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Industry Image Perceptions and Organizational Attractiveness: Results of an International Survey

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ABSTRACT
Extending the research on corporate brand image and recruitment, this study investigates the influence of industry image on organizational attractiveness in a cross–national context. Drawing from signaling theory and the application of the instrumental-symbolic image framework, we apply an experimental vignette design in the renewable energy industry (REI) and the oil and gas exploration and production industry (OGI) with potential job applicants in France, Germany, and the United Kingdom. We conceptualize national context as collective signaling environments. Results from 550 respondents indicate that the REI and OGI differ in most of the instrumental and symbolic image dimensions. The instrumental image dimension of pay and the three symbolic image dimensions of sincerity, innovativeness, and prestige predict organizational attractiveness. Moreover, sincerity, innovativeness, and prestige carry a mediating effect in the link between industry affiliation and organizational attractiveness. Findings also demonstrate that image perceptions of the REI and OGI vary across countries such that the already more favorable image perceptions regarding the REI are for the most part even more pronounced in France. Implications for theory and tailored recommendations for practice are provided.

1 | Introduction

In today's globalized markets, human capital is a key factor for organizations to achieve competitive advantage (Ehrhart and Ziegert 2005; Williamson et al. 2010; Yu and Cable 2012). Thus, attracting highly qualified individuals is among an organization's main priorities (Collins 2001; Williamson et al. 2010). However, organizations in some industries face severe difficulties in appealing to potential employees. For instance, energy firms in the United Kingdom (UK) face difficulties in attracting talent (Deloitte 2021), while Germany's railway industry struggles to attract employees (McKinsey 2020). On the other hand, some organizations can benefit from a particular industry in

which they are embedded (Bajde 2019), to such a degree that Wilden, Gudergan, and Lings (2010) found industry to be the first selection criterion for most potential recruits, when they considered a pool of potential employers. Therefore, in a global economy, it is vital to understand how an industry and its image will influence organizations' attraction of highly qualified prospective applicants across different countries.

Prior research found that industry shapes job seekers' initial impression of a specific organization (De Goede, van Vianen, and Klehe 2011), the perceived corporate reputation, and job choice decisions (Bryson, Forth, and Stojukikes 2017; Cable and Graham 2000; Pernkopf, Latzke, and Mayrhofer 2021). For

Summary

- What is currently known?
  - A particular industry shapes job applicants' initial impression of an organization.
  - Certain industries have a substantial effect on job choice decisions but the underlying mechanisms behind these decisions are not well understood.
  - The need for further investigations into the role of industry image and the way in which it trickles-down to potential applicants' attraction to an organization.
  - A need for greater understanding of the role of signaling environments in the recruitment context.

- What this paper adds?
  - Theorizes and tests a model to understand potential mechanisms behind the industry–industry image–organizational attractiveness relationship.
  - Extends signaling theory by elucidating a signaling environment, that is potential applicants' national context to understand differing collectivistic interpretations of industries and their interaction with individuals' formation of industry image.
  - Between industries, perceived industry-image dimensions are different, and it is symbolic image dimensions that mediate the relationship between industry and organizational attractiveness in this study. This implies that sincerity, innovativeness, and prestige images explain differences in organizational attractiveness between OGI and REI.

- The implication for practitioners:
  - Prospective applicants in developed countries are more attracted to organizations as future employers if they perceive organizations' industry-image as paying well, sincerer, more innovative, and more prestigious. Compared to OGI, REI is perceived more favorably in all the latter three regards.
  - Individuals in France, Germany, and the United Kingdom have overall a greater affinity for REI, than OGI, and this tendency is generally stronger in France. OGI should make sincere efforts to improve the environmental/social impact of their industry and, inter alia, communicate innovativeness in this regard, to attract applicants.
  - REI should play to its strengths by further improving any negative impact of renewable technologies.

example, because of information shortages about a firm, job applicants rely on industry culture stereotypes to evaluate a firm as an employer (De Goede, van Vianen, and Klehe 2011). Further, we know job candidates care about an organization's industry affiliation and prefer an organization that is associated with products and services that do good, instead of harming the public (Zhan, Noe, and Klein 2022). Thus, industry affiliation takes a critical role in affecting job choice decisions (Cable and Graham 2000). However, the underlying mechanism and granularity of how individuals form images of industries, and crucially by which avenues these trickle-down to attractiveness of organizations is unclear. This opacity is problematic because it means organizations cannot reliably know how the industry within which they are nested influences the pool of potential applicants and their organizational attractiveness. Thus,

recruitment practitioners need to understand, how job applicants become attracted to their organization, against the background of their industry embeddedness.

These issues indicate that current theorization needs to be more integrated into empirical design, to capture the complex constituents of industry image, with the aim of a better explanation of this trickle-down relationship. In this vein, Dineen and Williamson (2012) highlight from a practitioner perspective, the need for further investigation into how industry image might affect how organizations advertise to attract applicants to their organization. Furthermore, little academic attention has been paid to industry, or distinctly but relatedly, sector differences (for clarity: the, e.g., oil and gas *industry* is part of the energy *sector*) in recruitment across nations (Biemann, Mayrhofer, and Koch-Bayram 2023; O'Reilly, Grotti, and Russell 2019), although it is known more generally that recruitment varies substantially across nations (Froese, Vo, and Garrett 2010).

Spence's (1973) signaling theory is often applied to understand the recruitment context from the perspective of potential job applicants (Celani and Singh 2011). Signaling theory provides a way to understand how signals or cues emitted by an industry are received and interpreted, usually by individuals (Spence 1973; Wilden, Gudergan, and Lings 2010). However, Celani and Singh (2011) criticize that signaling theory in the context of recruitment has not been sufficiently tested. Further, the signaling environment–the context in which signals are sent from signaler to receiver–is under-researched. Scholars note the industry competitive environment among other examples, suggesting that "Some of these influences may compete with each other to make signals more or less observable" (Connelly et al. 2011, p. 62). Connelly et al. (2011) further note that management theory should develop nascent work that implies that collectivistic beliefs about signals (e.g., at the levels of nations, industry, organization, groups, etc.) could affect individualistic interpretations of signals (e.g., Langfield-Smith 1992; Park and Mezias 2005). In this vein, the signaling environment as a national context can represent a shared or overlapping environment which influences individuals' interpretation of industry signals. In response, this study accounts for the moderating influence of national context, across France, Germany, and the UK, three major European countries, to test how industries and their images are differently connoted by young prospective applicants, and assesses the impact of carefully selected image dimensions on organizational attractiveness.

To achieve these aims, we apply signaling theory (Spence 1973) to explain differences across industries in relation to organizational attractiveness based on varying image perceptions. Accordingly, we integrate national context as a boundary condition and proxy for collective interpretation of signals underlying image perceptions and test which industry image dimensions, for example, pay or sincerity, inform perceived organizational attractiveness. We conceptualize industry image using the instrumental–symbolic framework (Lievens and Highhouse 2003), and elevate it from the organizational level to the underexplored industry level. This approach provides a higher resolution picture of the industry, industry image, and

organizational attractiveness connection and helps us better understand through which avenues signals form images of an industry. Within three countries, we applied a vignette design and collected data from 550 university students who are well-educated, high potential individuals sought after by employers. In our vignettes, we consider two different industries, namely, the renewable energy industry (REI) and the oil and gas exploration and production industry (OGI). These industries are selected due to their similarities and differences. Both industries are characterized by global exposure and state of transition as driven by both economic and societal changes. Whereas REI represents the new, green economy, OGI represents the old, brown economy.

In sum, this study contributes to the literature in the following ways. First, it advances organizational attractiveness research by testing in detail how potential applicants rely on industry and its image (e.g., instrumental and symbolic dimensions) to evaluate an organization as a future employer. This substantially expands prior research that implied industry (or relatedly, sector) shapes job seekers' initial impression of an organization by disentangling the role of specific industry image dimensions in forming organizational attractiveness (e.g., De Goede, van Vianen, and Klehe 2011; Duff and Cotgrove 1982; Wilden, Gudergan, and Lings 2010). We thus respond to calls for further study into this understudied connection (De Goede, van Vianen, and Klehe 2011; Dineen and Williamson 2012).

Second, we contribute to signaling theory and the recruitment literature by theorizing and testing the role of national context as a salient signaling environment. More related studies were conducted in singular national contexts or did not account for the country/nationality of potential job candidates (De Goede, van Vianen, and Klehe 2011; Dineen and Williamson 2012; Lievens 2007; Peltokorpi, Bader, and Froese 2019). In contrast, our study investigates industries and their images across three national settings and thus enriches our theoretical understanding of the formation and granularity of industry images across national contexts. Thus, we heed calls to enrich signaling theory in the context of international recruitment (Connelly et al. 2011) and, more broadly, recruitment (Celani and Singh 2011) by conceptualizing and testing national context and competing industries as a potentially important signaling environment. Further, by examining this signaling environment which affects individuals' formation of industry image, we contribute to developing signaling theory in terms of the relationship between collectivistic and individualistic interpretations of signals (Connelly et al. 2011; Langfield-Smith 1992; Park and Mezias 2005). This is important from a practice perspective too because the interpretation of industry emitted signals culminates in relevant evaluations (images) of an industry, which can affect how individuals feel about and select employers embedded in a certain industry (De Goede, van Vianen, and Klehe 2011; Wilden, Gudergan, and Lings 2010). Likewise, this contributes to wider international recruitment research which found that organizational characteristics, such as country image, country of origin, organizational culture, and HRM practices, can influence perceptions of organizational attractiveness (Froese, Vo, and Garrett 2010; Froese and Kishi 2013; Held and Bader 2018; Newburry, Gardberg, and Belkin 2006; Peltokorpi, Bader, and Froese 2019; Pernkopf, Latzke, and Mayrhofer 2021).

Third, we contribute to corporations' recruitment strategies in the energy sector, by helping them understand which specific dimensions of the industry in which they are embedded "speak" to potential candidates across different national contexts. We further theorize the diverse channels through which these signals are received. Thus, based on our findings, concerned companies can form tailored strategies accounting for their industry membership, and where they decide to recruit candidates. The details provided by our theoretical and empirical approach provide plenty of input for this purpose. Contrasting new and old industries, also provides an increased understanding whether and how the green economy is desirable to potential applicants.

2 | Theoretical and Conceptual Background

Our study applies signaling theory (Spence 1973), which most fundamentally theorizes information asymmetry between two relevant parties. We apply this theory to understand the problem of information asymmetry from the perspective of potential job candidates to for example, increase effective recruitment (Celani and Singh 2011; Connelly et al. 2011). Signaling theory elucidates the perspective of (potential) job candidates to understand how they are influenced by job market signals (e.g., Celani and Singh 2011; Rynes, Bretz JR, and Gerhart 1991). In that regard, Ehrhart and Ziegert (2005) argue that signaling theory can explain the impact of observable environmental variables and recruiter characteristics. Recent empirical research also tells us that observable signals significantly matter when it comes to recruitment. For instance, Mirowska (2020) and Mirowska and Mesnet (2022) found that signals of AI reliance by organizations negatively impacted potential recruits and deterred job applications.

First, in accordance with the principles of signaling theory, it is unlikely that individuals will have complete information about a particular industry. In response, they will utilize the information available, so-called signals, to make inferences about the characteristics of an industry. Such signals may be transmitted through brochures and publicity initiatives conveying social responsibility or sensitivity towards work-life balance in a certain industry, media portrayal, direct personal experience, word of mouth, and general socio-political sentiment, for example, investment in the development of an industry through policymakers. Accordingly, individuals receive and interpret signals emitted from industry via diverse channels. Following the similar reasoning of Highhouse, Brooks, and Gregarus (2009) about the creation of organizational images, these diverse channels should, in turn, serve to constitute images of industries because of pertinent cues relayed through them. Consistent with signaling theory, we argue these images represent mental associations of an industry and broadly define industry image as "(...) *a set of associations that is firmly anchored, condensed, and evaluated in the minds of people concerning a group of companies (...)*" (Burmann, Schaefer, and Maloney 2008, p.159).

Crucially, individual interpretations of received industry signals are not the only thing that matters when forming an image of an

industry. Connelly et al. ([2011](#)) highlighted Langfield-Smith's ([1992](#)) experiment on cognitive maps, where in terms of organizational culture, individuals hold perceptions about that organization that overlap with other group members' perceptions as collectivistic beliefs, and importantly, these collectivistic beliefs influence individuals' perceptions to form understanding over time. Connelly et al. ([2011](#)) suggest this idea is a way forward to greater understanding of how receivers interpret signals. Thus, this means potential job candidates ascribe meaning to signals through both individualistic and collectivistic interpretation of those signals. Shifting to the industry context, we examine national setting as a signaling environment, that for receivers, forms a common, collectivist interpretation of industry signals. We postulate based on arguments in Connelly et al. ([2011](#)) and Langfield-Smith ([1992](#)) that collectivistic meaning ascribed to industry signals will interact with individual interpretations of an industry formed through received industry signals. This is important to theorize and test, because for instance, work has theorized that the signaling environment plays a role in deciding the success or failure of transmitted signals (Ndofor and Levitas [2004](#)). Thus, understanding the national signaling environment better can help organizations determine appropriate strategies to attract candidates across different national domains.

To capture images of industry in detail, formed from transmitted industry signals, we use the seminal conceptualization developed by Lievens and Highhouse ([2003](#); see for an overview: Lievens and Slaughter [2016](#)). In this conceptualization, images are distinguished between instrumental and symbolic image dimensions. This approach was originally inspired by the marketing literature concerned with brand image (e.g., Keller [1993](#)). Accordingly, as with brands, individuals associate organizations with functional, so-called instrumental, and symbolic attributes that are measured by means of image dimensions. Instrumental image dimensions relate to more objective attributes (e.g., pay, career advancement, job security), while symbolic image dimensions resemble trait inferences (e.g., sincerity, innovativeness, prestige). In line with Burmann, Schaefer, and Maloney ([2008](#)), we transfer instrumental and symbolic image dimensions from the organizational to the industry level, to discover the associations the individuals in our study form of industry.

After having introduced the tenets of our theoretical lens and core concepts, we will next develop and present our hypotheses.

3 | Hypothesis Development

3.1 | The OGI/REI and Instrumental and Symbolic Image Dimensions

Before delving into the development of our hypotheses, we briefly characterize the two industries that are the focus of this study, namely the renewable energy industry (REI) and the oil and gas exploration and production industry (OGI) which are part of the wider energy sector. Renewable energy originates from sources that replenish naturally and are virtually inexhaustible (U.S. Energy Information Administration [2023](#)).

These sources range primarily from wind, hydro, and solar power to biomass, for example, biofuels (U.S. Energy Information Administration [2023](#)). Against this background, renewable energy sources are widely considered key to the reduction of emissions that underlie climate change (United Nations [n.d.](#)). Further, countries worldwide, in particular in Europe, are investing major efforts to expand usage of renewable energy sources and to become independent from fossil fuels. The REI is crucial in this regard as it facilitates technological development to harness and supply renewable energy to societies. In contrast, the OGI is concerned with the rigging, extraction and provision of fossil fuels and is a long-standing industry. This industry is confronted with an unclear outlook in light of green energy transitions in many societies across the globe and pressure arising from the Paris Agreement and international climate targets. Additionally, the OGI industry is regarded to enjoy little trust among people across various countries (Kolaczkowski [2016](#)).

The first instrumental image dimension we direct attention to is pay. This dimension captures individuals' beliefs about remuneration. Based on signaling theory (Spence [1973](#)), we propose that individuals will associate the OGI with higher pay levels than the REI. First, in the media, signals are transmitted that portray the OGI, despite occasional crises, as inherently prosperous. Second, within Fortune's Global 500 (Fortune [n.d.](#)) top 10 list of largest companies by revenue in 2016, five companies operated in the OGI. While not everyone will know about this in detail, it is reasonable to expect that potential job applicants will have a basic comprehension about the prosperity of the OGI. In sum, such signals carry relevant informational cues that individuals likely use to construe an image of the OGI as an industry in which pay is generally high and most likely outperforming the pay levels in the REI.

Next, we turn to the instrumental image dimension called career advancement. This dimension captures individuals' image of whether an industry offers opportunities for promotion and career enhancement. The long-lasting sociopolitical debate about the future of fossil energies and stricter policies implemented by governments to reduce emissions and promote decarbonization likely leads individuals to infer that chances of making a career and swift promotions for novice employees become less probable in the OGI. In this regard, the REI is probably connoted with a more promising outlook for future career advancement. In 2017, 10.3 million individuals were employed in the REI worldwide, indicating a growth of 5.3% compared to the previous year. For the future, projections estimate a further substantial growth (International Renewable Energy Agency [2018](#)). This should facilitate the image of a vibrant, fast growing, industry with a long-term perspective in contrast to the stagnant OGI. The aspect of industry development and future prospects is also important to image regarding job security, which we consider as follows.

The third instrumental image dimension is job security. This dimension measures individuals' image in terms of having a safe job and the prevalence of permanent working contracts. In times of green transition, we propose that individuals will harbor an image of the OGI as providing less secure employment. First, individuals have likely witnessed the downfall of a closely

related fossil industry - the coal mining industry. For instance, in 2015, the British government announced their plans to shut down all coal-fired power plants (Reed 2015). Similar intentions to end coal mining are also observed in Germany. Speaking of the OGI, France has implemented a law to stop oil and gas production in its territories by 2040 (CBS News 2017). Other countries, such as the Netherlands, are heading in the same direction with the intention of becoming climate neutral and/or preventing natural disasters (Boersma 2016). These political strategies signal the transition from fossil fuels to renewables and, thereby, convey a rather bleak outlook on job security in the OGI. In turn, the promotion of the green transition has created new employment opportunities in the REI with a potential to expand vastly in the future (International Renewable Energy Agency 2018), and, thus, should advance a more reliable image in terms of secure employment.

The last instrumental image dimension we set focus on is workload. Accordingly, this image dimension refers to individuals' image perceptions of how busy employees are and the amount of expected working hours. The main rationale is that the OGI will be associated with an image of higher workloads as compared to the REI. Within the OGI, employees often work on offshore platforms or onshore facilities and, in many instances, in regions away from their home. Due to the remote nature of this type of work, individuals happen to be separated from their families and friends for extended periods of time. The work is usually organized in shifts and takes place during night hours. The notion that workload is high in the OGI is corroborated in respective employee polls. A survey of 1635 oil and gas workers in the USA indicated that 33% of respondents have a more negative view of their workload and hours (Milliken Biven and Lindner 2023). Multiple respondents also reported to work more than 12-h shifts. Another study on oil and gas extraction workers found that over 60% of respondents worked 12 h or more (Hagan-Haynes et al. 2022). Further, TV programs, such as *Black Gold* or *License to Drill*, broadcast the tough working realities of the OGI on TV screens in living rooms across the world. Therefore, the OGI should be related with an image of higher workload than the REI.

Next, we turn to the symbolic image dimensions (Lievens and Highhouse 2003). The first dimension is sincerity. Sincerity reflects whether individuals associate an industry with being honest and authentic. The REI is proposed to have a sincerer image than the OGI for the following reasons. First, as stated before, the OGI is said to have a trust problem (Kolaczkowski 2016). One reason for this could be the prevalence of corruption. One example is the Petrobras scandal from 2014 in which executives from Petrobras, a large Brazilian oil and gas company, conspired with executives in the construction industry and politicians resulting in one of the biggest corruption schemes worldwide (Beauchamp 2016). Second, the OGI has been responsible for ecological disasters. Probably, the most prominent incident was BP's Deepwater Horizon spill in 2010 with oil flowing into the sea for 87 days, covering 2000 km of coastline with oil and killing hundreds of thousands of birds and fish (Seynsche 2020). Adding to public indignation was BP's statement that the disaster was not caused by gross negligence but a tragic accident (Ali 2019). Moreover, the OGI has been accused by indigenous people of causing health dangers, for

instance, by contaminating groundwater (Livingstone 2016). Regarding the REI, on the other hand, similar issues, such as corruptive practices, may also exist, but have not made it into the view of the wider public. Also, the industry's image as clean and responsible affects its characterization as being sincerer.

The second symbolic image dimension we focus on is innovativeness. This dimension measures the degree of innovativeness and trendiness connoted with an industry. In this regard, we contend that the REI is viewed as more innovative than the OGI. In a world in which green transition has turned into a superordinate goal, the REI aligns well with the zeitgeist and contemporary trends. International studies with young individuals showcase that preoccupation and worries about climate change are an important subject (e.g., Broadbent et al. 2017). Hence, anxiety about climate change among young people and a pressing need to take action have become palpable in many societies. The REI provides the means for cleaner, more sustainable energy production and supply and, thus, corresponds with this need and keeps up with the times. On the contrary, the OGI is related with a poor perception in terms of sustainability (e.g., Chowdhury et al. 2019), and hence, comes across as outdated and traditional. Second, innovative and creative solutions in the REI, for instance, printable solar panels or solar-powered pumps to extract groundwater in arid regions, such as Africa (Howard 2015), signal the innovative spirit and exciting new solutions in the REI to advance green transition and fight human hardship. Finally, we argue that the innovation-driven nature of the REI will also signal a cooler/ trendier image than the OGI, which is accused of being a prominent driver of climate change, particularly in the eyes of younger individuals.

The next symbolic dimension is competence. Image perceptions in this dimension revolve around the prowess and reliability associated with an industry. We believe that the REI will be considered more competent than the OGI. First, as elaborated above, the REI is an innovation-driven industry and smart solutions to pressing environmental concerns should communicate the technological capabilities to be found in the REI, for example storage of excess solar energy in cloud systems. In this way, renewable energy sources are often combined with smart grids (Hossain et al. 2016). In contrast, the continued reliance on fossil energy and extraction processes present in the OGI will likely be perceived as ignorant and unwise by many of the public. In addition, major environmental disasters, such as the Deepwater Horizon spill, the Exxon Valdez spill, or the release of dangerous materials from oil and gas production facilities as a consequence of natural catastrophes such as Hurricane Katrina (Cruz and Krausmann 2009), demonstrated the industries' vulnerability and low reliability. Thus, in juxtaposition with the OGI, we argue that the REI will have a higher score on the competence dimension of symbolic images.

Now we center on the symbolic image dimension of prestige. This dimension captures the degree of status and respectability associated with an industry. We argue that the REI will be perceived as more prestigious than the OGI. The reputation of the OGI has suffered as a result of the already mentioned natural disasters, corruption scandals, and the industry's role in climate change. The industry is aware of this poor public

perception and observed that the OGI is related with an image of being a smelly and old-world industry (Edman 2013). This should negatively affect the prestige of the OGI. Further, a survey conducted by EY (2017) among US Americans indicated that especially Generation Z members and Millennials associated the OGI with blue-collar rather than white-collar employment. Moreover, in the same survey, the OGI is connoted with little prestige among Generation Z individuals. On the contrary, the REI with its generally accepted positive impact on the environment and clean image should resonate with younger individuals' desire to save the planet, and, therefore, enjoy a higher degree of prestige and regard.

The final symbolic image dimension is robustness. This dimension reflects whether an industry is perceived as masculine and tough. Our rationale is that the OGI will be associated with a more robust image than the REI. First, the OGI has a reputation for being masculine and male-dominated (Williams, Kilanski, and Muller 2014). This is not only apparent in the low representation of women in this industry, which is estimated to be at around 22% versus 32% in the REI (International Renewable Energy Agency 2018), but also in masculine value assumptions and in daily interactions (see for an account of the oil industry: Miller 2004). Second, working in the OGI frequently requires individuals to relocate for extended periods of time to foreign, remote, and harsh locations (Shortland 2018). This type of work can conflict with still prevalent family role stereotypes which apply pressure on females to take the main responsibility for parenting and being the "family manager". Related to this, harsh working and living conditions in the OGI may lead individuals to expect that some toughness and ruggedness is needed to succeed. While working in challenging environments is a common prerequisite in jobs in the REI, for instance, on offshore wind parks, the image of the OGI as being more robust and masculine than the REI likely persists in the minds of most individuals. In sum, we deduce:

Hypothesis 1a–d. *The OGI (REI) is positively (negatively) related with the instrumental image dimensions of pay (H1a) and workload (H1b) and negatively (positively) related with the instrumental image dimensions of career advancement (H1c) and job security (H1d).*

Hypothesis 1e–i. *The OGI (REI) is positively (negatively) related with the symbolic image dimension of robustness (H1e) and negatively (positively) related with the symbolic image dimensions of sincerity (H1f), innovativeness (H1g), competence (H1h), and prestige (H1i).*

3.2 | Instrumental and Symbolic Image Dimensions' Relationship With Organizational Attractiveness

In this section, we will elaborate why we expect that the instrumental and symbolic image dimensions are related with organizational attractiveness. Signaling theory proposes signal receivers choose a firm based on how they have interpreted market signals (Connelly et al. 2011). Based on signaling theory, we posit that once an individual has formed an interpretation of an industry, represented as instrumental and symbolic images, this interpretation of signals will logically trickle down to organizations nested within that industry. The literature on organizational images refers to images as malleable, mental representations of firms (Highhouse, Brooks, and Gregarus 2009). As such, we can understand industry images as corresponding higher-order constructs that are not constructed independently of companies but rather collectively (van Hoye et al. 2022). Since organizations are nested inextricably within an industry, we argue based on signaling theory that the formed images represent a receiver's positive or negative construal of an industry's signals, and thereby affect the perception of attractiveness of an organization within that industry.

First, let us turn to the instrumental image dimensions, that is, pay, career advancement, job security, and workload. Based on their origin in marketing research, the instrumental image dimensions mirror individuals' perceptions of utilitarian or functional aspects that serve to maximize benefits and minimize cost (Lievens and Highhouse 2003; Lievens and Slaughter 2016). Logically, positive industry images regarding pay, career advancement, and job security should lead to an increase in organizational attractiveness. This is also corroborated in related research on the factors young individuals deem important attributes of employers (Lassleben and Hofmann 2023). In terms of workload, younger generations, such as Generation Z, have been found to place great emphasis on work-life balance (e.g., Confederation of British Industry 2018; Lassleben and Hofmann 2023). Therefore, an industry image conveying a high workload should be negatively associated with organizational attractiveness.

In contrast to instrumental image dimensions, the symbolic image dimensions reflect individuals' inferences about subjective and intangible characteristics (Lievens and Slaughter 2016). Thus, symbolic image dimensions resemble personality descriptions of organizations or, in the case of the present study, industries. This implies that individuals could consider an industry to be very trustworthy and honest or prestigious and highly regarded. Pertaining to the symbolic image dimensions innovativeness, prestige, and competence, we postulate positive relationships with organizational attractiveness. Hence, individuals should be more likely to aspire to work in industries that are perceived to be innovative, creative and smart or respected versus industries believed to be outdated, uninspired, ignorant, or not well regarded. A similar relationship with organizational attractiveness is expected for the sincerity image dimension. For example, one guiding value for many people is walking through life honestly and being sincere (Rokeach 1973). Generation Z seem to attach particular importance to honesty (Niemiec 2017). Therefore, an industry sporting an image of being sincere should positively influence the attractiveness of organizations within this industry. In a similar vein, striving for gender equality and fairness is a central motivation among many young people across the world (e.g., Broadbent et al. 2017). Thus, industries perceived as masculine and viewed as tending to promote and perpetuate stereotypes that are typically male-connoted should generally not resonate with younger individuals. As a result, we expect a negative association between the symbolic image dimension of robustness and organizational attractiveness. Thus, we postulate:

Hypothesis 2a–d. *The instrumental image dimensions of pay (H2a), career advancement (H2b), and job security (H2c) are positively related with organizational attractiveness and workload (H2d) is negatively related with organizational attractiveness.*

Hypothesis 2e–i. *The symbolic image dimensions of innovativeness (H2e), prestige (H2f), competence (H2g), and sincerity (H2h) are positively related with organizational attractiveness and robustness (H2i) is negatively related with organizational attractiveness.*

Finally, we propose that the instrumental and symbolic image dimensions take the role of mediators in our model. This entails that differences in organizational attractiveness between organizations nested in either the REI or OGI can be attributed to the disparate instrumental and symbolic image perceptions connoted with the two industries. For example, an organization operating in the REI might be considered more attractive as its industry is associated with a sincerer image. On the other hand, an organization in the OGI could be looked upon as more attractive as a result of having an image that comprises high levels of pay in the OGI. Overall, this line of thinking implies the existence of mediating mechanisms and we, hence, conclude:

Hypothesis 3. *The instrumental and symbolic image dimensions are mediators in the relationship between the OGI/the REI and organizational attractiveness.*

3.3 | The OGI/REI and Instrumental and Symbolic Image Dimensions: The Moderating Role of National Context

In this segment, we will develop our rationale for the role of the national context, in which individuals are embedded, as a signaling environment that moderates the relations between the OGI/REI and respective instrumental and symbolic image perceptions. In this study, we focus on the national context of three major European countries—France, Germany, and the UK. Each of the three countries has a large economy, is highly industrialized, as well as internationally connected and democratic. All three countries are signatories of the Paris Agreement, implying a commitment towards expansion, development, and intensified usage of renewables to combat global warming into the future. However, while each of the three countries committed themselves to the goals of the Paris Agreement, climate change policies and social sentiment towards global warming and climate protection are not uniform.

Drawing from signaling theory, cues signal information and, therefore, function as the foundations of individuals' perceptions of an industry (i.e., image perceptions). As individuals in these three countries are embedded in different national contexts, the availability and content of information pertaining to the current and future standing of as well as perspective on the two industries likely differ to some degree because of the signals being sent in the respective national environments (Spence 1973). Against this background, we believe that individuals' image connotations regarding the OGI and the REI

will be influenced, not only by their individual perceptions, but also by national context as a signaling environment which constructs collectivistic construal of industry signals (Connelly et al. 2011; Langfield-Smith 1992; Park and Mezias 2005) and, thus, serves as a boundary condition. In this vein, we stipulate an even more favorable perception of the REI and a more critical stance towards the OGI in France as compared to Germany and the UK. We build this argumentation on the following: first, at the time of survey, France rose to the top of 2017's Climate Change Performance Index (CCPI) (Burck, Marten, and Bals 2016). The CCPI evaluates the climate protection performance of numerous countries (Burck, Marten, and Bals 2016). While the UK ranked at number six with a score approaching France's, its CCPI experienced a slight decrease. Germany, on the other hand, was far behind in position 29 in the CCPI-ranking. Second, the results of the European Perceptions of Climate Change (EPCC) survey (Steentjes et al. 2017) conveyed that people in France were the most worried about climate change. Accordingly, 41% of respondents indicated that they were very or even extremely worried about climate change. In comparison, UK-respondents were considerably less worried, with only 20% of individuals stating that they were very/extremely worried. The corresponding estimate for Germany is 30% (Steentjes et al. 2017). Third, the OGI is looked upon as a masculine industry (e.g., Williams, Kilanski, and Muller 2014). In contrast to Germany and the UK, France happens to have a rather feminine culture (Hofstede 2001), which might color the skeptical ways in which the OGI is perceived in an even stronger manner. In sum, this leads us to conclude:

Hypothesis 4. *The relations across the OGI and the instrumental and symbolic image dimensions are moderated by national context in a way that the adverse (favorable) image perceptions associated with the OGI will be more pronounced (weaker) in France than in Germany and the UK. Vice versa, the favorable (adverse) image perceptions associated with the REI will be more pronounced (weaker) in France than in Germany and the UK.*

Figure 1 summarizes our conceptual model and hypotheses to be investigated.

4 | Methods

4.1 | Sample and Procedure

We collected data from university students (as prospective job seekers) in France, Germany, and the UK from May 2017 to March 2018. They were undergraduate and graduate students studying at major universities in medium-sized cities in their respective countries. We selected these countries because they share many similar characteristics, while differing on important key features. On the one hand, France, Germany, and the UK are large economies, highly industrialized, internationally connected, and democratic countries in Europe. On the other hand, as elaborated earlier, the socio-political developments and sentiments varied in terms of green transition and climate worry across these three countries at the time of the survey (e.g., Burck, Marten, and Bals 2016).
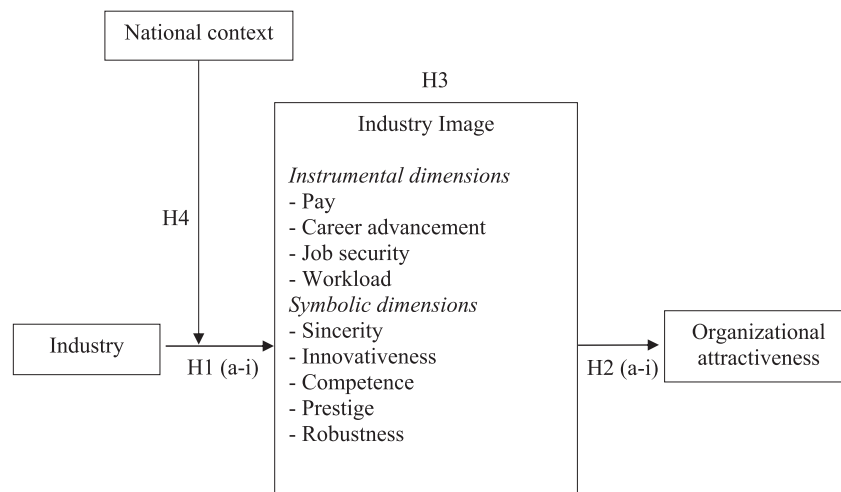
FIGURE 1 | Conceptual model and hypotheses.

The original scenarios and questionnaires were developed in English, translated into French and German for the French and German leg of the study, and then back-translated into English (Brislin 1980). Our study consisted of a between-subject design. In the scenarios, two factors were manipulated. The first factor, which is the focus of this study, was organizational industry affiliation. We defined two different industries—the OGI and the REI. The second factor, which is not the focus of this study, were three different countries of origin (domestic, United States, and Russia) of the firms featured in the scenarios. As such, respondents were randomly assigned into one of six scenarios. Student participation in our study was voluntary and anonymous. Instructors invited their students to participate in an online survey via emails. In addition, undergraduate and graduate students assisted us in disseminating the survey. At the beginning of the survey, we asked students to imagine that they were currently looking for a job and to read the description of a company seeking job applicants (one of the six scenarios). They answered several questions related to that description, to double-check that they understood it clearly–so-called manipulation checks. After this, they were asked to rate the featured industry in terms of their instrumental and symbolic image dimension perceptions and indicated how attracted they felt to the described organization. Moreover, demographic information was asked for at the end of the questionnaire to be used as control variables. An example scenario is enclosed in Appendix A.

In total, we had 550 respondents: 200 respondents from the UK (36.4%), 199 from Germany (36.2%), and 151 from France (27.5%), and 61.6% are female. The average age was 22.07 years (SD = 2.69). Additionally, 60.5% of participants were master students and 36.4% were bachelor students. The remaining percentage either indicated that they studied in another program–for instance, in Germany, study programs resulting in the conferral of a diploma or state examination do still exist–or did not answer. 63.8% of respondents studied in the area of Business and Economics. A substantial number of respondents, that is 70.2%, further reported that they had already gained work experience.

Finally, regarding our use of a student sample, Bello et al. (2009) note a major test of the inclusion of student samples is if the sample can be generalizable to real life. Graduates are a crucial human resource in the industries we focus on and large organizations regularly recruit fresh graduates (McCracken, Currie, and Harrison 2016). Thus, these individuals form a group whose perceptions and interpretations of the OGI and REI, and ultimately their organizational attraction is of vital importance to better understand our research questions, and to industries who might wish to recruit fresh graduates more effectively. Our cohort's perceptions of the REI and OGI are thus highly relevant to our research questions and to organizations nested within these industries for their formation of appropriate talent management strategies. In sum, this means that our student sample is appropriate for the purpose of this study and generalizable to the examined population.

4.2 | Measures

All scales were measured on a 7-point Likert scale, ranging from "1" (= strongly disagree) to "7" (= strongly agree).

4.2.1 | Organizational Attractiveness

The dependent variable organizational attractiveness was measured with four items based on Turban et al. (2001). An example item is "I would like to work for this company." Its Cronbach's α value is 0.893.

4.2.2 | Industry Image

To measure the image of a particular industry, our study adapted the instrumental–symbolic framework from Lievens and Highhouse (2003). We measured four instrumental image dimensions and five symbolic image dimensions (see: Appendix B). We gauged each dimension with three items. For the instrumental image dimensions, we focused on: pay

(Cronbach's α value = 0.844), career advancement (Cronbach's α value = 0.791), job security (Cronbach's α value = 0.771), and workload (Cronbach's α value = 0.806). For the symbolic image dimensions, we included five dimensions: sincerity (Cronbach's α value = 0.921), innovativeness (Cronbach's α value = 0.921), competence (Cronbach's α value = 0.813), prestige (Cronbach's α value = 0.76), and robustness (Cronbach's α value = 0.809).

4.2.3 | Industry

In our experimental vignette design, two distinct industries were featured, that is the renewable energy industry (REI) and the oil and gas exploration and production industry (OGI). We created a dummy variable with "1" representing the renewable energy industry and "0" representing the oil and gas exploration and production industry.

4.2.4 | National Context

National context is understood as the country in which respondents resided when participating in our study. Data were collected in three national contexts, that is, France, Germany, and the UK. We created two dummies: one for France ("1" = France, "0" = others), and one for the UK ("1" = UK, "0" = others). While the first serves as a dummy of our moderating variable, the latter dummy has the role of a control variable.

4.2.5 | Controls

Following related research, we controlled for the influence of respondents' age, gender, and work experience (Froese, Vo, and Garrett 2010; Kim, Froese, and Cox 2012; Lievens and Highhouse 2003; van Hoye and Saks 2011). Age was measured in years. Gender was coded as "1" for male and "0" for female. Work experience was coded as "1" for respondents who had work experience and "0" for respondents without work experience. Additionally, we controlled for study program and area of study. Study program was coded as "1" for master and "0" for others. In terms of area of study, we differentiated between students in the field of Business and Economics, which we coded as "1", and others coded as "0". Further, we controlled for firm country of origin. Consistent with prior research on organizational attractiveness in international contexts (Froese, Vo, and Garrett 2010; Peltokorpi, Bader, and Froese 2019; Pernkopf, Latzke, and Mayrhofer 2021), country of origin is defined as the home country of firms in our study. This study features three different countries of origin of firms: domestic, the United States, and Russia. We created a dummy variable with foreign companies (Russia and the United States) being coded as "1" and domestic companies being coded as "0".

5 | Results

Before testing our hypotheses, we validated our multi-item scales. We conducted multi-group confirmatory factor analysis

(CFA), which showed a satisfactory fit: χ^2 (1173) = 2225.3, $p < 0.001$ comparative fix index (CFI) = 0.906, and root mean square error of approximation (RMSEA) = 0.04 (Hair et al. 2010; Hu and Bentler 1999). Moreover, testing validity and reliability showed that all factors in this study demonstrated adequate validity and reliability, composite reliability (CR) > 0.7, average variance extracted (AVE) > 0.5, and the maximum shared variance (MSV) was smaller than the AVE. Table 1 presents the descriptive statistics and intercorrelations of the variables included in this study.

To test our hypotheses, we conducted regression analysis. First, let us turn to H1a-d, which are concerned with the relationship of the OGI/REI and instrumental image dimensions (see Table 2). Recalling that industry was coded as follows: "1" = REI, "0" = OGI, H1a postulates that the OGI (REI) is associated with higher (lower) perceptions in terms of pay. While the nature of this association is in the predicted direction, the result of our analysis is not significant, and thus, does not lend support to H1a ($B = -0.143$, SE = 0.091, $p > 0.05$). In H1b, we expected higher (lower) workload perceptions with the OGI (REI). H1b was accepted ($B = -0.284$, SE = 0.077, $p < 0.001$). Pertaining to career advancement (H1c) and job security (H1d), we contended lower image perceptions with the OGI and higher perceptions with the REI. H1c ($B = 0.413$, SE = 0.088, $p < 0.001$) and H1d were both corroborated ($B = 0.405$, SE = 0.092, $p < 0.001$).

Next, we report our findings regarding the relationship of the OGI/REI and symbolic image dimensions, that is H1e-i. The results of our analyses are again displayed in Table 2. First, H1e postulated that the OGI (REI) will score higher (lower) in the robustness image dimension. H1e was supported ($B = -1.099$, SE = 0.118, $p < 0.001$). Concerning the image dimensions sincerity (H1f), innovativeness (H1g), competence (H1h), and prestige (H1i), we theorized that the OGI (REI) will be associated with lower (higher) perceptions. H1f ($B = 1.8$, SE = 0.113, $p < 0.001$) as well as H1g ($B = 1.676$, SE = 0.117, $p < 0.001$) were accepted. The same applies to H1h ($B = 0.884$, SE = 0.108, $p < 0.001$) and H1i ($B = 0.561$, SE = 0.114, $p < 0.001$). Thus, in sum, eight out of nine hypotheses were corroborated.

In terms of the prediction of organizational attractiveness, we proposed that the instrumental image dimensions pay (H2a), career advancement (H2b), and job security (H2c) will relate positively to organizational attractiveness (see Table 3). However, only a positive association for pay with organizational attractiveness was identified ($B = 0.14$, SE = 0.061, $p < 0.05$). Career advancement ($B = 0.069$, SE = 0.066, $p > 0.05$) and job security ($B = 0.057$, SE = 0.054, $p > 0.05$) did not influence organizational attractiveness. Hence, H2a was accepted and H2b and H2c were rejected. Further, in H2d we reasoned that a negative association exists between the image dimension workload and organizational attractiveness. Yet, H2d was not supported ($B = -0.007$, SE = 0.057, $p > 0.05$).

With regards to the symbolic image dimensions, we proposed that innovativeness (H2e), prestige (H2f), competence (H2g), and sincerity (H2h) are positively related with organizational attractiveness. Innovativeness ($B = 0.186$, SE = 0.044, $p < 0.001$) and prestige ($B = 0.118$, SE = 0.047, $p < 0.05$) were in fact

TABLE 1 | Descriptive statistics and intercorrelations.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Independent var./controls/moderator																					
1. Industry	0.52	0.50	1																		
2. Age	22.07	2.69	0.012	1																	
3. Gender	0.38	0.49	0.014	0.119**	1																	
4. Work experience	0.70	0.46	0.005	0.26**	0.04	1																
5. Master versus others	0.61	0.49	0.002	−0.263**	−0.105*	0.035	1															
6. Business and economics versus others	0.64	0.48	−0.039	−0.01	0.112**	−0.044	−0.128**	1														
7. Foreign versus domestic	0.66	0.47	0.058	0.11**	−0.024	0.133**	−0.063	−0.112**	1													
8. France versus others	0.27	0.45	−0.006	−0.01	−0.016	−0.026	0.305**	−0.156**	0.024	1												
9. UK versus others	0.36	0.48	−0.01	−0.248**	−0.114**	−0.011	0.502**	−0.044	−0.102*	−0.465**	1											
Instrumental dimensions—industry image																					
10. Pay	4.84	1.10	−0.07	−0.066	0.044	−0.058	0.102*	0.087*	−0.073	−0.141**	0.216**	1										
11. Career advancement	4.75	1.05	0.191**	−0.074	−0.009	−0.082	0.087*	0.044	−0.051	0.016	0.073	0.575**	1									
12. Job security	4.32	1.13	0.175**	−0.174**	−0.018	−0.146**	0.208**	0.065	0.02	0.09*	0.119**	0.351**	0.47**	1								
13. Workload	4.86	0.94	−0.158**	−0.129**	−0.082	−0.139**	0.128**	0.052	−0.017	0.077	0.102*	0.251**	0.199**	0.143**	1							
Symbolic instrumental—industry image																					
14. Sincerity	4.12	1.66	0.533**	−0.062	−0.056	−0.07	0.233**	0.039	−0.035	−0.041	0.259**	0.151**	0.331**	0.362**	0.05	1						
15. Innovativeness	4.28	1.61	0.514**	−0.064	0.039	−0.057	0.092*	0.059	−0.025	0.004	0.064	0.155**	0.4**	0.277**	0.019	0.587**	1					
16. Competence	4.77	1.37	0.319**	−0.105*	−0.057	0.083	0.175**	−0.028	−0.036	−0.017	0.16**	0.267**	0.358**	0.346**	0.078	0.568**	0.536**	1				
17. Prestige	4.68	1.35	0.207**	−0.063	−0.035	0.027	0.074	−0.031	0.024	0.005	0.064	0.295**	0.333**	0.232**	0.065	0.317**	0.428**	0.525**	1			
18. Robustness	4.58	1.48	−0.37**	−0.006	−0.012	0.046	0.087*	0.007	−0.01	0.06	0.025	0.215**	0.028	0.016	0.173**	−0.186**	−0.142**	0.079	0.24**	1		
Dependent variable																					
19. Organizational attractiveness	4.30	1.37	0.279**	−0.038	0.012	−0.115**	0.084*	0.081	−0.084*	−0.012	0.07	0.253**	0.341**	0.279**	0.058	0.425**	0.459**	0.361**	0.324**	−0.071	1

Note: N = 550.

* correlation is significant at the 0.05 level (2—tailed); ** correlation is significant at the 0.01 level (2—tailed).

TABLE 2 | The relationship between industry and instrumental and symbolic image dimensions.

	Pay		Career advancement		Job security		Workload		Sincerity		Innovativeness		Competence		Prestige		Robustness	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Controls/moderator																		
Age	0	0.019	−0.01	0.018	−0.039*	0.019	−0.018	0.016	0.031	0.023	−0.018	0.024	−0.04	0.022	−0.028	0.023	0.004	0.024
Gender	0.138	0.095	−0.003	0.092	0.025	0.096	−0.109	0.081	−0.126	0.118	0.131	0.123	−0.106	0.113	−0.064	0.119	−0.003	0.123
Work experience	−0.133	0.105	−0.156	0.101	−0.316**	0.105	−0.238**	0.089	−0.284*	0.129	−0.168	0.135	0.32**	0.124	0.116	0.13	0.143	0.135
Master versus others	0.148	0.153	0.086	0.148	0.289	0.154	−0.018	0.13	0.419*	0.189	0.257	0.197	0.288	0.182	0.075	0.191	0.226	0.198
Business and economics versus others	0.171	0.098	0.131	0.095	0.256**	0.099	0.16	0.083	0.319**	0.121	0.278***	0.126	0.012	0.116	−0.024	0.122	0.038	0.127
Foreign versus domestic	−0.07	0.099	−0.078	0.095	0.155	0.099	0.065	0.084	−0.075	0.122	−0.093	0.127	−0.132	0.117	0.051	0.123	0.033	0.128
France versus others	−0.193	0.165	0.103	0.159	0.279	0.166	0.344*	0.14	0.175	0.204	0.043	0.212	−0.013	0.196	0.053	0.205	0.137	0.214
UK versus others	0.347*	0.169	0.146	0.163	0.23	0.17	0.326*	0.143	0.81***	0.208	0.11	0.217	0.234	0.2	0.129	0.21	0.022	0.218
Independent variable																		
Industry	−0.143	0.091	0.413***	0.088	0.405***	0.092	−0.284***	0.077	1.8***	0.113	1.676***	0.117	0.884***	0.108	0.561***	0.114	−1.099***	0.118
R^2	0.07		0.059		0.122		0.084		0.385		0.288		0.156		0.054		0.148	

Note: N = 550.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

TABLE 3 | The relationship across instrumental and symbolic image dimensions and organizational attractiveness.

	Organizational attractiveness			
	Model 1		Model 2	
	B	SE	*B*	SE
Controls				
Industry	0.782***	0.111	0.031	0.135
Age	0.013	0.022	0.02	0.02
Gender	0.029	0.116	0.012	0.105
Work experience	−0.341**	0.127	−0.241*	0.118
Master versus others	0.281	0.186	0.125	0.168
Business and economics versus others	0.252*	0.119	0.114	0.109
Foreign versus domestic	−0.201	0.12	−0.166	0.108
France versus others	−0.063	0.201	−0.088	0.182
UK versus others	0.045	0.205	−0.179	0.187
Industry–image dimensions				
Pay			0.14*	0.061
Career advancement			0.069	0.066
Job security			0.057	0.054
Workload			−0.007	0.057
Sincerity			0.139**	0.046
Innovativeness			0.186***	0.044
Competence			0.034	0.052
Prestige			0.118*	0.047
Robustness			−0.054	0.039
R^2	0.115		0.305	

Note: N = 550.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

significant and positive predictors of organizational attractiveness. Thus, H2e and H2f were accepted. The same applies to H2h, which focused on sincerity ($B = 0.139$, SE = 0.046, $p < 0.01$). However, no significant relation between the image dimension competence and organizational attractiveness was detected ($B = 0.034$, SE = 0.052, $p > 0.05$). As a result, H2g was rejected. Finally, the image dimension robustness (H2i) was argued to negatively inform organizational attractiveness. However, H2i had to be discarded ($B = −0.054$, SE = 0.039, $p > 0.05$). To summarize, four out of nine hypotheses regarding instrumental and symbolic image dimensions and organizational attractiveness found support.

In H3, we examined mediation effects. To test mediation effects of industry image dimensions, we employed the Sobel test. The results of the Sobel test indicate that three dimensions of industry image significantly mediate the relationships the OGI/REI and organizational attractiveness, that is, sincerity (Sobel test = 2.969, $p < 0.01$), innovativeness (Sobel test = 4.05, $p < 0.001$), and prestige (Sobel test = 2.236, $p < 0.05$). This means that as the REI is considered more favorably in terms of sincerity, innovativeness, and prestige, organizations in the REI are perceived as more attractive. To conclude, we found partial support for the mediating role of image dimensions.

To test H4, which focuses on the moderating role of national context in the first leg of our model, we added interaction terms to our regression analyses predicting instrumental and symbolic image dimensions (see Table 4). The highest VIF-value is 3.198, which indicates no concerning distortions caused by multicollinearity. Recalling that the moderator national context was coded as follows: "1" = France, "0" = others. Seven out of nine interaction terms significantly influenced the relationships regarding industry and industry image dimensions. The following association are moderated: pay ($B = 0.139$, SE = 0.045, $p < 0.01$), career advancement ($B = 0.147$, SE = 0.044, $p < 0.001$), workload ($B = 0.112$, SE = 0.039, $p < 0.01$), innovativeness ($B = 0.318$, SE = 0.057, $p < 0.001$), competence ($B = 0.202$, SE = 0.054, $p < 0.001$), prestige ($B = 0.196$, SE = 0.056, $p < 0.001$), and robustness ($B = 0.198$, SE = 0.059, $p < 0.001$). No moderation effects were detected for the association between OGI/REI and job security ($B = 0.014$, SE = 0.046, $p > 0.05$), as well as sincerity ($B = 0.101$, SE = 0.056, $p > 0.05$).

To better understand the nature of the identified interaction effects, we created interaction plots (Aiken and West 1991) (see Figures 2-8). Figure 2 depicts that in France no differences in pay perception exist between the OGI and REI. A slightly negative association is evident for Germany/UK. Thus,

TABLE 4 | The moderating effects of national context.

Controls/moderator	Pay		Career advancement		Job security		Workload		Sincerity		Innovativeness		Competence		Prestige		Robustness	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Age	0.001	0.018	−0.01	0.018	−0.039*	0.019	−0.018	0.016	0.032	0.023	−0.017	0.023	−0.039	0.022	−0.027	0.023	0.005	0.024
Gender	0.135	0.095	−0.006	0.091	0.025	0.096	−0.112	0.08	−0.128	0.117	0.123	0.119	−0.111	0.112	−0.069	0.117	−0.008	0.122
Work experience	−0.113	0.104	−0.135	0.1	−0.314**	0.106	−0.222*	0.088	−0.269*	0.129	−0.122	0.131	0.349**	0.123	0.144	0.129	0.171	0.134
Master versus others	0.116	0.152	0.053	0.147	0.286	0.154	−0.043	0.129	0.396*	0.189	0.185	0.192	0.242	0.18	0.03	0.189	0.181	0.197
Business and economics versus others	0.161	0.097	0.12	0.094	0.255**	0.099	0.152	0.083	0.312**	0.121	0.255*	0.123	−0.003	0.115	−0.038	0.121	0.023	0.126
Foreign versus domestic	−0.078	0.098	−0.087	0.094	0.154	0.099	0.059	0.083	−0.08	0.121	−0.112	0.124	−0.144	0.116	0.04	0.121	0.021	0.126
France versus others	−0.171	0.164	0.127	0.158	0.282	0.166	0.362**	0.139	0.191	0.204	0.094	0.207	0.019	0.194	0.085	0.204	0.169	0.212
UK versus others	0.368*	0.168	0.169	0.161	0.232	0.17	0.344*	0.142	0.826***	0.208	0.16	0.212	0.266	0.198	0.16	0.208	0.053	0.217
Independent variable																		
Industry	−0.143	0.091	0.413***	0.087	0.405***	0.092	−0.284***	0.077	1.8***	0.112	1.676***	0.114	0.884***	0.107	0.561***	0.112	−1.099***	0.117
Interaction term																		
Industry_x_France versus others	0.139**	0.045	0.147***	0.044	0.014	0.046	0.112**	0.039	0.101	0.056	0.318***	0.057	0.202***	0.054	0.196***	0.056	0.198***	0.059
R^2	0.086		0.078		0.122		0.098		0.389		0.327		0.177		0.075		0.166	

Note: $N = 550$.
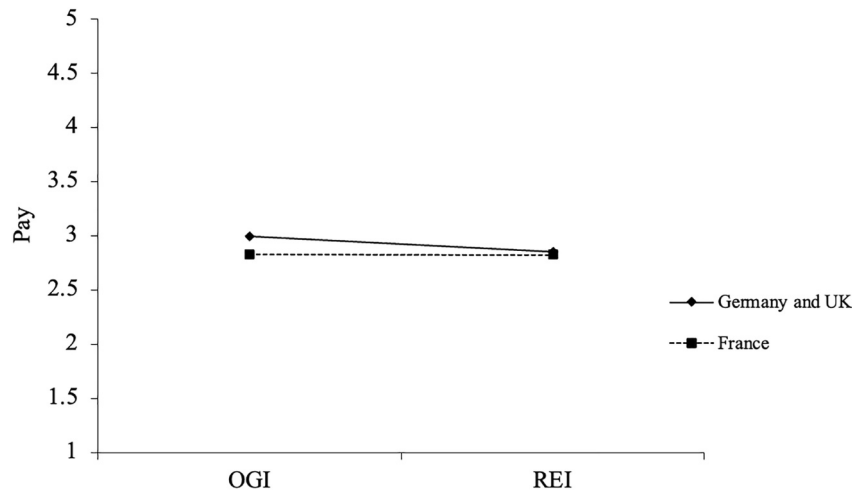*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

FIGURE 2 | The moderating effect of national context between industry and pay.
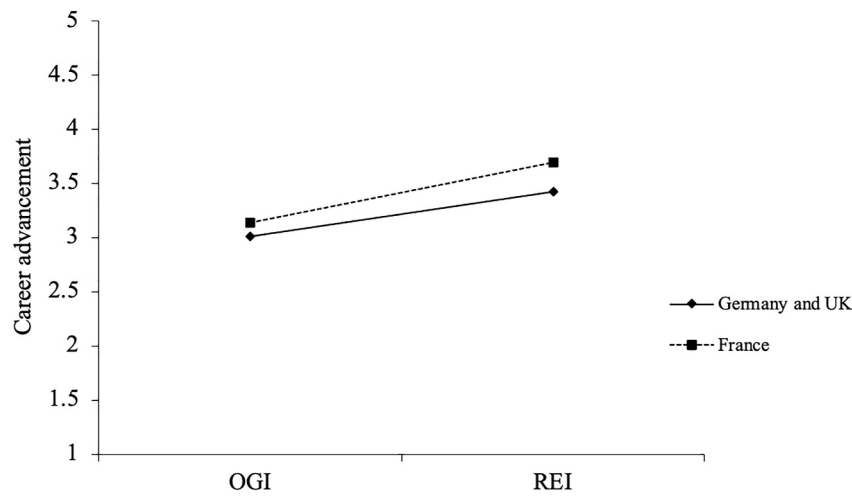

FIGURE 3 | The moderating effect of national context between industry and career advancement.
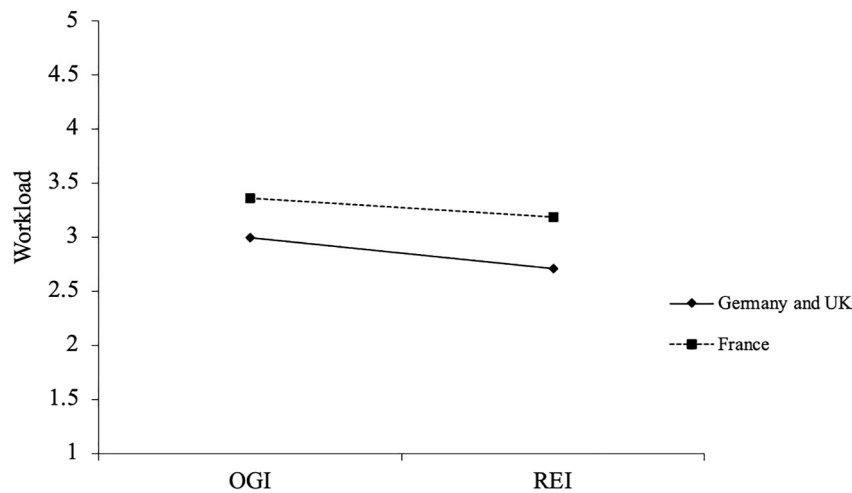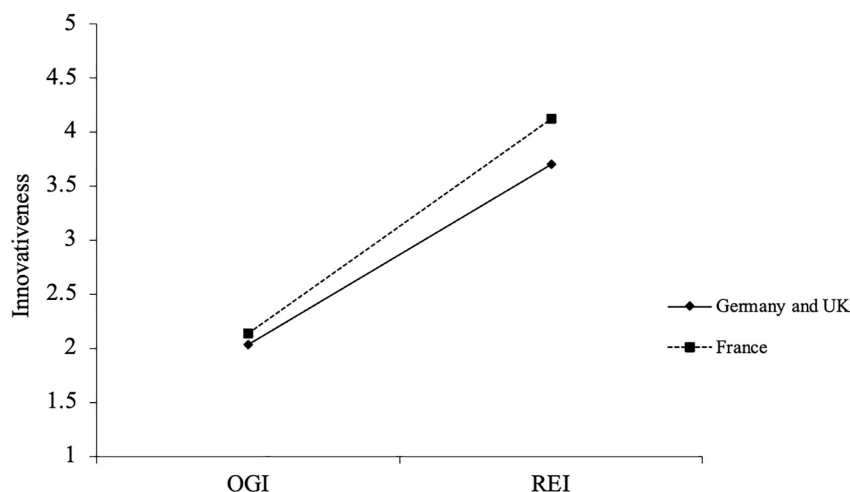

FIGURE 4 | The moderating effect of national context between industry and workload.

respondents in France do not connote the REI as paying less than the OGI. Figure 3 delineates that the generally positive association of REI with career advancement is somewhat steeper in France. Figure 4 implies that respondents in Germany/UK connote the REI with lower workload. This tendency is less pronounced for France. Figures 5–7 imply that the

FIGURE 5 | The moderating effect of national context between industry and innovativeness.
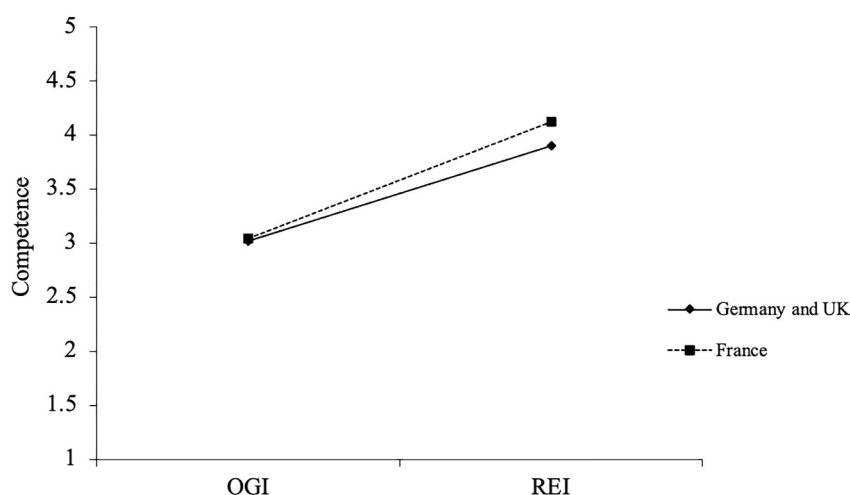

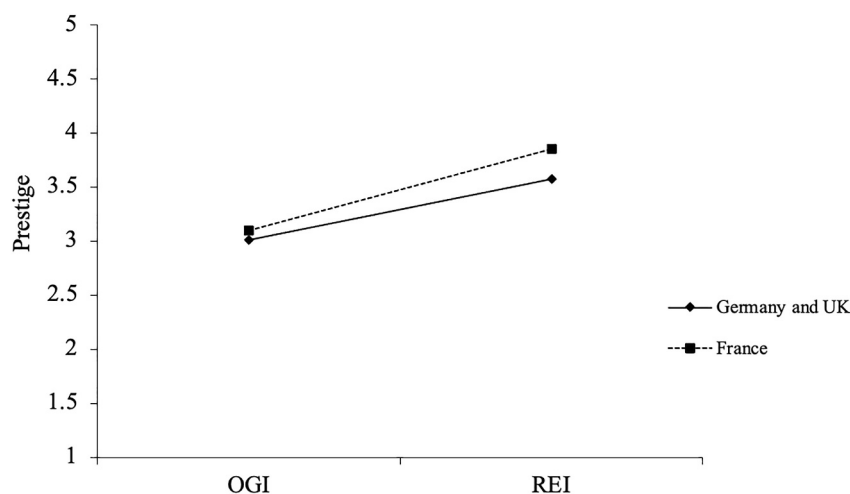**FIGURE 6** | The moderating effect of national context between industry and competence.

FIGURE 7 | The moderating effect of national context between industry and prestige.

positive perception of the REI in terms of innovativeness, competence, and prestige is steeper in France. Figure 8 shows that the tendency to think of the REI as less robust is somewhat mitigated in France. To conclude, the findings that in France pay differentials are expected to not exist, and that the REI is associated with even more favorable perceptions regarding career advancement, innovativeness, competence, and prestige is in the direction of our contentions. The nature of findings in terms of the moderating effect concerning workload suggests that in France less difference in workloads between the OGI/
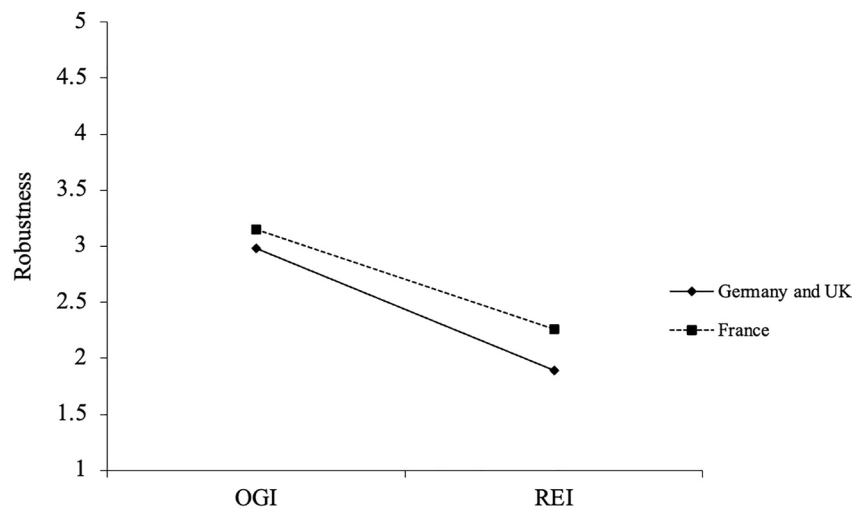
FIGURE 8 | The moderating effect of national context between industry and robustness.

REI are expected. For robustness, in France, people consider the REI as more robust than respondents in Germany/UK. As stated above, national context does not influence the association between OGI/REI and job security as well as sincerity. In sum, we, thus, have partial support for H4.

5.1 | Auxiliary Tests

We further performed auxiliary tests concerning moderation effects of national context in the relationships of image dimensions and organizational attractiveness. No significant moderation effect was found. In addition, we examined if firm country of origin ("1" = foreign, "0" = domestic) exerted moderation effects in the first leg of our model (prediction of image dimensions). Two significant moderation effects were found in the prediction of the following image dimensions: sincerity ($B = 0.075$, SE $= 0.034$, $p < 0.05$) and prestige ($B = 0.09$, SE $= 0.042$, $p < 0.05$). In terms of the second leg of the model (prediction of organizational attractiveness), none of the interaction terms between firm country of origin and industry images are significant.

6 | Discussion

Based on signaling theory (Spence 1973), and the instrumental-symbolic image framework (Lievens and Highhouse 2003), this study examined the industry-image-organizational attractiveness connection in an international context. Moreover, the study illuminated the role of the signaling environment by investigating how the relation across two industries, the OGI and the REI, and perceived industry image dimensions varies across national contexts. We will briefly summarize the key findings of this study below.

Overall, except for the image dimension pay, findings illustrate that the REI is perceived as providing better opportunities for career advancement, greater job security, lower workload, and is characterized as an industry that is sincerer, more innovative, more competent, more prestigious, and less robust as compared

to the OGI. Further, while our findings confirm that organizational attractiveness varies across industries (Wilden, Gudergan, and Lings 2010), they also provide novel insights by revealing why certain industries are preferred or disliked by job applicants: It is because of certain industry images.

First, generally, we found that one instrumental and three symbolic industry image dimensions influence perceived organizational attractiveness of potential job applicants across national contexts. Accordingly, potential job applicants in France, Germany, and the UK are attracted to an organization if they perceive the image dimensions of an industry in which that organization is embedded as sincere, innovative, and prestigious and well paid. The outcomes of this study are broadly in line with those of previous studies in organizational image and organizational attractiveness indicating that not all instrumental and symbolic image dimensions are always significantly related with organizational attractiveness (Lievens 2007; Lievens, van Hoye, and Anseel 2007; Lievens and Highhouse 2003; van Hoye and Saks 2011). An interesting finding, however, is that symbolic image dimensions seem to be more important to organizational attractiveness among our sample of young talents. A potential explanation is that the more instrumental aspects associated with employment could be a baseline expectation of young talents and, thus, no outstanding driver of organizational attractiveness. In a roughly similar vein to Herzberg's two-factor theory (Herzberg 1993), it might be that instrumental factors are hygiene factors, acting more as basic conditions to facilitate attraction to occur, than symbolic images which act more as factors which generate attraction. Another reason might be that there is a disparity between stated versus revealed preferences. For instance, for reasons of social desirability, individuals might signal on résumés that, for example, an industry's innovativeness or elevated reputation are more important to them than workload or job security, to appeal to potential employers, but then proceed to apply for positions with a lower workload and more secure employment. Second, pertaining to underlying mechanisms explaining differences with regard to organizational attractiveness between the OGI and the REI, three out of the five symbolic image dimensions, that is sincerity, innovativeness, and prestige, were found to function as mediators.

Crucially, as stated above, the REI was associated with more positive perceptions in all three symbolic image dimensions, which makes organizations in the REI more attractive than organizations belonging to the OGI. In addition, we identified a tendency in that the REI is for the most part viewed even more favorably in France versus Germany and the UK in terms of the image dimensions related to career advancement, innovativeness, competence, and prestige. Similarly, surmised differences in pay that display higher pay expectation associated with the OGI, do not seem to exist in France. Interestingly, discrepancies between the REI and OGI in terms of workload and robustness perceptions are also, yet to varying degrees, weaker in France. In sum, these are vital findings as they pinpoint that national context is a boundary condition and affects the interpretation of industry signals. We will discuss this in our theoretical implications segment next.

6.1 | Theoretical Contributions

This study makes two important contributions to theory and research. First, our theory and empirical evidence contribute to organizational attraction research (Held and Bader 2018; Kim, Froese, and Cox 2012; Newburry, Gardberg, and Belkin 2006; Peltokorpi, Bader, and Froese 2019) by using a vignette design to test which industry and image dimensions of a particular industry, trickle-down to the organizational level to influence perceived organizational attractiveness of job seekers across countries. Thus, this study has elucidated a way that individuals are attracted to a particular employer–the industry image. Previous studies paid greater attention to the organization's image at the firm level (Froese, Vo, and Garrett 2010; Lievens 2007; van Hoye et al. 2013), and few studies examined the role of industry in job choice decisions (Dineen and Williamson 2012; Wilden, Gudergan, and Lings 2010). However, the important factors of industry characteristics and differences in recruitment context, specifically in applicant attraction, have not been sufficiently studied (Dineen and Williamson 2012; O'Reilly, Grotti, and Russell 2019). Moreover, prior studies were conducted in a certain country or dealt with industry effects as control variables (Kim, Froese, and Cox 2012; Peltokorpi, Bader, and Froese 2019). Extending prior organizational attractiveness studies (Froese, Vo, and Garrett 2010; Held and Bader 2018; Kim, Froese, and Cox 2012; Lievens, van Hoye, and Anseel 2007; Peltokorpi, Bader, and Froese 2019; van Hoye and Saks 2011), our study has applied signaling theory to test influences of industry image dimensions (i.e., instrumental and symbolic dimensions) on perceived organizational attractiveness in an international recruitment context and demonstrated that industries can be differentiated from each other based on image dimensions. In this vein, our study provides support for the applicability of the instrumental–symbolic framework at the industry level.

Second, we contribute to and elicit an area for further expansion in Spence's (1973) signaling theory in the context of recruitment (Celani and Singh 2011) and the international recruitment literature (Froese and Kishi 2013; Newburry, Gardberg, and Belkin 2006; Peltokorpi, Bader, and Froese 2019), by examining national context as a representation of a signaling environment that affects the relationship between industry and industry image. Scholars have called for illumination of signaling environments as an important factor in how signals are received and interpreted by potential job recruits and note that signaling environments are hitherto understudied and, thus, not well understood (Connelly et al. 2011), as well as noting signaling theory in general needs more empirical validation in the recruitment context (Celani and Singh 2011). Thus, we provide stimulus for expanding enquiry on this aspect of signaling theory as it relates to recruitment, through our detailed theorization and empirical modeling, which breaks down aspects of how national context can influence how individuals interpret signals sent by industry to form different images, and by ultimately finding that national context played a moderating role in the relationship between industry and image dimensions. Consequently, this suggests that the signaling environment matters in terms of industry image. Notably, as part of this examination of the signaling environment, our study's finding expands prior proposals that collectivistic construal of job market signals should influence individuals' own interpretations of those signals (Connelly et al. 2011; Langfield-Smith 1992; Park and Mezias 2005). So, our study illuminates that when forming an image of an industry, both individual and collective interpretation of signals are at play as an interaction. It's not only individuals' perceptions, but also, together, *shared* perceptions that are vital when forming meaning about an industry, and in our study, national context mattered in this regard. This has important implications for future theorizing when developing models from the perspective of signal receivers. Here, it is advisable to account for signaling environments and other collectivistic phenomena, for instance, shared demography, similar work experiences, regional environments, political environments, etc. Specifically, generating theory and conceptualizations about the mechanics of this interactive relation between the individual and collective seems vital. Such theorizations and conceptualizations may focus on the idea of environmental distortion—the degree to which the signaling environment can help or hinder the salience or observability of signals (Connelley et al. 2011). Accordingly, this could, for instance, assist in explaining the effects of mixed policy signals sent by national governments, which possibly have the potential to confuse or disrupt individuals' ability to meaningfully interpret the characteristics of an industry or organization. This indicates the crucial role of additional factors that increase or decrease the degree to which a collective variable, such as national context, acts as a boundary condition for pertinent theorizations and subsequent empirical modeling.

Alongside these implications for theory, we next detail the practical implications of our findings.

6.2 | Practical Implications

First, in terms of general implications for individuals working in recruitment and aspiring to attract young talents, findings depict that at the industry level the instrumental image dimension pay as well as the symbolic image dimensions sincerity, innovativeness, and prestige seem to be the most important influences on organization attractiveness across national contexts.

Thus, organizations and industry associations should emphasize the aspects of their industry that drive positive image perceptions on the aforementioned dimensions, for instance, by means of job advertisements or industry-wide hiring initiatives.

Second, turning to the energy sector and the OGI/REI specifically, our findings hold value for organizations, because they demonstrate how REI and OGI are viewed by potential recruits. We show that young people across three major developed countries, and, thus, three major talent pools, have a greater affinity for REI, a representative of the new, green economy, over OGI, a representative of the old, brown economy. Further, the tendency to look more favorably on REI is generally even stronger in France. This signifies that it may be less challenging for organizations in the REI to recruit young talents in that region versus Germany and the UK, and so perhaps more recruitment resources could be focused in one environment versus another. On the other hand, they show that the OGI is confronted with a disadvantage in attracting young talents, which overall tends to be stronger in France. Based on this, we can deduce several tailored suggestions for organizations operating in the OGI and the REI. First, our findings indicate that the OGI has work to do in relation to signaling the benefits of their industry and rehabilitating its reputation. For instance, of the industry image dimensions that significantly mediated the effects of industry on organizational attraction, the OGI is not viewed preferably versus the REI in any of the significant dimensions of sincerity, innovativeness, and prestige. In Europe, firms in the OGI are pursuing plans to decarbonize and become greener as a result. We certainly recommend that OGI organizations do this as it could enhance the perceived image of innovativeness and sincerity of organizations and the OGI as a whole. However, on the other hand, we very much caution against greenwashing, which is the act of misleading, in our case, potential job applicants about an organization's pro-environmental actions or credentials (Delmas and Burbano 2011). Besides the obvious ethical concern, greenwashing could negatively impact how individuals who are sincere perceive both the OGI and the REI. Indeed, strong efforts in this regard could also enhance the perceived prestige of the OGI, which suffers when compared to the REI. Further, the REI could secure or expand its image advantages, for instance, regarding innovativeness by making efforts to continue and enhance effective communication in relation to the ingenuity of their industry, by conveying more recent enhancements and updates in renewable technologies. REI embedded organizations could further leverage the advantages of their sincere image and indeed their perceived prestige, by publicly and sincerely tackling problematic issues in their own industry. For instance, REI often rely on rare-earth elements and other critical elements such as cobalt. These have been associated with modern slavery (e.g., cobalt mining in Africa), environmental damage (e.g., rare-earth elements contaminating environmental pathways, mining damage), and potential damage to human health through bioaccumulation associated with the increasing amount of these elements in our daily living environment (Balaram 2019; Bales and Sovacool 2021). Driving innovation to solve some of these problems, and communication of these efforts via media channels may help to additionally promote the attraction of young talents to their industry and, as a result, organizations.

6.3 | Limitations and Avenues for Future Research

As with previous studies, our study also has some limitations. First, in terms of our contribution to the signaling environment within signaling theory, we were unable to test the effects of time on national context. Langfield-Smith (1992) theorizes that these collective beliefs can alter over time given "collective encounters". Modeling and testing temporal shift in a quantitative model would go some way to understanding how collectivistic interpretation of signals affect individuals' own perception of signals over time. For example, in terms of national context, this might happen in the form of government policy shifts towards REI over decades, as green policies make advancements across differing jurisdictions. Future research could also test this in relation to organization images, as well as other collectivistic interpretations other than national context, which may influence potential recruits' interpretation of industry and organizational signals.

Second, the data were collected in three countries in Europe, namely, France, Germany, and the UK. These are highly developed countries with long-established powerhouse economies. It would be interesting to analyze industry image using data from emerging markets and/or other cultural settings, for example, Asian culture (Budhwar, Varma, and Patel 2016; Froese et al. 2020), in countries such as China, India, and Vietnam. Corresponding studies could lead to a better understanding of industry image and country variation (Froese and Kishi 2013), making this an attractive area for future research.

Third, we used a between-subjects factorial design in the shape of a vignette study to establish causality. This method is useful for manipulating independent variables to assess causal relationships. However, because of limitations of experimental designs, our study only focused on two different industries, that is, the OGI and the REI. As evidenced by our results, industries have different images. Consequently, studying applicant attraction in other industries is likely to result in further insightful findings, extending the existing research on organizational attractiveness and recruitment.

Fourth, this study's participants are university students (Froese, Vo, and Garrett 2010; Held and Bader 2018). As future talents in the international labor market, this can be considered a strength in the study of fresh graduate recruitment as representing real life. However, a disadvantage of this pool of job candidates is a limited generalizability of findings to other groups of individuals. Accordingly, studying different pools of job candidates can enrich the current findings (Peltokorpi, Bader, and Froese 2019; Turban et al. 2001; Turban and Cable 2003).

Fifth, our study found that several of our proposed mediators were non-significant. Surprisingly, while three out of the five symbolic image dimensions were identified to function as mediators, none of the instrumental image dimensions carried an indirect effect. This is because, except for pay, no other instrumental image dimension was related with attractiveness. While pay was related with attractiveness in the second leg of the model, there was no direct relation between industry and pay in the first leg. As stated before, an explanation could be a

disparity between stated versus revealed preferences. Thus, we recommend that researchers attempt to look at stated preferences (e.g., organizational attraction) and then in a later wave, revealed preferences, for example, actual number of applications to an organization from a specific industry versus another. This is challenging as it entails tracking individuals over time. However, this effort might be worth it as it could unveil dynamic shifts in terms of which images eventually matter.

Sixth, the amount of variance explained in the examined image dimensions ranges from 8% to 39% in our final regression model. For some dimensions, for example, prestige, career advancement, or pay, it is rather low. In this regard, individual differences, for instance, related to the extent of knowledge about industries or values and political orientation might be relevant and should be examined as part of future research to boost explained variance.

Despite its limitations, we believe that this study has provided several interesting directions for future research to better understand the role of industry, the signaling environment, and industry images when it comes to attracting young talents to organizations.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix A: Example Scenario

Please imagine that you are currently looking for a job and read the description of the company.

The company Global Energy Resource Inc. is currently looking for applicants and has placed a job advertisement. The company is from The United States and it operates in the Renewable Energy Industry, for example solar, wind, and hydro power. The position is consistent with your education and area of expertise.

Appendix B: Items Measuring Instrumental and Symbolic Industry Image Dimensions

Dimensions items	
Instrumental	
Pay	In this industry, employees can make a lot of money
	In general, the wages are high in this industry
	Employees in this industry get attractive benefits
Career advancement	This industry offers many career opportunities
	In this industry, employees are frequently promoted
	This industry offers the possibility to build a career
Job security	Jobs in this industry are safe
	Employees in this industry often get permanent contracts
	In this industry, people stay for a long time with their employer
Workload	This industry has long working hours
	When you work in this industry, you are always busy
	This industry has high workloads
Symbolic	
Sincerity	Honest
	Sincere
	Authentic
Innovativeness	Trendy
	Exciting
	Cool
Competence	Competent
	Intelligent
	Reliable
Prestige	High status
	Highly regarded
	Well-respected
Robustness	Masculine
	Strong
	Tough