



ORIGINAL ARTICLE

How to pose for a professional photo: The effect of three facial expressions on perception of competence of a software developer

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Abstract

Objective: Prospective employers can nowadays easily access applicants' photos via Internet, for instance on professional and social networks or previous employers' websites. In our study, we investigated whether a facial expression in a picture affects evaluation of one's competence for a position where facial qualities are not crucial, namely a position of a software developer.

Method: In Study 1, both "models" and participants were employed in IT companies. The experiment followed a 3 x 3 x 2 design, with facial expression (smile, neutral, and thinking) and evaluator's experience in hiring as between-subjects factors and gender of the model as a within-subjects factor.

Study 2 was a survey among software specialists where we investigated their awareness of the impact of applicant's face on the evaluation of his/her competence.

Results: When the models smiled, they were perceived as more competent than when they had a neutral expression. When models adopted a thinking pose, they were evaluated as the least competent. Fifty-five percent of the sample was previously involved in hiring employees; the amount of hiring experience had no impact on this effect. Women were perceived as less competent than men and an interaction analysis revealed that this effect was driven by participants without prior experience in hiring. In Study 2, software specialists assigned a significant role in hiring decisions to the applicant's competent physical appearance, only 10% of participants thought that employers were hardly ever affected by the applicant's face.

Conclusion: Facial expression in a photo affects perceived competence of applicants for a position of a software developer regardless of evaluators' prior hiring experience for this type of job.

KEYWORDS

effect of hiring experience, evaluation of applicants, facial expression, impression formation, perception of competence, social cognition

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1 | INTRODUCTION

When writing job applications to countries where attaching a photo is a default-option, one needs to consider carefully what type of facial expression s/he should adopt in the picture. For jobs predominantly involving interaction with people (e.g., a shop assistant), attaching a picture with a smiling expression seems to be a natural choice. But what about jobs which involve mainly man-machine interaction and require high education and competence, such as the job of a software developer? Is a wide smile also best in communicating one's suitability for the job? Or should one rather adopt a more formal expression or perhaps a thinking pose? Even in countries where attaching a photo to a job application is not recommended, such as in the United States and Canada, the prospective employer can still be affected by pictures that the applicant has on online social networks (LinkedIn, Facebook, Instagram, Twitter, etc.) or on the website of his/her previous employer. According to the international survey by the Society for Human Resource Management, 84% of organisations use social media for recruiting and 43% of organisations use social media or online search engines for screening job applicants (Mulvey, Esen, & Coombs, 2016).

One would expect that in the context of applications for highly qualified jobs, reviewers will spend most of the time reading one's CV and will give only a brief glimpse at the photo, which should thus have a minimal effect on one's chances of being invited for a job interview. However, Willis and Todorov (2006) found in experimental conditions that people can make judgments on the basis of a photo after only a 100-ms exposure and that ratings after such brief exposure correlated highly with ratings made in the absence of time constraints. The respondents judged not only attributes inherently related to facial appearance, such as attraction, but also made inferences about models' trustworthiness, aggressiveness, likeability, and competence. Bar, Neta, and Linz (2006) found that time-consistent threat judgments of a face with a neutral expression can be made even as fast as after 39 ms of exposure to the photo. Judgments of intelligence made after such brief exposure were less stable and authors hypothesise that this difference is related to higher evolutionary importance of making quick and accurate threat appraisal for one's survival.

From the perspective of how quickly impressions from photos can be formed, it seems reasonable to expect that the picture of the applicant will impact the reviewers, even if they pay minimal attention to it. Todorov, Mandisodza, Goren, and Hall (2005) found that inferences of competence based on a 1-s exposure of Senate-candidates' photos correlated highly with the actual election outcomes. In a field experiment, Baert (2017) investigated the impact of

What is already known about this topic:

- Prospective employers are frequently exposed to applicants' pictures, as the majority of companies use social media for recruiting and/or screening job applicants.
- People can make judgments on the basis of a photo after only 0.1-second exposure and these correlate highly with judgments made in the absence of time constraints
- Smile is the most studied facial expression. Smiling has been associated with submission, warmth and happiness, findings on the relationship between smiling and perceived intelligence are mixed.

What is new:

- Software specialists evaluating photos of applicants for a position of a software developer ascribed highest competence to smiling faces, followed by faces with a neutral expression, the worst competence rating was associated with a thinking pose.
- Female applicants were perceived as less competent than male applicants and this effect was driven by evaluators without prior experience in hiring.
- Software specialists are aware that their hiring decisions are affected by applicants' facial attributes.

one's picture on one's chances of being invited for a job interview. Pictures of four different men were compared. A picture was either inserted into the applicant's CV, or was easily traceable via search by name on Facebook. Baert found that different people in the picture had different success rates with the same application. Both pictures in the CV and pictures only available on Facebook had similar effect, suggesting that the companies indeed search for candidates online (Baert, 2017).

The above-mentioned studies compared perceptions of different people, but experiments comparing perceptions of the same people adopting different facial expressions have also been pursued. Smile is probably the most widely studied facial expression; however, the results of the experiments yield varying results, depending on the context of smiling. In the sections below, we describe two main clusters of interpretation of smile, namely: (a) submission and (b) warmth and happiness. Both of them can be relevant also in the job situation. The effect

of smile on perceived competence has also been studied, but not in the context of applications for jobs focused on man–machine interaction, in which smiling cannot improve the quality of the job performance (unlike in jobs involving interactions with clients).

We have not found any study focused on the effect of a thinking expression with a hand touching one's chin which we found to be sometimes used in portrait pictures of people with a university background (in the context of computer science, for instance in the journal “Computerworld”) and which we therefore include in our study.

1.1 | Smile as an expression of submission

According to Mehu and Dunbar (2008), men with a lower social status show more deliberate smiles than their communication partners who have a higher social status and hence, a smile communicates submission. Hecht and LaFrance (1998) found that whereas high-power and equal-power people smiled only when they experienced positive affect, in low-power people smiling is unrelated to feeling happy. Low-power people are expected to maintain some positive expression regardless of how they feel and thus by smiling they follow formality rather than express their true emotions. Women smiled more than men across all conditions (high-power, low-power, equal-power) and also in everyday life they tended to smile more (Hecht & LaFrance, 1998).

Kraus and Chen (2013) found that by smiling before a fight, professional fighters unintentionally communicated their lower physical dominance in comparison to their competitor and those who smiled more tended to lose in the subsequent fight. When participants were supposed to evaluate two different photos of the same fighter (one with a smiling expression, one neutral), they judged the smiling fighter as less physically dominant than when he adopted a neutral expression. This is in line with the findings of a study on the role of smile in primates which suggest that silent bared-teeth display (the ancestor of the human smile) communicates submissiveness, subordination, and appeasement and appears often in situations when the sender fears that the interaction might become aggressive (Preuschoft, 1992).

1.2 | Smile as an expression of warmth and happiness

When we meet an unknown person, we immediately automatically evaluate him/her on two dimensions: warmth and competence (Fiske, Cuddy, & Glick, 2007).

These two dimensions are independent of each other; a person can score high on both of them, one of them, or none of them. According to Fiske et al. (2007), warmth is judged first and has a higher impact on our impression of the other person than perceived competence. In these authors' concept, warmth involves traits such as friendliness, helpfulness, sincerity, trustworthiness and morality; competence encompasses intelligence, skill, creativity, and efficacy.

The effect of smiling has been investigated mainly on the warmth dimension. Smiling people were perceived as nice, pleasant, and good (Lau, 1982), kind and sympathetic (Otta, Abrosio, & Hoshino, 1996), warm and polite (Deutsch, LeBaron, & Fryer, 1987), and trustworthy (Scharlemann, Eckel, Kacelnik, & Wilson, 2001). However, Otta, Lira, Delevati, Cesar, and Pires (1994) found the association between smiling and reliability only for male faces. Smiling faces were evaluated as happier and more relaxed, optimistic, and carefree than non-smiling ones (Deutsch et al., 1987; Keating et al., 1981; Otta et al., 1994).

1.3 | Smile and intelligence and competence

The effect of smiling on perceived intelligence (part of Fiske, Cuddy, & Glick's (2007) “competence dimension”) yielded mixed results. Whereas in the study by Lau (1982), smiling individuals were generally perceived as more intelligent, in the study by Otta et al. (1994), the effect applied only to women and in the study by Otta et al. (1996), there was no clear relationship between smiling and perceived intelligence.

The previous experiments sometimes involved only two stimuli for evaluation (e.g., one male and one female model) and in addition, they were mostly lacking in specific context of applications. Both the models and the participants were typically students (e.g., Lau, 1982). An exception in this respect is a study by Damhorst and Pinaire Reed (1986), in which business persons evaluated pictures of female applicants for a lower-level management position (students served as models for the photos). The study found that the female applicants was perceived as more powerful and competent when they were smiling than when they had a non-smiling, serious expression (Damhorst & Pinaire Reed, 1986). Harker and Keltner (2001) also focused their study on pictures of females, but in the context of a college yearbook. They found that observers evaluating the college photos perceived the smiling females as more competent and moreover, smiling in a college yearbook was associated also with self-reported competence up to 30 years later.

In addition, smiling in a college yearbook was positively related with being married and negatively related with negative emotionality in adulthood (Harker & Keltner, 2001). Horiuchi, Komatsu, and Nakaya (2012) found on the sample of Australian and Japanese pictures of election candidates that in both countries, candidates who smiled had a significantly higher vote share than candidates who did not smile. One of the suggested explanations for this finding is according to the authors a possibility that voters associated smiling with political competence.

The contribution of our study is its high ecological validity: software specialists evaluate the competence of 20 faces of other software specialists, in the context of applications for a job of a software developer. In addition, we do not compare only smiling with a neutral expression, but also we investigate the effect of a thinking pose. We found that all these three expressions appear in photos of software engineering top professionals published in journals such as *Computerworld* as well as on websites of IT companies. Auguste Rodin's famous sculpture *The Thinker* presents a man who touches his chin with his hand. We find the same pose also by Google-search for pictures with a key word "thinking" which suggests that touching one's chin is an archetypical position for thinking. A face with a hand touching one's chin is used as thinking emoji by Google, Apple, Microsoft, Twitter, Samsung, LG, and so on. To our knowledge, the effect of a thinking pose on perception of competence has never been studied before.

Provided the absence of studies investigating the effect of the thinking pose on perceived competence, accompanied by a lack of studies on the effect of facial expression in the context of applications for technical jobs, we did not formulate any hypotheses and instead construed our study as exploratory. Our research question was: Does a choice of a facial expression (smile, neutral, thinking) in a photo affect the evaluation of applicant's competence for a position of a software developer?

2 | STUDY 1

The purpose of our experiment was to investigate whether a choice of facial expression affects perception of one's competence in the field where man-machine interaction prevails. We compared three types of facial expressions used in pictures attached to CVs: a neutral expression, a smile and a thinking expression, with a hand touching one's chin.

We focused on applications for a job where facial qualities and extraversion should not be crucial and

where interaction with a computer is predominant, namely a position of a software developer in a company. In order to ensure ecological validity of the study, both models and their evaluators were employees of IT companies.

2.1 | Method

2.1.1 | Participants

Participants in the experiment were 238 employees of IT companies; 218 participants were men, 20 women. Mean age of the sample was 29.9 years. Forty-five percent of the participants reported that they were occasionally involved in the process of hiring new employees, 10% were frequently involved in hiring new staff.

The number of participants in the experiment was not predetermined and it was contingent on how many employees of the IT companies would complete the online questionnaire (their participation was voluntary). The companies were paid for taking part in the study. All participants who completed the questionnaire are included in the analysis.

2.1.2 | Materials and procedure

The Internet-based questionnaire Qualtrics randomly assigned participants to three conditions. Participants were asked to evaluate pictures of 20 people who were in one group all smiling ($N = 79$), in another group had a neutral expression ($N = 79$), and in the third group had a thinking pose ($N = 80$; for an example of the stimulus material, see Figure 1).

All 20 models in the pictures were employees of an IT institution in Norway, 10 of them men, 10 women; all white ($M = 31.4$ years). As the same participants appeared in all three experimental conditions (smile, neutral, thinking) which were the main target of the comparison and as we did not study differences in evaluation of different models (except for a gender comparison), the models did not receive any specific instructions regarding clothing. All pictures were taken in the same office at the workplace of the models by a camera Canon EOS 350D Digital with a maximum resolution of 8 megapixels. To keep the light conditions constant, we chose an office without a window. The pictures have a portrait orientation, all models received an instruction to look straight to the camera and consecutively adopt a neutral expression, a smile and a thinking pose with a hand touching one's chin (see Figure 1). The study followed a mixed $3 \times 3 \times 2$ design, with facial expression

FIGURE 1 Example of stimulus material: smile, neutral expression, thinking pose



of the model (smile, neutral, thinking) and evaluator's experience in hiring (frequently, occasionally, never) as between-subjects variables and gender of the model as a within-subjects variable.

At the start of the questionnaire, participants were instructed that they were going to evaluate photos of 20 people who had applied for jobs as software developers in different companies and attached the presented pictures to their application. Afterwards, a set of 20 pictures was presented and each applicant's competence was evaluated on a 7-point scale (1 = not competent at all; 7 = very competent). Participants could spend as much time as they wanted on each screen, but could not go backwards to a previous picture once they had moved on. Female faces were presented on odd screens (first, third, fifth...), male faces were presented on even screens (second, fourth, sixth...). Each of the three experimental groups received pictures of the same models in the same order (a picture of the female Model A was always followed by a photo of the male Model B, which was always followed by the picture of the female Model C, etc.). We held the sequence of the models fixed in order to keep all variables except for models' facial expression constant between the three experimental groups.

If competence evaluation was affected only by models' physiognomy and not by his/her expression in the picture, we would expect differences in evaluation only between different models (individuals with different physiognomy), but not between different experimental groups which contained a set of the same 20 models. In the current study, we are not interested in how specific physiognomic differences (distance between eyes, shape of nose, height of forehead, width of face, etc.) affect the perception of individual's competence and instead focus on comparison of different facial expressions across the same set of individuals.

The programme Qualtrics automatically measured the speed with which participants made an evaluation of the presented photo. It recorded with the accuracy of 1/100 of a second both the first click and the last click on

the scale and these measures were identical unless a participant decided to change the initial evaluation. The time was successfully recorded for all except for one participant. As a supplemental finding, we investigated how much time it takes before participants settle on an evaluation of competence based on a photo and whether the amount of time spent on the evaluation has any relation to the degree of perceived competence, facial expression in the photo, gender of the model, and participants' hiring experience. In addition to the evaluation of competence, the questionnaire contained an unrelated set of questions on time estimates of software tasks.

2.2 | Results

Using a 3 x 3 x 2 mixed ANOVA conducted in IBM SPSS Statistics 26, we found a significant main effect of the facial expression, $F(2,229) = 9.70$, $p < .001$, partial $\eta^2 = 0.078$. Post hoc comparisons using the Fisher's LSD test indicated that smiling faces were perceived as more competent ($M = 4.55$, $SD = 0.68$) than faces with neutral expression ($M = 4.31$, $SD = 0.53$), $p = .030$, $d = 0.394$.

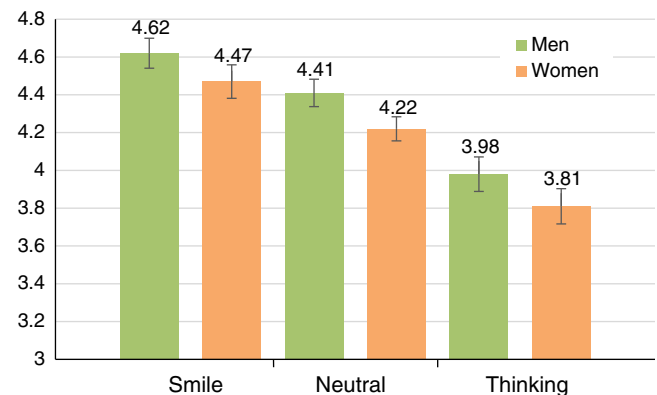


FIGURE 2 Evaluation of competence of the three facial expressions: Comparison of male and female models (Error bars: Standard error)

Faces with neutral expression were perceived as more competent than faces with thinking expression ($M = 3.90$, $SD = 0.78$), $p < .001$, $d = 0.615$. Consequently, smiling faces were perceived also as more competent than faces with a thinking pose ($p < .001$, $d = 0.888$); see Figure 2. We also found a significant main effect for a within-subjects variable, gender of the model, $F(1,229) = 7.60$, $p = .006$, partial $\eta^2 = 0.032$; faces of women reached lower competence rating ($M = 4.17$, $SD = 0.78$) than faces of men ($M = 4.33$, $SD = 0.77$). There was no interaction between facial expression and gender of the model, $F(2,229) = 0.79$, $p = .458$, partial $\eta^2 = 0.007$. There was no main effect of the variable experience in hiring, $F(2,229) = 0.12$, $p = .884$, partial $\eta^2 = 0.001$, and there was no interaction between experience in hiring and evaluation of different facial expressions, $F(4,229) = 0.93$, $p = .450$, partial $\eta^2 = 0.016$. However, there was a significant interaction between experience in hiring and gender of the model, $F(2,229) = 4.15$, $p = .017$, partial $\eta^2 = 0.035$. Whereas, male models received equally high competence ratings from evaluators with all levels of experience in hiring, female models were evaluated more diversely, with the lowest competence rating received from evaluators with no previous experience in hiring (see Figure 3).

As noted above, the experiment did not put any time constraints on the participants and they could spend on each screen as much time as they wanted. We investigated how long it took before participants settled on the evaluation of the applicant (=their last click on the scale). For all conditions taken together, the median value of an evaluation was 8.08 s ($M = 10.88$, $SD = 17.24$). Median values for the three experimental groups were 8.21 s for evaluation of smiling faces ($M = 12.82$, $SD = 23.50$), 8.08 s for evaluating faces with a neutral

expression ($M = 10.95$, $SD = 17.93$) and 7.26 s ($M = 8.89$, $SD = 4.58$) for evaluation of faces with a thinking expression. Median is in this case more accurate than the mean, because some participants were clearly distracted during the task as they spent large amount of time on single pictures (for the time distribution, see Figure 4).

To limit the impact of the most extreme values (~1%) on the results of more advanced analyses, we excluded durations of evaluation exceeding 70 s per one picture, as we assumed that these evaluations were likely interrupted by another task. This exclusion concerned 0.93% of all recorded times of evaluations (=44 out of 4,740 recorded separate evaluations of a photo). Using a $3 \times 3 \times 2$ mixed ANOVA, we did not find a main effect of the type of facial expression on the amount of time spent on evaluating the photos, $F(2,228) = 0.052$, $p = .950$, partial $\eta^2 < 0.001$. Participants' experience in hiring did not have a main effect on the duration of the evaluation, $F(2,228) = 1.08$, $p = .342$, partial $\eta^2 = 0.009$. However, there was a significant main effect of gender of the model ($F[1,228] = 4.24$, $p = .041$, partial $\eta^2 = 0.018$), indicating that participants spent significantly longer time evaluating pictures of female faces. A closer analysis revealed that whereas 43.2% of participants spent on average less than 6 s on evaluation of a male face, only 22.3% of participants spent less than 6 s on average on evaluating a female face (see Figure 5). None of the interactions between the variables reached significant levels.

Using Pearson's correlation coefficient, we did not find any association between the time spent on the evaluation and competence rating (duration of evaluation and competence rating for the entire sample: $r(237) = .058$, $p = .378$; for male faces: $r(237) = -.023$, $p = .724$; for female faces: $r(237) = .068$, $p = .300$).

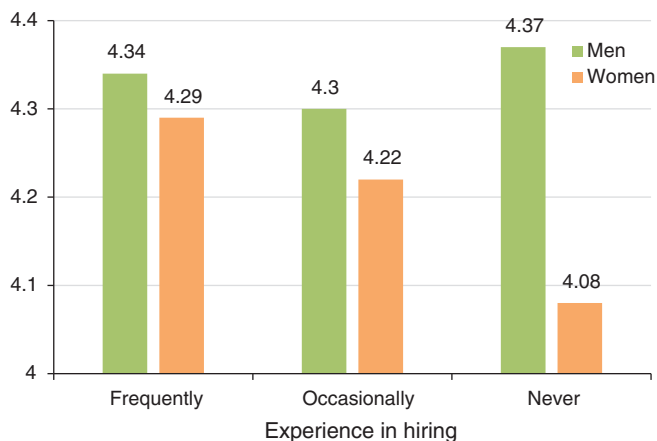


FIGURE 3 Evaluation of competence of male and female faces by participants with different levels of experience in hiring employees

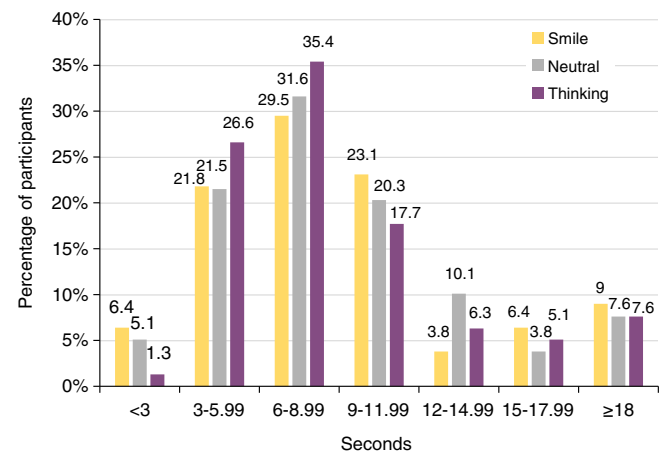


FIGURE 4 Participants' distribution according to the mean duration of the evaluation of a photo: Comparison of three experimental conditions

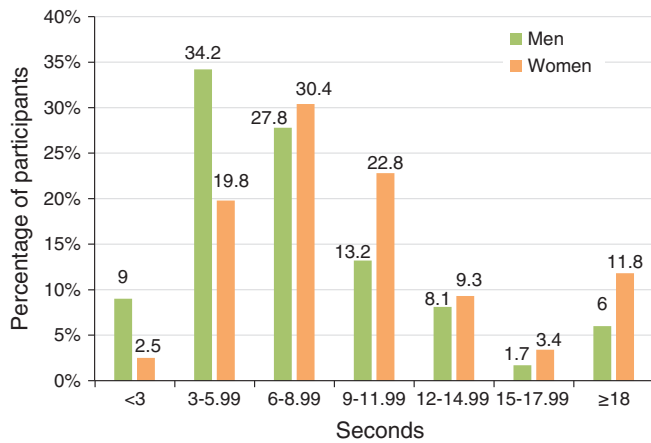


FIGURE 5 Participants' distribution according to the mean duration of the evaluation of a photo of male versus female applicants

3 | STUDY 2

In Study 2, we asked an ecologically valid sample of software specialists in Norway whether they thought that having a competent-looking face had an impact on one's chances of getting a job as a software developer in a company.

3.1 | Method

3.1.1 | Participants

The study was conducted among participants of the Norwegian Software Developers conference; in total 68 software specialists participated in the study. Only one participant reported that he had never employed software developers. The sample size was not predetermined and was contingent on the number of conference participants answering the questionnaire, no participants were excluded.

3.1.2 | Materials and procedure

Participants completed the questionnaire during a brief break in a conference talk of the second author of this article, the data was collected by the Internet-based questionnaire Qualtrics. Due to time constraints at the conference setting, the participants were asked only one question concerning the evaluation of competence according to facial attributes: "Do you think that how competent a software developer's face looks impacts her/his chances of being employed?" The participants answered by choosing one out of six options: (a) Employers are hardly ever affected by whether a

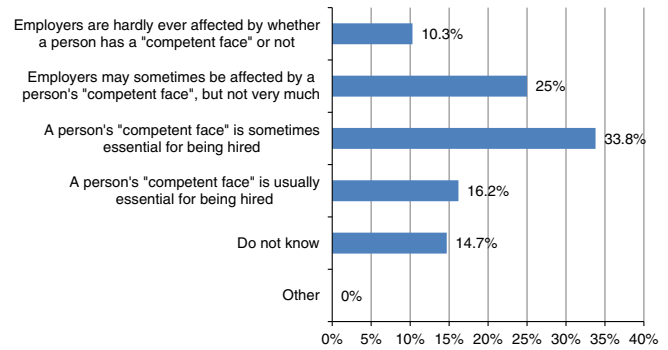


FIGURE 6 Perceived impact of competent face on one's chances of being hired

person has a "competent face" or not, (b) Employers may sometimes be affected by a person's "competent face," but not very much, (c) A person's "competent face" is sometimes essential for being hired, (d) A person's "competent face" is usually essential for being hired, (e) Do not know, (f) Other (please specify). The questionnaire additionally contained an unrelated question concerning participants' perception of low bids in bidding rounds.

3.2 | Results

Overall, software specialists ascribed a significant role to facial features in a software developer's career, see Figure 6. Whereas 16% of participants thought that a person's competent face was *usually essential* for being hired, only 10% of participants thought that employers were *hardly ever* affected by a person's competent face. One third of participants felt that a person's competent face was *sometimes essential* for being hired.

4 | DISCUSSION

In our study, we found that application photos have an impact on one's perceived competence in a field where man-machine interaction is predominant and high technical skills are required, such as in the case of a software developer position. Most software specialists both with and without experience in hiring new employees ascribed one's competent look as having some impact on the application outcome and 16% even thought that a person's competent face was *usually essential* for being hired.

Our study suggests one can easily manipulate his/her face to make it look more competent. The pose most stereotypically associated with thinking, which we found to be sometimes used in portrait photos among people with a university background, is apparently not serving its purpose well, since adopting such a pose significantly

decreased one's competence rating. Neutral expression was the least staged out of our three facial expressions and hence could have also been perceived as the least artificial and most honest. However, adopting a neutral expression, so that one looks reasonably serious, respectable, and thoughtful, without exaggerating it to the thinking pose was also not ideal. Out of the three investigated facial expressions, the best expression one can adopt in order to look competent in software development is to smile. Smiling was evaluated most favourably by participants both with and without previous experience in hiring new employees.

One can presume that the thinking pose was evaluated most negatively due to the fact that it appeared artificial and fake. On the other hand, smiling could also have been perceived as fake since the participants smiled on command. An another explanation why the thinking pose received the lowest rating is a possibility that some participants interpreted the expression differently, for instance as "being concerned." In fact, even the neutral expression could have been associated with various interpretations by different participants (as for instance in the study by Mazurski & Bond, 1993). The advantage of a smiling expression could be its possible lesser ambiguity and also a potential larger frequency of smiling on professional pictures, which could make processing of smiling pictures more fluent. Fluency has been in different contexts associated with perceived intelligence and competence (Laham, Koval, & Alter, 2012; Oppenheimer, 2006). As the thinking position is likely the least frequently used out of the three investigated facial expressions, it could have been perceived as the least fluent and also as the least professional, hence negatively impacting the competence rating. Yet another explanation why the smiling faces were evaluated most favourably could be that the smile clearly depicted an affective state as opposed to the other two expressions.

Although the same individuals adopted three different expressions, one cannot discard the possibility that physiognomy of the same model was perceived differently across the three different conditions. For instance, smile could change the shape of the eyes, widen the mouth and possibly even widen the face, and highlight wrinkles. When the models smiled, they might have been perceived as more attractive than when they adopted a neutral expression or a thinking pose and that is also why they were evaluated as superior in competence. On the other hand, in our sample women received a significantly lower competence rating than men. Kanazawa (2007) found that women in a representative population sample receive a higher attractiveness rating than men. On this basis, it seems unlikely that the evaluation of one's competence in software development merely

mirrors attractiveness of the models, otherwise women would be perceived as more competent developers than men. Also, considering the fact that 92% of the participants (evaluators) were men, it seems improbable that their higher competence rating of men was reflecting higher perceived attractiveness of the male models in comparison to the female models. The larger amount of time spent on evaluating photos of female faces might indicate that these pictures indeed constituted a more attractive stimulus for the participants.

The finding that female models received lower competence rating than male models seems to be in variance with the fact that female applicants are preferred above male applicants with equal skills when applying for STEM tenure-track assistant professorships (Williams & Ceci, 2015). This difference can be attributed to the fact that Williams and Ceci (2015) did not present photos but instead narrative summaries of candidates' credentials. Moreover, the sample of American tenure-track faculty members might have been more attentive to the topic of gender-equality in STEM-fields than our sample of employees in IT-companies. Nevertheless, it should be noted that female models in our study received the lowest competence rating from evaluators with no previous experience in hiring.

The relationship between smiling and competence could be explained by perceived association between smiling and feeling self-confident about mastering one's own field. However, previous studies showed that there exist a number of other factors, which jointly contribute to the favourable evaluation of smiling. Smiling affects individuals on subconscious level related to neuropsychological mechanisms in the brain. When one sees a smiling attractive face, his/her medial orbitofrontal cortex is activated, similar to situations when one receives a reward (e.g., nice food, money; O'Doherty et al., 2003). Hence, employers may subconsciously prefer to hire smiling employees who provide them with a positive visual stimulus and consequently, they may unwittingly evaluate smiling applicants as more competent. One can presume that if photos of smiling faces constituted a pleasurable stimulus, participants would spend more time watching these pictures, however, we did not find any difference in the amount of time spent on evaluating photos with different facial expressions.

Smiling was found to be associated with traits such as warmth and happiness (e.g., Deutsch et al., 1987). By the halo effect, individuals may subconsciously ascribe smiling individuals with other positive characteristics, for instance competence in their field of specialisation. Additionally, prospective employers may associate smiling with politeness, social conformity, submissiveness, and willingness to control one's emotional expressions in a

socially desirable way, which could be positive traits when it comes to future cooperation with the new employee.

It would be interesting to investigate whether smiling is associated with perceived competence in any kind of job, or whether there exist exceptions to the rule. As Kraus and Chen (2013) suggested, smiling before a fight is related to inferior performance in professional fighters. It can be hypothesised that while applying for jobs which require physical strength accompanied by a certain level of authority and aggressiveness, such as a position of a bouncer in a bar, it would not be strategic to attach a picture with a smile to the application. It is also possible that applications for jobs, which generally require large physical strength, such as constructor jobs, should instead be accompanied by a picture with a neutral expression than by a photo of a smiling face. According to Dabbs (1997), higher levels of testosterone are associated with less smiling, which explains why men generally smile less than women.



It shall be emphasised that results of our study cannot be without further research extrapolated to all types of positions in IT companies, as we only focused on the position of a software developer. It is possible that in case of applications for a leader of a large IT company, attaching a smiling photo would be less advantageous due to possible associations between smiling and submissiveness.

It would also be interesting to study to what extent smiling during the job interview has an effect on the outcome of the interview. More research is needed in order to investigate whether there is any real association between choosing to adopt a particular facial expression in an application photo and one's level of competence in the field or whether it is a pure bias.

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