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Founder smiles increase investor trust and funding

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Entrepreneurs seeking funding increasingly present themselves to investors for the first time online. In these digital first impressions, some entrepreneurs smile while others do not. We posit that smiling increases investors' perceptions of trustworthiness and willingness to invest. Through five studies, we investigate this effect. Two pilot studies provide initial evidence: one based on interviews with 10 early-stage investors and another on a randomized experiment involving 210 entrepreneurs and prospective entrepreneurs, both showing that smiling boosts perceived trustworthiness and investor interest. Building on these findings, an analysis of 20,316 ventures on Crunchbase demonstrates that smiling in profile pictures is significantly associated with both higher likelihood of securing funding and higher amount raised. A study of 1,091 Shark Tank pitches further reveals that smiling is associated with higher funding odds, with trustworthiness serving as a key mediator. Finally, in a randomized experiment with 51 venture capitalists, founders were assessed as having a 16.6% higher probability of a successful exit and were valued $2.1 million more than non-smiling founders, with trustworthiness mediating 36% and 27% of the overall treatment effect for venture valuation and exit probability, respectively.

Entrepreneurs seeking external funding typically face significant hurdles when pitching their ideas to investors. Not only must they demonstrate the viability of their business models, but they must also convey traits—such as trustworthiness—that reassure prospective funders they will use the capital effectively[1]. Non-verbal signals are an important component of these impressions[2,3] particularly because many investor–entrepreneur interactions now occur online or under time pressure. These signals serve as shortcuts to help investors quickly gauge an entrepreneur's credibility and intentions when little other concrete information is available.

Research on non-verbal communication has shown that subtle cues—ranging from voice intensity to facial expressions—can alter observers' assessments of interpersonal and professional qualities[4]. Within entrepreneurial settings, scholars have documented that certain nonverbal behaviors can help founders secure funding by making their ventures appear more promising[2]. However, most existing work has focused on correlational evidence in crowdfunding settings, which typically differ from high-stakes environments involving angel investors or venture capitalists.

Our study addresses this gap by examining the role of smiling in shaping perceptions of founder trustworthiness, which, in turn, affects investors' willingness to invest and the magnitude of their investment. We build on the Ability-Benevolence-Integrity (ABI) model of trustworthiness[5,6] to argue that a founder's smile can send a credible signal of benevolence and integrity[7,8] even before the entrepreneur has an opportunity to showcase deeper competencies. Because investors often lack the information needed to verify an entrepreneur's claims about their venture[9] they rely on these early impressions to decide whether further investigation—or funding—might be warranted.

Building on prior research linking nonverbal cues to investment success[10,11] we seek to address two key questions:

RQ1: Does founder smiling cause investors to increase their willingness to invest and the magnitude of their investment?
RQ2: Does trustworthiness mediate the relationship between smiling and investors' willingness to invest?

To answer these questions, we conducted five studies: two pilot studies and three main studies. The first pilot consisted of interviews with 10 early-stage investors, while the second used a randomized experiment with 210 entrepreneurs and prospective entrepreneurs. Building on the preliminary findings from the pilot studies, we conducted three main studies. The first study examined 20,316 Crunchbase-listed ventures to test the relationship

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between founders' smiles in profile photos and funding success, controlling for multiple venture- and founder-level characteristics. The second study analyzed 1,091 Shark Tank pitches, employing computer vision and deep learning to quantify entrepreneurs' smiling behaviour, and tested its association with funding and its potential connection to trustworthiness. Finally, in a randomized experiment with 51 venture capitalists, we systematically manipulated pitch deck photos to test the causal impact of entrepreneur smiling on investment decisions—including perceived investment opportunity, company valuation, and probability of exit—and demonstrated that this effect is mediated by perceived trustworthiness using fixed-effects regression models.

Our findings make two key contributions to the literature. First, based on our within-subjects randomized controlled experiment with venture capitalists, we provide causal evidence that founders' smiling in pitch materials positively influences funding decisions—including perceived investment opportunity, company valuation, and likelihood of exit—while addressing concerns about the generalizability of prior findings from crowdfunding contexts. Second, we identify trustworthiness as a key mediating mechanism through which smiling influences funding outcomes, offering the first empirical evidence to directly link trustworthiness with the relationship between founders' smiles and investment decisions. Additionally, unlike existing research, which often focuses on either the entrepreneur's pitching behavior or the investor's decision-making in isolation[12]our study bridges both perspectives by examining both the entrepreneurs' smiles and the investors' trust.

Related work

The success of entrepreneurs in securing investment is significantly influenced by how they present themselves and their ventures. Personal and communicative characteristics[13,14] including nonverbal cues, play pivotal roles in this process. Nonverbal cues—encompassing body language, facial expressions, and paralinguistic features—are critical in business settings for establishing trustworthiness and shaping investor decisions.

Investor decision-making and nonverbal cues in business settings

Investor decision-making in entrepreneurial contexts is influenced by both objective business metrics and subjective impressions derived from nonverbal cues. Foundational research emphasizes that body language and other nonverbal signals are integral to the formation of first impressions in business interactions[4]. Similarly, increased voice intensity has been shown to be associated with higher perceived passion, which in turn enhances the likelihood of securing investment[15]. Additional research on nonverbal cues of entrepreneurs reveals that gestural cues during pitches enable investors to construct vivid mental images of a venture's potential, thereby positively influencing funding decisions[2,3].

Observational studies in the context of crowdfunding have further explored the relationship between nonverbal cues and funding outcomes. Facial expressions, particularly moderate expressions of joy, are associated with increased investment success among crowdfunders[10,11]. Moreover, facial expressions have been found to influence funding decisions in gender-specific ways, underscoring the role that nonverbal cues play in crowdfunders evaluations[16]. While these studies offer valuable insights, most are correlational and focus on crowdfunder behavior, leaving open the question of whether founder smiling exerts a direct causal effect on investors' willingness to invest and on the magnitude of their investments among traditional investors such as angel investors or venture capitalists. This study addresses this gap by experimentally testing the causal impact of smiling on investment decisions (RQ1).

First impressions and trustworthiness in entrepreneurial contexts

In entrepreneurial settings, first impressions are critical because they shape investors' assessments of an entrepreneur's trustworthiness, a key determinant in overcoming information asymmetry. Entrepreneurs must establish trust to persuade investors to commit capital despite the inherent uncertainties of early-stage ventures. When investors perceive entrepreneurs as trustworthy, they are more inclined to believe the entrepreneurs' claims, even in the absence of complete information[9]. The Ability-Benevolence-Integrity (ABI) model[5,6] conceptualizes trustworthiness in terms of competence, goodwill, and honesty. Investors expect that an entrepreneur is capable of executing their vision (ability), possesses genuine concern for stakeholders (benevolence), and adheres to ethical principles (integrity)[1,17].

These dimensions are particularly salient in startup funding contexts, where even minor uncertainties about an entrepreneur's ability, benevolence, or integrity can lead investors to reject a venture[18,19]. Psychological research indicates that investors rapidly assess trustworthiness based on facial cues, with findings suggesting that initial impressions of a person's face play a crucial role in evaluating credibility[8,20]. Some studies further suggest that facial appearance influences perceived trustworthiness[7,21] and can promote trust in economic exchanges[22,23]. However, these studies are not situated in the context of entrepreneurship or real-world investor decision-making in high-stakes environments (e.g., angel investors, venture capitalists), leaving open the question of whether similar effects hold in high-stakes business interactions. Furthermore, while prior research establishes a link between facial characteristics and trustworthiness perceptions, it does not determine whether trustworthiness serves as a causal mechanism explaining how such impressions influence investor behavior. Past studies also fail to quantify the degree to which trust mediates the relationship between nonverbal cues and investment outcomes. This study addresses this gap by focusing specifically on smiling and employing an experimental design to assess whether—and to what extent—trustworthiness mediates the effect of smiling on investors' willingness to invest (RQ2).

Methodology

To address our research questions on whether founder smiling increases investors' willingness to invest (RQ1) and whether trustworthiness mediates this effect (RQ2), we employed a multi-study design that combines

both qualitative and quantitative approaches. Two pilot studies laid the groundwork. Pilot Study 1 used semi-structured interviews with 10 early-stage investors to explore how smiling might shape their perceptions of entrepreneurs. Pilot Study 2 then used a between-subjects randomized experiment with 210 entrepreneurs and prospective entrepreneurs to test whether trustworthiness serves as a mediator in the relationship between smiling and venture evaluations.

Building on these insights, we conducted three main studies in distinct empirical contexts to systematically address our research questions. Study 1 analysed a large dataset of 20,316 ventures from Crunchbase, quantitatively exploring the relationship between smiling in founders' profile photos and actual funding outcomes. Given the archival nature of Study 1, trustworthiness was not assessed directly in this analysis.

In studies 2 and 3, we explicitly followed a two-step analytic approach. First, we established direct relationships between founder smiling and funding outcomes without including trustworthiness. Next, we introduced and examined trustworthiness explicitly as a mediator. Specifically, Study 2 analyzed real-world pitch interactions from the television program Shark Tank ($N = 1{,}091$ pitches), first establishing the direct smiling–funding association and subsequently examining trustworthiness mediation. Similarly, Study 3, using a within-subjects randomized experiment with 51 professional venture capitalists, initially tested the direct causal effect of founder smiling on investment decisions, and then analyzed trustworthiness as a mediator under experimentally controlled conditions.

Pilot study 1: Interviews with early-stage investors

To assess the plausibility of our research questions, we conducted a qualitative, interview-based pilot study with 10 early-stage investors. The goal was to explore their perceptions of entrepreneurs' facial expressions, particularly smiling, in first-impression pitch settings.

Participants

The participants were selected from our professional network, representing a diverse range of investment experience and geographical regions. On average, the investors had more than ten years of experience, with individual tenures ranging from four to twenty-seven years. Collectively, they had invested in several hundreds of startups, and the primarily operate in the United States, the United Kingdom, Israel, Ireland, and Greece.

Interview procedure and questions

Interviews were conducted in a semi-structured format, allowing for open-ended discussions while ensuring consistency across responses. Investors were asked the following key questions: "1. Do you notice founders' facial expressions when they pitch to you?", "2. Do you prefer when founders smile or not smile during a pitch?", "3. Why do you like (or dislike) when founders smile?", "4. Do you feel that a founder's smile makes them more (or less) trustworthy? If so, why?".

The interviews provided qualitative insights into how investors interpret facial expressions in pitch settings and whether smiling influences their perception of trustworthiness. These findings informed the design of our subsequent quantitative studies.

Pilot study 2: Randomized experiment with entrepreneurs

To assess the plausibility of our 2nd research question, we designed a between-subjects experiment that observes trustworthiness (using measures of ability, benevolence, and integrity evaluations) to test whether trustworthiness is a mediator between randomly assigned entrepreneur smiling and venture evaluations.

Data and sample

We recruited 210 participants (120 registered SME founders in Sweeden and 90 prospective entrepreneurs) through three university-affiliated incubators. Founders were predominantly resident in an incubator, whereas prospective entrepreneurs were senior business students working on venture projects, some partnered with full-time founders in the incubators.

While prospective entrepreneurs are not investors, they often operate in similar evaluative environments where pitch quality, perceived founder competence, and market viability are rapidly assessed. Many founders eventually become angel investors themselves or participate in early-stage screening panels, making them a relevant proxy population for studying pitch perception. Moreover, because these individuals are actively building ventures or considering doing so, they bring a heightened sensitivity to what constitutes a strong or weak pitch because they are learning and benchmarking against other pitches. Their perspectives can illuminate true decision heuristics that formal investors may hold but not reveal.

Independent variables

We randomly assigned participants to view a pitch delivered by either a smiling or a non-smiling entrepreneur. The stimuli in this experiment are videos of entrepreneur pitches ostensibly for a nascent legal tech startup. Two entrepreneurs volunteered to film these stimuli videos. These confederates rehearsed together so that they received the same instructions at the same time from experimenters, and converged upon a similar delivery and intensity of verbal and non-verbal communication[24]. After five hours of rehearsals, they donned a similar nondescript wardrobe, and each recorded this 75-second script while smiling and again while not smiling:

> Hello I am the founder of [company name]. We are a legal-tech startup on a mission to disrupt the legal services industry by making high-quality digital legal solutions accessible to all. Today, the legal service industry is characterized by high prices and a complete lack of transparency. For private individuals and small companies, even simple tasks like writing relatively basic contracts often require visiting a law

firm's offices and paying steep hourly fees. Our goal is to change that by using a digital platform and powerful natural language processing algorithms to automate legal advice and contract writing. We are unique among legal service providers in offering a full-service digital platform that makes customers feel empowered and in-control. Using our proven platform we can provide customers with access to on-demand, high-quality legal solutions for low, transparent prices, all in the comfort of their own homes or businesses. Our scalable business model also enables us to serve customers at a fraction of the cost of traditional competitors.

Dependent variables

ABI trustworthiness: In line with the ABI trustworthiness model, we captured direct judgments of the ability, benevolence, and integrity of the target entrepreneur after each participant viewed the stimulus. We captured these tripartite components of trustworthiness on a 1–7 Likert scale with these 3 items (Cronbach's $\alpha = 0.85$): 1. "How competent is this entrepreneur? (Ability)", "2. How good-natured is this entrepreneur? (Benevolence)", "3. How honest is this entrepreneur? (Integrity)".

Propensity to Invest: Recent research on investor evaluations regarding non-verbal behaviors in entrepreneurial pitches suggests that the propensity to invest is an appropriate outcome to measure immediately following a pitch, rather than final funding outcomes that may evolve over an extended negotiation or due-diligence process[3]. Propensity to invest was captured on a 1–7 Likert scale with these 4 items (Cronbach's $\alpha = 0.86$): "1. How interested are you in finding out more information about this venture?", "2. How likely is it that you would do further research into the industry and/or market of the business?", "3. How interested are you in meeting this entrepreneur to discuss this venture?", "4. How interested are you in finding out more information about the entrepreneur/management team?".

Study 1: Crunchbase analysis

Data and sample

Crunchbase (https://www.crunchbase.com) is a leading online database containing data on the start-up ecosystem, established in 2007. Crunchbase positions itself as a platform for investors and VCs to source startups, track funding activity, and analyze market trends. This positioning is supported by its extensive user base and data contributions: the platform has over 4,000 global investment firms submitting deal data, and it is widely recognized as a trusted source of information on startup activity and funding worldwide. Information and updates to Crunchbase are submitted by more than 50,000 contributors (e.g., entrepreneurs, investors), with each submission undergoing a review by a moderator before entry into the database. The accuracy and validity of the data is also ensured by (1) work partners like AngelList, (2) CrunchBase's expert team that uses manual validation and curation methods, and (3) AI and Machine Learning techniques that are utilized for detection of anomalies. Recent research[25,26] has accessed, scraped, and in many cases designed entire studies from Crunchbase data. We restricted the sample to firms founded between 2011 and 2015 from the USA to ensure that we were comparing startups in the same ecosystem over the same period. We captured data on all the funding these firms received up to 2018. Because our research question and hypotheses are concerned with visual first impressions, we further restricted our sample to companies with a profile image of a founder, leaving 20,316 companies.

Image processing

We use Face++ Cognitive Service API to identify smiling and emotions in these images[27,28]. Face++ (https://www.faceplusplus.com/) is a leading platform that uses computer vision functionalities based on state-of-the-art deep learning techniques[29] that have been trained with five million facial photos[30]. Those facial photos have been annotated from human raters (e.g. smiling or not, etc.) and later used for training a deep learning Convolutional Neural Network (CNN). Face++ yields a smiling score that ranges from 0 to 1, with 1 indicating high smiling intensity. Furthermore, Face++ is on par with industry giants such as Microsoft, Amazon, and IBM for its performance in facial recognition algorithms[31]. Specifically, it achieves a 90.6% accuracy for face detection, 92% accuracy for gender detection, 93% accuracy for race detection, and approximately 99% precision in recognizing emotions like happiness[32,33].

Dependent variables

Our DVs measure what most entrepreneurs primarily need from investors: funding. The first DV is the total number of funding rounds that a company has gone through. Firms report their funding rounds on Crunchbase and we observe an integer value for this variable. For example, a start-up that has raised a seed round and a Series A will score a 2 for funding rounds. The second DV is a binary variable indicating whether a company has received funding (1) or not (0). The third DV is continuous, the total US dollar amount of funding raised.

Independent variables

Our independent variable is the smiling score of the founders measured by Face++. In our sample of over 20 thousand entrepreneurs, Face++ calculated scores from 0.00 to 1.00, with a mean of 0.78 ($SD = 0.33$).

Control variables

We control for several factors that could bias our results. We controlled for the following industries: "Commerce and shopping", "Apps", "Financial services", "Internet services", "Advertising", "Information technology", "Health care", "Data and analytics", "Software" and "Other". Industry fixed effects capture sector-specific differences in capital intensity and investor expertise that influence funding propensities[34]. We also controlled for founders' gender ("all males", "all females" or "mixed") to adjust for documented gender gaps in venture financing[35,36].

Different geographic areas demonstrate different rates of entrepreneurial growth and success in attracting funding[37] so we control for the headquarters location using the dummy variables "CA", "MA", "NY", indicating whether a company is located in California, Massachusetts, or New York. These three states together account for the majority of U.S. venture capital and thus represent distinct funding environments[38]. Finally, we control for the year in which the company was founded, a proxy for venture age, prior track record and accumulated credibility[39] the total number of founders[40] (larger teams offer broader skills and networks valued by investors) and the number of employees in a company[41] (head-count signals early traction and organisational scale).

Study 2: Shark tank pitch analysis

Data and sample

Next, we investigated smiling in the context of entrepreneurial pitches, using state-of-the-art deep learning techniques. Specifically, we examined whether founders who smile in their entrepreneurial pitches are more likely to receive funding. We created a dataset of 1091 pitches (10-minutes long on average) from one of the most widely watched pitch competitions in the USA: Shark Tank. Shark Tank involves entrepreneurs pitching to a panel of five investors; the investors evaluate the new ventures, negotiate with entrepreneurs over valuation (e.g., equity share and investment amount), and offer their own capital to some of the ventures. Shark Tank has been used in several recent studies[42–45].

Video processing

To create the Shark Tank dataset, we implemented a data processing pipeline comprising several state-of-the-art image processing and computer vision techniques. Specifically, using OpenCV, we first cut each video into frames, with each frame lasting approximately one second. In total, we have over 670,000 frames from the 1091 videos, with each video providing 615 frames on average. Then, we extracted and aligned (i.e., rotated a face according to the angle of the eyes) the face of each entrepreneur using the Deepface tool and the MTCNN algorithm[46]. We then used Face++to identify the smiling score of each entrepreneur in each frame and calculated the average smiling scores over all frames. Finally, we calculated the average smiling score between team members. In our sample of 1,684 entrepreneurs, Face++calculated smiling scores from 0.00 to 1.00, with a mean of 0.22 (SD = 0.17).

We then extracted and manually coded several control variables from the pitches (e.g. gender, ethnicity, etc.). We hired two research assistants blind to the hypotheses and provided them with specific coding guidelines and training prior to manual coding[47,48]. Then, we provided videos from the 1091 pitches to the first research assistant to code the variables. After that, we provided 450 pitches, randomly selected from the whole sample to the second research assistant to validate the coded variables. The interrater agreement between the research assistants was acceptable with a Krippendorff's $\alpha = 0.94$. In the case of disagreements between the two research assistants, a third research assistant confirmed the codings.

Dependent variables

Our primary dependent variable is a binary measure indicating whether a venture receives funding (1) or not (0) from the investors[45]. Our second dependent variable captures the investors' intention to fund[49] coded as 1 if an offer is made and 0 otherwise. Our third dependent variable measures funding goals, defined as the ratio of final valuation to initial valuation, reflecting the difference between the proposed and accepted deal valuations.

Independent variables

Our independent variable is the entrepreneurs' smiling score during their pitch. For team presentations, we calculated the mean smiling score across all team members, ensuring a comprehensive assessment of the entrepreneurs' overall smiling behaviour throughout the pitch.

Control variables

We control for the total number of presenters in a pitch, their gender ("Male", "Female" or "Mixed team"), their ethnicity ("Black", "White", "Asian", "Mixed team") and their age (as given by Face++with average error of age inference between [−8.9, 6.4])[15,32,42]. Also, we control for whether the presenters have a patent for their product ("Patent Obtained", "Patent Filed/In-Progress", "No patent effort")[42] and whether they have a loan/debt (1 or 0) related to their business. The variables "patent", "loan/debt", "distributional channels", "revenue model", "revenue of the venture in the previous year" are provided by the entrepreneurs during the pitches. In addition, we control for whether a product/service is seasonal (1 or 0) (e.g., a product/service gets most of their sales in specific periods like summer or Christmas), its distribution channels ("Physical", "Web", "Both") and the revenue model of the venture ("Transactional model", "Rental/Leasing model", "Subscription model", "Other"). We also control for the following industries, "Children/Education", "Fashion/Beauty", "Fitness/Sports/Outdoors", "Food and Beverage", "Health/Wellness/Cleaning", "Lifestyle/Home", "Pet Products", "Software/Tech", "Other"[49]. Finally, we control for the revenue of the venture in the previous year[42,43].

Mediator

We next examined the mediating role of trustworthiness in the relationship between smiling and funding using the PROCESS macro in SPSS. To assess the trustworthiness score of entrepreneurs in Shark Tank dataset, we employed a deep neural network classification model developed by Choi et al. (2020)[50] (Area Under the Curve = 0.85). This model analyses conversational text data to gauge perceived trustworthiness within a discussion. Rather than capturing trust in a strictly one-directional manner, the model identifies linguistic cues and contextual signals that contribute to how trustworthy a speaker appears in the eyes of their conversational

partner(s). In our context, we apply the model to investors' speech to derive a "confidence score" that reflects the degree of trust the investor expresses toward the entrepreneur during their conversation.

Study 3: Randomized experiment with venture capitalists

We designed a within-subjects randomized experiment to complement the Crunchbase and Shark Tank results and attribute any funding differences to the founder's smile rather than to other venture or entrepreneur characteristics.

Data and sample

We elicited funding appraisals of ten different ventures from 51 venture capitalists. In this within-subjects, design, each of the 51 VCs evaluated ten ventures, resulting in 510 observations. A truly random sample of VCs to engage in an experiment is very hard to obtain[51,52]due to the time pressures in the VC industry and the time required to participate in an experiment of 10 pitch decks. These VCs were all professional institutional investors at active funds. Their funds had an average of $372 million of capital under management and their firms managed an average portfolio of 68 companies. While we cannot claim that the 51 VCs are representative of the general population of VCs, we made every effort for the sample to be as representative as possible.

We used 10 pitch decks from real companies and created two versions of each pitch deck by replacing the photos of the team members while leaving everything else (e.g., company narrative, product description, projected financials, etc.) exactly the same to mimic a real-world entrepreneurial profile. The selection of stimulus photos matched the gender ratio of the original pitch desks (79:21 for males and females). We created one version of each venture with pictures that Face++predicted as smiling and another version with pictures predicted as non-smiling, thereby testing a binary contrast, smile versus neutral expression; no intermediate smile intensities were included. The exact same team members that were used in the smiling pitch decks were also used in the non-smiling pitch decks. The only variation between two pitch decks of the same venture was the smiling versus non-smiling team members (everything else, e.g. attire, light in the photo etc. remained exactly the same) (see Fig. 1 as an example). The photos of the individuals (both smiling and non-smiling versions) were purchased from Depositphotos (https://depositphotos.com). Each venture capitalist viewed one randomly chosen version of every deck, yielding a mixture of smiling and non-smiling founders but never both versions of the same company; for each deck the smiling or neutral version was selected at random with equal (50/50) probability. Presenting only a single version per pitch deck helped keep the study realistic and prevented the participating investors from inferring that facial expression was under examination, thereby avoiding the major detriment to external validity that would have arisen if they had evaluated the same founders twice, one smiling and one not.

The investors answered the following 8 questions for each pitch deck: "1. What is the probability that the venture will have a successful exit of 50 million USD?", "2. How much would you value this company for if you were to invest?", "3. This venture constitutes a viable entrepreneurial opportunity." "4. This venture offers an attractive business model.", "5. I would pursue a follow-up meeting to learn more about the venture.", "6. I would recommend this opportunity to a co-investor I have invested with in the past.", "7. I would initiate due diligence on the venture." (7-point Likert scale ranging from *strongly disagree* to *strongly agree* for questions 3 to 7), "8. The content of this pitch deck was…" (7-point Likert scale ranging from *very poor* to *excellent*). These eight questions assess each investor's professional opinion of the entrepreneur and the business opportunity presented, and are discussed further in the next section.

Manipulation checks

We performed a manipulation check to ensure that the intervention had the desired effect[53,54]. Following the guidance of Lonati, Quiroga, Zehnder and Antonakis (2019: 22)[55] that manipulation checks "should be done on a separate sample for the sorts of experiments social scientists normally do" so as to alleviate the potential of unwanted demand effects, we conducted this check on a separate sample. We recruited a sample of 72 participants (average age: 37; 51% males) who were asked to rate the happiness of the founders in the two groups in order to examine whether the participants noticed the treatment. Because participants may have been rushing through

Fig. 1. Example of smiling and non-smiling photo used in the experiment.

the pitch decks without paying much attention, we wanted to conduct this check on attention to ensure that they noticed the differences across the two groups. We found statistical significant differences in the happiness ratings across the two groups ($p<.01$). This was validated by the scores that Face++ yielded on smiling versus non-smiling founders (average happiness score of smiling pitch decks was 0.99 while the average happiness score of non-smiling pitch decks was 0.09; $p<.001$; average smiling score of smiling pitch decks was 0.99 while the average smiling score of non-smiling pitch decks was 0.14; $p<.001$). Second, we recruited a sample of 56 participants (average age: 27; 52% males) who were asked to rate the founders across the two groups in terms of boredom and smiling. While we found statistically significant differences in the smiling ratings across the two groups (paired samples t-test; $p<.001$) we found no significant differences for boredom (boredom was measured using 4-items[56] on a 5-point Likert scale (alpha = 0.87).

Dependent variables

We examined three dependent variables to establish convergent validity. The first DV was the probability of a successful exit - a liquidity event for investors that involves the venture being acquired or going public (question 1). This question reflects real-world financial judgments, with investors assessing the probability of a successful exit based on actual pitch decks[57]. The second DV was the investor's valuation of the company (question 2). Again, this is a judgment that a practiced investor makes many times during their professional duties. Several studies have examined the venture capitalist's valuation of a startup[58]. The third dependent variable was the extent to which the company represented an overall favorable investment opportunity. This dependent variable is a composite score obtained by calculating the mean of questions 3–8 per opportunity, per investor. Factor analysis of questions 3–8 confirmed the uni-dimensionality of this variable (KMO measure of sampling adequacy = 0.92; Bartlett's test of sphericity ($x^2(15) = 7676.7$, $p<.001$). The interpretation of the results is the same when each of the questions 3–8 are used as separate dependent variables, but this composite score is accompanied by a small error term and increases the precision of the estimated treatment effect. Cronbach's alpha was 0.89.

Independent variable

Our independent variable is whether all team members in the pitch were smiling (1) or all non-smiling (0).

Mediator

ABI trustworthiness: In line with the ABI trustworthiness model, we captured direct judgments of the ability, benevolence, and integrity of the entrepreneurial team. We captured these tripartite components of trustworthiness on a 1–7 Likert scale with these 3 items (Cronbach's $\alpha = 0.95$): "1. How competent is this entrepreneur? (Ability)", "2. How good-natured is this entrepreneur? (Benevolence)", "3. How honest is this entrepreneur? (Integrity)".

Ethical considerations

This study was conducted in accordance with all relevant guidelines and regulations. It adhered to the General Data Protection Regulation (GDPR), and no personally identifiable information of investors or entrepreneurs was collected, stored, or otherwise accessed by the authors. Participant responses were anonymized and analysed solely at an aggregate level (e.g., by pitch or company). All images included in this manuscript are illustrative stock photos purchased from Depositphotos under a commercial license. Informed consent was obtained from all participants for the experimental components of this research. Finally, ethics approval for this study was formally waived by the Cyprus National Bioethics Committee (CNBC; Ref: EEBK 21.1.01.03).

Results

Pilot study 1: Qualitative exploration

To verify the plausibility of our research questions, we first conducted an interview-based pilot study with 10 early-stage investors, to determine what they think about smiling in an entrepreneur's first impression. The pilot study revealed that eight of ten investors interviewed explicitly said that they prefer founders who smile. For example, Investor 1 said, "I personally prefer founders who smile" while Investor 3 said, "If all other things are equal and if the process is respected I think that having people who smile…plays a favorable role".

Six of the ten investors interviewed explicitly said that entrepreneurs' smiles make them more trustworthy. For example, Investor 3 said, "[Smiling] makes them more trustworthy." Investor 9 said, "I would find it extremely difficult to build a relationship and trust if they don't smile…" Investor 1 explained, "Smiling makes founders more trustworthy as it positively predisposes you that he is also happy about what he says, that he believes what he says, and that he likes to do what he does". Investor 5 added, founders who smile "[give] me the feeling that they know what they are doing… I'm comfortable in my pitch. I'm telling you the story, therefore I can also smile. Which [makes them], in other words, trustworthy". These interviews suggest the value of smiling as a mechanism through which entrepreneurs establish their trustworthiness to investors.

The role of smiling in investment outcomes

Study 1: Crunchbase

To quantitatively explore the relationship between smiling and funding success, we first analyzed 20,316 ventures from Crunchbase. The results, presented in Table 1, are based on Cragg Hurdle regression estimates. Model 1 (selection stage) examines the likelihood of receiving any funding, and Model 2 (output stage) evaluates the total amount of funding received, conditional on passing the selection stage. The smiling score in both stages shows a positive and significant association with funding outcomes ($p<.01$), with a one-unit increase in the smiling variable corresponding to an additional $3.4 million in funding.

Variable	Model 1 (Selection Stage)	Model 2 (Output Stage)
CA	0.085 (0.023)***	0.085 (0.023)***
MA	0.299 (0.050)***	0.299 (0.050)***
NY	0.067 (0.031)**	0.067 (0.031)**
Commerce and shopping	−0.070 (0.036)	−0.070 (0.036)
Apps	−0.059 (0.040)	−0.059 (0.040)
Financial services	−0.386 (0.042)***	−0.386 (0.042)***
Internet services	−0.209 (0.047)***	−0.209 (0.047)***
Advertising	−0.239 (0.048)***	−0.239 (0.048)***
Information technology	−0.006 (0.049)	−0.006 (0.049)
Health care	0.328 (0.049)***	0.328 (0.049)***
Data and analytics	0.186 (0.044)***	0.186 (0.044)***
Software	−0.080 (0.059)	−0.080 (0.059)
All males	0.135 (0.032)***	0.135 (0.032)***
All females	−0.021 (0.049)	−0.021 (0.049)
Founded year 2011	0.165 (0.036)***	0.165 (0.036)***
Founded year 2012	0.115 (0.035)***	0.115 (0.035)***
Founded year 2013	0.064 (0.034)	0.064 (0.034)
Founded year 2014	0.028 (0.034)	0.028 (0.034)
Number of founders	0.228 (0.012)***	0.228 (0.012)***
Company size	0.000 (0.000)	0.000 (0.000)
Smiling avg	0.130 (0.031)***	0.130 (0.031)***
(Constant)	−0.740 (0.057)***	−0.740 (0.057)***
N	15,070	15,070
Log likelihood	-	−124291.270

Table 1. Cragg hurdle Regression - Total amount of funding (Crunchbase). Standard errors are in parentheses. ** p <.05; *** p <.01.

The robustness of these findings was assessed through alternative regression approaches (e.g., Negative Binomial regression for "number of funding rounds", Logistic regression for binary funding, and Tobit regression for "total amount of funding") as well as robustness checks such as using the highest smiling score among founders instead of the average, analyzing only CEOs, and applying log transformations to the funding variable (e.g. ln (Total amount of funding + 1)). Additionally, our examination of smile authenticity, comparing Duchenne (authentic) and non-Duchenne (non-authentic) smiles, confirms that the observed effects remain robust regardless of smile type. To address potential reverse causality (i.e., the possibility that profile photos were updated after funding decisions), we re-estimated all models using only funding rounds that occurred after the date we retrieved the profile pictures, and the results remained robust (see Online Appendix A).These analyses consistently support the conclusion that founders who smile are more likely to raise funding.

Study 2: Shark tank

Next, drawing on the 1,091 Shark Tank pitches described in the Methodology section, we estimate a logistic model of whether ventures received funding (Table 2). In Model 2, the smiling score is introduced and found to have a positive and significant effect (p <.01). The odds of receiving funding are associated with a 1.47-fold increase for a standard deviation increase in the smiling score (0.148), ceteris paribus (p <.01). Our results remain robust across several checks, including using smiling scores from the presentation phase and analysing intention-to-fund and funding goals as alternative dependent variables (see Online Appendix B).

As a post-hoc robustness analysis, we examined the moderating effects of founder gender, ethnicity, and attractiveness, as well as team composition (solo versus team founders) and within-team smiling variance, across both the Crunchbase and Shark Tank datasets. Overall, our findings do not provide robust evidence that any of these factors consistently moderate the relationship between smiling and funding, suggesting that they play a limited role in shaping investor decisions (see Online Appendix A and B).

Study 3: Randomized Experiment

Finally, we conducted a within-subjects randomized experiment (described in detail in the Methodology section) with 51 venture capitalists to establish a causal link between smiling and funding outcomes. To analyze the data, we used fixed-effects regressions, treating each pitch deck as the grouping (within-subject) variable. The nature of the experiment automatically controls for any factors that could influence the results such as intelligence, health etc. of the entrepreneurs. The variable "Smiling pitch deck" indicated whether the pitch deck contained faces with smiling entrepreneurs (coded as "1" for smiling and "0" otherwise). Six regression models are shown in Table 3. Model 1 showed that companies with smiling pitch decks were associated with a higher probability of successful exit (p <.001). Model 2 showed that companies with smiling pitch decks were associated with higher

Variable	Model 1	Model 2
Age	−0.024 (0.008)***	−0.022 (0.008)***
Gender = Female	0.333 (0.224)	0.202 (0.229)
Gender = Male	−0.003 (0.195)	0.137 (0.200)
Ethnicity = Black	−0.071 (0.229)	−0.104 (0.231)
Industry = Children/Education	−0.062 (0.351)	−0.040 (0.358)
Industry = Fashion/Beauty	−0.572 (0.329)	−0.607 (0.336)
Industry = Fitness/Sports/Outdoors	−0.362 (0.349)	−0.358 (0.356)
Industry = Food and Beverage	−0.248 (0.325)	−0.281 (0.331)
Industry = Health/Wellness/Cleaning	−0.111 (0.404)	−0.205 (0.411)
Industry = Lifestyle/Home	−0.190 (0.328)	−0.255 (0.335)
Industry = Software/Tech	−0.390 (0.363)	−0.406 (0.371)
Industry = Pet Products	−0.221 (0.424)	−0.347 (0.434)
Revenue Model = Production/Transactional model	0.050 (0.337)	−0.008 (0.342)
Revenue Model = Subscription model	−0.533 (0.419)	−0.579 (0.427)
Revenue Model = Rental or leasing model	−0.514 (0.379)	−0.553 (0.385)
Retail Ecommerce = Retail	−0.435 (0.199)**	−0.464 (0.202)**
Retail Ecommerce = Online	−0.444 (0.170)***	−0.526 (0.174)***
Has Patent = Yes	0.374 (0.175)**	0.375 (0.177)**
Has Patent = In-Progress	0.487 (0.228)**	0.519 (0.231)**
Num of Presenters	0.447 (0.123)***	0.442 (0.124)***
Has Debt	−0.644 (0.318)**	−0.544 (0.323)
Seasonal	0.022 (0.302)	0.014 (0.305)
Num of Sales Last Year ($) (00000s)	0.021 (0.006)***	0.021 (0.006)***
Smiling avg		2.576 (0.494)***
_cons	0.955 (0.624)	0.422 (0.641)
N	1091	−0.022 (0.008)***
−2LL	1399.782	0.202 (0.229)
χ^2	79.050***	0.137 (0.200)
$\Delta\chi^2$		−0.104 (0.231)
Pseudo R^2	0.054	−0.040 (0.358)

Table 2. Logistic regression - Did the venture receive funding? (Shark tank). Gender: "Male", "Female" or "Mixed". Standard errors are in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$.

Variable	Model 1 – Probability of successful exit	Model 2 – Company valuation	Model 3 – Investment opportunity	Model 4 – Probability of successful exit	Model 5 – Company valuation	Model 6 – Investment opportunity
Smiling pitch deck	16.552 (0.663) ***	2,136,223 (96177) ***	2.427 (0.091) ***	16.609 (1.040) ***	2,147,665 (143243) ***	2.429 (0.157)***
All males	-	-	-	−2.150 (0.728)	−223,477 (112756)	−0.184 (0.102)
Number of members	-	-	-	1.096 (0.301)	239,443 (53961)***	0.040 (0.037)
Number of pages	-	-	-	0.040 (0.045)	8650 (6100)	−0.004 (0.006)
(Constant)	13.116 (0.469) ***	1,588,751 (68001) ***	3.275 (0.064) ***	9.398 (1.707) ***	681,861 (180296) ***	3.284 (0.223)***
N observations	510	510	510	510	510	510
N groups (pitch decks)	10	10	10	10	10	10
R-squared	0.555	0.497	0.590	0.503	0.442	0.565
F (1,499)	623.47***	493.34***	718.95***	-	-	-
F (4, 50)	-	-	-	67.26***	59.52***	69.98***

Table 3. Pitch deck VC Experiment - Fixed effects regression (model 1, 2 and 3) and linear regression with clustering (model 4, 5 and 6) (Experiment). Standard errors are in parentheses. ***$p < .001$. We also applied a Bonferroni correction to adjust the p-values in our statistical analyses. Given we evaluated 8 DVs, the level of significance was adjusted to α=0.000125 (0.001/8). Following this correction, our main findings remain robust.

	Not Smiling	Smiling	*t*	*d*	*p*	95% CI L	95% CI U
Trustworthiness	1.96 (0.44)	2.11 (0.43)	2.49	0.15	0.013	0.03	0.26
Propensity to invest	3.81 (1.41)	3.98 (1.25)	0.93	0.17	0.356	−0.19	0.53

Table 4. Effect of smiling on evaluations (Pilot study 2).

Variables	90% CI
Model 1: smiling → trustworthiness	Smile: 1.405*
Model 2: smiling + trustworthiness → DV	Smile: 2.207*** Trustworthiness: 0.082***
Indirect effect	Effect: 0.120 LLCI: 0.001 ULCI: 0.259

Table 5. The mediation role of trustworthiness in the relationship between smiling and funding – Has received funding (Shark Tank). $^{*}p<.10$; $^{**}p<.05$; $^{***}p<.01$.

company valuation ($p<.001$). Model 3 showed that companies with smiling pitch decks were regarded as a higher investment opportunity ($p<.001$). Drawing from Scherbaum and Ferreter[59] and noting that our effect size is large, we have a statistical power of 0.80 (1 – β, where β is the probability of a "Type II error" i.e., failing to detect a real effect). In models 4, 5 and 6 we run alternative regressions clustering by VC. Model 4 showed that companies with smiling pitch decks were associated with a higher probability of successful exit ($p<.001$). Model 5 showed that companies with smiling pitch decks were associated with higher company valuation ($p<.001$). Model 6 showed that companies with smiling pitch decks were regarded as a higher investment opportunity ($p<.001$).

Trustworthiness as a Mediating Mechanism

After establishing that smiling has a causal impact on funding outcomes, we next examined whether trustworthiness serves as the mediation mechanism explaining this effect (RQ2). Specifically, we sought to test whether entrepreneurs who smile are perceived as more trustworthy, which in turn enhances their likelihood of investment success.

Pilot Study 2

To test whether trustworthiness mediates the relationship between smiling and funding, we initially conducted a pilot study involving a between-subjects randomized experiment with 210 entrepreneurs and prospective entrepreneurs (described in detail in the Methodology section). In this mediation analysis, smiling (independent variable) influences perceptions of trustworthiness (mediator), which is referred to as the "a path." Trustworthiness in turn shapes investment interest (outcome), known as the "b path", and the product of these two paths (a × b) is the indirect effect, reflecting how much of smiling's impact on investment interest is transmitted through trustworthiness. The "c path" captures the total effect of smiling on investment interest without considering trustworthiness, while the "c′ path" denotes the direct effect of smiling on investment interest once trustworthiness is taken into account.

The results showed that smiling was positively associated with evaluations of trustworthiness (a path: $c=0.15$, $p=.01$), and trustworthiness, in turn, significantly predicted a higher propensity to invest (b path: $c=1.31$, $p<.001$). An indirect effect analysis further confirmed that trustworthiness mediated the relationship between smiling and investment interest ($p=.013$; Table 4).

Study 2: Shark Tank

We next conducted mediation analyses using the Shark Tank data and SPSS Process[60] to test whether trustworthiness explains the relationship between smiling and funding outcomes (Table 5). The results revealed a marginally significant effect of smiling on trustworthiness (Model 1; $p<.10$), with trustworthiness significantly predicting funding likelihood (Model 2; $p<.01$). An indirect effect analysis further supported the mediating role of trustworthiness (indirect effect size: 0.120, 90% CI [0.001, 0.259]). However, given the marginal significance of the effect of smiling on trustworthiness, this mediation finding should be interpreted cautiously, providing only tentative support for trustworthiness as a mediator in the Shark Tank dataset.

Study 3: Randomized Experiment

Finally, we examined whether trustworthiness mediated the relationship between smiling and funding in the randomized experiment with VCs. First, an OLS regression confirmed that the smiling manipulation significantly increased perceived trustworthiness ($p<.001$; Table 6). We then included trustworthiness in the outcome models. With both smiling and trustworthiness entered simultaneously (Table 7), trustworthiness remained strongly predictive of investment opportunity, valuation, and probability of successful exit, while the direct effect of smiling was reduced, satisfying the conditions for partial mediation. We estimate the Average Causal Mediation Effect (ACME) which examines how changes in trustworthiness, generated by the treatment, affect funding

Variable	Model 1 – Trustworthiness
Smiling pitch deck	2.033 (0.132) ***
Number_of_members	0.087 (0.055)
Number_of_pages	0.009 (0.008)
_cons	2.597 (0.260) ***
N observations	260
R-squared	0.484
F(3, 256)	80.060

Table 6. Effect of smiling on perceived trustworthiness (Path a). Standard errors are in parentheses. $^{***}p$ <.001.

Variable	Model 1 - Investment opportunity	Model 2 - Company valuation	Model 3 - Probability of successful exit
Smiling pitch deck	0.713 (0.147) ***	1,247,330 (186567) ***	12.534 (1.297) ***
Trustworthiness	0.695 (0.050) ***	338,294 (63572) ***	2.270 (0.442) ***
Number_of_members	−0.015 (0.045)	227,638 (56503) ***	0.691 (0.393)
Number_of_pages	−0.006 (0.007)	7701 (8413)	0.066 (0.058)
_cons	1.489 (0.246) ***	−356,587 (311457)	2.170 (2.165)
N observations	260	260	260
R-squared	0.699	0.503	0.593
F(4, 255)	148.19	64.590	92.690

Table 7. Simultaneous effects of smiling and trustworthiness on funding outcomes (Paths b and c′). Standard errors are in parentheses. $^{***}p$ <.001.

Mediator	Dependent Variable	ACME	ACME 95% confidence interval		Proportion Mediated
Trustworthiness	Investment opportunity	1.42	1.16	1.69	0.66
	Company valuation	689,434	430,195	963,922	0.36
	Probability of successful exit	4.63	2.83	6.52	0.27

Table 8. Causal mediation analysis (experiment). $N = 260$.

while counterfactually holding the treatment effect on funding fixed[61,62]. Table 8 provides evidence of mediation for trustworthiness. The average causal mediation effects are 1.42 for investment opportunity, 0.69 for company valuation, and 4.63 for the probability of successful exit, with trustworthiness mediating 66%, 36%, and 27% of the overall treatment effects, respectively.

Discussion

Visual first impressions are vital in relationships with nonverbal cues, especially facial expressions, playing a significant role in perception and decision-making[63]. In the context of entrepreneurship, founders leverage both tangible and intangible resources to secure funding[64]. Our study focuses on how smiling, an intangible resource, plays a role in building trustworthiness and improving funding prospects.

Our analysis reveals that a unit increase in our smiling variable is associated with an average of approximately $3.4 million more funding, according to Crunchbase data. Similarly, the Shark Tank data reveal that a standard deviation increase in the smiling score is associated with 1.47-times higher odds of receiving funding. In our experimental study, we find that random assignment of a smiling pitch causes investors to assess a 16.6% higher probability of a successful exit, value a venture $2.1 million higher, and assess the venture 2.4 Likert scale score points higher on a measure of venture attractiveness.

Additionally, trustworthiness plays a crucial role in mediating the effect of smiling and smiling duration on funding. In our pilot study with 210 entrepreneurs and prospective entrepreneurs, we found that smiling increased perceptions of trustworthiness, which, in turn, mediated the relationship between smiling and investor interest. In other words, the reason smiling increase investor interest is because it first enhances how trustworthy the entrepreneur appears. Mediation analysis in the Shark Tank data demonstrates that trustworthiness mediates the relationship between smiling and the likelihood of receiving funding. Similarly, our experimental study reveals through causal mediation analysis that trustworthiness accounts for 27% of the overall treatment effect on the probability of a successful exit, 36% on venture valuation, and 66% on venture attractiveness. The results reveal a significant mediation effect of trustworthiness between entrepreneurs' smiling and investor fundraising.

Contributions to theory and practice

Our research makes several practical and theoretical contributions to current literature. First, by drawing from multiple datasets—including Crunchbase profile pictures, Shark Tank videos, and randomized experiments involving pitch decks and real venture capitalists—we demonstrate how smiling shapes investor impressions across diverse settings. Furthermore, our study provides causal evidence of the value of smiling in securing venture funding through a randomized controlled trial, addressing the call for more rigorous methodologies in studying non-verbal cues[65].

Secondly, we identify trustworthiness as a mediator of the relationship between smiling and investor funding. This integration of trustworthiness into the theoretical understanding of non-verbal communication advances existing theories by elucidating the psychological mechanism through which non-verbal cues influence funding outcomes[5,66]. Also, our study integrates and examines both the entrepreneur's pitching behavior (e.g. smiling) and the investor's decision-making (e.g. trust) perspectives. This integration addresses the broader gap in entrepreneurial pitching research, which has been fragmented and focused on isolated aspects (e.g., communication of entrepreneurs vs. decision-making of investors) rather than on the interplay between these elements[12]. Furthermore, our findings contribute to the theoretical perspectives on entrepreneurial resource mobilization by highlighting trustworthiness as a vital factor in securing resources[67].

Practical implications

The practical implications of our research is obvious; entrepreneurs seeking external funding should smile for their profile pictures and when they pitch. Smiling conveys trustworthiness.

Limitations and future directions

While this study provides important insights into the role of smiling in early-stage investment decisions, certain limitations should be acknowledged. First, we rely on Crunchbase profile photographs as a proxy for investor impressions, yet static images may not capture the richer visual cues present in live pitches, and we cannot verify that investors ever saw these photos. Hence the Crunchbase findings document an association between founders' habitual online self-presentation and capital raised, without tracing the many intermediary steps in actual funding decisions. Second, the quality of Crunchbase funding records themselves is imperfect. Crowd-submitted entries can omit or mis-characterize deals.

Third, the observational Shark Tank setting may be subject to endogeneity. Smiles may reflect immediate positive cues from investors, and founders' broader charisma or sales skills could drive both smiling and higher trust ratings, so part of the observed link may arise from these unobserved factors rather than the smile itself. Fourth, because the televised pitches are edited for broadcast, the footage may accentuate certain moments or expressions and omit others, which could bias the observed relationship between smiling and funding outcomes. Fifth, the Shark Tank dataset itself is not representative of early-stage ventures; applicants self-select into a tv show and producers further screen contestants for entertainment value, so participants are likely more expressive than the average founder, thus constraining external validity. Sixth, the investors from Shark Tank are celebrity "sharks" whose compensation, brand-building motives, and deal-sourcing context differ from those of typical angels or venture capitalists. We interpret the findings from the perspective of these on-screen decision-makers, but their unique incentives may amplify or dampen responses to founder smiling in ways that do not generalize. Seventh, the analysis of Shark Tank, though valuable in demonstrating the relationship between smiling and funding success, is subject to potential biases due to video editing and the non-random selection of entrepreneurs. Eighth, Pilot Study 2 relies on founders and prospective entrepreneurs rather than professional investors; although their assessments may be similar with investor decisions, this proxy sample may still differ in experience and risk preferences.

Future research should seek to explain additional pathways through which smiling benefits entrepreneurs, as trustworthiness alone does not fully account for the variance in funding outcomes. Longitudinal studies tracking investor-entrepreneur interactions over time could also shed light on the sustained impact of nonverbal cues beyond initial impressions. Finally, incorporating variables such as the number of investors and the temporal aspects of fundraising would be valuable, given their potential significance in this domain.

Conclusion

In conclusion, our research provides robust evidence that entrepreneurs' smiles cause investors to invest by making entrepreneurs appear more trustworthy. Through two pilot studies and three main studies, we demonstrate that smiling is more than just a social cue; it plays a pivotal role in early-stage investment decisions. Our findings extend prior observational research by establishing causality and identifying trustworthiness as a key mediating factor. Beyond theoretical contributions, this research has practical implications for entrepreneurs seeking to optimize their fundraising strategies. Given the importance of trust in high-risk investment decisions, entrepreneurs may benefit from being mindful of nonverbal cues, such as smiling, when engaging with potential investors.

Data availability

All data and code for the pilot study 2, Shark Tank analysis, and randomized experiment are available at https://osf.io/q3vms/?view_only=8fb826c0e3eb46eea9389f0233e31545. Data are not available for Crunchbase study due to their proprietary nature.

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Declarations

Competing interests

The authors declare no competing interests.

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