



# New ventures fighting the war for talents: the impact of product innovativeness and entrepreneurs' passion on applicant attraction

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**Abstract** An unanswered question in studies on recruiting in new ventures is how entrepreneurs can persuasively communicate to job seekers information about their ventures' unique features to attract applicants. By building on nonverbal communication research, we investigate how verbally communicated product innovativeness and entrepreneurs' nonverbal displays of passion affect applicant attraction both separately and in combination. We find applicant attraction is positively related to both communicated product innovativeness and entrepreneurs' displays of moderate passion and negatively related to excessive displays of passion. Moreover, our findings suggest that displays of high passion distract job seekers from processing the semantic content of recruitment messages.

**Plain English Summary** In the war for talent, entrepreneurs interacting with job seekers should display passion but not excessively, especially when their

venture's products/services are highly innovative. To help new ventures overcome the severe recruiting challenges they typically face, we study how entrepreneurs can use verbal and nonverbal communication to persuasively communicate their ventures' unique features to job seekers to enlarge their applicant pools. We asked a sample of individuals on the job market to watch videos of entrepreneurs presenting their ventures' products/services and evaluate these ventures' attractiveness as employers. These evaluations indicate that new ventures are considered more attractive employers when entrepreneurs communicate the innovativeness of ventures' products/services and display moderate passion. Thus, the main implication of this study is that entrepreneurs looking for applicants should convey information about the novelty of their ventures' products/services and display passion when interacting with job seekers while avoiding excessive outwardly manifestations of passion.

**Keywords** Applicant attraction · New ventures · Entrepreneurs' passion · Product innovativeness

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## 1 Introduction

Human capital is a fundamental asset for new ventures (Cardon & Stevens, 2004) because it is strongly linked to venture survival and growth (Agarwal et al., 2016; Unger et al., 2011). Hence, hiring talents is of crucial importance for these firms. Unfortunately,

new ventures typically face severe challenges in recruiting talented employees (Greer et al., 2016; Mayson & Barrett, 2006). In the war for talents, new ventures are at a competitive disadvantage with respect to large and established companies (Eisenhardt & Schoonhoven, 1990) because they are less familiar to job seekers (Williamson et al., 2002), have a high propensity to fail due to the liabilities of newness and smallness they suffer from (Stinchcombe, 1965), and are particularly vulnerable to economic downturns (Fort et al., 2013).

Even though research could help new ventures overcome recruiting challenges by developing knowledge about ways to attract talents and influence their job choices, the scientific literature on recruiting in new ventures is relatively underdeveloped. In this work, we contribute to advancing said literature by investigating how entrepreneurs can communicate their ventures' unique features to job seekers to persuade the latter to apply for job interviews. We focus on applicant attraction as it is the primary objective of recruiting (Rynes, 1991): only companies that are able to attract large pools of job seekers to apply for job interviews can be selective in hiring and increase the probabilities of employing talents. Despite the topic's relevance, few studies focused on applicant attraction to new ventures.<sup>1</sup> These studies find that applicant attraction is driven by some characteristics of the entrepreneurs, such as their qualifications (Bublitz et al., 2018) and leadership behavior (Hubner et al., 2021), and several new ventures' features, such as their communal team climate and culture, the flexibility of working schedule, flat hierarchy, vision and mission (Moser et al., 2017; Tumasjan et al., 2011). Instead, extant studies do not examine how information about venture attributes should be communicated to job seekers. Exploring this issue is essential. Information about many venture features associated with superior attractiveness as employers is not publicly available. Hence, it must be transferred to job seekers

by sending them persuasive recruitment messages, i.e., messages that persuade them to apply for job interviews. Moreover, in new ventures, recruitment communication is generally not designed by experienced human resource (HR) practitioners. Since these ventures usually lack a specialized HR staff (Cardon & Stevens, 2004), recruiting activities tend to be managed by entrepreneurs (Longenecker et al., 1994), who are likely less skilled than HR practitioners in crafting persuasive recruiting messages (Baron et al., 1996; Katz et al., 2000).

We ground our study on the literature that recognizes both verbal expressions and nonverbal behaviors as conveyors of information (for a review, see Bonaccio et al., 2016). We posit that when entrepreneurs interact with job seekers (e.g., during venture presentations at job fairs or record employer branding videos to be spread through venture websites, social media, blogs, and web communities), they send recruitment messages by simultaneously using verbal and nonverbal communication.<sup>2</sup> Building on nonverbal communication theories (Birdwhistell, 1970; Burgoon et al., 1989; Ekman, 1993), we investigate the relationship of verbal and nonverbal expressions with applicant attraction both separately and in combination.

We consider a specific verbal expression—the information about the novelty of a venture's products/services transmitted through an entrepreneur's discourse (hereafter, communicated product innovativeness)—and a specific nonverbal expression—the affective passion displayed by the entrepreneur while presenting her/his venture's products/services. Considering these two expressions is particularly appropriate. Product innovativeness predicts applicant attraction (Sommer et al., 2017). As scarce information is usually available on new ventures' products/services, job seekers cannot evaluate product innovativeness using public information only, but entrepreneurs can verbally transmit information useful to assess it. However, job seekers do not uniformly evaluate new ventures' product innovativeness; their product innovativeness perceptions are influenced by

<sup>1</sup> It is worth acknowledging that, despite the dearth of works on applicant attraction to new ventures, a vast literature has investigated applicant attraction to established organizations (for reviews, see Chapman, Uggerslev, Carroll, Piasentin, and Jones 2005; Uggerslev, Fassina, and Kraichy 2012). However, the knowledge developed in studies on established organizations is hardly generalizable to new ventures due to the above-mentioned peculiarities of these latter firms.

<sup>2</sup> Verbal communication is the transfer of messages using spoken words (or the language of signs, Bonaccio et al., 2016), while nonverbal communication is “the sending and receiving of thoughts and feelings via nonverbal behavior” (Ambady and Weisbuch 2010: 465).

entrepreneurs' nonverbal expressions. Instead, displayed affective passion is a widely noted and readily visible nonverbal cue (Li, Chen, Kotha, and Fisher 2017) typical of entrepreneurs (Cardon et al., 2009a, 2009b; Smilor, 1997) that plays a role in persuading external stakeholders to provide resources to new ventures (Li et al., 2017; Mitteness et al., 2012) and, in particular, job seekers to become applicants (Lewis & Cardon, 2020). In the next sections of this article, we formulate hypotheses about the relationship between these verbal and nonverbal expressions and applicant attraction to new ventures.

To test the hypotheses, we collected unique primary data. Specifically, we asked a sample of individuals on the job market to watch nine videos of entrepreneurs presenting their ventures' products/services. After watching each video, sample individuals evaluated their interest in pursuing employment with the venture and its product innovativeness. We combine these data with measures of entrepreneurs' displayed passion and communicated product innovativeness and estimate generalized structural equation models. These estimates reveal that applicant attraction positively correlates with communicated product innovativeness and an inverse U-shaped relationship with entrepreneurs' displayed passion. Moreover, the results of the estimates suggest that displays of high passion distract job seekers from processing the semantic content of recruitment messages.

These findings are expected to make several contributions. First, we contribute to the emerging literature on recruiting in new ventures by bringing a communication perspective. The study moves the spotlight from specific unique venture attributes that attract job seekers to the importance of recruitment communication, suggesting that the effectiveness of a particular attribute depends on how the entrepreneurs communicate it. Second, we provide a twofold contribution to the literature on passion in entrepreneurship: we discuss the effects of displayed affective passion on a set of venture stakeholders (i.e., job seekers that may eventually become applicants) that have not been sufficiently explored so far and, by revealing the drawbacks of excessive displays of passion from entrepreneurs who are trying to attract applicants, we provide further evidence of the dark side of passion. Third, we contribute to research on persuasive communication in entrepreneurship by examining the influence of verbal and nonverbal expressions in juxtaposition,

as synchronized channels, each carrying both complementary and distinct meanings, and showing how entrepreneurs combine these two types of expressions when communicating with job seekers.

## 2 Theoretical framework

This section discusses persuasive communication in recruiting. We first describe how organizations send recruitment messages. Then, drawing on nonverbal communication theories (Birdwhistell, 1970; Burgoon et al., 1989; Ekman, 1993), we explain what nonverbal behavior adds to the semantic content of a verbally communicated message, thus making the message more (or less) persuasive. In the following subsections, we focus on the recruiting messages sent by new venture entrepreneurs. A discussion on the relationship between communicated product innovativeness and applicant attraction leads to our first hypothesis. Then, using insights from persuasive communication in recruiting, we formulate hypotheses about the relationship between applicant attraction and entrepreneurs' nonverbal displays of affective passion and the interaction between displayed passion and communicated product innovativeness.

### 2.1 Persuasive communication in recruiting

Applicant attraction is an inherently persuasive process (Roberson et al., 2005). Organizations send recruitment messages to generate job seekers' positive assessments of the senders and make job seekers more willing to apply for job interviews and accept job offers.

Recruitment messages are sent through two broad forms of communication: textual and spoken. Textual communication, namely intentionally produced text (eventually accompanied by pictures) those job seekers can access, is extensively used to propagate recruitment messages. When job seekers begin their job searches, they typically evaluate potential employers through the text on company websites (Kraichy & Chapman, 2014), but also the text they find in online newspaper career columns, e-recruitment, and professional job networking sites used for job postings such as LinkedIn (Walker et al., 2009). However, textual communication is usually less effective than spoken communication, namely transferring a message

through spoken words to convey persuasive recruitment messages (Allen et al., 2004).

When recruitment messages are sent through spoken communication (in-person or online), verbal and nonverbal strands of communication are integrated as parts of overall interactions (Burgoon et al., 2021). Verbal communication refers to the message that the speaker is transferring through her/his words that appeals to the intellect or reason (Aristotle 1991; Haskins, 2004). It is at the core of persuasion, especially in work contexts, where rationality is desired (Cohen and Levesque 1990). In recruitment contexts, verbal language is crucial for new ventures to attract attention (Giorgi & Weber, 2015), explain their products/services to potential employees (Cornelissen, 2012), and convey information about themselves (Garud et al., 2014). Indeed, entrepreneurs use verbal language to legitimize and rationalize their activities and communicate desired images of themselves and their new ventures (Clarke et al., 2019). Specifically, the verbal channel is crucial for persuasion for cognitive tasks that the listener is motivated to master, such as listening to a potential employer's presentation (Petty & Cacioppo, 1986). Persuasion happens because speakers appeal to logical arguments (Roberson et al., 2005), such as statistics and facts supporting their case. Indeed, persuasive recruitment messages should have much evidence to convince job seekers about the speakers' propositions. Before deciding to apply for job interviews (or eventually accept employment offers), job seekers process the content of these recruitment messages and scrutinize verbally transmitted information (Marsh et al., 1997; Petty & Cacioppo, 1986). However, as in all domains of life, also in recruitment contexts, verbal communication is seldom used in isolation. Instead, it is combined with nonverbal communication, be it in videos (e.g., television ads or videos spread through company websites, social media, blogs and web communities) or in face-to-face interactions with job seekers (e.g., presentations in job fairs, campus visits, informal conversations between employer personnel and job seekers). Nonverbal communication entails those behaviors with specific communicative meanings other than words themselves that include body movements (i.e., facial expressions, eye movement, gesture, posture, body orientation, proximity, and physical contact) and audible elements (e.g., tone of voice and nonlinguistic vocal signals) (for a complete

description of nonverbal behaviors, see Duncan, 1969; Burgoon et al., 1989).

Research on nonverbal communication suggests that nonverbal behavior is a ubiquitous element of communication across all forms of social interactions (Burgoon, Buller, and Woodall 1996) and that it can produce consensually recognized relational meanings within a given social community (Floyd and Ebert 2003). Individuals make relatively quick judgments of others based on their nonverbal behavior (Albright, Kenny, and Malloy 1988). Research shows that even brief observations of nonverbal behavior can result in accurate impressions (Ambady et al., 2000). In a recruitment context, nonverbal behavior was proven to help with "giving off signals," displaying personal attributes and emotions from both the recruiter and the job seeker sides (Ambady et al., 2000), and has shown to influence the recruiter's assessments (e.g., Burgoon et al., 1985; Howard & Ferris, 1996; McElroy et al., 2014; McGovern & Tinsley, 1978; Woodzicka, 2008). In entrepreneurship research, entrepreneurs' nonverbal behaviors, such as gesturing or displaying enthusiasm in the social interaction context of a pitch, have been investigated as determinants of investors' decisions (e.g., Chen et al., 2009; Clarke et al., 2019; Pollack et al., 2012).

Persuasive communication is virtually never restricted to just verbal or just nonverbal expressions. It usually consists of an incredibly intricate, dynamic combination of verbal and nonverbal expressions showing a highly interactive relationship. Hence, we build on the latest developments in communication literature (e.g., Burgoon et al., 2021) and take an integrated view of recruitment communication, studying verbal and nonverbal expressions separately and in their interaction.

Nonverbal communication theories (Birdwhistell, 1970; Burgoon et al., 1989; Ekman, 1993) explain that nonverbal behavior serves multiple functions in persuasion and adds to the semantic content of a message, thus making the message more (or less) persuasive. Specifically, nonverbal behavior plays a dual role in persuasion. First, it has an illustrative function (Ekman & Friesen, 1972), i.e., it depicts and reinforces the semantic contents of verbally communicated messages. A speaker's body movements and vocal elements are not accidental. Still, they are often tightly coupled to the semantic contents of the message the speaker wishes to convey (see e.g.,

Kelly et al., 2010); thus, they reinforce these contents (Ambady & Rosenthal, 1992; Huang & Pearce, 2015). Moreover, body movements and vocal elements help speakers express their emotions and, in so doing, catalyze the listeners' attention (e.g., Hansen and Hansen 1988; Niedenthal and Kitayama, 1994; Öhman et al., 2001). As "emotions are powerful triggers of attention" (Steigenberger & Wilhelm, 2018: 532), emotion-laden information is more visible and more likely to be carefully processed by listeners (Bower and Forgas, 2001; Forgas & George, 2001). Second, nonverbal behavior conveys non-semantic information, e.g., about the personality or personal background of the speaker, her/his cultural context, and emotional state (e.g., Krauss et al., 1996; Marsh et al., 1997), which enriches the semantic content of the message. For example, nonverbal behavior that conveys less immediacy (e.g., reduced eye contact) leads to impressions of a speaker as relatively less engaging, cold, or unsociable; increased pauses in a speech lead to images of the speaker as less competent and credible (e.g., Burgoon et al., 1990); a speaker's posture can indicate the nature of the social relationship with other participants (Laver, 1999). In sum, the non-semantic information conveyed by nonverbal behavior makes the speaker's messages more (or less) persuasive, regardless of the message content.

## 2.2 The relationship between verbally communicated product innovativeness and applicant attraction

Here, we direct our attention to the use of verbal communication by new venture entrepreneurs to send persuasive recruitment messages. Specifically, we discuss the relationship between communicated product innovativeness and applicant' attraction to new ventures.

Job seekers' willingness to become employees of a specific organization is influenced by the organization's products/services (Backhaus & Tikoo, 2004; Moroko & Uncles, 2008). In particular, companies strike as more attractive employers when job seekers perceive their products/services as more innovative (Sommer et al., 2017). Product innovativeness is a strong indicator of the company's prospective market performance and potential for offering other innovative products/services in the future (Keller, 2012), and companies with superior performance prospects attract job seekers because

the latter are aware that poor employers' performance may lead to job loss for employees (Ouimet & Zarutskie, 2014).

As we mentioned in the introduction, in the case of new ventures, job seekers are likely unable to assess venture product innovativeness by relying only on the scarce information on these products/services that are publicly available. Accordingly, new venture entrepreneurs should include verbal descriptions of their products/services in their recruitment messages to reveal product innovativeness. For instance, they may verbally transmit information about the needs of the customers they address, the features of their products/services, and the differences between these products/services and those commercialized by venture competitors.

However, as different individuals differ in their judgments and evaluations (Stanovich, 1999), when job seekers are exposed to the same information about the venture's products/services, they may differently assess product innovativeness. Accordingly, several studies show that even though some degree of correlation exists, the product innovativeness evaluations of different individuals are not identical (e.g., the product innovativeness ratings of managers and consumers; Andrews & Smith, 1996; Sethi et al., 2001). Such differences may emerge even when individual reasoning abilities are similar. When job seekers process the content of the messages about a venture's products/services sent by an entrepreneur, they develop subjective perceptions of product innovativeness based on their information, knowledge, and experiences (Kunz et al., 2011). For instance, the evaluations of job seekers familiar with the venture's technology will probably differ from those of job seekers who have limited knowledge of this technology.

Therefore, we hypothesize that the new venture's message of product innovativeness verbally communicated by an entrepreneur is positively related to applicant attraction, but this relationship is mediated by perceived product innovativeness, i.e., the degree of novelty of the venture's products/services as perceived by the job seeker. We thus formulate the following hypothesis:

*H1: Communicated product innovativeness is positively related to applicant attraction to a new ven-*

ture, and this relationship is mediated by perceived product innovativeness.

### 2.3 The interaction between verbally communicated product innovativeness and nonverbal displays of affective passion

In line with nonverbal communication theories suggesting that both what entrepreneurs say and how they say it matters (Burgoon et al., 1990), we argue that the extent to which job seekers attend to and comprehend the semantic content of entrepreneurs' recruitment messages depends on the nonverbal behavior that accompanies verbal communication. In particular, we direct our attention to entrepreneurs' nonverbal displays of affective passion (i.e., animated facial expressions, gestures, and energetic body movements; Chen et al., 2009).<sup>3</sup> Job seekers listening to an entrepreneur consciously and/or unconsciously take notice of her/his emotional displays, including displays of affective passion (Li et al., 2017), alongside the speech, and infer different things about the entrepreneur's messages as a result (Clarke et al., 2019). Nonverbal communication theories inform us that listeners respond more strongly to emotion-laden information than emotionally neutral information (Bower & Forgas, 2001; Ekman, 1993). Thus, the affective passion displayed by an entrepreneur describing her/his venture's products/services may reinforce verbal expressions referring to venture product innovativeness by generating attention in the listeners and increasing the visibility of the semantic information (Ambady & Rosenthal, 1992; Damasio, 2010). The affective passion displayed by the entrepreneur is also likely to affect the probability that job seekers carefully process the content of the entrepreneur's message to evaluate venture product innovativeness (Allred et al.,

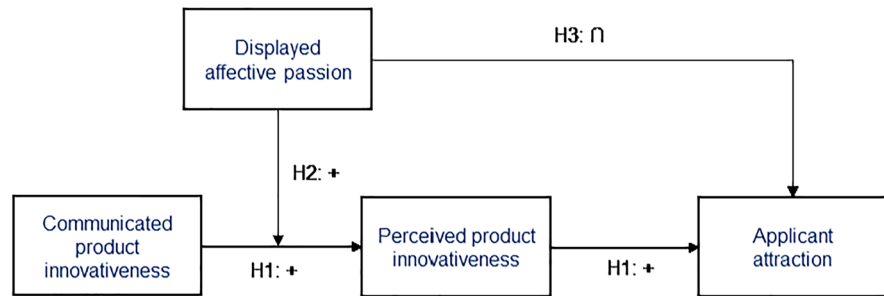
1997). Accordingly, displayed affective passion is likely to strengthen the relationship between communicated product innovativeness and job seeker perception of product innovativeness (which, in turn, positively affects applicant attraction). We thus formulate Hypothesis 2.

*H2: The affective passion displayed by an entrepreneur while presenting her/his new venture's products/services has a positive moderating effect on the relation between communicated product innovativeness and perceived product innovativeness.*

### 2.4 The relationship between nonverbal displays of affective passion and applicant attraction

Nonverbal communication theories (Birdwhistell, 1970; Burgoon et al., 1989, 1990) suggest that, besides reinforcing the effect of verbally communicated product innovativeness, nonverbal expressions such as entrepreneurs' displays of affective passion also convey non-semantic information to job seekers and are, thus, likely to influence applicant attraction directly. People hold beliefs about the traits and behaviors that demarcate successful entrepreneurs (Elenurm et al., 2014; House et al., 2002; Murnieks et al., 2019), and displaying passion is one of those behaviors (Cardon et al., 2009a, 2009b; Stroe et al., 2019). Passion has been demonstrated to drive the tenacious pursuit of goals, greater levels of persistence, initiative, willingness to work long hours, and greater levels of effort invested in the new venture pursuit (Bierly et al., 2000; Cardon et al., 2009a, 2009b, 2013; Murnieks et al., 2014; Cardon et al., 2013). Hence, displaying passion conveys information about the entrepreneur's increased commitment to putting enough time and effort into her/his venture to ensure success (Cardon et al., 2009a, 2009b). In the entrepreneurial process, commitment is critical to implementing productive business activities (Moore, 1986) and ensuring ventures succeed (Erikson, 2002; Klofsten, 1994). Displays of affective passion thus signal an entrepreneur's commitment to put effort into her/his venture to overcome the obstacles of the entrepreneurial journey, fulfill entrepreneurial role demands, and create and sustain a viable venture (Cardon et al., 2009a, 2009b; Vallerand et al., 2003).

<sup>3</sup> The objects of an entrepreneur's passion can be manifold; e.g., the venture in general, the entrepreneur's role as a founder or inventor, and the product (Cardon et al., 2009a, 2009b; Warnick et al., 2018). Moreover, the type of passion the entrepreneur experiences can be harmonious or obsessive (Stroe et al., 2020; Vallerand et al., 2003). The object and the type of experienced passion are out of the scope of this study. In this work, we focus on affective external expressions of passion as displayed to the outside world, regardless of the internal experience of passion, its type, or object (see Chen et al., 2009 for another example of affective displayed passion).

**Fig. 1** Conceptual model

Therefore, displayed passion is likely to persuade job seekers that venture performance prospects are good, thus attracting applicants.

However, increasing displays of affective passion are likely to positively influence applicant attraction only up to a threshold level, beyond which further increases will reduce applicant attraction. Indeed, job seekers might interpret excessive displays of affective passion negatively. Too intense passion has been shown to deteriorate others' assessment of the individual's trustworthiness and approachability (Ho & Pollack, 2014; Philippe et al., 2010). Moreover, excessive displays of passion might indicate that the entrepreneur is rigid, unreceptive to feedback, and inflexible (Cardon, 2008; Thorgren & Wincent, 2013; Vallerand et al., 2003). Such characteristics of the entrepreneur may lead to dysfunctional outcomes such as biased decision-making, misguided efforts to move forward with the new venture despite negative feedback, blind persistence, irrational escalation of commitment, as well as negative work relationship quality and work conflicts (Branzei & Zietsma, 2003; Vallerand et al., 2007), thus eventually having adverse effects on the venture. Consequently, we expect the entrepreneurs' displayed affective passion to have a curvilinear relationship with applicant attraction; displayed passion is positively related to applicant attraction up to a threshold beyond which displayed passion is negatively associated with applicant attraction. Therefore, we set forth the following hypothesis.

*H3: There is an inverted U-shaped relationship between the affective passion displayed by an entrepreneur while presenting her/his new venture's products/services and applicant attraction to the venture.*

Our hypotheses are summarized in Fig. 1.

### 3 Methods

#### 3.1 Participants and procedures

To test our hypotheses, we exposed study participants to stimulus presentations, and following these presentations, we asked them to answer the questions included in three separate questionnaires. These answers were used to build measures of the key constructs analyzed in the study.

The study participants comprised 101 Italian graduate students in the final term of their Master of Science degree in Management Engineering at an Italian public technical university. All participants were either already on the job market or about to enter the job market for professional work. Using samples of students is a widespread practice in empirical studies on applicant attraction (see, e.g., Allen et al., 2007; Allred et al., 1997; Rau & Hyland, 2002; Roberson et al., 2005). It is worth noting that, for our study, students are not a convenience sample but a theoretically relevant sample of future new venture employees (Grégoire et al., 2019; Hsu et al., 2017). The mean age of the 101 participants was 24 years, and 27 participants (27%) were female. This age range and gender distribution mirror the results of the start-up survey conducted in 2016 by the Italian National Institute of Statistics and the Italian Ministry of Economic Development (ISTAT, 2018). This survey indeed reveals that most Italian start-up employees are recent graduates, and about one out of four employees are female.

Following similar studies (e.g., Davis et al., 2017; Elpers et al., 2003; Elpers et al., 2004), we employed stimuli taken directly from the domain of interest. The stimuli consisted of 12 videos of entrepreneurs presenting their ventures' products/services. To maintain consistency across the stimuli, we selected the 12 ventures among those located in the incubators of two

well-known Italian universities that were founded in the last 4 years and had already recruited their first employees. As none of these incubated ventures already had recruitment videos we could use, we had to record them (for details on video recording and editing, see the Appendix).

All the ventures had already obtained external financing from venture capitalists, business angels, or crowdfunding campaigns or were closing deals with professional investors. The entrepreneurs who recorded the videos ranged from 28 to 46 years. The ventures presented in the videos had substantial heterogeneity as to the industry of operation; they operated in the following domains: agritech, AI, electronics, energy, finance, health, new materials, pharma, sport, and two-sided platforms. All the videos lasted between 2:30 and 3:30 min.

The administration of the video stimuli to the participants was always organized in the same way. After completing an initial briefing (for details on this briefing and, more in general, on the organization of video shows, see the Appendix again), a first questionnaire was distributed, and the projection of the videos started. Because of time constraints and to reduce participant fatigue, each participant watched nine of the 12 stimulus videos. To reduce the possibility of biases stemming from order effects, each respondent group watched and evaluated the videos in randomly determined order sets (Elpers et al., 2004). Within each of these sets, the order of the videos was also randomized. After watching each stimulus video, participants evaluated the attractiveness of an employer of the venture presented and their willingness to accept job offers from this venture. When all present participants had completed the evaluation, the projection of the following video started. After watching the nine videos, study participants returned the completed questionnaires, and two other questionnaires were distributed. The second questionnaire was focused on the participants' demographic and individual characteristics. The third questionnaire measured the perceived product innovativeness of the ventures presented in the videos and the respondents' familiarity with these products/services. As study participants were asked to fill in this last questionnaire several minutes after watching the videos, the question aimed at evaluating the perceived product innovativeness of each venture was preceded by a three-line description of the venture's product(s)/service(s) to refresh any forgotten details about the products/services.

It is worth acknowledging that before starting data collection, we pilot-tested the data collection tool with three research assistants of similar age as the study participants. The aim of the pilot test was twofold. First, we wanted to be sure that all the three-line descriptions were faithful to the video presentations. Second, we aimed at collecting information to evaluate whether the number of questions in the questionnaires and/or the number of videos shown to study participants were to be reduced to alleviate the risk of survey fatigue during data collection. The pilot test confirmed the appropriateness of the descriptions and the feasibility of the data collection tool.

The data collection resulted in a sample of 909 video-participant observations.

### 3.2 Measures

**Dependent variable: applicant attraction to the venture** The dependent variable captures the interest of study participants in pursuing employment with the focal venture. We measure it with the three questions reported in Table 1. Researchers use these questions as accepted measures of applicant attraction (Harris & Fink, 1987; Kammermeyer-Mueller & Liao, 2006; Turban & Dougherty, 1992; Turban et al., 1998). In our sample, the internal consistency reliability of this scale is high ( $\alpha=0.92$ ). The dependent variable *Attraction* is thus computed for each respondent as the average of the answers the focal respondent provided to the three questions.

**Independent variable: displayed affective passion** After recording the videos and before starting the data collection, two independent observers (i.e., one author that was not involved in the video registration and one research assistant) evaluated the entrepreneurs' displayed affective passion using the scale developed by Chen et al., (2009: 204) and subsequently validated in various entrepreneurship studies (e.g., Davis et al., 2017; Mitteness et al., 2012). Since the entrepreneurs presented their ventures while seated, we dropped the item "the presenter had energetic body movements" and asked the two observers to evaluate only the five items listed in Table 1. The values of  $\alpha$  for the two observers are 0.83 and 0.91, and the inter-rater reliability is significant ( $r=0.952$ ,  $p<0.000$ ,  $n=12$ ). We thus computed the



**Table 1** Descriptions of the variables

Variables	Descriptions
<b>Dependent variable</b>	
<i>Attraction</i>	Average of the answers provided by the focal participant to the following three questions: (i) "How attractive is this venture as an employer for you?" (Answers were provided using a seven-point scale from 1 = not attractive to 7 = very attractive); (ii) "How likely would you be to accept a job if offered by this venture?" (Answers were provided using a seven-point scale from 1 = not likely to 7 = very likely); (iii) "How likely is it that this venture would be your first choice as an employer?" (Answers were provided using a seven-point scale from 1 = not likely to 7 = very likely)
<b>Independent variables</b>	
<i>Displayed_Passion</i>	Average of two independent observers' assessments of the following five items: (i) the entrepreneur had rich body language, (ii) the entrepreneur showed animated facial expressions, (iii) the entrepreneur's face lit up when he talked, (iv) the entrepreneur used a lot of gestures, and (v) the entrepreneur talked with varied tone and pitch. Each item was rated by the two observers using a seven-point scale from 1 = strongly disagree to 7 = strongly agree
<i>Communicated_Prod_Inno</i>	Average of the experts' evaluations of the following five items: (i) the technology this product/service incorporates is new to me, (ii) the benefits this product/service offers are new to me, (iii) the product/service features are novel/unique to me, (iv) this product/service introduced many completely new features to the market, and (v) this product/service offers dramatic improvements to existing product/service features. Each item was rated using a seven-point scale from 1 = strongly disagree to 7 = strongly agree
<b>Mediator</b>	
<i>Perceived_Prod_Inno</i>	Average of participant's evaluations of the following five items: (i) the technology this product/service incorporates is new to me, (ii) the benefits this product/service offers are new to me, (iii) the product/service features are novel/unique to me, (iv) this product/service introduced many completely new features to the market, and (v) this product/service offers dramatic improvements to existing product/service features. Each item was rated using a seven-point scale from 1 = strongly disagree to 7 = strongly agree
<b>Control variables</b>	
<i>Participant_Gender</i>	Dummy equals to one for female participants and zero for male participants
<i>Participant_Age</i>	Age (in years) of the participant
<i>New_Ventures_Appeal</i>	Participant's answer to the question: "If you received two similar job offers (= same activities and salary), one from an established company and one from a new venture, which one would you most likely accept?". Answers were provided using a seven-point scale from 1 = the established company to 7 = the new venture
<i>Student_Avg_Mark</i>	Average of the marks the participant student obtained in the Master of Science courses he/she attended. The variable ranges between 18 and 30
<i>Entrepreneur_Age</i>	Age (in years) of the entrepreneur
<i>Entrepreneur_Attractiveness</i>	The measure of the entrepreneur's physical attractiveness. In line with prior studies (e.g., Garcia et al., 1991), we built the variable with the following procedure. Eight graduate students (four females and four males) of similar age and in a similar stage of their studies as study participants, and blind to the purposes of our research, watched the first 20 s of each video with the sound muted. Then, they were asked to rate the overall physical attractiveness of each entrepreneur. Raters made independent assessments on a seven-point scale from 1 = physically very unattractive to 7 = physically very attractive. The internal consistency of the ratings was significant ( $r = .890, p < 0.000, n = 12$ ), thus justifying using the mean of the ratings to measure entrepreneurs' physical attractiveness
<i>Video_Length</i>	Video length in seconds
<i>Venture_Familiarity</i>	Dummy equals to one if the participant already knew the entrepreneur or had already heard about the venture and its activity before watching the video, and zero otherwise
<i>Problem_Familiarity</i>	Participant assessment of her/his familiarity with the problem/need addressed by the venture. Familiarity is evaluated using a seven-point scale from 1 (= the participant is not familiar with the problem/need addressed by the venture) to 7 (= the participant is very familiar with the problem/need addressed by the venture)

**Table 1** (continued)

Variables	Descriptions
<i>Industry_Attractiveness</i>	Participant assessment of the attractiveness of the industry where the venture operates. Attractiveness is assessed using a seven-point Likert scale from 1 (=the participant would not work in companies operating in the venture industry) to 7 (=the participant would very much work in companies operating in the venture industry). To collect these assessments, at the end of the second questionnaire, we asked respondents to evaluate how much they would work in companies operating in a series of industries. These industries were listed in alphabetical order and included all the industries where the ventures presented in the 12 videos operated, plus a couple of other industries. The variable was then developed considering only the participant's evaluation of the venture industry for each venture

variable *Displayed\_Passion* by averaging the evaluations of all items provided by the two observers.<sup>4</sup>

**Independent variable: communicated product innovativeness** As a measure of communicated product innovativeness, we used the assessments of experts familiar with the technologies and industries of sample ventures and with substantial knowledge about competing products/services. In particular, we used the consensual assessment technique (Amabile et al., 1996; Grant & Berry, 2011), which is well established in creativity research (Amabile & Mueller, 2007) and has also been used in entrepreneurship experiments (e.g., Frederiks et al., 2019; Shepherd & DeTienne, 2005). Five independent experts in innovation and entrepreneurship in general and in the evaluation of start-ups in particular<sup>5</sup> rated each venture's communicated product innovativeness. These evaluations were based solely on the contents of the entrepreneurs' messages. The experts read the transcripts

<sup>4</sup> To check whether the evaluations provided by the two observers were similar to those that could have been provided by study participants, we also showed the videos to 10 students with similar demographics to study participants and asked them to evaluate entrepreneurs' displayed affective passion. The 10 students used the same scale used by the author and the research assistant. The inter-rater reliability computed considering the two observers and the 10 students is very high ( $r=0.993$ ,  $p<0.000$ ,  $n=12$ ). Moreover, the results discussed in the following section do not change if *Displayed\_Passion* is computed by averaging the answers to all scale items provided by the 10 students.

<sup>5</sup> The five experts were chosen so as to have different complementary expertise: (1) the Chief Operating Officer of an Italian Incubator, (2) a Professor in Innovation at an Italian University and Director of the University Incubator, (3) a Professor in Entrepreneurship in an Italian University and Scientific director of a local Startup competition, (4) the Head of Dealflow in an Italian equity crowdfunding platform, and (5) the Investment Director in a venture capital fund that invests in start-ups, SMEs and academic spin-offs.

of the 12 videos without watching them, then were asked to rate communicated product innovativeness using the five-item scale developed by Lee and Colarelli O'Connor (2003) and reported in Table 1. The scale shows good reliability, with Cronbach's alphas between 0.77 and 0.96. The inter-rater reliability of the experts' average scores is significant ( $r=0.854$ ,  $p<0.000$ ,  $n=12$ ). We thus computed the variable *Communicated\_Prod\_Inno* by averaging the answers to all items provided by all evaluators.

**Mediator variable: Perceived product innovativeness** For each study participant, we computed *Perceived\_Prod\_Inno* as the average of the answers provided by the focal participant to the five items of the above-mentioned scale by Lee and Colarelli O'Connor (2003). Items were rated using the same scale used by the experts ( $\alpha=0.84$ ).

Table 2 reports the factor loadings for all the items of the scales used to build the four variables described so far.

**Control variables** The models reported in Sect. 4 include several controls from the applicant attraction literature (more details about how the controls were computed are reported in Table 1).

The first set of controls includes four variables capturing the individual characteristics of study participants. In line with prior works on applicant attraction (for a review, see Chapman et al., 2005), we control for participant gender (*Participant\_Gender*) and age (*Participant\_Age*). We do not control for participant race because there is no racial heterogeneity in the group of participants in our study. As study participants may differ in their propensities to include new ventures in their consideration set of prospective employers, we control for the appeal of working in new ventures compared to established organizations

**Table 2** Factor loadings of the scales used

	<i>Attraction</i>	<i>Displayed_Passion</i>	<i>Communicated_Prod_Inno</i>	<i>Perceived_Prod_Inno</i>
Attraction_item1	0.90			
Attraction_item2	0.95			
Attraction_item3	0.92			
Displayed_Passion_item1		0.87		
Displayed_Passion_item2		0.88		
Displayed_Passion_item3		0.75		
Displayed_Passion_item4		0.79		
Displayed_Passion_item5		0.90		
Communicated_Prod_Inno_item1			0.93	
Communicated_Prod_Inno_item2			0.90	
Communicated_Prod_Inno_item3			0.96	
Communicated_Prod_Inno_item4			0.97	
Communicated_Prod_Inno_item5			0.93	
Perceived_Prod_Inno_item1				0.68
Perceived_Prod_Inno_item2				0.78
Perceived_Prod_Inno_item3				0.85
Perceived_Prod_Inno_item4				0.85
Perceived_Prod_Inno_item5				0.78
Eigenvalue	2.57	3.54	4.41	3.14
Variance explained	86%	71%	88%	63%

(*New\_Ventures\_Appeal*). Finally, we control for participants' human capital as proxied by the average mark of the focal student in the Master of Science courses he/she attended (*Student\_Avg\_Mark*). Participants' human capital may affect their ability to process the messages sent by entrepreneurs, thus influencing participant attraction to the venture.

The second set of controls includes three video-specific variables. *Entrepreneur\_Age* and *Entrepreneur\_Attractiveness* capture individual characteristics of the entrepreneur who speaks in each recorded video. The age of the entrepreneur (*Entrepreneur\_Age*) may have contrasting effects on applicant attraction. On the one hand, in line with homophily arguments (McPherson et al., 2001), similarity positively affects individual attraction. Hence, young job seekers may be more attracted by younger entrepreneurs. On the other hand, job seekers may be more attracted to working with older entrepreneurs because the latter are likely to be more experienced than younger entrepreneurs. We also control for the entrepreneur's physical attractiveness (*Entrepreneur\_Attractiveness*) since a communicator's physical attractiveness is shown to enhance

her/his persuasiveness (Chaiken, 1979). We do not control for the entrepreneur's gender and race, as all entrepreneurs are Caucasian males. To account for differences across the video descriptions used in the study, we control for the length of the video (*Video\_Length*).

The list of controls includes three additional variables. Since a fundamental driver of applicant attraction is organizational familiarity (Uggerslev et al., 2012), i.e., the likelihood that an employer comes to a job seeker's mind (Keller, 1993), we control for the participants' familiarity with the focal venture (*Venture\_Familiarity*).<sup>6</sup> We also control for the participant's familiarity with the problem/need addressed by

<sup>6</sup> To avoid that prior information possibly possessed by the respondents about the entrepreneurs and the ventures presented in the videos may engender biases, we repeated the estimates excluding the 90 observations where *Venture\_Familiarity* was equal to 1 (and excluding *Venture\_Familiarity* from the list of controls). The results of these additional estimates are not significantly different from those reported in the following. These additional estimates are available from the authors upon request.

**Table 3** Means and standard deviations of dependent and explanatory variables

Variable	Mean	Std. dev	Min	Max
<i>Attraction</i>	3.339	1.372	1.000	7.000
<i>Displayed_Passion</i>	3.709	1.461	1.800	6.300
<i>Communicated_Prod_Inno</i>	4.480	0.993	3.320	6.240
<i>Perceived_Prod_Inno</i>	4.511	1.207	1.000	7.000
<i>Participant_Gender</i>	0.267	0.443	0.000	1.000
<i>Participant_Age</i>	24.238	0.677	23.000	27.000
<i>New_Ventures_Appeal</i>	2.970	1.602	1.000	7.000
<i>Student_Avg_Mark</i>	27.550	1.406	22.545	30.000
<i>Entrepreneur_Age</i>	33.495	6.585	28.000	46.000
<i>Entrepreneur_Attractiveness</i>	3.327	1.309	1.667	5.333
<i>Video_Length</i>	174.499	27.644	133.000	210.000
<i>Venture_Familiarity</i>	0.099	0.299	0.000	1.000
<i>Problem_Familiarity</i>	3.516	1.641	1.000	7.000
<i>Industry_Attractiveness</i>	3.942	1.705	1.000	7.000

the focal venture (*Problem\_Familiarity*). Finally, we control for the participant's assessment of the attractiveness of the industry where the focal venture operated (*Industry\_Attractiveness*). We include this control because job seekers may have a particular interest in products commercialized or technologies used in a specific industry, so they might prefer that industry and the respective employers to others (Wilden et al., 2010).

In Table 3, we show the summary statistics of the variables included in the analysis, whereas in Table 4, we report the correlation matrix. The explanatory variables are, in general, poorly correlated. However, to assess potential multicollinearity, we computed the variance inflation factors (VIF) by estimating a model including *Attraction* as the dependent variable and all the remaining variables as explanatory variables using an OLS estimator. The mean VIF is 1.07, with a maximum VIF of 1.35. These values are well below the corresponding thresholds of 6 and 10, respectively (Hair et al., 2009: 193). We thus concluded that multicollinearity is not a problem in our estimates.

### 3.3 Statistical procedures

Since data for both the dependent variable (*Attraction*) and the mediator (*Perceived\_Prod\_Inno*) were collected from the same source, we address the possibility of common method bias influencing the results of the analysis. To help mitigate the potential effects

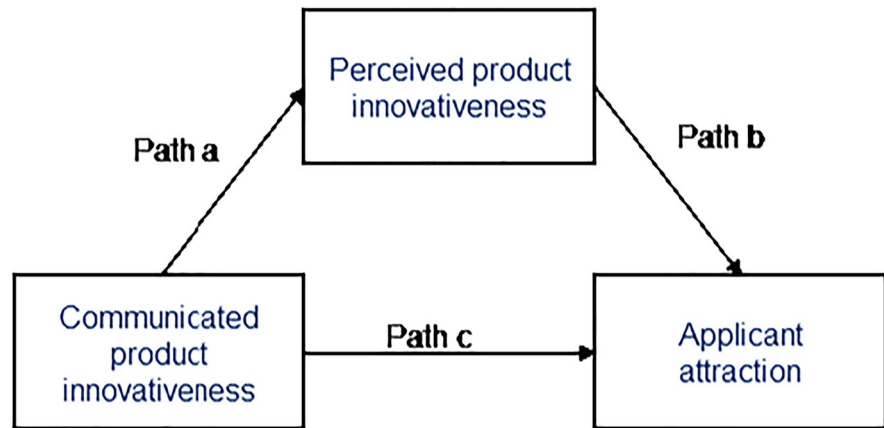
of common method bias, both procedural and statistical remedies were employed (Podsakoff & Organ, 1986; Podsakoff et al., 2003). First, the dependent and mediator variables were separated proximally in the survey to reduce the participant's ability to use responses to prior questions to choose subsequent responses. We collected the data used to build *Attraction* at the beginning of the data collection session through the first questionnaire, and the data used to build *Perceived\_Prod\_Inno* at the end of the session through the third questionnaire that study participants filled in after returning the previous questionnaires. Second, Harman's one-factor analysis does not show a dominant first unrotated principal component, indicating that common method bias should not affect the findings unduly (Podsakoff & Organ, 1986). Third, we conducted a confirmatory factor analysis (CFA) to assess the fit of a single-factor model (all items loading on one factor). The single-factor model showed a very poor fit (CFI: 0.57; TLI: 0.40; RMSEA: 0.31; SRMR: 0.17); this confirmed the absence of common method bias. Fourth, following Podsakoff and colleagues (2003), we used the common latent factor technique. Specifically, we focused on the model containing two latent factors, respectively measured by the three items considered to build *Attraction* and the five items used to build *Perceived\_Prod\_Inno*, and we compared the standardized regression weights of this model with and without a common latent factor, computed using the software AMOS. The differences between regression weights in all paths of the model

**Table 4** Correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 <i>Attraction</i>	1.00												
2 <i>Displayed_Passion</i>	0.21***	1.00											
3 <i>Communicated_Prod_Inno</i>	-0.03	-0.03	1.00										
4 <i>Perceived_Prod_Inno</i>	0.37***	0.18***	0.23***	1.00									
5 <i>Participant_Gender</i>	0.07*	-0.01	-0.01	0.15***	1.00								
6 <i>Participant_Age</i>	0.07*	-0.00	0.00	-0.02	-0.18***	1.00							
7 <i>New_Ventures_Appeal</i>	0.08**	0.00	-0.00	0.03	-0.21***	-0.03	1.00						
8 <i>Student_Avg_Mark</i>	-0.18***	0.01	0.00	0.00	0.10**	-0.25***	-0.08*	1.00					
9 <i>Entrepreneur_Age</i>	0.17***	0.35***	-0.26***	0.10**	0.03	-0.01	0.00	0.00	1.00				
10 <i>Entrepreneur_Attractiveness</i>	-0.02	0.03	0.26***	-0.07*	-0.02	-0.00	0.00	0.01	-0.20***	1.00			
11 <i>Video_Length</i>	-0.19***	-0.33***	-0.05	-0.09**	0.03	-0.01	0.00	-0.01	0.04	-0.10**	1.00		
12 <i>Venture_Familiarity</i>	0.12**	0.23***	-0.02	-0.08*	-0.03	0.02	0.03	-0.03	-0.12***	0.32***	-0.18***	1.00	
13 <i>Problem_Familiarity</i>	0.32***	0.08*	-0.17***	0.07*	-0.08*	-0.12***	-0.01	0.04	0.05	-0.06†	-0.14***	0.12***	1.00
14 <i>Industry_Attractiveness</i>	0.32***	0.05	-0.22***	0.13***	0.02	-0.03	0.03	-0.02	0.14***	-0.20***	-0.03	-0.06†	0.26***

N=909; †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ , two-tailed test

**Fig. 2** Graphical representation of the mediation model



without and with the common latent factor were less than 0.2. These results further suggest that common-method bias is not likely to influence our study's results, permitting us to proceed with hypotheses testing.

Furthermore, since the data used in the current study are nested within individuals evaluating attraction to new ventures (level 2) based on (perceived and actual) characteristics of both the ventures and the entrepreneurs (level 1), we checked for the need to use multilevel modeling techniques. Following Heck et al. (2010), we partitioned the variances in both *Attraction* and *Perceived\_Prod\_Inno* into their within- and between-group components. To measure the between-group variances, we calculated the intra-class correlation (ICC). Our ICC calculations are 0.20 and 0.15 for *Attraction* and *Perceived\_Prod\_Inno*, respectively. These values support the use of multilevel modeling techniques. Therefore, to test our hypotheses, we resort to structural equation modeling and simultaneously estimate two equations. The first equation represents the path from the independent variable *Communicated\_Prod\_Inno* to the mediator *Perceived\_Prod\_Inno*, while the second equation represents the path from *Perceived\_Prod\_Inno* to the dependent variable *Attraction*. Given the double-censored nature of *Perceived\_Prod\_Inno* and *Attraction*, we employ the GSEM Stata command specifying a Gaussian link for both equations. Both equations include all the above-listed controls from applicant attraction literature. As a robustness check, we excluded the controls from the first equation; the results are in line with those discussed in the following.

## 4 Results

We hypothesize that the relationship between communicated product innovativeness and applicant attraction is (at least partially) mediated by perceived product innovativeness (see again Fig. 1). Thus, in line with the recommendation by Zhao et al. (2010), before running the GSEM estimates we used the Preacher and Hayes (2004, 2008) bootstrap procedure to establish whether there is evidence for mediation. Specifically, we performed regression-based mediation analyses, estimating all the paths depicted in Fig. 2, and assessed the confidence interval of the indirect relation between *Communicated\_Prod\_Inno* and *Attraction* via *Perceived\_Prod\_Inno* by drawing 500 bootstrap samples from the original sample. This relation is positive and significant as zero is not included in the bias-corrected 99 percent confidence interval with a lower limit of 0.102 and an upper limit of 0.172. We, therefore, conclude that there is evidence for mediation of *Perceived\_Prod\_Inno* on the relationship between *Communicated\_Prod\_Inno* and *Attraction*.

To test the hypotheses, we adopted a two-step approach (Anderson & Gerbing, 1988): we first confirmed the measurement model using CFA and then performed GSEM. We performed CFA for the key variables in the study (i.e., not including control variables) and used the items as separate indicators for the constructs. The measurement model results indicated a good fit to the data (CFI=0.95; TLI: 0.85; RMSEA=0.07; SRMR: 0.03).

The multilevel results of the GSEM analyses are displayed in Table 5. Models 1 and 2 explore the

**Table 5** Results of GSEM estimates

		DV: <i>Perceived_Prod_Inno</i>				DV: <i>Attraction</i>			
		Model 1		Model 2		Model 3			
a <sub>0</sub>	Constant	0.464	(1.832)	-1.742	(1.869)	-1.414	(3.226)		
a <sub>1</sub>	<i>Displayed_Passion</i>	0.132	(0.030) ***	0.939	(0.190) ***	0.680	(0.163) ***		
a <sub>2</sub>	<i>Displayed_Passion</i> × <i>Displayed_Passion</i>	-		-		-0.087	(0.022) ***		
a <sub>3</sub>	<i>Communicated_Prod_Inno</i>	0.398	(0.040) ***	0.930	(0.130) ***	0.049	(0.041)		
a <sub>4</sub>	<i>Displayed_Passion</i> × <i>Communicated_Prod_Inno</i>	-		-0.176	(0.041) ***	-			
a <sub>5</sub>	<i>Perceived_Prod_Inno</i>	-		-		0.343	(0.034) ***		
a <sub>6</sub>	<i>Participant_Gender</i>	0.481	(0.090) ***	0.481	(0.087) ***	0.324	(0.160) *		
a <sub>7</sub>	<i>Participant_Age</i>	0.048	(0.059)	0.048	(0.057)	0.201	(0.105) †		
a <sub>8</sub>	<i>New_Ventures_Appeal</i>	0.049	(0.024) *	0.050	(0.023) *	0.065	(0.043)		
a <sub>9</sub>	<i>Student_Avg_Mark</i>	-0.005	(0.028)	-0.006	(0.027)	-0.169	(0.050) **		
a <sub>10</sub>	<i>Entrepreneur_Age</i>	0.015	(0.006) **	0.012	(0.006) †	0.035	(0.007) ***		
a <sub>11</sub>	<i>Entrepreneur_Attractiveness</i>	-0.083	(0.031) **	-0.122	(0.032) ***	0.025	(0.029)		
a <sub>12</sub>	<i>Video_Length</i>	-0.002	(0.001)	-0.002	(0.001)	-0.009	(0.002) ***		
a <sub>13</sub>	<i>Venture_Familiarity</i>	-0.325	(0.138) *	-0.359	(0.138) **	0.473	(0.134) ***		
a <sub>14</sub>	<i>Problem_Familiarity</i>	0.067	(0.024) **	0.067	(0.024) **	0.230	(0.025) ***		
a <sub>15</sub>	<i>Industry_Attractiveness</i>	0.091	(0.023) ***	0.083	(0.023) ***	0.180	(0.023) ***		
	N. of observations	909		909		909			
	χ <sup>2</sup> test: a <sub>1</sub> =a <sub>2</sub> =0	-		-		18.03 (2)***			

Legend: †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . The table reports the unstandardized factor loadings

relations of the explanatory and control variables to the mediator (*Perceived\_Prod\_Inno*), while model 3 explores the relations to the dependent variable *Attraction*.

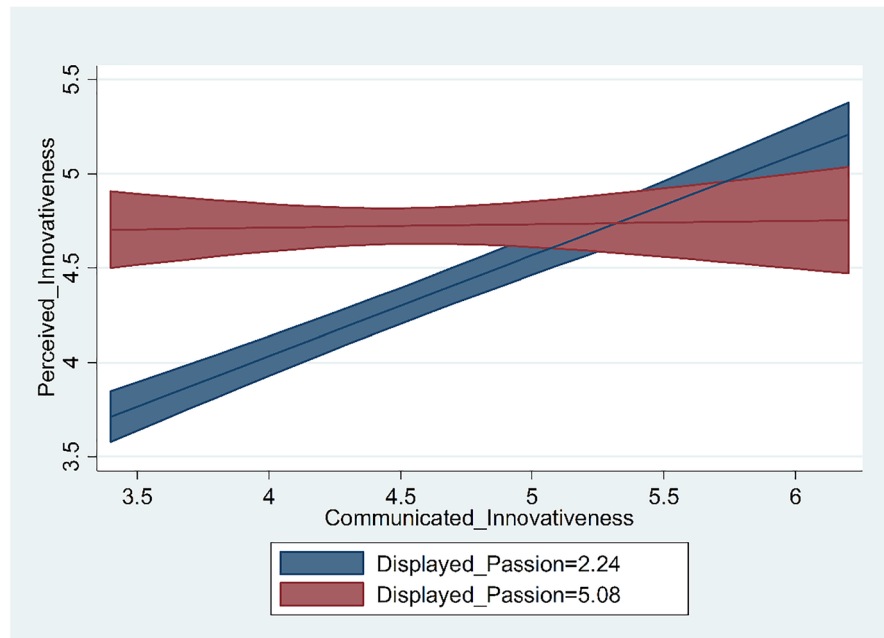
To test Hypothesis 1, we rely on models 1 and 3. The estimates of these models reveal that, in line with our hypothesis, *Perceived\_Prod\_Inno* mediates the relation between *Communicated\_Prod\_Inno* and *Attraction*. Specifically, the non-significant coefficient of *Communicated\_Prod\_Inno* in model 3 indicates the absence of a direct relation between communicated product innovativeness and applicant attraction (“indirect only mediation”; Zhao et al., 2010). Conversely, there is a positive association between *Communicated\_Prod\_Inno* and *Perceived\_Prod\_Inno* (model 1:  $b = 0.40$ ,  $p = 0.000$ ), and *Perceived\_Prod\_Inno*, in turn, has a positive relation with *Attraction* (Model 3:  $b = 0.39$ ,  $p = 0.000$ ). Thus, Hypothesis 1 is supported.

To test the moderating effect of displayed affective passion on the relation between communicated product innovativeness and perceived innovativeness (i.e., Hypothesis 2), we resort to model 2, where we

insert the interactive term *Displayed\_Passion* × *Communicated\_Prod\_Inno*. The coefficients of both the interactive term and the interacted variables are significant. Contrary to our hypothesized positive moderating effect of displayed affective passion, we find that the coefficient of *Displayed\_Passion* × *Communicated\_Prod\_Inno* is negative ( $b = -0.18$ ,  $p = 0.000$ ), while the coefficients of both *Displayed\_Passion* and *Communicated\_Prod\_Inno* are positive.<sup>7</sup> Thus, Hypothesis 2 is not supported. To better understand this unexpected result, we plot the relations between *Communicated\_Prod\_Inno* and *Perceived\_Prod\_Inno* for both low and high values of *Displayed\_Passion* (respectively, the mean value of *Displayed\_Passion* minus one standard deviation and the mean value plus one standard deviation) in Fig. 3. As the figure

<sup>7</sup> To gain further insights into the relationships between our main variables, we inserted the interactive term *Displayed\_Passion* × *Communicated\_Prod\_Inno* also in the applicant attraction equation. The coefficients of both the interactive term and the interacted variables were not significant. The results of these estimates are available from the authors upon request.

**Fig. 3** The moderating effect of displayed affective passion on the relation between communicated product innovativeness and perceived product innovativeness



clearly shows, communicated product innovativeness has a strong positive association with perceived innovativeness for low values of *Displayed\_Passion*. Conversely, when entrepreneurs display high passion in describing their ventures' products/services (i.e., the value of *Displayed\_Passion* is high), there is no relation between communicated product innovativeness and perceived innovativeness.

Regarding the direct relation between displayed affective passion and applicant attraction, we check for the presence of a curvilinear relationship through Model 3 by inserting both *Displayed\_Passion* and the squared term  $Displayed\_Passion \times Displayed\_Passion$  in the equation on applicant attraction. The coefficients of both terms are significant, and the null hypothesis that these coefficients are jointly equal to null is rejected by the  $\chi^2$  test reported at the bottom of Table 5. In particular, the coefficient of *Displayed\_Passion* is positive ( $b=0.68, p=0.000$ ), while the squared term coefficient is negative ( $b=-0.09, p=0.000$ ). Thus, as Fig. 4 clearly shows, the direct relation between displayed affective passion and applicant attraction is inverted U-shaped: applicant attraction first increases with displayed affective passion up to a threshold (corresponding to the median value of *Displayed\_Passion*), then it decreases when displayed affective passion further increases. Job seekers are more attracted to new ventures if the

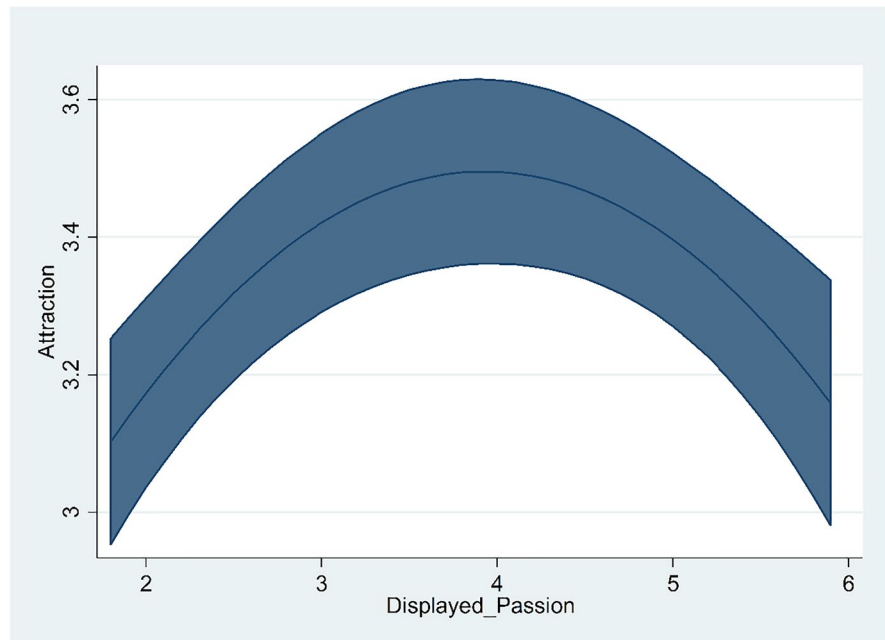
entrepreneurs display moderate levels of affective passion, whereas entrepreneurs who display excessive affective passion turn applicants away from their ventures. We thus conclude that Hypothesis 3 is supported.

The estimates of Models 1 and 3 also shed light on the unhypothesized direct relationship between displayed affective passion and perceived innovativeness. The positive and significant coefficient of *Displayed\_Passion* in Model 1 ( $b=0.13, p=0.000$ ) indicates that the greater the affective passion displayed by an entrepreneur when presenting her/his venture's product(s)/service(s), the more innovative job seekers perceive the new venture's product(s)/service(s) to be.

Regarding the controls for individual characteristics of study participants, the positive and significant coefficients of *Participant\_Gender* and *New\_Ventures\_Appeal* in models 1 and 2 indicate that both female participants and participants who are more likely to accept job offers from new ventures tend to perceive the products/services of sample ventures as more innovative. The individual characteristics of study participants affect applicant attraction as well. The positive coefficients of *Participant\_Gender* and *Participant\_Age* and the negative coefficient of *Student\_Avg\_Mark* indicate that sample ventures are considered more attractive employers by females, older participants, and participants with lower-quality



**Fig. 4** Inverted U-shaped effect of displayed affective passion on applicant attraction



human capital. As to the characteristics of venture entrepreneurs, while entrepreneur age has a positive effect on both perceived innovativeness and applicant attraction (*Entrepreneur\_Age* has positive coefficients in all the models), physical attractiveness negatively affects perceived innovativeness (*Entrepreneur\_Attractiveness* has negative coefficients in models 1 and 2) and has no effect on applicant attraction. Instead, *Video\_Length* negatively influences applicant attraction.

Finally, *Venture\_Familiarity*, *Industry\_Attractiveness*, and *Problem\_Familiarity* influence both the ventures' perceived product innovativeness and applicant attraction. The coefficients of *Industry\_Attractiveness* and *Problem\_Familiarity*, positive and significant in all the models, show that study participants perceive the products/services of the new ventures operating in more attractive industries and addressing needs or problems they are familiar with as more innovative, and these ventures attract them more. Prior knowledge of a venture and/or its entrepreneur led study participants to perceive the venture's product(s)/service(s) as less innovative, as the negative coefficients of *Venture\_Familiarity* in models 1 and 2 indicate. Conversely, the positive coefficient of *Venture\_Familiarity* in model 3 suggests that organizational familiarity positively affects applicant attraction, in line with the literature on recruiting.

## 5 Discussion and conclusions

This work aims to clarify how entrepreneurs can persuasively communicate information about their ventures' unique features to job seekers to attract applicants. We investigate how specific verbal and nonverbal expressions—namely communicated product innovativeness and affective passion displayed by the entrepreneur while presenting her/his venture's products/services—affect applicant attraction both separately and in combination.

In line with our predictions, the results show that including verbal descriptions of ventures' products/services aimed at revealing product innovativeness in recruitment messages is associated with increased perceived product innovativeness and, thus, positively related to applicant attraction. Instead, entrepreneurs' nonverbal displays of affective passion have an inverted U-shaped relation with applicant attraction. An increase in the passion displayed by an entrepreneur is associated with an increase in applicant attraction up to a threshold level, beyond which further increases in displayed passion are associated with reductions in applicant attraction. This finding uncovers a "dark side" of passion. Excessive passion makes individuals rigid, unreceptive to feedback, and inflexible (Cardon, 2008; Thorgren & Wincent, 2013; Valierand et al., 2003). Job seekers probably fear that a

too highly passionate entrepreneur would experience irrational dedication to her/his venture and engage in obsessive behavior, which could bring about detrimental effects on venture performance and eventually venture failure (Bélangier et al., 2013; Ho & Pollack, 2014; Sirén et al., 2016). Thus, job seekers are less attracted to new ventures when entrepreneurs display excessive affective passion.

As for the combined effect of verbal and nonverbal expressions, our analyses do not provide evidence of a reinforcing effect of displayed affective passion on the positive relation between communicated and perceived product innovativeness (which, in turn, positively affects applicant attraction). Contrary to our expectations, communicated product innovativeness is positively related to perceived product innovativeness only if the entrepreneur does not display high affective passion. Conversely, if an entrepreneur displays high affective passion, job seekers perceive the venture's products/services as highly innovative, irrespective of the communicated innovativeness. The information processing theory offers a possible explanation for this unexpected result. This theory recognizes that the individual capacity to select and process information is limited and can readily be exceeded (Kahneman, 1973; Simon, 1955). Thus, individuals commonly consider only part of the available information, making appraisals based on selective attention (Jonas et al., 2001; March & Simon, 1958; Simon, 1955). In particular, when faced with multiple informative cues, individuals attend more to the ones that are easier to perceive and process while ignoring others (Shah & Oppenheimer, 2007; Simon, 1976). In our case, processing an entrepreneur's verbal descriptions of her/his venture's products/services is far from easy for job seekers because they usually do not have a comprehensive knowledge of the new venture's technology (Dane & Pratt, 2007; Shanteau, 1988). Under such conditions, the affective passion displayed by the entrepreneur is likely to monopolize the attention of job seekers, hijack their limited cognitive resources, and distract them from processing the content of the entrepreneur's verbal message.

Findings from the current study are expected to make several contributions. First, they contribute to the growing literature on recruiting in new ventures in general and on the early stages of the recruitment process in particular. Most prior studies are based on an employer brand-building perspective and focus on

identifying a series of attributes of new ventures that applicants generally appreciate, such as communal team climate, the flexibility of working schedule, and flat hierarchy (Moser et al., 2017; Tumasjan et al., 2011; Williamson et al., 2002). However, we know much less about how entrepreneurs can effectively communicate information about these attributes to positively influence job seekers' perceptions and their subsequent job-related decisions. Aimed at filling this gap, our study brings a communication perspective into the research on recruiting in new ventures. The study moves the spotlight from specific new venture attributes that are important for job seekers to the importance of recruitment communication, suggesting that the effectiveness of a particular attribute depends on how the entrepreneurs communicate it.

Second, our work offers a twofold contribution to the literature on passion in entrepreneurship. First, we expand the set of new venture stakeholders the entrepreneur's passion can influence. The existing literature on passion has mostly focused on either cognitive and behavioral outcomes of passion for the entrepreneurs themselves (for a review, see Stroe et al., 2019) or the effect of passion on potential investors such as business angels, venture capitalists, or crowdfunding (Chen et al., 2009; Davis et al., 2017; Warnick et al., 2018). Few studies considered the impact of entrepreneurs' passion on new venture employees (Breugst et al., 2012; Cardon, 2008; Hubner et al., 2020) and, to the best of our knowledge, only one recent work started looking at the effect of entrepreneurs' passion on prospective employees (Lewis & Cardon, 2020). In demonstrating that displayed passion also affects applicant attraction to new ventures, we provide further evidence of the importance of passion throughout the entrepreneurial process. Second, our results contribute to the emerging stream of research investigating the dark side of entrepreneurs' passion. The overwhelming majority of existing studies connect entrepreneurs' passion with a host of positive outcomes such as venture growth and performance, access to funding, and entrepreneurial persistence (e.g., Drnovsek et al., 2016; Li et al., 2017; Mueller et al., 2017). On the other hand, research looking at potential adverse outcomes of passion in entrepreneurship has started to grow only recently (De Mol et al., 2018; Ho & Pollack, 2014; Stroe et al., 2020). This work expands the limited knowledge about passion's potential negative consequences in

entrepreneurship by uncovering the negative impact of too high levels of displayed affective passion on applicant attraction.

Third, we contribute to research on persuasive communication in entrepreneurship by showing how entrepreneurs combine verbal expressions and nonverbal behaviors when communicating with job seekers and how these two channels—alone and in combination—influence job seekers' judgments. To date, work on persuasive communication by entrepreneurs has explored verbal and nonverbal communication strategies mostly in isolation (Huang & Pearce, 2015). In contrast, this study examines the influence of verbal expressions and nonverbal behaviors in juxtaposition in entrepreneurial communication. While we know from other contexts (e.g., daily life activities; Kelly et al., 2010) that verbal and nonverbal expressions may be closely linked communication mechanisms (Ambady & Rosenthal, 1992; McNeill, 2005), we know little about their distinct and combined outcomes in the risky and uncertain context of entrepreneurship. These results are a step toward discovering more about verbal and nonverbal communication as synchronized channels, each carrying interdependent but separate meanings.

As with all studies, the current work has several limitations that lead to avenues for future research. First, communication literature (Hovland et al., 1953; Popovich & Wanous, 1982) informs us that the outcome of persuasive recruitment communication also depends on the characteristics of the job seekers that receive recruitment messages. Receiver characteristics are known to be important in persuasion and attitude change (Hovland et al. 1953; McGuire 1968) because individuals differ in how they process and use information (Allinson and Hayes, 1996; Peterson and Deary, 2006; Riding and Cheema, 1991). Although our study recognizes that each job seeker perceives the content of a recruitment message differently, it does not further investigate which characteristics of job seekers might affect the outcome of recruitment communication. Future research can model communication as a joint activity between entrepreneurs and job seekers and includes moderating effects of job seeker characteristics such as gender (Mohammadi and Shafi, 2018), cognitive style (analytical versus intuitive, e.g., Slovic et al. 2002), social perception skills (e.g., Niedenthal et al. 2005), or cultural background on the relations between

verbal and nonverbal expressions and applicant attraction.

Second, we have explored the effects of the entrepreneurs' verbal and nonverbal communication in an early stage of the recruitment process, i.e., the generation of a pool of applicants, but we have not investigated the role of recruitment communication in later stages, i.e., maintaining applicants and influencing their job choices (Barber, 1998). Future works may try to disentangle the effects of recruitment communication on the applicants' acceptance intention and employee-venture matching. Moreover, future studies might test whether the entrepreneurs' verbal and nonverbal recruitment communication matters more in the early stages of the recruitment process when limited information on the venture is available to applicants and new ventures might appear much less attractive to employers than large and established firms.

Third, this research focuses solely on *affective* manifestations of passion as a nonverbal behavior of the entrepreneur sending recruitment messages. However, previous literature informs us that passion can also have cognitive and behavioral expressions (Cardon et al., 2017; Chen et al., 2009). Moreover, we look at general outwardly expressions of passion and do not differentiate between the different domains in which passion can be experienced. Cardon et al. (2009a) recognize that different entrepreneurs may experience passion for the various roles they play in the entrepreneurial process. Thus, they distinguish passion for inventing, passion for founding, and passion for developing. Subsequent studies reveal that stakeholders differently perceive entrepreneurs who experience passion for different roles (e.g., Breugst et al., 2012; Cardon et al., 2017; Mitteness et al., 2012; Warnick et al., 2018). In this work, we focused on the most readily visible manifestation of passion: the nonverbal expressions of the affective passion displayed by an entrepreneur while speaking about her/his venture. We acknowledge that future research should also consider how job seekers perceive and weigh in their job decisions cognitive and behavioral manifestations of passion that the entrepreneur may demonstrate for different entrepreneurial roles.

Finally, a further limitation of this study derives from a research design based on one subpopulation of job seekers—namely, final-year Master of Science Italian students who are about to graduate—which

raises questions about whether similar results would be obtained with different populations of job seekers (e.g., young professionals, experienced professionals, and students of different nationalities). Job seeker characteristics such as age, nationality, previous work, and entrepreneurial experience may impact the outcomes of recruitment communication. As fresh graduates are a key group of future employees for new ventures (Grégoire et al., 2019; Hsu et al., 2017), the decision to target final-year MSc students were made to focus on an undoubtedly relevant pool of prospective applicants, leaving open the possibility to replicate this research in other job seeker groups in the future. In future studies, it would be interesting to explore the relationship between applicant attraction and verbal and nonverbal expressions in groups of job seekers from multiple countries. In doing so, researchers must be sure that there are no communication problems between entrepreneurs and job seekers. If, due to difficulties in using verbal language, entrepreneurs found it hard to verbally communicate the innovativeness of their start-ups' solutions and job seekers found it challenging to understand entrepreneurs' words, job seekers' evaluations might be based more on nonverbal than on verbal expressions. In our study, we alleviated difficulties in verbal language by allowing entrepreneurs and job seekers to use their native language. As we could record videos with Italian entrepreneurs only, we focused on Italian jobseekers. However, future research, e.g., studies developed by international teams of scholars, may involve entrepreneurs and job seekers of different nationalities and native languages.

Despite its limitations, our work has practical implications for entrepreneurs who are fighting the war for talent. As the performance of new ventures is a function of employees' human capital (Crook et al., 2011), enlarging the pool of applicants is crucial to give entrepreneurs the possibility to select and hire talented employees. Our study provides entrepreneurs with practical suggestions about how to persuasively communicate their ventures' attributes to job seekers. Our results suggest that when a venture's products/services are innovative, the entrepreneurs might succeed in enlarging the pool of applicants by providing verbal descriptions of the venture's products/services aimed at revealing product innovativeness. Conversely, when the venture's products/services have a low level of innovativeness, the venture might

benefit from being presented by an entrepreneur able to display affective passion. Nonetheless, displaying excessive passion may turn applicants away from the venture. As many new ventures are founded by teams rather than solo entrepreneurs (Klotz et al., 2014), and team members are likely to display different levels of affective passion while presenting their ventures, our results may guide entrepreneurs' selection of the team members who should interact with job seekers being likely to send more persuasive recruitment messages.

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## Appendix

To record the stimulus videos, we selected a series of ventures in the incubators of two well-known Italian universities. In December 2018, we contacted at least one member of the entrepreneurial team of the selected ventures, either by email or through LinkedIn, and explained the purpose of the research. We then asked for the availability of the entrepreneur usually involved in venture recruiting activities to record a video aimed at presenting her/his venture's product(s)/service(s) to job seekers. We recorded and edited the videos between January and February 2019.

We recorded the videos in the entrepreneurs' offices or meeting rooms. To put the entrepreneurs at ease, we asked them not to look at the camera while speaking. Conversely, a young research assistant joined us at their offices, and we asked the entrepreneurs to talk to her/him, imagining that he/she was a job seeker interested in collecting information about the venture. We recorded the videos with a camera

positioned next to the research assistant so that he/she was not visible in the video.

To reduce the heterogeneity across videos that might influence the evaluations of study participants, we ensured that all entrepreneurs (i) were male, (ii) were sitting at a table while speaking and their gestures and facial expression were visible in the video, and (iii) were dressed in similar ways (specifically, they were all dressing a white or a light blue shirt). We informed the entrepreneurs that the length of the videos to be shown to the study participants should be around 3 min. However, we did not ask them to prepare a 3-min speech. Entrepreneurs were left to speak freely, and the videos were edited to fit the desired duration afterward. To avoid potential response biases stemming from factors related to differences in the information provided by the entrepreneurs, in editing the videos, we removed all the details about the milestones already achieved by the venture (e.g., amount of sales, number of employees, amount of financing received, patents obtained, affiliations with prominent partners/customers), leaving in only information related to the description of the venture's product(s)/service(s).

The videos were shown to study participants between March and April 2019. The video show was conducted in a controlled environment, where one of the authors was always present. The video stimuli were administered to the participants in sessions involving between 2 and 6 participants. Each session lasted 40 to 45 min, and the structure of all sessions was the same. Upon arrival, each participant was seated to ensure no possible communication with other participants. Participants have then assured confidentiality of their responses and informed that the collected data would be used only for research purposes. They were also requested not to discuss the activity with outside friends or colleagues until the data collection had been completed. No rewards were provided in return for participation. Then, participants were instructed to imagine they were in the process of searching for a job and to evaluate the new ventures presented in the upcoming videos. Since this study is not focused on exploring the effects of job characteristics or traditional drivers of applicant attraction (such as company location) on applicant attraction itself, participants were instructed to imagine that

the ventures presented in the videos had job openings in the participants' functional areas of interest, in the city/town where the participants would like to live, and offered market-level salaries. The instructions informed that all the ventures presented in the videos (i) already had customers, (ii) had seen constant growth in their turnover since founding and expected to further increase turnover in 2019, and (iii) had attracted the attention of external investors who already funded them or with whom they were discussing deals.

After completing the briefing, participants started watching the videos and answering the researchers' questions, as described in Sect. 3.1.

## References

- Aristotle, (1991). *The art of rhetoric*. Trans. John Henry Freese. Harvard University Press.
- Agarwal, R., Campbell, B. A., Franco, A. M., & Ganco, M. (2016). What do I take with me? The mediating effect of spin-out team size and tenure on the founder-firm performance relationship. *Academy of Management Journal*, 59(3), 1060–1087. <https://doi.org/10.5465/amj.2012.0853>
- Albright, L., Kenny, D. A., & Malloy, T. E. (1988). Consensus in personality judgments at zero acquaintance. *Journal of personality and Social Psychology*, 55(3), 387.
- Allen, D. G., Scotter, J. R. V., & Otondo, R. F. (2004). Recruitment communication media: Impact on prehire outcomes. *Personnel Psychology*, 57(1), 143–171. <https://doi.org/10.1111/j.1744-6570.2004.tb02487.x>
- Allen, D. G., Mahto, R. V., & Otondo, R. F. (2007). Web-based recruitment: Effects of information, organizational brand, and attitudes toward a web site on applicant attraction. *Journal of Applied Psychology*, 92(6), 1696. <https://doi.org/10.1037/0021-9010.92.6.1696>
- Allinson, J., & Hayes, C. (1996). The cognitive style index, a measure of intuition-analysis for organizational research. *Journal of Management Studies*, 33, 119–135.
- Allred, K. G., Mallozzi, J. S., Matsui, F., & Raia, C. P. (1997). The influence of anger and compassion on negotiation performance. *Organizational Behavior and Human Decision Processes*, 70(3), 175–187. <https://doi.org/10.1006/obhd.1997.2705>
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39(5), 1154–1184. <https://doi.org/10.2307/256995>
- Amabile, T. M., & Mueller, J. S. (2007). Assessing creativity and its antecedents: An exploration of the component theory of creativity. In J. Zhou & C. E. Shalley (Eds.), *The handbook of organizational creativity* (pp. 31–62). Taylor & Francis Group.
- Ambady, N., Bernieri, F. J., & Richeson, J. A. (2000). Toward a histology of social behavior: Judgmental accuracy from thin slices of the behavioral stream. In *Advances in*

- experimental social psychology*, 32, 201–271. Academic Press. [https://doi.org/10.1016/s0065-2601\(00\)80006-4](https://doi.org/10.1016/s0065-2601(00)80006-4)
- Ambady, N., & Rosenthal, R. (1992). Thin slices of expressive behavior as predictors of interpersonal consequences: A meta-analysis. *Psychological Bulletin*, 111, 256–274. <https://doi.org/10.1037/0033-2909.111.2.256>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411. <https://doi.org/10.1037/0033-2909.103.3.411>
- Andrews, J., & Smith, D. C. (1996). In search of the marketing imagination: Factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, 33(2), 174–187. <https://doi.org/10.1177/002224379603300205>
- Backhaus, K., & Tikoo, S. (2004). Conceptualizing and researching employer branding. *Career Development International*, 9, 501–517. <https://doi.org/10.1108/13620430410550754>
- Barber, A. E. (1998). *Recruiting employees: Individual and organization perspectives*. Sage. <https://doi.org/10.4135/9781452243351>
- Baron, J. N., Burton, M. D., & Hannan, M. T. (1996). The road taken: Origins and evolution of employment systems in emerging companies. *Industrial and Corporate Change*, 5, 239–275. <https://doi.org/10.1093/icc/5.2.239>
- Bélanger, J. J., Lafreniere, M. A. K., Vallerand, R. J., & Kruglanski, A. W. (2013). When passion makes the heart grow colder: The role of passion in alternative goal suppression. *Journal of Personality and Social Psychology*, 104(1), 126. <https://doi.org/10.1037/a0029679>
- Bierly, P. E., Kessler, E. H., & Christensen, E. W. (2000). Organizational learning, knowledge and wisdom. *Journal of Organizational Change Management*. <https://doi.org/10.1108/09534810010378605>
- Birdwhistell, R. (1970). *Kinesics and context: Essays on body motion communication*. University of Pennsylvania Press. <https://doi.org/10.9783/9780812201284>
- Bonaccio, S., O'Reilly, J., O'Sullivan, S. L., & Chiochio, F. (2016). Nonverbal behavior and communication in the workplace: A review and an agenda for research. *Journal of Management*, 42(5), 1044–1074. <https://doi.org/10.1177/0149206315621146>
- Bower, G. H., & Forgas, J. P. (2001). Mood and social memory. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 95–120). Lawrence Erlbaum.
- Branzei, O., & Zietsma, C. (2003). *Entrepreneurial love: The enabling functions of positive illusions in venturing*. In Babson-Kauffman Entrepreneurial Research Conference.
- Breugst, N., Domurath, A., Patzelt, H., & Klaukien, A. (2012). Perceptions of entrepreneurial passion and employees' commitment to entrepreneurial ventures. *Entrepreneurship Theory and Practice*, 36(1), 171–192. <https://doi.org/10.1111/j.1540-6520.2011.00491.x>
- Bublitz, E., Nielsen, K., Noseleit, F., & Timmermans, B. (2018). Entrepreneurship, human capital, and labor demand: A story of signaling and matching. *Industrial and Corporate Change*, 27(2), 269–287. <https://doi.org/10.1093/icc/dtx027>
- Burgoon, J., Buller, D., & Woodall, W. (1996). *Nonverbal communication: The unspoken dialogue* (2nd ed.). McGraw-Hill.
- Burgoon, J. K., Manusov, V., Mineo, P., & Hale, J. L. (1985). Effects of gaze on hiring, credibility, attraction and relational message interpretation. *Journal of Nonverbal Behavior*, 9, 133–146. <https://doi.org/10.1007/BF01000735>
- Burgoon, J. K., Birk, T., & Pfau, M. (1990). Nonverbal behaviors, persuasion, and credibility. *Human Communication Research*, 17(1), 140–169. <https://doi.org/10.1111/j.1468-2958.1990.tb00229.x>
- Burgoon, J. K., Manusov, V., & Guerrero, L. K. (2021). Nonverbal communication. *Routledge*. <https://doi.org/10.4324/9781003095552>
- Burgoon, J. K., Buller, D. B., & Woodall, W. G. (1989). *Nonverbal communication: The unspoken dialogue*. Harpercollins College Division.
- Cardon, M. S. (2008). Is passion contagious? The transference of entrepreneurial emotion to employees. *Human Resource Management Review*, 18(2), 77–86. <https://doi.org/10.1016/j.hrmr.2008.04.001>
- Cardon, M. S., Gregoire, D., Stevens, C. E., Patel, P. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing* 28(3), 373–396.
- Cardon, M. S., & Stevens, C. E. (2004). Managing human resources in small organizations: What do we know? *Human Resource Management Review*, 14(3), 295–323. <https://doi.org/10.1016/j.hrmr.2004.06.001>
- Cardon, M. S., Sudek, R., & Mitteness, C. (2009). The impact of perceived entrepreneurial passion on angel investing. *Frontiers of Entrepreneurship Research*, 29(2), 1.
- Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. (2009). The nature and experience of entrepreneurial passion. *Academy of Management Review*, 34(3), 511–532. <https://doi.org/10.5465/AMR.2009.40633190>
- Cardon, M. S., Glauser, M., & Murnieks, C. Y. (2017). Passion for what? Expanding the domains of entrepreneurial passion. *Journal of Business Venturing Insights*, 8, 24–32. <https://doi.org/10.1016/j.jbvi.2017.05.004>
- Chaiken, S. (1979). Communicator physical attractiveness and persuasion. *Journal of Personality and Social Psychology*, 37(8), 1387. <https://doi.org/10.1037/0022-3514.37.8.1387>
- Chapman, D. S., Uggerslev, K. L., Carroll, S. A., Piasentin, K. A., & Jones, D. A. (2005). Applicant attraction to organizations and job choice: A meta-analytic review of the correlates of recruiting outcomes. *Journal of Applied Psychology*, 90(5), 928. <https://doi.org/10.1037/0021-9010.90.5.928>
- Chen, X.-P., Yao, X., & Kotha, S. (2009). Entrepreneur passion and preparedness in business plan presentations: A persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52, 199–214. <https://doi.org/10.5465/AMJ.2009.36462018>
- Clarke, J. S., Cornelissen, J. P., & Healey, M. P. (2019). Actions speak louder than words: How figurative language and gesturing in entrepreneurial pitches influences investment judgments. *Academy of Management Journal*, 62(2), 335–360. <https://doi.org/10.5465/amj.2016.1008>

- Cohen, P., & Levesque, H. (1990). Rational interaction as the basis for communication. In P. Cohen, J. Morgan, & M. Pollack, (Eds.), *Intentions in Communication* (pp. 221–256). MIT Press.
- Cornelissen, L. (2012). *Evaluation of a learning portfolio: How to stimulate self-directed learning among employees in health care* (Master's thesis, University of Twente). <https://purl.utwente.nl/essays/62308>. Accessed 02.12.2021
- Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J., Jr. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology*, *96*(3), 443. <https://doi.org/10.1037/a0022147>
- Damasio, A. (2010). *Self comes to mind*. Pantheon Books.
- Dane, E., & Pratt, M. G. (2007). Exploring intuition and its role in managerial decision making. *Academy of Management Review*, *32*(1), 33–54. <https://doi.org/10.5465/AMR.2007.23463682>
- Davis, B. C., Hmieleski, K. M., Webb, J. W., & Coombs, J. E. (2017). Funders' positive affective reactions to entrepreneurs' crowdfunding pitches: The influence of perceived product creativity and entrepreneurial passion. *Journal of Business Venturing*, *32*(1), 90–106. <https://doi.org/10.1016/j.jbusvent.2016.10.006>
- De Mol, E., Ho, V. T., & Pollack, J. M. (2018). Predicting entrepreneurial burnout in a moderated mediated model of job fit. *Journal of Small Business Management*, *56*(3), 392–411.
- Drnovsek, M., Cardon, M. S., & Patel, P. C. (2016). Direct and indirect effects of passion on growing technology ventures. *Strategic Entrepreneurship Journal*, *10*(2), 194–213.
- Duncan, S., Jr. (1969). Nonverbal communication. *Psychological Bulletin*, *72*(2), 118. <https://doi.org/10.1037/h0027795>
- Eisenhardt, K. M., Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, *35*, 504-529. <https://doi.org/10.2307/2393315>
- Ekman, P. (1993). Facial Expression and Emotion. *American Psychologist*, *48*(4), 384. <https://doi.org/10.1037/0003-066X.48.4.384>
- Ekman, P., & Friesen, W. V. (1972). Hand movements. *Journal of Communication*, *22*(4), 353–374. <https://doi.org/10.1111/j.1460-2466.1972.tb00163.x>
- Elenurm, T., Alas, R., Rozell, E. J., Scroggins, W. A., & Alsua, C. J. (2014). Cultural prototypes of the successful entrepreneur: Comparison of Estonia and the United States. *Journal of Baltic Studies*, *45*(4), 499–515. <https://doi.org/10.1080/01629778.2014.938354>
- Elpers, J. L. W., Mukherjee, A., & Hoyer, W. D. (2004). Humor in television advertising: A moment-to-moment analysis. *Journal of Consumer Research*, *31*, 592–598. <https://doi.org/10.1086/425094>
- Elpers, J. L.W., Wedel, M., Pieters, R. G. (2003). Why do consumers stop viewing television commercials? Two experiments on the influence of moment-to-moment entertainment and information value. *Journal of Marketing Research (JMR)*, *40*(4). <https://doi.org/10.1509/jmkr.40.4.437.19393>
- Erikson, T. (2002). Entrepreneurial capital: The emerging venture's most important asset and competitive advantage. *Journal of Business Venturing*, *17*(3), 275–290. [https://doi.org/10.1016/S0883-9026\(00\)00062-8](https://doi.org/10.1016/S0883-9026(00)00062-8)
- Floyd, K., & Erbert, L. A. (2003). Relational message interpretations of nonverbal matching behavior: An application of the social meaning model. *The Journal of Social Psychology*, *143*(5), 581–597.
- Forgas, J. P., & George, J. M. (2001). Affective influences on judgments and behavior in organizations: An information processing perspective. *Organizational Behavior and Human Decision Processes*, *86*(1), 3–34. <https://doi.org/10.1006/obhd.2001.2971>
- Fort, T. C., Haltiwanger, J., Jarmin, R. S., & Miranda, J. (2013). How firms respond to business cycles: The role of firm age and firm size. *IMF Economic Review*, *61*(3), 520–559. <https://doi.org/10.1057/imfer.2013.15>
- Frederiks, A. J., Englis, B. G., Ehrenhard, M. L., & Groen, A. J. (2019). Entrepreneurial cognition and the quality of new venture ideas: An experimental approach to comparing future-oriented cognitive processes. *Journal of Business Venturing*, *34*(2), 327–347. <https://doi.org/10.1016/j.jbusvent.2018.05.007>
- Garcia, S., Stinson, L., Ickes, W., Bissonnette, V., & Briggs, S. R. (1991). Shyness and physical attractiveness in mixed-sex dyads. *Journal of Personality and Social Psychology*, *61*(1), 35. <https://doi.org/10.1037/0022-3514.61.1.35>
- Garud, R., Schildt, H., & Lant, T. (2014). Entrepreneurial storytelling, future expectations, and the paradox of legitimacy. *Organization Science*, *25*, 1479–1492. <https://doi.org/10.1287/orsc.2014.0915>
- Giorgi, S., & Weber, K. (2015). Marks of distinction: Framing and audience appreciation in the context of investment advice. *Administrative Science Quarterly*, *60*(2), 333–367. <https://doi.org/10.1177/0001839215571125>
- Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity. *Academy of Management Journal*, *54*(1), 73–96. <https://doi.org/10.5465/amj.2011.59215085>
- Greer, C. R., Carr, J. C., & Hipp, L. (2016). Strategic staffing and small-firm performance. *Human Resource Management*, *55*(4), 741–764. <https://doi.org/10.1002/hrm.21693>
- Grégoire, D. A., Binder, J. K., & Rauch, A. (2019). Navigating the validity tradeoffs of entrepreneurship research experiments: A systematic review and best-practice suggestions. *Journal of Business Venturing*, *34*(2), 284–310. <https://doi.org/10.1016/j.jbusvent.2018.10.002>
- Hair, J. F., Black, W. C., Babin, B. J., & R. E. (2009). *Multivariate data analysis* (7th ed.). Prentice-Hall.
- Hansen, C. H., & Hansen, R. D. (1988). Finding the face in the crowd: An anger superiority effect. *Journal of Personality and Social Psychology*, *54*, 917–924. <https://doi.org/10.1037/0022-3514.54.6.917>
- Harris, M. M., & Fink, L. S. (1987). A field study of applicant reactions to employment opportunities: Does the recruiter make a difference? *Personnel Psychology*, *40*(4), 765–784. <https://doi.org/10.1111/j.1744-6570.1987.tb00623.x>
- Haskins, E. V. (2004). *Logos and power in Isocrates and Aristotle*. University of South Carolina Press.

- Heck, R. H., Thomas, S. L., & Tabata, L. N. (2010). Multilevel and longitudinal modeling with IBM SPSS. *Routledge/taylor & Francis Group, New York*. <https://doi.org/10.4324/9780203855263>
- Ho, V. T., & Pollack, J. M. (2014). Passion isn't always a good thing: Examining entrepreneurs' network centrality and financial performance with a dualistic model of passion. *Journal of Management Studies*, 51(3), 433–459. <https://doi.org/10.1111/joms.12062>
- House, R., Javidan, M., Hanges, P., & Dorfman, P. (2002). Understanding cultures and implicit leadership theories across the globe: An introduction to project GLOBE. *Journal of World Business*, 37(1), 3–10. [https://doi.org/10.1016/S1090-9516\(01\)00069-4](https://doi.org/10.1016/S1090-9516(01)00069-4)
- Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). Communication and persuasion. Yale University Press.
- Howard, J. L., & Ferris, G. R. (1996). The employment interview context: Social and situational influences on interviewer decisions. *Journal of Applied Social Psychology*, 26, 112–136. <https://doi.org/10.1111/j.1559-1816.1996.tb01841.x>
- Hsu, D. K., Simmons, S. A., & Wieland, A. M. (2017). Designing entrepreneurship experiments: A review, typology, and research agenda. *Organizational Research Methods*, 20(3), 379–412. <https://doi.org/10.1177/1094428116685613>
- Huang, L., & Pearce, J. L. (2015). Managing the unknowable: The effectiveness of early-stage investor gut feel in entrepreneurial investment decisions. *Administrative Science Quarterly*, 60(4), 634–670. <https://doi.org/10.1177/0001839215597270>
- Hubner, S., Baum, M., & Frese, M. (2020). Contagion of entrepreneurial passion: Effects on employee outcomes. *Entrepreneurship Theory and Practice*, 44(6), 1112–1140.
- Hubner, S., Rudic, B., & Baum, M. (2021). How entrepreneur's leadership behavior and demographics shape applicant attraction to new ventures: The role of stereotypes. *The International Journal of Human Resource Management*, 1–36. <https://doi.org/10.1080/09585192.2021.1893785>
- ISTAT Istituto Nazionale di Statistica (2018). Start up survey (in collaboration with the Italian Ministry of Economic Development). <https://www.istat.it/it/files/2018/02/Rapporto-Startup.pdf>. Accessed 12.11.2021
- Jonas, E., Schulz-Hardt, S., Frey, D., & Thelen, N. (2001). Confirmation bias in sequential information search after preliminary decisions: An expansion of dissonance theoretical research on selective exposure to information. *Journal of Personality and Social Psychology*, 80(4), 557. <https://doi.org/10.1037/0022-3514.80.4.557>
- Kahneman, D. (1973). *Attention and effort*. Prentice-Hall.
- Kammeyer-Mueller, J., & Liao, H. (2006). Workforce reduction and job-seeker attraction: Examining job seekers' reactions to firm workforce-reduction policies. *Human Resource Management: Published in Cooperation with the School of Business Administration, the University of Michigan and in Alliance with the Society of Human Resources Management*, 45(4), 585–603. <https://doi.org/10.1002/hrm.20133>
- Katz, J. A., Aldrich, H. E., Welbourne, T. M., & Williams, P. M. (2000). Guest editor's comments: Special issue on human resource management and the SME: Toward a new synthesis. *Entrepreneurship Theory and Practice*, 25(1), 7–10. <https://doi.org/10.1177/104225870002500102>
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1–22. <https://doi.org/10.2307/1252054>
- Keller, R. T. (2012). Predicting the performance and innovativeness of scientists and engineers. *Journal of Applied Psychology*, 97(1), 225. <https://doi.org/10.1037/a0025332>
- Kelly, S. D., Özyürek, A., & Maris, E. (2010). Two sides of the same coin: Speech and gesture mutually interact to enhance comprehension. *Psychological Science*, 21(2), 260–267. <https://doi.org/10.1177/0956797609357327>
- Klofsten, M. (1994). Technology-based firms: Critical aspects of their early development. *Journal of Enterprising Culture*, 2(01), 535–557. <https://doi.org/10.1142/S0218495894000148>
- Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. *Journal of Management*, 40(1), 226–255. <https://doi.org/10.1177/0149206313493325>
- Kraichy, D., & Chapman, D. S. (2014). Tailoring web-based recruiting messages: Individual differences in the persuasiveness of affective and cognitive messages. *Journal of Business and Psychology*, 29(2), 253–268. <https://doi.org/10.1007/s10869-013-9311-z>
- Krauss, R. M., Chen, Y., Chawla, P. (1996). Nonverbal behavior and nonverbal communication: What do conversational hand gestures tell us?. I 28, 389–450. Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)60241-5](https://doi.org/10.1016/S0065-2601(08)60241-5)
- Kunz, W., Schmitt, B., & Meyer, A. (2011). How does perceived firm innovativeness affect the consumer?. *Journal of Business Research*, 64(8), 816–822. <https://doi.org/10.1016/j.jbusres.2010.10.005>
- Laver, J. (1999). Towards an integrated theory of nonverbal communication. In *Proceedings of the 14th International Congress of Phonetic Sciences-ICPhS99, San Francisco. Berkeley: University of California* 2433–6.
- Lee, Y., & Colarelli O'Connor, G. (2003). The impact of communication strategy on launching new products: The moderating role of product innovativeness. *Journal of Product Innovation Management*, 20(1), 4–21. <https://doi.org/10.1111/1540-5885.t01-1-201002>
- Lewis, T., & Cardon, M. S. (2020). The magnetic value of entrepreneurial passion for potential employees. *Journal of Business Venturing Insights*, 14, e00193. <https://doi.org/10.1016/j.jbvi.2020.e00193>
- Li, J. J., Chen, X. P., Kotha, S., & Fisher, G. (2017). Catching fire and spreading it: A glimpse into displayed entrepreneurial passion in crowdfunding campaigns. *Journal of Applied Psychology*, 102(7), 1075. <https://doi.org/10.1037/apl0000217>
- Longenecker, J. G., Moore, C. W., & Petty, J. W. (1994). *Small business management: An entrepreneurship emphasis*. Southwestern Publishing.
- McGuire, W. J. (1968). Personality and attitude change: An information-processing theory. *Psychological Foundations of Attitudes*, 171, 196.



- March, J. G., & Simon, H. A. (1958). *Organizations*. Wiley. <https://doi.org/10.1017/S1373971900074230>
- Marsh, K. L., Hart-O'Rourke, D. M., & Julka, D. L. (1997). The persuasive effects of verbal and nonverbal information in a context of value relevance. *Personality and Social Psychology Bulletin*, 23(6), 563–579. <https://doi.org/10.1177/0146167297236001>
- Mayson, S., & Barrett, R. (2006). The 'science' and 'practice' of HRM in small firms. *Human Resource Management Review*, 16(4), 447–455. <https://doi.org/10.1016/j.hrmr.2006.08.002>
- McElroy, J. C., Summers, J. K., & Moore, K. (2014). The effect of facial piercing on perceptions of job applicants. *Organizational Behavior and Human Decision Processes*, 125, 26–38. <https://doi.org/10.1016/j.obhdp.2014.05.003>
- McGovern, T. V., & Tinsley, H. E. (1978). Interviewer evaluations of interviewee nonverbal behavior. *Journal of Vocational Behavior*, 13, 163–171. [https://doi.org/10.1016/0001-8791\(78\)90041-6](https://doi.org/10.1016/0001-8791(78)90041-6)
- McNeill, D. (2005). *Gesture and thought*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226514642.001.0001>
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415–444. <https://doi.org/10.1146/annurev.soc.27.1.415>
- Mittness, C., Sudek, R., & Cardon, M. S. (2012). Angel investor characteristics that determine whether perceived passion leads to higher evaluations of funding potential. *Journal of Business Venturing*, 27(5), 592–606. <https://doi.org/10.1016/j.jbusvent.2011.11.003>
- Moore, C. F. (1986). Understanding entrepreneurial behavior: A definition and model. In *Academy of Management Proceedings*, 1986(1), 66–70. Briarcliff Manor, NY 10510: Academy of Management. <https://doi.org/10.5465/ambpp.1986.4978712>
- Mohammadi, A., & Shafi, K. (2018). Gender differences in the contribution patterns of equity-crowdfunding investors. *Small Business Economics*, 50(2), 275–287.
- Moroko, L., & Uncles, M. D. (2008). Characteristics of successful employer brands. *Journal of Brand Management*, 16(3), 160–175. <https://doi.org/10.1057/bm.2008.4>
- Moser, K. J., Tumasjan, A., & Welpe, I. M. (2017). Small but attractive: Dimensions of new venture employer attractiveness and the moderating role of applicants' entrepreneurial behaviors. *Journal of Business Venturing*, 32(5), 588–610. <https://doi.org/10.1016/j.jbusvent.2017.05.001>
- Mueller, B. A., Wolfe, M. T., & Syed, I. (2017). Passion and grit: An exploration of the pathways leading to venture success. *Journal of Business Venturing*, 32(3), 260–279.
- Murnieks, C. Y., Mosakowski, E., & Cardon, M. S. (2014). Pathways of passion: Identity centrality, passion, and behavior among entrepreneurs. *Journal of Management*, 40(6), 1583–1606. <https://doi.org/10.1177/0149206311433855>
- Murnieks, C. Y., McMullen, J. S., & Cardon, M. S. (2019). Does congruence with an entrepreneur social identity encourage positive emotion under environmental dynamism? *Journal of Small Business Management*, 57(3), 872–890. <https://doi.org/10.1111/jsbm.12335>
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review*, 9(3), 184–211.
- Niedenthal, P., & Kitayama, S. (1994). Introduction. In P. Niedenthal & S. Kitayama (Eds.), *The heart's eye: Emotional influences in perception and attention* (pp. 1–14). Academic Press.
- Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychology: General*, 136, 466–478. <https://doi.org/10.1037/0096-3445.130.3.466>
- Ouimet, P., & Zarutskie, R. (2014). Who works for start-ups? The relation between firm age, employee age, and growth. *Journal of Financial Economics*, 112(3), 386–407. <https://doi.org/10.1016/j.jfineco.2014.03.003>
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In *Communication and persuasion*, 1–24. Springer, New York, NY. [https://doi.org/10.1007/978-1-4612-4964-1\\_1](https://doi.org/10.1007/978-1-4612-4964-1_1)
- Peterson, E. R., & Deary, I. J. (2006). Examining wholistic-analytic style using preferences in early information processing. *Personality and Individual Differences*, 41, 3–14. <https://doi.org/10.1016/j.paid.2005.12.010>
- Philippe, F. L., Vallerand, R. J., Houliort, N., Lavigne, G. L., & Donahue, E. G. (2010). Passion for an activity and quality of interpersonal relationships: The mediating role of emotions. *Journal of Personality and Social Psychology*, 98, 917–932. <https://doi.org/10.1037/a0018017>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544. <https://doi.org/10.1177/014920638601200408>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Pollack, J. M., Rutherford, M. W., & Nagy, B. G. (2012). Preparedness and cognitive legitimacy as antecedents of new venture funding in televised business pitches. *Entrepreneurship Theory and Practice*, 36(5), 915–939. <https://doi.org/10.1111/j.1540-6520.2012.00531.x>
- Popovich, P., & Wanous, J. P. (1982). The realistic job preview as a persuasive communication. *Academy of Management Review*, 7(4), 570–578. <https://doi.org/10.2307/257223>
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731. <https://doi.org/10.3758/BF03206553>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Rau, B. L., & Hyland, M. A. M. (2002). Role conflict and flexible work arrangements: The effects on applicant

- attraction. *Personnel Psychology*, 55(1), 111–136. <https://doi.org/10.1111/j.1744-6570.2002.tb00105.x>
- Riding, R. J., & Cheema, I. (1991). Cognitive styles: An overview and integration. *Educational Psychology*, 11, 193–215. <https://doi.org/10.1080/0144341910110301>
- Roberson, Q. M., Collins, C. J., & Oreg, S. (2005). The effects of recruitment message specificity on applicant attraction to organizations. *Journal of Business and Psychology*, 19, 319–339.
- Rynes, S. L. (1991). Recruitment, job choice, and post-hire consequences: A call for new research directions. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology*, vol. 2 (2d ed.): 399–444. Palo Alto, CA: Consulting Psychologists.
- Sethi, R., Smith, D. C., & Park, C. W. (2001). Cross-functional product development teams, creativity, and the innovativeness of new consumer products. *Journal of Marketing Research*, 38(1), 73–85. <https://doi.org/10.1509/jmkr.38.1.73.18833>
- Shah, A. K., & Oppenheimer, D. M. (2007). Easy does it: The role of fluency in cue weighting. *Judgement and Decision Making*, 2, 371–379.
- Shanteau, J. (1988). Psychological characteristics and strategies of expert decision makers. *Acta Psychologica*, 68(1–3), 203–215. [https://doi.org/10.1016/0001-6918\(88\)90056-X](https://doi.org/10.1016/0001-6918(88)90056-X)
- Shepherd, D. A., & DeTienne, D. R. (2005). Prior knowledge, potential financial reward, and opportunity identification. *Entrepreneurship Theory and Practice*, 29(1), 91–112. <https://doi.org/10.4337/9781783479801.00013>
- Simon, H. A. (1955). A behavioral model of rational choice. *Quarterly Journal of Economics*, 69, 99–118. <https://doi.org/10.2307/1884852>
- Simon, H. A. (1976). From substantive to procedural rationality. In *25 years of economic theory*, 65–86. Springer, Boston, MA. [https://doi.org/10.1007/978-1-4613-4367-7\\_6](https://doi.org/10.1007/978-1-4613-4367-7_6)
- Sirén, C., Patel, P. C., & Wincent, J. (2016). How do harmonious passion and obsessive passion moderate the influence of a CEO's change-oriented leadership on company performance? *The Leadership Quarterly*, 27(4), 653–670. <https://doi.org/10.1016/j.leaqua.2016.03.002>
- Slovic, P., Finucane, M., Peters, E., & MacGregor, D. G. (2002). The affect heuristic. In T. Gilovich, D. Griffin & D. Kahneman (Eds.), *Heuristics and biases* (pp. 397–420). Cambridge University Press.
- Smilor, R. W. (1997). Entrepreneurship: Reflections on a subversive activity. *Journal of Business Venturing*, 12(5), 341–346. [https://doi.org/10.1016/S0883-9026\(97\)00008-6](https://doi.org/10.1016/S0883-9026(97)00008-6)
- Sommer, L. P., Heidenreich, S., & Handrich, M. (2017). War for talents—How perceived organizational innovativeness affects employer attractiveness. *R&D Management*, 47(2), 299–310. <https://doi.org/10.1111/radm.12230>
- Stanovich, K. E. (1999). *Who is rational? Studies of individual differences in reasoning*. Erlbaum.
- Steigenberger, N., & Wilhelm, H. (2018). Extending signaling theory to rhetorical signals: Evidence from crowdfunding. *Organization Science*, 29(3), 529–546. <https://doi.org/10.1287/orsc.2017.1195>
- Stinchcombe, A. L. (1965). Social structure and organizations. *Handbook of Organizations*, 7, 142–193.
- Stroe, S., Sirén, C., Shepherd, D., & Wincent, J. (2020). The dualistic regulatory effect of passion on the relationship between fear of failure and negative affect: Insights from facial expression analysis. *Journal of Business Venturing*, 35(4), 105948. <https://doi.org/10.1016/j.jbusvent.2019.105948>
- Stroe, S., Thorgren, S., Wincent, J. (2019). The outcomes of passion in entrepreneurship. *Passion for Work: Theory, Research, and Applications*, 463. <https://doi.org/10.1093/oso/9780190648626.003.0016>
- Thorgren, S., & Wincent, J. (2013). Passion and role opportunity search: Interfering effects of conflicts and overloads. *International Journal of Stress Management*, 20(1), 20. <https://doi.org/10.1037/a0031457>
- Tumasjan, A., Strobel, M., & Welpe, I. M. (2011). Employer brand building for start-ups: Which job attributes do employees value most? *Zeitschrift Für Betriebswirtschaft*, 81(6), 111–136. <https://doi.org/10.1007/s11573-011-0507-2>
- Turban, D. B., & Dougherty, T. W. (1992). Influences of campus recruiting on applicant attraction to firms. *Academy of Management Journal*, 35(4), 739–765. <https://doi.org/10.5465/256314>
- Turban, D. B., Forret, M. L., & Hendrickson, C. L. (1998). Applicant attraction to firms: Influences of organization reputation, job and organizational attributes, and recruiter behaviors. *Journal of Vocational Behavior*, 52(1), 24–44. <https://doi.org/10.1006/jvbe.1996.1555>
- Uggerslev, K. L., Fassina, N. E., & Kraichy, D. (2012). Recruiting through the stages: A meta-analytic test of predictors of applicant attraction at different stages of the recruiting process. *Personnel Psychology*, 65(3), 597–660. <https://doi.org/10.1111/j.1744-6570.2012.01254.x>
- Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26(3), 341–358. <https://doi.org/10.1016/j.jbusvent.2009.09.004>
- Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Léonard, M., & Marsolais, J. (2003). Les passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85(4), 756. <https://doi.org/10.1037/0022-3514.85.4.756>
- Vallerand, R. J., Salvy, S. J., Mageau, G. A., Elliot, A. J., Denis, P. L., Grouzet, F. M., & Blanchard, C. (2007). On the role of passion in performance. *Journal of Personality*, 75(3), 505–534. <https://doi.org/10.1111/j.1467-6494.2007.00447.x>
- Walker, H. J., Feild, H. S., Giles, W. F., Armenakis, A. A., & Bernerth, J. B. (2009). Displaying employee testimonials on recruitment web sites: Effects of communication media, employee race, and job seeker race on organizational attraction and information credibility. *Journal of Applied Psychology*, 94(5), 1354. <https://doi.org/10.1037/a0014964>
- Warnick, B. J., Murnieks, C. Y., McMullen, J. S., & Brooks, W. T. (2018). Passion for entrepreneurship or passion for the product? A conjoint analysis of angel and VC decision-making. *Journal of Business Venturing*, 33(3), 315–332. <https://doi.org/10.1016/j.jbusvent.2018.01.002>
- Wilden, R., Gudergan, S., & Lings, I. (2010). Employer branding: Strategic implications for staff recruitment. *Journal*

*of Marketing Management*, 26(1–2), 56–73. <https://doi.org/10.1080/02672570903577091>

- Williamson I. O., Cable D. M., Aldrich H. E. (2002) Smaller but not necessarily weaker: How small businesses can overcome barriers to recruitment. In: Katz J, Lumpkin T (eds) *Managing people in entrepreneurial organizations* (Advances in entrepreneurship, firm emergence and growth, vol 5). Emerald Group Publishing Limited, West Yorkshire, 83–106. [https://doi.org/10.1016/S1074-7540\(02\)05005-5](https://doi.org/10.1016/S1074-7540(02)05005-5)
- Woodzicka, J. A. (2008). Sex differences in self-awareness of smiling during a mock job interview. *Journal of Nonverbal Behavior*, 32, 109–121. <https://doi.org/10.1007/s10919007-0046-2>

Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206. <https://doi.org/10.1086/651257>

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