Emoji Response Options: Unhelpful in Affective, Confusing in Non-Affective Job Satisfaction Measurement

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April 7, 2024

Abstract

Many work-related assessments happen digitally these days. While this is feasible, it comes at the disadvantage that communication is purely verbal. Although this doesn't impede the assessment of non-affective constructs, challenges emerge in assessing affective constructs primarily conveyed via non-verbal cues. Encompassing both affective and non-affective elements, job satisfaction is an example of such constructs. Due to the absence of non-verbal cues in text, digital job satisfaction assessments fail to capture affective elements, diminishing their reliability. Improving job satisfaction assessment is vital as it correlates with costly outcomes, such as turnover intentions. Recent studies suggest emojis offer context for affect in text. Thus, it is hypothesized that while emojis will improve affective job satisfaction assessment, they will not offer additional value in assessing non-affective job satisfaction. This improvement was operationalized by the scale's predictive ability on turnover intentions. 355 participants were randomly assigned to either a text- or emoji-anchored scale condition and were asked to complete self-reported questions on job satisfaction, turnover intentions, and clarity of anchors. No difference in the relation between affective job satisfaction and turnover intentions was observed across conditions, with emoji options rated less clear than text options. Text scales exhibited a stronger relation between non-affective job satisfaction and turnover intentions with higher clarity ratings than emoji scales. In the emoji condition, emojis altered non-affective satisfaction assessment, indicated by the negative relation between anchor clarity ratings and non-affective job satisfaction score. In sum, emojis neither improved nor hindered affective construct measurement. Caution is advised on using emojis for non-affective constructs. Future research should explore emojis' utility across diverse contexts and demographics.

Keywords: *Emoji, Online Assessments, Job Satisfaction, Turnover Intentions.*

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Nearly 65% of Americans report using text messages or emails to stay connected with friends and family, accelerating the shift from face-to-face communication to digital text form (Atske, 2022). This percentage does not solely imply that individuals use digital texts to keep in touch with loved ones but highlights an important transition in the way we communicate. Initially confined to casual conversations, digital communication now extends to many other aspects of daily life including professional contexts, such as Human Resources (HR) management. Although many HR practices would traditionally take the form of face-to-face communication, with globalization, these practices have started to take place in digital environments through texts. Mainly, the assessments and evaluations of job-related constructs are now transferred to digital channels where employees are asked to fill in online surveys rather than having face-to-face discussions about them (Lengnick-Hall et al., 2018).

There are many benefits of such digital assessments and evaluations of job-related constructs. For example, the ease of providing a supervisor evaluation through online surveys or gathering employee satisfaction survey results from all over the world with just one click. However, it has some downsides as well. Transitioning to digital communication from face-to-face interactions results in the absence of non-verbal cues that carry undeniable importance for emotional information exchange. Face-to-face communication encompasses both verbal and non-verbal cues, with non-verbal expressions, like facial expressions and gestures, serving as vital sources of social information (Van Kleef, 2009). For example, a verbal content “I am fine” can be interpreted as “I am indeed fine”, “I am happy”, or that “I am actually not fine” depending on

the non-verbal cues it is accompanied with. The significance of non-verbal cues diminishes when the content is not about subjective experiences like emotions, mood, attitudes, satisfaction, and motivation, collectively known as affective constructs (Arroyo et al., 2012). That is, when a sentence involves affective experiences, non-verbal cues play an additional clarifying role in communication. However, in sentences focusing on objective or fact-based content (e.g., "it is two o'clock"), non-verbal cues do not serve any additional clarifying role as there is likely no ambiguity created. Therefore, in the digital environment where non-verbal cues are lacking and communication is mainly text-based, concerns arise about potential ambiguity in the assessment of key affective job constructs. That is, in the process of digitalization of HR practices, the loss of non-verbal cues and their impact on the digitalized assessments of affective constructs should be recognized. Additionally, alternatives to place these non-verbal cues within the digital text-based assessments should be implemented.

The evolution of digital communication already gave rise to a new form of non-verbal communication, introducing a visual component within the text: emojis. Emojis are sets of symbolic expressions and are advanced versions of emoticons, sequences of ASCII imitating facial expressions (Bai et al., 2019; Erle et al., 2022). Emojis not only reduce the ambiguity of texts but also set an emotional tone in digital communication facilitating affective comprehension and aiding contextualizing of the emotions (Erle et al., 2022; Kaye et al., 2016; Schmit et al., 1995). Thus, in alignment with emotional expressions in face-to-face communication, emojis serve analogous functions with non-verbal cues and enhance our comprehension of emotions within texts. As the use of emojis in daily life contexts showed that they serve parallel functions with non-verbal cues within text, the implementation of emojis in digital assessments and evaluations of job-related affective constructs could be an alternative to

consider. By ensuring comprehension of emotions within texts, emojis can help reduce the risks of missing affective components of work constructs in digital assessments. These affective job constructs play a pivotal role in predicting essential organizational outcomes, including performance, turnover, and employee motivation. Nevertheless, impaired quality of the measurement risks the ability of scale scores to anticipate vital work outcomes (Cronbach & Meehl, 1955; Clark & Watson, 2019), suggesting by not being able to successfully measure an affective construct we also risk not being able to predict important work outcomes associated with it. Hence, the utilization of emojis in the assessment as an alternative to text-based assessment of affective constructs can be a promising strategy in the digital era. Such integration offers a possible reduction in the risk of creating ambiguity in the measurement of affective dimensions of critical work constructs and their associations with organizational outcomes.

Theoretical Background

For the remainder of this study, the above-mentioned context of using emojis in digital assessments will be applied to a well-studied relationship between job satisfaction and turnover intentions.

The Relationship Between Job Satisfaction and Turnover-Intention

Job satisfaction is a multidimensional set of responses of an individual to one's job, and it involves cognitive, affective (or emotional), and behavioral elements (Hulin & Judge, 2003). Therefore, by definition, job satisfaction refers not only to how one objectively evaluates their job but also their affective experiences about it. That is, job satisfaction has both affective (e.g. enthusiasm and joy linked to job) and non-affective (e.g. pay, promotion, and rewards) components. Although the division between affective and non-affective job satisfaction is made in theory, measures of job satisfaction fail to tap into the affective component properly. In fact, a

lot of research on job satisfaction specifically points to the lack of 'good' or 'precise' measures of job satisfaction, especially 'affectively laden' measures of job satisfaction (Brief & Weiss, 2002; Eid & Larsen, 2008; Weiss, 2002). Following the digitalization of the job satisfaction assessment, the issue of overseeing affective components of job satisfaction is exacerbated due to the absence of non-verbal cues, which could at least convey some of the affective components in face-to-face interactions. Nevertheless, this transition is less problematic for the measurement of non-affective components as they are likely less affected by affective ambiguity that the absence of non-verbal cues creates.

Furthermore, an employee's dissatisfaction (i.e. employee not being satisfied) with their job is associated with many negative outcomes, making job satisfaction and its assessment crucial in work settings (Faragher et al., 2005; Vangel, 2011). One of the consistently supported correlates of job dissatisfaction is turnover intentions (Özkan et al., 2020; Sanghoo & Kim, 2022). Turnover refers to an employee leaving a company whereas turnover intention is an employee's reported willingness to leave the organization (Lazzari et al., 2022). As turnover behavior is one of the costliest negative outcomes for the organization (Park & Shaw, 2013), correctly predicting turnover intention carries an undeniable preemptive importance. That is, by more successfully assessing the affective nature of job satisfaction, more successful preventive measures towards dissatisfaction could be taken. Following, undeniable financial benefits as well as positive employee outcomes can be obtained.

Put together, measurement tools should be tailored to the differentiation between affective and non-affective components of job satisfaction. Most importantly, following the digitalization of these assessments, this tailoring should focus on the differential impact the lack

of non-verbal cues has on affective vs. non-affective job satisfaction assessment (Brief & Weiss, 2002; Fernández-Muñóz & Topa, 2018).

Use of Text-Anchored Scales for the Measurement of Job Satisfaction

Most digital assessments rely on text-anchored scales for the measurement of both affective and non-affective constructs. In traditional text-anchored scales, response options are represented by words or phrases to indicate different levels of the construct being measured. For example, an item "how satisfied are you with your job" will have answer options ranging from "not at all" to "extremely". Nonetheless, affective constructs are latent constructs with an abstract nature that cannot be observed directly, thus measuring them correctly is challenging (El-Den et al., 2020). The ability of scales to correctly measure what they are supposed to is referred to as construct validity (Bhandari, 2023).

Following these definitions, it can be argued that text-anchored scales are threats to the construct validity of affective job satisfaction measurement for several reasons. Following the lack of non-verbal cues, self–report response options remain ambiguous for respondents. Suggesting that the meaning assigned to response options remains unclear for the respondent, turning the selection of an option based on guessing what "not at all" or "extremely" would mean rather than a precise translation of one's feelings (Diener, 1999; Segura & González-Romá, 2003). Subsequently, this unclarity interferes with the accurate measurement of affective constructs while inducing more ambiguity and confusion in the assessment. Additionally, individuals often struggle to correctly translate their emotions (or more generally affective states) into numerical or verbal expressions (Valev et al., 2019). That is, the text-based answer respondents provide for their affective states cannot be directly translated into their feelings as respondents themselves are having a hard time transitioning from feelings to words. Both these

create systematic errors in the measurement of a construct, suggesting that the quality of the measure is hindered for everyone taking the test. This means that by asking for a verbal response in the assessment of an affective job satisfaction, we engage in a systematic measurement error where the response given does not correspond to internal insights. In turn, this makes the scores obtained from measures more distant from what we would get if the respondent could provide answers perfectly matching their feelings, the true value.

On the other hand, having text-anchored response options does not threaten a scale's ability to correctly measure non-affective job satisfaction nor its ability to predict turnover intentions. Mostly because the non-affective components are not influenced by the ambiguity created by the lack of non-verbal cues in the response options. To exemplify, one can think of the difference between the response options of "strongly agree" and "agree". These options would correspond to a meaningful difference and would not necessitate non-verbal cues for clarification when an individual is asked to rate the statement "I get paid enough" (non-affective component). This is because it is an objective evaluation: depending on the size of the discrepancy between your ideal and current pay, you can choose to either strongly agree or agree. Nevertheless, these options would not correspond to a meaningful difference when the item is "I am happy with my job" (affective component). As discussed, one would seek non-verbal cues to convey a meaningful difference between being strongly happy or just happy with their job. This might explain why the affective job satisfaction scores cannot be fully obtained and used to predict outcomes even when the content of the measure is precisely tailored for affective components of job satisfaction (see, 'affective job satisfaction scales', Thompson & Phua, 2012). These text-anchored scales are bounded in their ability to correctly tap into the

affective construct, pointing to a need for improvement in the measurement tool for affective job satisfaction.

Introducing Emoji Anchors for the Measurement of Job Satisfaction

One line of research focuses on using emojis as anchors in psychometric scales rather than the commonly used text anchors (Bai et al., 2019). Emoji anchoring suggests representing response options with relevant emoji replacements. An example is text-anchored Likert scales in which answer options range between opposite ends of a spectrum (e.g., “not at all” to “most likely”), and the emoji replacements of such anchors usually range from 😞to 😐 to 🙂 (see, Mahbub et al., 2021). Initially, studies were concerned with whether using emojis for the assessment revealed *similar* psychometric properties as text-anchored scales (Jaeger et al., 2019; Sick et al., 2022). However, further studies are needed because emoji-anchored scales, by ensuring emotional information exchange within text, might not only be *alternatives* but also *superior* to text-anchored scales in measuring affective constructs. Throughout the remainder of this paper, emoji-anchored scales will be referred to as “emoji scales.”

It is expected that emoji scales would make translating emotions into responses easier for respondents. Mainly, this would occur through emojis serving similar functions with non-verbal cues within text and creating a context for the affective content. In fact, the use of such visual cues is preferred by the respondents as it eases the understanding of the statement, making the ratings on the scale more accurate compared to only text measures. (Jaeger et al., 2021; Mahbub et al., 2021). In turn, this enhances the scale's ability to accurately measure affective constructs. By doing so, emoji scales would reduce the systematic measurement error and ensure that we get closer to the true value. Thus, the replacement of commonly used text anchors with emojis can

ensure better measurement of affective constructs and further improve the ability of affective constructs to predict related criteria.

Studying this hypothesis, Phan et al. (2017) compared emoji scales with text-anchored scales for measuring vocational interest, an affective construct reflecting an individual's preference on a career/job (Schermer, 2016). Their study analyzed whether these scales differed in their ability to predict a well-known correlate, job performance. The main findings indicated that the emotional aspect of vocational interest was better captured using an emoji scale compared to a text-anchored scale as the assessment with an emoji scale demonstrated a stronger predictive ability for job performance. The results of Phan et al. (2017) support the notion that text-anchored scales are limited in their ability to measure affective constructs, likely because of the remaining ambiguity of the response options for the respondents. The limited capacity of text-anchored scales to capture affect may obscure assessments of the relationships of affective constructs with other criteria. Suggesting that by using emojis as indicators in scales, improved measurement, hence better predictive outcomes of affective constructs can be utilized.

In the context of job satisfaction measurement, the integration of emojis as anchors in job satisfaction scales could better tap into affective components of job satisfaction. This improves the construct validity of assessment of the affective job satisfaction. For example, instead of having to respond, "not at all" or "extremely" to a statement "I am happy with my job", respondent can choose an emoji option that is contextually more valid and familiar from non-verbal cues used in face-to-face communications (i.e., an emoji correspond of a facial expression). Subsequently, this improvement in the assessment leads to a better ability to predict turnover intention than when measured with text-anchored scales. On a broader level, this understanding holds benefits for the domain of applied sciences, as it provides the researcher

with clarity on the meaning obtained from scale scores and their real-life associations, contributing to advancements in various fields (Blanton & Jaccard, 2006).

On the other hand, similar to non-verbal cues not contributing to the communication of non-affective constructs, emoji anchors are assumed to not provide additional benefits in their measurement. In the context of work, the hours spent at work, rewards, or the way the promotion system works are examples of non-affective components that can be evaluated objectively. These non-affective components are determinants of one's non-affective job satisfaction and, thus, related to turnover intentions as well. Hence, it is important to understand whether emoji scales serve additional advantages in their measurement. Following the assumption that emojis will not provide additional help with the measurement of non-affective constructs, it can be argued that emoji anchors would not serve any advantage over text-anchored scales when measuring non-affective job satisfaction.

The examination of the use of emojis in both affective and non-affective construct measurements brings the current study a step further to existing emoji research, aiming to strengthen the assumption that emojis are useful as anchors specifically for affective construct measurement. Respectively, the current study takes a step further in job satisfaction research by examining possible better measurement for affective job satisfaction, while gaining insight into differential outcomes of different measurement tools for non-affective and affective job satisfaction.

Current Study

Digitalization is moving forward, and there is no stopping that. The key remains in adjusting to new ways of communication, and how it influences other contexts. Phan et al. (2017)' s study represents an advancement in emoji studies as it not only reports *similar*

psychometric properties between emoji scales and text-anchored scales but also suggests that emoji scales could be a *superior* alternative for measuring affective constructs and understanding their association with different criteria. To our knowledge, no other studies further investigated the use of emoji scales in the measurement of affective constructs for improved construct validity and predictive outcomes. By providing better alternatives within the digital domain, this study aims to stimulate adjustments regarding the assessment of affective constructs in a digital, text-based environment.

Building upon the work of Phan et al. (2017), this study compares the strength of the relationship between job satisfaction and turnover intentions when job satisfaction is measured with an emoji versus a text-anchored scale. To achieve a detailed understanding on the role of emojis in job satisfaction assessment, the current study divides affective and non-affective job satisfaction, a division that has been encouraged by multiple studies for ensuring better measurement of job satisfaction (Brief & Weiss, 2002; Fernández-Muñóz & Topa, 2018). Therefore, the main goal of this research is to determine whether the use of emoji scales is associated with an improved assessment of affective job satisfaction and hence better predictive ability on turnover intention. That is, the improvement of the measurement is operationalized by the ability of (affective/non-affective) job satisfaction to predict turnover intentions. Following the research goal, the current study aims to answer the question "Do emoji scales compared to text-anchored scales improve how well (non-)affective job satisfaction predicts turnover intentions?" by testing the following hypotheses.

H1. Affective job satisfaction will be negatively correlated with turnover intentions.

H2. Non-affective job satisfaction will be negatively correlated with turnover intentions.

H3. There will be a significant interaction between scale type and turnover intentions for affective job satisfaction. The correlation between affective job satisfaction and turnover intention will be stronger (i.e., more negative) when affective job satisfaction is measured with an emoji scale than with a text-anchored scale.

H4. The interaction between scale type and turnover intentions for non-affective job satisfaction will be insignificant. The correlation between non-affective job satisfaction and turnover intentions will be equally strong when non-affective job satisfaction is measured with an emoji scale or text-anchored scale.

Method

Open Science Practices

Prior to data collection a pre-registration has been made and uploaded onto AsPredicted (AsPredicted #160012). This pre-registration provides a detailed summary of the research plan including a G*power analysis (Faul et. al., 2009) setting the minimum participant requirement to 348. The pre-registration can be found at this link: https://aspredicted.org/WNS_X75.

Participants

Before recruiting the participants**,** ethical approval for this research was received from the Ethical Review Board (ERB) at the Tilburg School of Social and Behavioral Sciences (TSB) under the blanket application of the Social Psychology department (RP1173).

Participants were recruited through the website Prolific (https://www.prolific.com/) and were compensated with £1 for the study that took 5-7 minutes to complete. The exclusion criteria were structured to prevent participation of individuals below the age of 18 and/or those who were unemployed. The current study employed 369 participants in total. After the deletion of unemployed participants (n = 9), and participants who provided wrong answers to ‘careless

respondent detector' items (n = 5), there were 177 participants (120 female, 55 men, 2'other') in the emoji scale condition and 178 (108 female, 68 male, 2 'other') participants in the text-anchored scale. Hence, the utilized sample size at the start of the analysis was 355, satisfying the minimum sample requirement for this analysis set by the G*power analysis (Faul et. al., 2009).

Materials

All scales used in the current study can be found in Appendix A.

Demographic Variables

To determine the age of the participants, the first item in demographics block was "what is your current age". Second question focused on their employment asking, "what is your current employment status" and the response options were employed or unemployed. Last question was concerning gender identity, "which gender do you identify with", where participants could respond as male, female, other, prefer not to say.

Turnover Intentions

Turnover intentions were measured by using certain items from the 6-item Turnover Intentions Scale (TIS- 6) (Bothma & Roodt, 2013). This scale consists of 6 items with 5-point Likert Scales. To ensure there are no affective components that can interfere with the analysis of this construct, only the scores from the items that are cognitively evaluative in nature and that do not require emotional evaluation were assessed. Among the six items, only three were devoid of affective components. For instance, the item "How satisfying is your job in fulfilling your personal needs?" was excluded due to its affective nature. A representative item employed in this study was "How often have you considered leaving your job?" The response option for this question ranged from "*never*" to "*always*", the former corresponding to a score of 1 and the latter to 5. The turnover intention of an individual was calculated by summing up their response to

these items (Bothma & Roodt, 2013). The scores ranged from 3 to 15, with higher scores indicating higher turnover intentions. Regarding the psychometric qualities of this measurement, based on Mujis (2010)'s classification, a good reliability score was reported with a Cronbach's alpha of $\alpha = 0.80$. The scale is also shown to be a valid measure of turnover intentions (Bothma & Roodt, 2013). The current study alpha for this questionnaire was $\alpha = 0.76$, which is acceptable.

Affective Job Satisfaction

For the assessment of affective components of Job satisfaction, the Brief Index of Affective Job Satisfaction (BIAJS) was used (Thompson & Phua, 2012). This scale consists of 4 items focusing on affective components of job satisfaction that are measured on a 5-item Likert Scale (1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree*, 5 = *Strongly agree).* An example item of the questionnaire is "I find real enjoyment in my job". Affective job satisfaction score was determined by summing up the response given to each item (Thompson & Phua, 2012). The scores ranged between 4-20, with higher numbers indicating more affective job satisfaction. Regarding the psychometric properties, the job satisfaction survey had a good reliability score with a Cronbach's alpha ranging between $\alpha = 0.81$ and $\alpha = 0.83$ (Spector, 1985; Mujis, 2010). The BIAJS scale was found to correlate highly with the other measures of job satisfaction, showing its validity to correctly measure job satisfaction. Current study reliabilty score for this scale was $\alpha = 0.90$, which is excellent.

Non-affective Job Satisfaction

For the measurement of non-affective components of job satisfaction, specific items from the Job Satisfaction Survey (JSS) were used (Spector, 1985). The JSS consists of 36 items that are measured on a 6-point Likert scale (1 = *disagree very much*, 2 = *disagree moderately*, 3 = *disagree slightly*, 4 = *agree slightly*, 5 = *agree moderately*, 6 = *agree very much*). Following

the current goals of the current research, items that are under the domains of ‘pay’, ‘promotion’, ‘rewards’, and ‘benefits’ were used. This decision was made as these categories are not related to affective evaluation but rather cognitive evaluation of the respondents (Brief & Weiss, 2002; Eid & Larsen, 2008). That is, when assigning ratings to these items, individuals focus on objective factors such as comparing efforts with outcomes, or others' pay, etc. Items used in the questionnaire of the current research were “There are benefits we do not have which we should have”, “There are few rewards for those who work on my job”, “Raises are too few.”, “There is really too little chance for promotion on my job”. The satisfaction score of an individual is calculated by the summation of the score in each item (Spector, 1985). As these items were negatively worded, the responses reverse-coded before summation. Thus, the scores ranged from 4 to 24, with higher scores indicating higher job satisfaction. Regarding the psychometric properties, the job satisfaction survey had a high reliability score with a Cronbach’s alpha of α = 0.91 (Spector, 1985; Mujis, 2010). Specifically, the subscales of pay, promotion, reward, and benefits had a good reliability score with Cronbach’s alpha being α = 0.75, α = 0.73, α = 0.76, α = 0.75, respectively. Additionally, the JSS is reported to be a valid measure of job satisfaction. The JSS used in the study revealed a Cronbach’s alpha of α = 0.73, which is acceptable.

Manipulated Variable

Emoji Scale. In addition to each text-anchored scale for the assessment of both job satisfaction scores, an emoji scale was developed. The emoji anchors were selected based on the positive and negative valence associated with them. That is, the choice of emojis was based on the attitude respondents would have toward the statement, either positive or negative. This decision was informed by the study of Krekhov et al. (2022) assessing the emotional valence

scores of emojis on a 7-point scale. In addition to valence scores for the emojis, Krekhov et al. (2022) categorized emojis into distinct groups based on the significance of differences in valence associated with them. In our study, emoji anchors were determined by focusing on whether the emoji corresponds to a positive or negative valence and by ensuring that emoji anchors significantly differed from each other.

In the online survey, the emoji response options were written using code points corresponding to each emojis code point. Therefore, the appearance of emoji response options varied slightly depending on the user's operating system (Appendix A). The following sections provides the code points of the emojis as well as their visual correspondence for Apple users.

Emoji Scale for Affective Job Satisfaction. The "Grinning Face (U+1F600, 😃)" emoji rated highest for positive valence ($M_{intensity}$= 5.34) (Krekhov et al., 2022). With the addition of stars instead of eyes, "Grinning Face with Star Eyes (U+1F929, 🤩)" emoji implies even stronger positive feelings, summarized as being 'starstruck' (*Emojipedia*). Hence, selecting this emoji suggests strong agreement with statements about job satisfaction and happiness. Conversely, the "Slightly Smiling Face (U+1F642, 🙂)" emoji, with lower positive valence ($M_{intensity}$ = 2.39), represents a less intense positive reaction ($p < .001$ for the comparison between '🙂' and '😃') (Krekhov et al., 2022). Hence, the "slightly smiling face" is assumed to correspond to the respondent's positive attitude and agreement (as opposed to strong agreement/positive attitude) for the statement. For the neutral emoji anchor, "face without mouth (U+1F636, 😶)" was used in the current study. Although former research suggested the use of "expressionless or neutral face (😑; 😐)" for neutrality toward statements, it is shown that these expressions are associated with mild negative feelings such as irritation (Krekhov et al., 2022; *Emojipedia*). Lastly, the "disappointed face (U+1F61E, 😞)" emoji, rated highest for negative valence ($M_{intensity}$ = 4.23).

Reflecting strong negative feelings, it indicates significant disagreement with positive statements about the job, suggesting lower satisfaction. As the "Slightly frowning face (U+1F641, 🙁)" is shown to be associated with negative valence but in a distinctly lesser intensity ($M_{intensity} = 2.70$, $p < .001$ for the comparison between '🙁' and '😞'), it is assumed that this emoji to correspond the respondent's disagreeing (as opposed to strongly disagreeing) attitude for the statement. Taken together, the 5-point emoji Likert scale of affective job satisfaction was: 1 (🤩) = *strongly agree*, 2 (🙂)= *agree*, 3 (😶) = *neutral*, 4 (🙁) = *disagree,* 5 (😞)= *strongly disagree*. Regarding the psychometric properties, the emoji scale for affective job satisfaction revealed an excellent reliability score with a Cronbach's alpha of $\alpha = 0.93$.

Emoji Scale for Non-Affective Job Satisfaction. Following that the items of non-affective job satisfaction were negatively worded, the emoji response options were located oppositely. For example, when a participant was presented with the item 'there are too little promotion options', the response option that correspond to the highest agreement to the statement should be negative in nature. Therefore, the emoji anchor was adjusted to ensure that the strongest agreement option captures respondent's negative feelings. That is, statements where higher response options point to job dissatisfaction had negatively valanced emoji anchors corresponding to a score of 5, while positively valanced emoji anchors corresponding to a score of 1. This way, the same scoring procedure was ensured for emoji and text-anchored scales of non-affective job satisfaction.

Additionally, following that non-affective job satisfaction was measured using a 6-point Likert scale, two emojis corresponding to response options 'agree very much' and 'disagree very much' were added. Furthermore, the neutral option was omitted from this scale. Hence, based on the valence scores provided by Krekhov et al. (2022), the 6-point emoji Likert scale was: 1 (🤩)

= *disagree very much*, 2 (😃)= *disagree moderately*, 3(🙂)= *disagree slightly*, 4 (😕) = *agree slightly,* 5 (😞)= *agree moderately*, 6 (😭)= *agree very much*. The addition of the 'Loudly Crying Face (U+1F62D, 😭)' was based on the significantly higher negative valence this emoji conveyed compared to all other negative emojis ($M_{intensity}$ = 5.83, $p < .001$ for the comparison between '😭' and two other negative anchors '😞 & 😕'). As such, the distinction between the Grinning Face with Star Eyes (🤩) and Grinning Face (😃) was based on the difference in positive valence they have. Although other stronger positive valence emoji options were presented in the analysis of Krekhov et al. (2022), these emojis conveyed different meanings such as amused (😂, 🤣) or fun (🥳), hence not used as anchors. Regarding the psychometric properties, the emoji scale for non-affective job satisfaction revealed a good reliability score with a Cronbach's alpha of $\alpha = 0.81$.

Manipulation Check

Both affective and non-affective job satisfaction scales were followed up with a manipulation check question "*please indicate how clear the response options were for you*". Additional questions were included alongside this clarity item to mask the primary research objective of assessing whether emoji anchors enhance response option clarity for survey participants (Appendix B). The scale of clarity item ranged from 1 to 5, higher scores indicating better perceived clarity of the response options.

Other Measures

Since the data was gathered for multiple studies at the same time, the survey included additional variables. Scales that were in the survey to measure these variables but not examined in the current study were the Cognitive Appraisal Scale (Skinner & Brewer, 2002), an item for stress measure ("How would you rate the level of your job stress?"), and lastly four items

measuring participant's perception of workplace diversity (e.g., "What is the level of ethnic diversity at your workplace?").

Procedure

Recruited participants were forwarded to a Qualtrics survey (https://www.qualtrics.com/), beginning with an item asking for informed consent (Appendix C). Following this, demographic questions were presented, and participants received instructions about the study they are about to start (Appendix D).

The current research employed an experimental between-subjects design where individuals were randomly assigned either to a text-anchored (0) or emoji scale (1) scale condition. In the text-anchored scale condition, all items were measured with a text-anchored scale. In contrast, the emoji scale condition used emoji scales for assessing affective and non-affective job satisfaction, and text-anchored scale for assessing turnover intentions. Besides, both conditions had a consistent structure, instructing participants to select the option that best described their response to the statement. In both conditions, in-between a long item list, a 'careless respondent detector' was placed (i.e., "If you are reading this please choose 'agree'"). At the end of the survey, participants received a debriefing (Appendix E) and were referred to an email address for further inquires.

Results

All statistical analyses were performed using IBM SPSS version 28.0.

Preliminary Analyses and Descriptive Statistics

Pearson correlations between the independent variables (affective and non-affective job satisfaction) and dependent variable (turnover intention). Additionally, descriptive statistics for these variables were obtained. As Table 1 summarizes, non-affective job satisfaction and

affective job satisfaction correlated significantly positively (r = .25, p <.001). Turnover intentions was negatively correlated with both non-affective (r = -.32, p <.001) and affective job satisfaction (r = -.52, p <.001). Overall, these correlations are similar to the observations of the recent meta-analyses on this relationship (Özkan et al., 2020; Sanghoo & Kim, 2022). Lastly, the descriptive scores pointed to normal levels on all variables.

Table 1

Descriptive Statistics of the Measures of the Study

	M	*SD*	1	2	3
1. Affective Job Satisfaction	13.8	3.5	—	.25**	-.52**
2. Non-Affective Job Satisfaction	11.4	4.0	.25**	—	-.32**
3. Turnover Intentions	8.7	2.5	-.52**	-.32**	—

Note. N = 355. ** p < .001

Manipulation Checks

Two independent sample t-test were performed as a manipulation check to understand if the mean of the ratings to the manipulation check item was significantly different between the emoji and text-anchored scale conditions in job satisfaction measurement.

In the measurement of affective job satisfaction, there was a significant difference in clarity ratings between scale conditions $t(353) = 2.80$, $p = .003$, $d = 0.30$. When measuring affective job satisfaction, emoji response options were rated as less clear (M = 4.53, SD = 0.67) than text response options (M= 4.71, SD = 0.46). Similarly, clarity ratings significantly differed between conditions when measuring non-affective job satisfaction, $t(353) = 10.01$, $p < .001$, d = 1.07. For the measurement of non-affective job satisfaction, text response options were rated higher in clarity (M = 4.54, SD = 0.67) than emoji options (M = 3.35, SD = 1.41)

Hypothesis Tests

To test the hypotheses, two different three-stage hierarchal multiple regression analyses were carried out with turnover intentions as the dependent variable. Throughout the analysis, a significance level of $p < .05$ was used. Prior to analysis all variables were centered to avoid multicollinearity and to ensure easier interpretation, hence the reported variables are based on centered scores. Assumptions of multiple regression analysis were checked for both hierarchal multiple regressions. The independence of observations was ensured by the research design. The examination of the scatterplots demonstrated a linear relationship between dependent and independent variables. None of the variance inflation factors were higher than 2, ensuring absence of multicollinearity. Assessment of the assumption normally distributed variables was conducted via examination of the histograms, revealing normal distributions for each variable. Additionally, scatterplots of the standardized residuals and standardized predicted values confirmed that the assumption of homoscedasticity was met. Lastly, examination of probability plots (PP plots) demonstrated that the residuals were normally distributed.

Hypothesis 1 and 3

The first regression analysis, stage one tested the first hypothesis by including affective job satisfaction This initial stage of the hierarchical regression analysis revealed that affective job satisfaction contributed significantly to the regression model and explained significant proportion of variance in turnover intentions, $R^2 = .27$, $F(1,353) = 128.63$, $p < .001$. As presented in Table 2, higher affective job satisfaction was significantly associated with lower turnover intentions, $b = -0.52$, $t(353) = -11.34$, $p < .001$, supporting Hypothesis 1. At the second stage of the analysis, scale condition was added. Results of this stage revealed that scale condition explained an additional 1% of the variance in turnover intentions, $\Delta R^2 = .01$, F (2,352)

= 4.99, p = .026. This suggests, although with a small proportion, change in scale condition accounted for some variance in turnover intentions. When controlled for the scale condition, affective job satisfaction was still negatively and significantly associated with turnover intentions, b = -0.52, $t(353)$ = -11.38, $p < .001$ (see Table 2). To test the third hypothesis, the interaction term of affective job satisfaction and turnover intentions was introduced at the third stage of the model. Introducing the interaction term did not result in a significant change in the proportion of variance explained in turnover intentions, ΔR^2 = .00, $F(3,351)$ = .03, p = .855. As shown in Table 2, the interaction between affective job satisfaction and scale condition was not significant, b = -0.02, $t(353)$ = - 0.18, p = .855. That is, contrary to Hypothesis 3, the relationship between affective job satisfaction and turnover intentions showed no difference between scale conditions.

The subsequent simple regression analysis demonstrated that the relationship between turnover intentions and affective job satisfaction remained significant both in emoji (b = -.38 p < .001) and text scale condition (b = -.37 p < .001) (see Figure 1).

Table 2

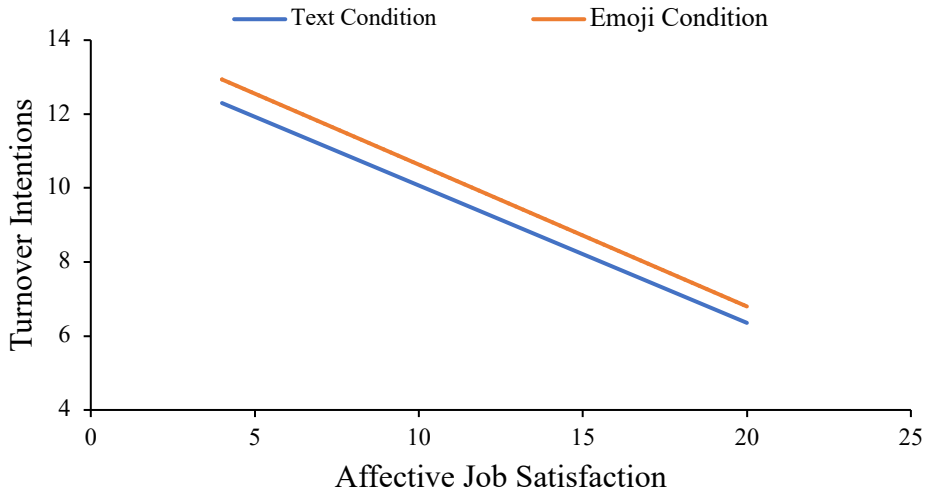
Summary of Hierarchical Regression Analysis for Scale Condition Moderation of Affective Job Satisfaction and Turnover Intentions

Variable	B	*SE* (B)	*t*	95% CI		*R*	R^2	Δ R^2
				LL	*UL*			
Stage 1						.52	.27	.27
Affective Job Satisfaction	-0.52	0.05	-11.34**	-0.61	-0.43			
Stage 2						.53	.28	.01
Affective Job Satisfaction	-0.52	0.05	-11.38**	-0.61	-0.43			
Scale condition [a]	0.20	0.09	2.24*	0.02	0.38			
Stage 3						.53	.28	.00
Affective Job Satisfaction	-0.51	0.07	-7.76**	-0.64	-0.38			
Scale condition [a]	0.20	0.09	2.23*	0.02	0.38			
Affective Job Satisfaction*Scale Condition	-0.02	0.09	-0.18	-0.20	0.16			

Notes. CI = confidence interval; *LL* = lower limit; *UL* = upper limit. [a] Scale condition was a dichotomous variable where 0 = text-anchored scale, and 1 = emoji scale condition. ** $p < .001$ * $p < .05$.

Figure 1

Affective Job Satisfaction by Scale Condition Predicting Turnover Intentions



Hypothesis 2 and 4

At the second regression analysis, stage one tested the second hypothesis by including non-affective job satisfaction. The results of the initial stage showed that non-affective job satisfaction contributed significantly to the regression model and explained significant proportion of variance in turnover intentions, R^2 = .11, F(1,353) = 41.33, p < .001. As presented in Table 3, stage 1 of the hierarchical regression analysis showed that higher non-affective job satisfaction was significantly associated with lower turnover intentions, b = -0.33, t(353) = -6.43, p < .001, supporting Hypothesis 2. At the second stage of the analysis, scale condition was introduced and it explained an additional 4% of the variance in turnover intentions, ΔR^2 = .04, F(2,352) = 14.95, p < .001. When adjusted for the scale condition, non-affective job satisfaction was still negatively and significantly associated with turnover intentions, b = -0.37, t(353) = -7.30, p < .001 (see Table 3). At the third stage of this model, the interaction term of non-affective job satisfaction and turnover intentions was introduced. The interaction term explained an additional 3% of variation in turnover intentions, and this change in explained variance was significant, ΔR^2 = .03, F(3,351) = 10.57, p = .001. Following the significant change in explained variance, stage 3 of the hierarchical regression analysis revealed that the interaction between non-affective job satisfaction and scale condition was significant, b = 0.33, t(353) = 3.25, p = .001. This pattern of results is not line with Hypothesis 4 and suggests the relationship between non-affective job satisfaction and turnover intentions showed differences between emoji and text-anchored scale condition.

To further understand the nature of this difference, a simple linear regression analysis was conducted. The results showed that non-affective job satisfaction predicted turnover intentions more strongly when measured with text scale (b = - 0.33, p < .001) than when

measured with emoji-anchored scale (b = - 0.13, p = .002). Figure 2 depicts this interaction effect.

Table 3

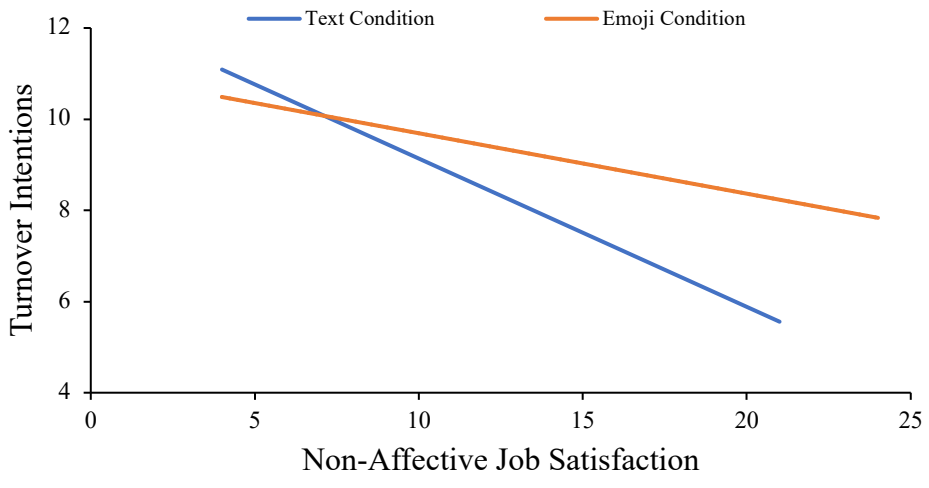
Summary of Hierarchical Regression Analysis for Scale Condition Moderation of Non-affective Job Satisfaction and Turnover Intentions

Variable	B	*SE* (B)	*t*	95% CI		*R*	R^2	Δ R^2
				LL	*UL*			
Stage 1						.32	.11	.11
Non-affective Job Satisfaction	-0.32	0.05	-6.43**	-0.42	-0.23			
Stage 2						.38	.14	.04
Non-affective Job Satisfaction	-0.37	0.05	-7.30**	-0.47	-0.27			
Scale condition [a]	0.39	0.10	3.87**	0.19	0.59			
Stage 3						.41	.17	.03
Non-affective Job Satisfaction	-0.55	0.08	-7.35**	-0.70	-0.40			
Scale condition [a]	0.40	0.10	4.00**	0.21	0.60			
Non-affective Job Satisfaction*Scale Condition	0.33	0.10	3.25*	0.13	0.53			

Notes. CI = confidence interval; *LL* = lower limit; *UL* = upper limit. [a] Scale condition was a dichotomous variable where 0 = text-anchored scale, and 1 = emoji scale condition. ** $p < .001$ * $p < .05$.

Figure 2

Non-Affective Job Satisfaction by Scale Condition Interaction Predicting Turnover Intentions



Exploratory Analysis

Since the hypothesized interactions were not observed and opposite patterns emerged for some of the interactions, additional descriptive statistics, Pearson correlations and t-tests comparing variables in different scale conditions were conducted. The goal of these analysis was to further understand the data.

As summarized Table 4, the means of turnover intentions and non-affective job satisfaction were different between scale conditions. Specifically, participants in emoji scale condition were significantly more willing to leave their job (M = 9.2) than the participants in text-anchored scale condition (M= 8.7), $t(353) = -2.01$, $p = 023$. Additionally, participants in the emoji condition reported higher non-affective job satisfaction (M = 13.55) than the ones in text-anchored scale condition (M = 11.42), $t(353) = -4.72$, $p < .001$. These differences correspond to a sample difference and cannot be explained by scale condition.

As presented in Table 5, while measuring non-affective job satisfaction, the clarity rating assigned to emoji response options was negatively related to non-affective job satisfaction scores, r (175) = -.24, p = .001. This suggests, the less clear the emoji response option was perceived the higher one's score on non-affective job satisfaction got. This correlation between clarity ratings to anchors and non-affective job satisfaction scores was not visible in the text scale condition r (176) = -.07, p = .341 (Table 6). Following the change in non-affective job satisfaction scores across conditions, non-affective job satisfaction is more strongly related to turnover intentions in text-anchored (r (176) = -.52, $p < .001$) condition than in emoji condition (r (175) = -.23, p = .002). Additionally, clarity ratings assigned to affective job satisfaction measures significantly and positively correlated with the clarity ratings assigned to non-affective

anchors both in emoji scale condition (r (175) = .36, p < .001) and text anchored condition (r (176) = .50, p < .001)

Table 4

Descriptive Statistics of the Variables Grouped for the Condition.

Variable	Emoji Scale Condition (n = 177)		Text-Anchored Scale Condition (n = 178)		t	Cohen's d
	M	*SD*	*M*	*SD*		
Affective Job Satisfaction	13.7	3.6	13.8	3.5	0.19	0.02
Non-Affective Job Satisfaction	13.6	4.5	11.4	4.0	-4.72**	-0.50
Turnover Intention	9.2	2.6	8.7	2.5	-2.01*	-0.21
Clarity (Affective Job Satisfaction)	4.5	0.7	4.7	0.5	2.80*	0.30
Clarity (Nonaffective Job Satisfaction)	3.4	1.4	4.5	0.7	10.01**	1.07

Note. * p < .05 ** p < .001

Table 5

Correlations Between the Variables in The Emoji Scale Condition

Variable	1	2	3	4	5
1. Affective Job Satisfaction	—	.19*	-.53*	.13	-.07
2. Non-Affective Job Satisfaction	.19*	—	-.23**	-.06	-.24**
3. Turnover Intention	-.53*	-.23**	—	-.03	.10
4. Clarity (Affective Job Satisfaction)	.13	-.06	-.03	—	.36**
5. Clarity (Nonaffective Job Satisfaction)	-.07	-.24**	.10	.36**	—

Note. n = 177. * p < .05 ** p < .001

Table 6

Correlations Between the Variables in the Text Scale Condition

Variable	1	2	3	4	5
1. Affective Job Satisfaction	—	.35**	-.51**	-.01	-.01
2. Non-Affective Job Satisfaction	.35**	—	-.52**	-.04	-.07
3. Turnover Intention	-.51**	-.52**	—	.09	.04
4. Clarity (Affective Job Satisfaction)	-.01	-.04	.09	—	.50**
5. Clarity (Nonaffective Job Satisfaction)	-.01	-.07	.04	.50**	—

Note. $n = 178$. * $p < .05$ ** $p < .001$

Discussion

This thesis aimed to investigate whether the lack of non-verbal cues in digital assessment of job satisfaction can be addressed by utilizing emojis in these assessments. Specifically, guided by the understanding that emojis reduce ambiguity and create context for affective constructs within text (Erle et al., 2022; Kaye et al., 2016), it was hypothesized that using emojis as response options will improve the measurement of affective job satisfaction and, subsequently, lead to stronger predictive ability on turnover intentions. As emojis did not have an additional clarifying role on non-affective content, it was expected that they serve no incremental value for the assessment of non-affective job satisfaction. Hence, it was hypothesized that non-affective job satisfaction's ability to predict turnover intentions would not be influenced by the scale it is measured with.

Overall, the results of the study replicated the already reported negative relationship between (non-)affective job satisfaction and turnover intentions (Özkan et al., 2020; Sanghoo & Kim, 2022), also confirming the validity of the chosen scales. However, contrary to the moderation hypothesis, the study found no significant difference between scale conditions for

how well they measure affective job satisfaction as operationalized by how well it predicts turnover intentions. In addition, the manipulation checks revealed that the text measurement of affective job satisfaction was perceived as being clearer by responders than the emoji measurement. Notably, differences emerged across scale conditions in the relationship between non-affective job satisfaction and turnover intentions. Specifically, non-affective job satisfaction predicted turnover intentions better when measured with text-anchored scale compared to when measured with emoji scales. This pattern was also visible in the results of manipulation checks demonstrating higher clarity ratings for text-anchored scales than emoji scales.

Contrary to our expectations, affective job satisfaction was not a stronger predictor of turnover intentions when measured with emoji scale compared to when measured with the text-anchored scale. In fact, there was a small decrease in clarity ratings when emojis were used. Nevertheless, the predictive ability of affective job satisfaction remained quite similar across scale conditions, suggesting that this difference in clarity did not lead to a systematic difference in the measurement of the construct. Therefore, these result point that using emojis when measuring affective constructs neither clarifies nor significantly harms the assessment. These observations are inconsistent with the current knowledge on the clarifying role of emojis (Erle et al., 2022; Kaye et al., 2016), and with the findings of Phan et al. (2017)’s study presenting stronger predictive validity of the affective construct on a criterion when measured with emoji.

One explanation for this small decrease in clarity ratings may be individuals' familiarity with, and consequently preference for, text-anchored scales (Weijters et al., 2013). Prior to their main analysis, Phan et al. (2017) ran a pilot study asking individuals to choose two emojis they thought best represented each of the text-anchors. That is, individuals were asked to indicate their emoji preference corresponding to the response options (agree, strongly agree, disagree

etc.). Based on these indications, the utilized emoji scale equivalents of text-anchored scales were formed. This approach countered the potential bias of respondents' ratings favoring clarity based on familiarity as it ensures the response options chosen are already familiar and clear to the participants. However, in the current study, the clarity assessment of the emoji scales relied on participants' self-reported ratings, which may not accurately display comprehension of the question. Participants might perceive text-anchors as clear not necessarily due to enhanced understanding, but simply because of familiarity with these options. The correlation between the clarity ratings also suggests that participants who rated one scale's anchors as clear were more likely to assign higher clarity ratings to the anchors of the other scales as well. This blurs the distinction between the role of emojis in clarifying affect, shifting the assessment more towards determining if participants understood the meaning of the response options alone, rather than assessing whether the options made answering the question easier. Although clarity ratings were not the primary assessment in our research, this limitation undermines the informative value of comparing average clarity ratings across conditions, and when making comparisons across studies.

Another reason for the inconsistent results could be that participants in the emoji condition reported higher levels of turnover intentions than the participants in the text-anchored scale condition. This discrepancy was solely related to a randomization error resulting from variation among samples on measured constructs. Hence, this difference cannot be attributed to the study design or specific scale conditions. Consequently, this discrepancy between samples in baseline turnover intentions may impede the accurate comparison of how the predictive ability of affective job satisfaction varied across groups. One could argue that because participants in the emoji condition already displayed stronger intentions to leave their jobs compared to those in the

text-anchored scale condition, they might have been less likely to select emojis reflecting strong positive feelings when evaluating their job satisfaction. As an extreme example take an individual with depression; they tend to have a negativity bias (Gollan et al., 2016). They have hard time discussing or envisioning positive things in their surroundings. Similarly, an individual who is already quite close to quitting their job may experience cynicism and negativity that a star-struck emoji (🤩) is nearly inconceivable to them.

It is also plausible that such emojis, with their high positive valence, could be more off-putting when used in response to queries about job satisfaction than a straightforward phrase like "strongly agree." In turn, this make respondents less likely to choose the emoji correspondent of “strongly agree” while choosing the text-anchor for this option is perceived as less problematic. Put simply, people already considering leaving their jobs might find the highly positive, glorified star-eyes emoji option more unsettling and unattainable compared to a plain 'strongly agree' option. In a way, this explanation suggests emoji anchors could be more successful in conveying affect than verbal anchors, parallel to the understanding from Erle et al. (2022) and Kaye et al. (2016). Nevertheless, as participants in the emoji scale condition of the current study already reported intentions to leave their job, the attempt to convey positive affect through emojis might have elicited adverse reactions to the emoji anchors. That is, although the intended affective contexts were created with the emoji response options, the measurement was not improved because the sample had a negative attitude toward the job. Consequently, they reacted unfavorably to positive response options. This is an important limitation of the current research as it might have obscured the investigated clarifying role of emojis and could potentially explain why the results of Phan et al. (2017) were not replicated.

Most interestingly, the result of the study revealed a stronger predictive ability of non-affective job satisfaction for turnover intentions when measured with text-anchored scale than emoji-scale. This in contrary to what is expected based on the assumption we built on the current knowledge that emojis serve an incremental clarifying role for affective constructs (Kaye et al., 2016), therefore, would serve no function when the construct is non-affective. The exploratory analysis revealed that this moderation was underlined by a correlation between the anchor clarity ratings and rating assigned to non-affective job satisfaction. That is, in the emoji scale condition, the less clear the emoji anchors for the participant the higher they scored in non-affective job satisfaction. These results imply that when the emoji response option was unclear for the participants, they were more likely to choose the higher values of the non-affective job satisfaction scale. This is mainly because emojis do not correspond to a meaningful difference in the response option for a non-affective construct. Hence, when a non-affective construct is measured with emoji response options, the difference between these anchors become less meaningful for the respondent (Schmit et al., 1995). Nevertheless, this correlation between participant's clarity ratings and score on non-affective job satisfaction was not visible in text-anchored scale condition.

These findings can be interpreted that using emojis for a non-affective construct induced ambiguity in response options, leading participants to choose the higher response options and creating a systematic difference between score for non-affective job satisfaction between scale conditions. To exemplify, one can think of this in a real-life situation. Imagine that you think that you are not paid enough and get asked if your job pays enough (a non-affective evaluation). However, you are told that you could only respond by laughing, smiling, having a neutral face, sad face or by crying. In this situation, it might be challenging to understand that both smiling

and having a neutral face can indicate, to some extent, that you believe you are not paid enough. Because these expressions tend to be associated with positive emotions, you might mistakenly believe that the only way to convey dissatisfaction with your salary is through a sad face or crying. As a result, responses may be skewed higher than they would be with verbal options, since even individuals who feel their pay could be slightly better might choose the higher response. Therefore, these response options, with their associated affective meanings not aligned with the question, can create confusion in selecting the most appropriate response. In turn, the responses obtained from this assessment would not be reliable and cannot be used to predict other outcomes. Similarly, substituting emojis (an affect indicator) for text-anchors when measuring a non-affective construct introduces a systematic difference to the measurement, thereby reducing its reliability. In line with the suggestions of Cronbach & Meehl (1955) and Clark & Watson (2019) on predictive ability, the difference in reliability between the measures corresponds to a lower predictive ability of non-affective job satisfaction on turnover intentions when measured with an emoji scale compared to when measured with a text-anchored scale.

These results, indicating the differential effectiveness of emoji scales in measuring affective and non-affective job satisfaction, align with the suggestion of Brief & Weiss (2002) and Fernández-Muñóz & Topa (2018) to separate measurements for each dimension. This highlights the need for distinct approaches in measuring affective and non-affective job satisfaction, also when finding digital equivalents for the assessment.

Implications

Although our results do not replicate the clarifying role of emojis for affective content within text-based assessment (Erle et al., 2022; Kaye et al., 2016) or its role as a tool to improve affective construct measurement (Phan et al., 2017), it points to an uninvestigated aspect of

emojis: the contexts where they lead to confusion and ambiguity. The current research introduces a new aspect to existing studies on emoji and its use as a tool to improve affective constructs measurement. It suggests that although it is relevant to understand how emojis can be used to reaching true value in assessment of affective constructs, it is also important to understand when emojis are the reasons moving us away from the true value. Therefore, by highlighting the differential role of emojis in assessment of affective and non-affective constructs, this study challenges existing literature on the use of emojis as clarifying tools for affect assessment and recommends further extension on the understanding on how emojis could alter comprehension of the assessment. In other words, the current findings suggest that existing studies on emojis should broaden their scope on a spectrum ranging from affective to non-affective constructs, and further investigate the circumstances under which the use of emojis may become a threat for the effectiveness of assessment tools.

While this study suggests that utilizing emoji scales may not offer significant advantages when assessing affective constructs, it challenges the common assumption that their use would diminish the perceived credibility of the organization or the assessment process (Glikson et al., 2017; Lebovits, 2015). The absence of systematic differences in the predictive ability of affective constructs measured by different scales suggests that the use of emojis does not impede the assessment process. Pointing to a potential for integrating emojis within assessment settings, this understanding keeps the door open for further exploration on if emoji scales could be not only *alternatives* but also *superior* to text alternatives. It is plausible that the selection of emojis in this study was not entirely suitable for the measured construct. The limited pool of available emojis and insufficient research on user perceptions make it challenging to assess their alignment with the measured construct. Nevertheless, supported by the current study, it can be concluded

that there is room for development in utilization of emoji scales for affective construct measurement.

Importantly, the nature of the measured construct should be considered. Current results highlight the problems of using emojis when measuring non-affective constructs. As discussed, when emojis are used in the assessment of non-affective construct they interfere with the assessment and the ability to predict other outcomes by creating ambiguity. This finding does not directly imply that the use of emojis in non-affective constructs measurement should be avoided, rather, it implies that the type of emoji and the valence/emotionality score attached to it should be congruent with the measured construct.

Future Research

Despite recent progress in emoji research, there remains much to explore. Nonetheless, aligned with our findings, we propose three key future directions for researchers.

Firstly, there is a need for a deeper understanding of the distinctions between affective and non-affective constructs and their evaluation within the online domain. This understanding should further explore a question partially addressed by this research: whether the affectivity of emojis utilized in the digital assessments should be congruent with the affectivity of the construct being measured? This can be achieved through experimental study designs that compare the use of non-affective emojis for non-affective constructs, affective emojis for affective constructs, as well as the use of affective emojis for non-affective constructs and non-affective emojis for affective constructs. Secondly, the research on emojis and their categorization remains insufficient. While Krekhov et al. (2022)'s study provides valuable insights into user perceptions of emojis, there is a pressing need for more extensive research to determine which emotions are associated with specific emojis, as well as the intensity and valence of these emotions. Such

understanding is crucial for effectively utilizing emojis in assessment settings and ensuring their congruence with the emotional context of the measured construct. On top of expanding the literature, based on the understanding from the limitations of the current study, future research is encouraged to employ a ‘pilot study’ on their emoji scales. This way, it can be ensured that emojis chosen for the scale correspond to parallel perceptions by the responders as well, eliminating the possibility for non-significant results might be due to selected emojis not properly corresponding to the measured construct. Thirdly, concerning external validity, the current study’s target group a sample consisted of employees. Due to using data exclusively from employees, it's harder to generalize the findings to a larger population or to spot any differences across different sample characteristics. However, it is crucial to explore if the insights gained regarding emoji use hold in diverse contexts and among various demographic groups. Given the documented age and gender-related differences in emoji use and comprehension (Koch et al., 2022), it becomes evident that the utility of emoji scales may vary significantly across different samples. For instance, while integrating emoji scales into school assessments might be beneficial, their utility in settings such as elderly care could be limited. Hence, future studies with diverse samples would not only contribute significantly to broadening our understanding but also inform us about the usefulness of emoji use across various groups or contexts.

Conclusion

In conclusion, this study highlights the importance of recognizing the differential role of emojis in digital text-based assessments for affective and non-affective constructs. Recognizing this differential role is crucial as assessments are typically used to predict outcomes and inform decisions accordingly. Inaccurate measurement comprises the reliability of conclusions, potentially leading to costly decisions, such as initiating a treatment, implementing a training

program, or terminating an employee. Therefore, comprehending emojis and their distinct roles in improving text-based measurements is essential and offers significant value. Further research aimed at understanding how emojis function in digital text-based assessments and ensuring the reliability of conclusions would make notable contributions to applied sciences. This knowledge empowers researchers and practitioners to make informed decisions across various domains and contexts, such as assessments in elderly care centers or in educational institutions, as well as while gathering customer insights.

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Appendix A

Scales Used in the Current Study

A.1 Turnover Intentions

How likely are you to accept another job at the same compensation level should it be offered to you?
Highly Unlikely; Unlikely; Neutral; Likely; Highly Likely

How often have you considered leaving your job?
Never; Rarely; Sometimes; Often; Always

How often do you dream about getting another job that will better suit your personal needs?
Never; Rarely; Sometimes; Often; Always

A.2 Affective Job satisfaction

A.2.1 Affective Job satisfaction- text

Please choose the option that best describes your response to the statement.

I find real enjoyment in my job
Strongly Disagree; Disagree; Neutral; Agree; Strongly Agree

I like my job better than the average person
Strongly Disagree; Disagree; Neutral; Agree; Strongly Agree

Most days I am enthusiastic about my job
Strongly Disagree; Disagree; Neutral; Agree; Strongly Agree

I feel fairly well satisfied with my job
Strongly Disagree; Disagree; Neutral; Agree; Strongly Agree

A.2.2 Affective Job satisfaction- emoji

Please choose the option that best describes your response to the statement.
I find real enjoyment in my job
I like my job better than the average person
Most days I am enthusiastic about my job
I feel fairly well satisfied with my job

Response option appearance for different devices
Apple devices (iPhone, iPad, Mac)

Android devices created by Google and used on devices by Google, Xiaomi, Oppo, Huawei, Sony

Android devices created by Samsung

A.3 Non-affective Job satisfaction
A.3.1 Non-affective Job satisfaction- text

Please choose the option that best describes your response to the statement.

There are benefits we do not have which we should have
Disagree very much; Disagree Moderately; Disagree Slightly; Agree Slightly; Agree Moderately; Agree very much

There are few rewards for those who work on my job
Disagree very much; Disagree Moderately; Disagree Slightly; Agree Slightly; Agree Moderately; Agree very much

Raises are too few
Disagree very much; Disagree Moderately; Disagree Slightly; Agree Slightly; Agree Moderately; Agree very much

There is really too little chance for promotion on my job
Disagree very much; Disagree Moderately; Disagree Slightly; Agree Slightly; Agree Moderately; Agree very much

A.3.1 Non-affective Job satisfaction- emoji

Please choose the option that best describes your response to the statement.

There are benefits we do not have which we should have.
There are few rewards for those who work on my job.
Raises are too few.
There is really too little chance for promotion on my job.

Response option appearance for different devices
Apple devices (iPhone, iPad, Mac)

Android devices created by Google and used on devices by Google, Xiaomi, Oppo, Huawei, Sony

Android devices created by Samsung

Appendix B

Manipulation Check question Block

The statements/questions were clear to me
Strongly Disagree; Disagree; Undecided; Agree; Strongly Agree

The response options were clear to me
Strongly Disagree; Disagree; Undecided; Agree; Strongly Agree

I am confident in my responses
Strongly Disagree; Disagree; Undecided; Agree; Strongly Agree

I felt comfortable answering the questionnaire
Strongly Disagree; Disagree; Undecided; Agree; Strongly Agree

Appendix C

Informed Consent Presented in the Qualtrics Survey

STUDY ON THE ASSESSMENT OF WORKPLACE-RELATED CONSTRUCTS

Purpose

In this study, we investigate the quality of various questionnaires that are used in work and organizational settings. These questionnaires cover a wide range of constructs, such as job satisfaction, stress, turnover intentions, and many more.

Nature, duration, and rewards

Throughout the whole study, you will only answer questions on well-established questionnaires. The survey will take you approximately XXX minutes to complete. Participating in this study will rewarded with a payment of XXX.

Contact

Any questions about this study can be directed to: Damla Alyeni (D.alyeni@tilburguniversity.edu)

PARTICIPATION INFORMATION

Voluntariness of participation

We ask your consent to participate in this study, which applies for the length of this study. Participating in this research is voluntary. You have the right not to take part in this study. If you decide to participate in this study, you are free to withdraw from this study at any time, without any negative consequences, and without giving any reason. You are free to only answer questions that you want to reply to.

What rights do I have?

You have the right, in principle, to request access to and rectify, erase, restrict or object to the processing of your personal data. For more information: www.tilburguniversity.edu/privacy

Confidentiality

All information collected during this study will be stored confidentially. Your research data will be anonymized with a code name or number. Any personal information is not released without your written permission.

Research Data Management Policy

The anonymized research data will be stored safely. Only the researchers have access to this data. When the results of this study are published or presented at conferences, no information will be presented that can reveal your personal identity. Anonymized data collected in this study might be useful for future research and therefore this data will be anonymously available.

Ethical Approval

This study was approved by the ethics review board (ERB) of Tilburg University [RP1173].

CONSENT

By accepting this informed consent form, you voluntarily agree to participate in this study. Signing this form does not interfere with your right to withdraw from this study at any time without an explanation.

By signing this informed consent form, I (the participant) confirm that I have read and understood the entire information letter and confirm that:

- I have read and understood the entire information letter that belongs to this study.
- I had sufficient time to decide whether I would participate or not.
- I know that participation is completely voluntary.
- I know that the duration of the study is XXX minutes.
- I know I can decide to withdraw from the study at any time, without any negative consequences and without providing any explanation.
- I know that my research data will be processed as described in the information letter and only the researcher team have access to this data.
- I give permission to use my research data for the purposes that are mentioned in the information letter that belongs to this study.
- I give permission to store my research data.

Appendix D

Brief Instruction Before the Start of the Survey

You will now complete a series of scales that are commonly used to assess diverse constructs that are important in the context of work. We selected these scales specifically because they are commonly used in HR and other professional assessment contexts, and because they assess constructs that workers from diverse professions are or should be familiar with, not necessarily because of their specific contents.

The understanding of such scales develops continuously, and needs to be re-visited periodically due to societal and other changes. The goal of this study is to assess how users of these scales perceive them, and how that relates to their responses. Thus, after completing each scale, we will ask you some additional questions about the format of the scale, its clarity, usability, and so on.

All questions asked in this study are subjective and therefore there are no right or wrong answers. Still, please answer all questions truthfully, that is, in line with your personal subjective opinion or perception of the scales at hand. This will allow us to make constructive recommendations for the further development of these scales.

Once you click to proceed, the first scale will be presented.

Appendix E
Debriefing

Dear participant, you have reached the end of the survey. We would like to thank you for your participation!

You have just participated in a study that investigated whether using emoji as anchors in psychometric workplace scales can improve the measurement of workplace constructs compared to purely verbal or numerical scales. We were not able to provide you with information related to the actual objective of the study in advance, given that this may have affected your responses. The main objective of this study was to examine whether using emojis as response options instead of text-anchors reduces the ambiguity in response options. Specifically, it was examined if the use of emojis improve the measurement of affective constructs that are hard to understand based on verbal labels alone, such as stress and affective job satisfaction.

Again, we thank you for your participation in this study. If you know any friends or acquaintances that are eligible to participate in this study, we request that you do not discuss it with them until after they have had the opportunity to participate. Prior knowledge of questions asked during the study can invalidate the results. We greatly appreciate your cooperation.