outline contributions and limitations; and make suggestions for future research and organisational practice.

First, we respond to Allen et al.'s (2013) call to provide more insights on the effectiveness of RecW. Our quantitative results support GA1 that RecW as sources of congruent signals are beneficial to employer attractiveness. Participants regard the focal organisation more favourably after visiting its website. However, when discussing and reflecting with others, they become critical about the credibility of 'single-source information'. Their criticism of the source mainly builds on three orders of worth: opinion, domestic and industrial. Important factors include organisational reputation (Cable & Turban, 2003), employee testimonials (Walker, Feild, Giles, Armenakis, & Bernerth, 2009) and RecW usability (Cober et al., 2004)—and, especially, providing access to sufficient employer information (Baum & Kabst, 2014). Employers are criticised if they neglect these factors.

Second, we extend research on how OnERev affect employer attractiveness (Kaur & Dubey, 2014). Our quantitative results support GA2 that OnERev as sources of balanced incongruent signals are detrimental to perceived employer attractiveness. As soon as potential applicants are confronted with mixed signals, the organisation is perceived more negatively. However, when discussing and reflecting in groups on their experiences with OnERev, participants become rather sceptical and start to question the credibility of reviews. Their scepticism mainly builds on the market order of worth—suggesting that the relative usefulness of online reviews depends upon perceived source credibility (Cheng & Ho, 2015). Our data show that potential applicants prefer to find out for themselves how attractive employers are and are unwilling to accept negative reviews if their aim is obviously market distortion. Criticism based on the domestic order arises when those posting the reviews are seen as strangers that cannot be trusted. Thus, not only is trust in the source of reviews essential (Matute et al., 2016), but it helps when sources are perceived as experts (Hong, Xu, Wang, & Fan, 2017)—similar to the industrial order.

Third, we extend Drover et al.'s (2018) recent work to study the effects of multiple signals with competing valence—putting more analytical focus on the signal source(s). Our quantitative results show that the effects of RecW in combination with OnERev lower perceived employer attractiveness (contrary to GA3). They but do not merely cancel each other out. The qualitative data underscore the importance of signals and their valence; and, furthermore, show that information sources and their credibility are critical. When multiple information sources are used in decision-making processes, it is important to consider the extent to which information pieces from these sources contradict or support each other. Because potential applicants increasingly rely upon OnERev, decisions to apply are likely to be based on signals from multiple sources; and, thus, focus should be placed upon their interaction. Importantly, our findings show that evaluations in group discussions become more positive when groups engage with both information sources. Overall, mixed signals from more than one source is seen as an opportunity to compare and develop more grounded expectations towards an employer. These evaluations mainly build on three orders of worth: industrial, civic and market. This conforms to previous research suggesting that creating realistic expectations helps to ensure that new hires fulfil requirements (Dineen, Ling, Ash, & DelVecchio, 2007). Employees' information sharing makes the whole recruitment process more transparent (Dabirian et al., 2017) and adds value for applicants (Stone et al., 2015).

Fourth, by integrating signalling and convention theory we emphasise the importance of mixed signals from multiple sources, and address individual and interactive information processing and interpretation. As discussed in relation to GA1–GA3, critically reflecting with others on RecW and/or OnERev leads to modifications of initial judgements about employer attractiveness. The direction and degree depend on the evaluation of the signal set, as outlined above. Uncertainty due to contradictory information triggers systematic processing, which can be explained by the HSM. However, we add convention theory to identify which higher-order principles are used to evaluate information. This allows us to further theorise signal interpretation, partially opening up the black box of how potential applicants evaluate signals, and what they criticise and appreciate. The orders they draw on (Table 1) shape expectations towards employers and undergird their quality judgements. Our convention-based analysis yields evaluative patterns for RecW, OnERev and both.

The industrial order of worth predominates in all signal sets and is used to criticise inefficient presentation of information. Usability is important to the new generation of applicants and also is decisive in their perception of relevant information (Djamasbi, Siegel, Skorinko, & Tullis, 2011). The market order is mainly used for challenging the subjective nature of information. In this regard, Hillebrandt, Rauchschnabel, Hartmann, and Ivens (2015) argue that anonymous reviews bear the risk of biases. The domestic order is used to criticise the impersonal nature of RecW and OnERev. Allen et al. (2007) see employee referrals as building trust in this context. The civic order is used to emphasise the importance of transparency and open access to independent information. The new generation tends to regard social media as a legitimate information source for job search (Manroop & Richardson, 2013). From an opinion order standpoint, realistic information—also on RecW—is appreciated, while banal and irrelevant information is criticised. Also, previous research warns against too appealing RecW (Dineen et al., 2007). In our study, the inspiration order is not as relevant as the others—because it strongly depends on what is seen as state-of-the-art or creative. While inexperienced job seekers are inspired by catchy RecW designs or ‘authentic’ information on OnERev, those that have a bit of work experience are easily disappointed by web content that has too many glossy pictures of employees or superficial complaints. On RecW, they appreciate seeing mission statements and other elements expressing companies’ corporate philosophies. In addition, candidates are attracted to information about the good causes that companies are involved in, for example, successful Corporate Social Responsibility (CSR) projects (Puncheva-Michelotti, Hudson, & Jin, 2018). These empirical glimpses show that participants’ prior experiences feed into their critical capacity. Variations in how participants apply orders of worth are driven by the specific situation, the information provided (different signal sets) and their individual experiences (actors’ critical capacity). Although we did not study the role of applicants’ prior experience, it appears to affect their critical capacity and their evaluations.

Finally, we contribute to research examining online information sources and employer attractiveness. The majority of this research focuses on single signal sources (Drover et al., 2018). While the effects of RecW on applicant attraction is well-researched, there has been little attention given to examining how the credibility of RecW influences this attraction. Furthermore, research examining the potential role and influence of OnERev is scarce. Our study demonstrates how important it is to consider mixed signals—as they might challenge the signals of employer attractiveness promoted by RecW. At the same time, we find that mixed signals do not create confusion, but, instead, may be seen as valuable additional information for job seekers. Our study shows that potential applicants prefer more realistic than idealistic information. This finding is in line with research that stresses the importance of a ‘realistic job preview’ (Phillips, 1998) as a precondition for a sustainable fit between employee and employer. Realistic expectations prevent pointless applications, which is beneficial to both organisations and individuals (Dineen et al., 2007).

7.1 | Practical implications

On a practical level, two major consequences follow from our study. First, applicants should visit RecW and OnERev platforms prior to an application to get a ‘realistic job preview’ (Phillips, 1998). Both sources contribute to reducing asymmetric information in the recruitment process and support a proper signal pool, increasing the person-organisation fit (D. S. Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005). As for organisations, they should not only actively manage their own RecW, but also constantly monitor OnERev platforms, replying to comments and providing information. Second, organisations can make use of the evaluative repertoire as a starting point to increase credibility and information quality. They may also consider tailoring their approach, especially their communication channels, in order to address particular orders of worth; and ultimately improve potential applicants’ experiences. Table 3 summarises major recommendations for RecW and OnERev.

This approach could help organisations improve their employer brand via electronic Human Resource Management (eHRM) (Stone et al., 2015) and enhance their ability to attract future employees.

TABLE 3 Summary of implications for organisational practice

Recommendations for		Order of worth addressed
... recruiting websites	... online employer reviews	
Implement filtering options; choose a plain and simple design; provide sufficient, relevant, unambiguous information; consider that aesthetics are of secondary importance	Make employees write reviews including both pros and cons; suggest a matter-of-fact style in terms of information processing	Industrial
Present the overall package in a genuine, unbiased and compelling way; put a clear emphasis on the individual advantages that come with the job offered	Motivate employees to provide inside information; ensure emotion-free and anti-competitive content, also in reactions to reviews	Market
Provide personal contact information (pictures and/or email addresses of recruiters, line managers or future colleagues); use employee reports/videos that contain everyday information	Be in touch with the reviewers by honestly reacting to their comments; encourage employees to share personal stories about their work life	Domestic
Include links to third party or social media channels; make all the necessary information available to everyone for the sake of fairness among applicants	Be respectful towards reviewers; be responsive to reviews, confirm or correct information and ensure transparency	Civic
Communicate a positive image without banality; be aware of your reputation, be (pro-)active and proficient in dealing with any negative press	Be present either with reviews from your own employees or via reactions to reviews; ensure a controlled exchange of opinions	Opinion
Invest in state-of-the-art web design; provide a stimulating mission statement or other information that reveals the bigger picture; show how people can contribute to a cause	Ensure authentic information by avoiding fake reviews; your employees should reveal their motives for writing the review	Inspiration

7.2 | Limitations and future research

The study was conducted with initial job seekers from a single university; the sample is therefore rather homogenous. While the actual RecW and OnERev of a prototypical employer provided a realistic setting, generalising our results requires additional empirical efforts. To note, we did not intend to make statements about different groups of applicants or organisations, but wanted to show how potential applicants react to and interpret (mixed) signals. Furthermore, we chose RecW and OnERev as information sources because we expected contradictions. For the qualitative study, we did not include all participants in the group discussions; a random selection was done. Due to our method, it was not possible to control for individual participants who were dominant in group discussions. Our analytical focus was rather on teasing out evaluative patterns of how participants would interpret signals about the employer. The scope of this study did not allow us to provide further details on interpretations that would build on combinations of multiple evaluative principles.

Future studies on e-recruiting and applicant attraction should cover both OnERev and RecW. Quantitative studies should integrate credibility measures of both sources and investigate their interaction. Our study also underscores the need for further and more systematic research on effects of mixed signals (Drover et al., 2018). This is particularly true for hypotheses-testing research in more controlled settings or comparative research, for example, studies that contrast findings across types of applicants, organisations, industries or countries. Moreover,

other information sources such as social media or job search engines should be studied for their effects on employer attractiveness. It would also be interesting to repeat the study with more experienced employees and see whether effects and evaluative patterns vary.

7.3 | Concluding remarks

While RecW controlled by employers provide largely congruent signals, OnERev usually create a mixed-signal situation. Our study shows that mixed signals negatively affect employer attractiveness and that signal evaluation depends on how information sources are perceived in given situations. Both organisations and potential applicants should be aware of mixed signals to make informed decisions in recruitment and job search processes.

Digital transformation does not exclude HRM and its processes. Our study not only sheds light on some of the technology-induced changes at the individual and organisational level, but also points to more fundamental issues of information power and control in the new world of work. For a long-time to come, this provides ample opportunities for better understanding new patterns of individual and organisational behaviour.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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