3-2024

The interpersonal effects of emotional expressions with both and single valences on work-related satisfaction: An examination of emotions and perceived openness as mediators

Ming-hong TSAI
Singapore Management University, mhtsai@smu.edu.sg

The Interpersonal Effects of Emotional Expressions with Both and Single Valences on Work-related Satisfaction: An Examination of Emotions and Perceived Openness as Mediators

Ming-Hong Tsai

School of Social Sciences

Singapore Management University

Correspondence concerning this article should be addressed to Ming-Hong Tsai, Singapore Management University, 10 Canning Rise, #05-01, Singapore 179873, Tel: (65) 6828-1905, Email: mhtsai@smu.edu.sg.

To cite this article: Ming-Hong Tsai (2023): The interpersonal effects of emotional expressions with both and single valences on work-related satisfaction: an examination of emotions and perceived openness as mediators, Cognition and Emotion, DOI: 10.1080/02699931.2023.2299981

To link to this article: https://doi.org/10.1080/02699931.2023.2299981

Abstract

Work-related satisfaction has critical benefits. To predict work-related satisfaction, we investigated how a counterpart's expressions of emotional complexity (both positive and negative emotions), positive emotions, and negative emotions influenced a perceiver's work-related satisfaction during discussions over different work-relevant ideas. We conducted a three-wave coworker survey (N = 529) and an experiment with a confederate as a task partner (N = 378). The results consistently showed significant positive impacts of a counterpart's emotional complexity and positive emotion expressions on a perceiver's work-related satisfaction by enhancing the perceiver's positive emotions and evaluation of the counterpart's openness. Conversely, a counterpart's negative emotion expression significantly decreased a perceiver's work-related satisfaction by reducing perceived counterpart openness. We also did not find a perceiver's negative emotion as a significant mediator of the associations between the three emotional expressions and work-related satisfaction. Therefore, our investigation highlights similar positive effects of emotional complexity and positive emotion expressions and suggests that an expression of both positive and negative emotions promotes satisfaction by enhancing positive emotions and openness perception.

Keywords: emotional expression, emotional complexity, openness, emotions, work-related satisfaction

The Interpersonal Effects of Emotional Expressions with Both and Single Valences on Work-related Satisfaction: An Examination of Emotions and Perceived Openness as Mediators

Work-related satisfaction, the extent to which an individual experiences contentment or fulfillment from a job or task assignment (Lambert et al., 1999), predicts a broad range of important consequences. It positively predicts not only work involvement (Kanungo, 1982) but also various performance indicators, such as productivity (Hoboubi et al., 2017), performance (Judge et al., 2001), and creativity (Spanjol et al., 2015). Work-related satisfaction also forecasts crucial behaviors and attitudes, such as infrequent turnover behaviors (Griffeth et al., 2000) and strong commitments to organizations (Farkas & Tetrick, 1989). Moreover, it is significantly associated with multiple health outcomes, such as good mental health, high self-esteem, low degrees of depression and anxiety, and a low likelihood of cardiovascular disease (Faragher et al., 2005). These findings illustrate the significant advantages of work-related satisfaction.

To predict work-related satisfaction, we explore how a counterpart's emotional complexity, positive emotion, and negative emotion expressions *separately* influence a perceiver's work-related satisfaction in situations where the counterpart and the perceiver discuss their different ideas. A discussion over different ideas is our study context because this process is common for judgment and decision-making (Minson et al., 2017) and allows participants to increase the diversity of their perspectives (Owen, 2015). In the current investigation, a counterpart indicates a coworker or partner in a task. We also examine a counterpart's emotional expression regarding a perceiver's idea because people have positive and negative emotions during discussions of their different ideas (Todorova et al., 2014). Moreover, emotional complexity expression refers to a display of both positive and negative emotions (Larsen et al.,

2017) whereas positive emotion or negative emotion expression indicates a display of "only" positive or negative emotions.

Furthermore, we examine a perceiver's emotions and evaluation of a counterpart's openness as mediators of the associations between the counterpart's emotional expressions and the perceiver's work-related satisfaction based on the model of Emotions as Social Information (EASI; Van Kleef, 2009). The EASI model predicts that an individual's emotional displays elicit perceivers' emotional responses and perceivers' inferences of the target (Van Kleef, 2009; Van Kleef et al., 2012). Thus, our mediators involve positive and negative emotions that are most likely to be experienced during opinion differences (Todorova et al., 2014). We also used perceived counterpart openness as an inference cue during the discussion over different ideas because this openness perception can determine whether an initial opinion difference unfolds to mutually satisfactory solutions (Tsai, 2023).

Our work presents original observations regarding emotions and their cognitive processing in three crucial facets. First, we present the interpersonal effects of emotions with both and single valences, which allows for an examination of whether the interpersonal effects of emotion expressions with both valences are similar to those of *positive or negative* emotion expressions. From a standpoint of negativity bias, humans are more likely to attend and be influenced by *negative* than positive emotion expressions because processing negative information increases survival advantages (reviewed in Vaish et al., 2008). This view suggests similar adverse effects of negative emotion and emotional complexity expressions. However, we explore comparable beneficial effects of emotional complexity and positive emotion expressions. Second, we investigate the interpersonal effects of emotional complexity on unexplored outcomes, which deviates from most previous studies on the intra-personal associations between

emotional complexity and other variables (e.g., Fatima & Majeed, 2023; Grühn et al., 2013). Third, we explore multiple novel mediators of the associations between emotional expressions and work-related satisfaction. This approach allows us to understand the relative importance of emotional responses and inferences of counterpart openness.

Emotions as Social Information (EASI) Framework

The EASI framework proposes that others' emotional expressions offer information and thus may affect perceivers' attitudes and actions via two processes, including affective reactions and inferential processes (Van Kleef, 2009; Van Kleef et al., 2012). The process of affective reactions refers to instances in which others' emotional displays can elicit perceivers' similar emotional reactions, such that others' happiness (or anger) expressions will evoke perceivers' positive (or negative) emotions (p. 563, Van Kleef et al., 2009). The spread of emotions may be explained by emotional contagion, a tendency to experience others' emotions (Hatfield et al., 1994). Emotional contagion can transpire via emotional mimicry (e.g., perceivers imitate others' non-verbal emotional expressions, Hawk et al., 2012) or computer-mediated communication (e.g., perceivers experience anger because of a message containing a counterpart's anger expression, Friedman et al., 2004). Moreover, affective reactions (elicited by others' emotional expressions) subsequently affect attitudes due to a misattribution of current emotional states to information relevant to an evaluation target (Forgas, 1995; Van Kleef et al., 2012). For example, people may regard positive (or negative) emotional reactions as favorable (or unfavorable) information about evaluation targets and thus formulate desirable (or undesirable) attitudes. Thus, the process of affective reactions operates within a positive or negative valence.

In addition to affective reactions, inferential processes mediate the effects of emotional displays on relevant outcomes. Perceivers make inferences about emotional expressers'

intentions in specific situations. For example, when a negotiation counterpart expresses happiness (or anger), this display conveys a willingness to cooperate with a perceiver (or a threat of an impasse), which determines the perceiver's negotiation behavior (Hillebrandt & Barclay, 2017). When a negotiation opponent displays anger, perceivers are also more likely to infer the opponent's selfishness and thus select an impasse or reject offers from the opponent (Yip & Schweinsberg, 2017). These examples illustrate that emotional displays offer information about expressers' social intentions and thus shape perceivers' actions.

Counterpart's Emotional Complexity Expression as a Predictor

A counterpart's display of emotional complexity regarding a perceiver's idea may influence the perceiver's work-related satisfaction via the perceiver's positive emotions, negative emotions, and assessment of the counterpart's openness. We present the rationales for the associations between specific variables in the next subsections.

Positive and Negative Emotions as Mediators

A counterpart's emotional complexity may elicit a perceiver's positive emotions and negative emotions, which may be in turn proportionally and inversely associated with the perceiver's work-related satisfaction, respectively. We assess a perceiver's positive emotions (e.g., activeness and interest) and negative emotions (e.g., frustration and anger) separately based on the most commonly experienced emotions during opinion difference (Todorova et al., 2014). Although the EASI model has been mostly applied to emotional expressions with a single valence in previous studies (e.g., Friedman et al., 2004), this model may also explain the associations between emotional complexity expression and affective reactions. That is, when a counterpart expresses both positive and negative emotions regarding a perceiver's idea, the

perceiver may also experience positive and negative emotions during their interactions due to emotional contagion.

Subsequently, a perceiver's positive and negative emotions may differentially predict work-related satisfaction. People with higher levels of positive (or negative) emotions are more likely to recall positive (or negative) cues from their memory and may use the cues as a basis of evaluation to produce a more favorable (or unfavorable) work assessment (Judge & Ilies, 2004; Schwarz, 2012). Positive emotions also promote a positive exchange relationship, such as eliciting mutual supportiveness (Cooper et al., 2018), which may create high job satisfaction. By contrast, negative emotions consume resources that are used to cope with challenges (Fredrickson & Losada, 2005), and deficient resources may reduce job satisfaction. Empirical studies also supported a proportional association between positive emotions and work-related satisfaction (Liu et al., 2010) and an inverse relationship between negative emotions and work-related satisfaction (Fisher, 2000). Thus, a counterpart's emotional complexity expression may enhance work-related satisfaction by increasing positive emotions but reduce work-related satisfaction by increasing negative emotions.

Perceived Counterpart Openness as a Mediator

A counterpart's emotional complexity expression may enhance a perceiver's assessment of the counterpart's openness, which may subsequently predict work-related satisfaction. A perceiver's assessment of the counterpart's openness indicates that the perceiver evaluates the counterpart as contemplating other thoughts and proposals (Tsai, 2023). An expression of emotional complexity offers information about expressers' social intentions; they want to widen their attention span and impartially deliberate on contrasting standpoints of specific issues (Rothman & Melwani, 2017). Accordingly, when a counterpart expresses both positive and

negative emotions regarding a perceiver's idea, the perceiver may infer that the counterpart intends to consider the idea from multiple perspectives, thus creating perceptions of the counterpart's openness.

Perceptions of a counterpart's openness may be in turn positively associated with a perceiver's work-related satisfaction via positive interpersonal processes. The openness perceptions can produce desirable interpersonal interactions, such as enhancing information sharing (Tsai & Bendersky, 2016) and collaboration (Tsai et al., 2020). Other researchers also found that information sharing (Ukangwa et al., 2020) and collaboration (Zhang et al., 2016) positively predicted work-related satisfaction. Moreover, research supported a significant association between perceptions of other organizational members' communication openness and perceivers' job satisfaction (Trombetta & Rogers, 1988). Consequently, a counterpart's emotional complexity expression may increase work-related satisfaction by enhancing perceptions of the counterpart's openness.

Counterpart's Positive or Negative Emotion Expression as a Predictor

A counterpart's positive or negative emotional expression regarding a perceiver's idea may influence the perceiver's work-related satisfaction differently via the perceiver's corresponding emotions, and assessment of the counterpart's openness. We expect that a counterpart's positive or negative emotion expression will elicit a perceiver's positive or negative emotions due to emotional contagion based on the EASI model (Van Kleef, 2009; Van Kleef et al., 2012). To our knowledge, most research on emotional contagion focuses on the affective spread of emotions with the same valence, such as positive emotional contagion during group processes (Barsade, 2002) and negative emotional contagion during negotiations (Friedman et al., 2004). Other researchers also propose that emotions with positive and negative

valences are distinct factors rather than two opposite ends of a bipolar spectrum (Watson et al., 1999). Thus, we do not hypothesize the associations between a counterpart's positive (or negative) emotion expression and a perceiver's negative (or positive) emotions although we empirically explore these associations. To reiterate, a perceiver's positive emotions may in turn predict high work-related satisfaction due to recalls of positive cues from memory and/or desirable exchange relationships. Conversely, a perceiver's negative emotions may in turn predict low work-related satisfaction due to recalls of negative cues from memory and/or deficient resources. To summarize, a counterpart's positive (or negative) emotional expression regarding a perceiver's idea may increase (or decrease) the perceiver's work-related satisfaction by enhancing the perceiver's positive (or negative) emotions.

Moreover, a counterpart's positive or negative emotion expression may enhance or reduce a perceiver's work-related satisfaction via perceived counterpart openness. When a counterpart expresses positive or negative emotion expression regarding a perceiver's idea, such an expression can convey the expresser's intention to agree or disagree with the idea (Hillebrandt & Barclay, 2017). Furthermore, individuals with positive emotions are more likely to consider a broad range of viewpoints than those with negative emotions (Fredrickson, 2013), which suggests that those who express positive (or negative) emotions may be regarded as more (or less) open to alternative viewpoints. As stated previously, perceived counterpart openness may positively predict a perceiver's work-related satisfaction by enhancing beneficial interpersonal processes. Therefore, a counterpart's positive (or negative) emotion expression may increase (or decrease) a perceiver's work-related satisfaction by enhancing (or reducing) perceived counterpart openness. To conclude, we predict specific associations between a counterpart's emotional expressions regarding a perceiver's idea and the perceiver's work-related satisfaction

via the perceiver's emotions and assessment of the counterpart's openness (see the predicted variable associations in Figure 1).

Overview of the Studies

We examined our predicted associations in two studies. We explored the relationships between others' emotional displays and perceivers' work-related satisfaction via the perceivers' emotions and evaluations of the others' openness. We categorized emotional displays into expressions of emotional complexity, positive emotions, and negative emotions. We also employed different methods (i.e., conducting a field survey in Study 1 and using an experiment in Study 2), sources of data (i.e., online recruitment of full-time employees in Study 1 and recruitment via a university participant pool in Study 2) to strengthen the generalizability of the results. To enhance cross-cultural generalizability, our studies also included samples across different cultures. That is, participants resided in the United States and Singapore for Studies 1 and 2, respectively. We also confirm that all study participants submitted their online informed consent.

We provide the following information to promote the transparency of the studies. We did not preregister the studies, but all the study materials, data, and analytic codes can be accessed at: https://osf.io/stmve/?view_only=b77ec9c6ec0f4306a3007f9ad6355286. Furthermore, we predetermined our sample size to be at least 300 participants in each study by conducting power analyses to calculate the minimum sample sizes according to a meta-analysis (Sharma et al., 2020), using its average effect sizes for the correlations between emotional expressions and social-psychological outcomes (i.e., $|r| = 0.34$ for "positive emotional expression vs. neutral expression" and 0.50 for "negative emotional expression vs. neutral expression"). Using a power of 0.80 and a 5% Type I error rate (two-tailed), we found that pairwise conditional comparisons

required at least 65 participants for "positive emotional expression vs. neutral expression" and 29 participants for "negative emotional expression vs. neutral expression." We overrecruited participants based on our available resources because we anticipated the possibility of data screening and exclusion. We also performed data analyses only after the completion of data collection. Moreover, we reported all the conditions, data exclusion, and relevant measures in the studies.

Study 1: Three-wave Survey on Coworkers

To investigate our predicted associations and demonstrate external validity of the study results, we administered a three-wave survey on employees who indicated their coworkers' emotional expressions and other relevant variables.

Participants, Design, and Procedures

To enlist participants, we used the TurkPrime platform (Litman et al., 2017) to screen full-time employees[1] from the United States, and 562 participants finished a three-wave survey online. To incentivize repeated participation, we increased the amount of monetary remuneration in subsequent surveys (first wave: $1.0; second wave: $1.2; third wave: $1.4). To ensure that a participant evaluated the same coworker across different waves of the survey, we utilized the information about a coworker's initials and gender indicated by a participant during each wave of the survey and found 33 participants who reported inconsistent information about their coworkers' initials and/or genders. Therefore, we excluded the data from these participants in our subsequent analyses, and our valid sample included 529 participants (age: M = 41.15, SD = 10.75; 53% male; work experience: M = 20.31 years, SD = 10.59; organizational tenure: M =

[1] Please see the detailed information about the screening process in the file titled "Data Screening in Study 1" using the web link: https://osf.io/stmve/?view_only=b77ec9c6ec0f4306a3007f9ad6355286.

8.59 years, *SD* = 6.96). Moreover, the participants worked in a variety of sectors, such as consumer businesses, telecommunications, and pharmaceuticals.

To minimize the likelihood of common method variance, we used approximately two weeks as a survey interval because at least a 2-week interval between measures substantially mitigates inflated relationships between constructs (Johnson et al., 2011). The two-week survey interval was also employed in previous studies regarding opinion differences and emotions (e.g., Chi & Yang, 2015; Tsai, 2023). We also determined the order of the measures according to the temporal order of the variables in our hypothesized associations. Specifically, the first survey included the measures of a coworker's three emotional displays (i.e., expressions of emotional complexity, positive emotions, and negative emotions). Participants pinpointed one of their current coworkers whom they were most likely to interact with based on their work assignment because they would be more likely to give precise assessments of the coworker given their more frequent interactions. The second survey included the measures of positive emotions, negative emotions, and coworker openness. The third survey included the measure of work-related satisfaction. Participants also reported their demographics during the first survey and indicated their coworkers' initials and genders during each survey.

Moreover, we used two questions to examine the data quality of our final sample during each wave of the survey. We used a motivational filter question from Tsai et al. (2019), and all the respondents indicated their commitment to providing their best answers to the study questions. We used a comprehension question that was designed to test whether respondents understood the purpose of our study, and all the respondents selected the correct purpose of the study. The finding supported the high quality of our data.

Measures

To ensure that participants had clear information about our study setting (i.e., discussion on different work-related ideas), they were instructed to consider situations in which they and their coworkers discussed their different ideas regarding their work before the participants rated the statements of all the scales. Other research also used scale instructions to indicate a study context (e.g., Todorova et al., 2014; Tsai, 2023).

Expression of emotional complexity. Participants reported their coworkers' emotional complexity expressions (α = .97) by rating a three-statement scale (1 = strongly disagree, 7 = strongly agree). We indicated the "concurrent nature" of positive and negative emotions (Larsen et al., 2017) by using the wording "both" or "a mixture of" based on an existing scale (Oh & Tong, 2021). The sample item was: "My coworker expresses both positive and negative emotions regarding my idea."

Expression of positive emotions or negative emotions. Participants indicated their coworkers' positive emotion expressions (α = .97) and negative emotion expressions (α = .97) by rating three statements (1 = strongly disagree, 7 = strongly agree), respectively. To provide a clear contrast between expressions of emotional complexity and emotions with a single valence, we used the wording "only" to emphasize emotional expressions with a positive or negative valence. The sample items were: "My coworker only expresses positive emotions regarding my idea" and "My coworker only expresses negative emotions regarding my idea."

Positive and negative emotions. Participants indicated their emotions during the interactions with their coworkers (1 = not at all, 7 = extremely) using the scales of positive emotions (α = .90) and negative emotions (α = .92) from Tsai (2023). Each emotion scale used four adjectives to describe emotions (e.g., "Interested" or "Angry"). These adjectives were used

because of their prevalence during the communication of different opinions (Todorova et al., 2014).

Openness. Participants evaluated their coworkers' openness (1 = strongly disagree, 7 = strongly agree) by rating three statements (α = .93) based on Tsai et al. (2020). An example statement was: "Good ideas get serious consideration from my coworker."

Work-related satisfaction. Participants reported their work-relevant satisfaction (α = .96) by completing the 3-item scale (1 = strongly disagree, 7 = strongly agree) from Zhang et al. (2019). A sample item was: "I am very satisfied with my current job."

Results and Discussion

Table 1 indicates the means, standard deviations, and correlations of the focal variables in Study 1.[2]

Emotional expressions as predictors. To investigate the relationships between a counterpart's three emotional expressions and a perceiver's work-related satisfaction via three mediators (i.e., positive emotions, negative emotions, and perceived counterpart openness), we used Ordinary Least Squares (OLS) regression analyses. To present the effect sizes of the variable relationships, we indicate standardized coefficients of the regression models in Table 2. The results demonstrated that a counterpart's emotional complexity expression was significantly proportionally associated with work-related satisfaction (Model 1: b = 0.20, p < .001), positive emotions (Model 2: b = 0.18, p < .001), and perceived counterpart openness (Model 4: b = 0.15, p < .001), but non-significantly inversely associated with negative emotions (Model 3: b = -0.02, p = .740). Moreover, a counterpart's positive emotion expression was significantly

[2] To test discriminant validity of measures in Studies 1 and 2, we conducted confirmatory factor analyses and chi-square difference tests, and the results supported the separation of the measures. Please see the detailed results in the section titled "Discriminant Validity of Measures in Studies 1 and 2."

proportionally associated with work-related satisfaction (Model 1: $b = 0.26$, $p < .001$), positive emotions (Model 2: $b = 0.24$, $p < .001$), and perceived counterpart openness (Model 4: $b = 0.29$, $p < .001$), but significantly inversely associated with negative emotions (Model 3: $b = -0.22$, $p < .001$). Furthermore, a counterpart's negative emotion expression was significantly inversely associated with work-related satisfaction (Model 1: $b = -0.11$, $p = .013$), positive emotions (Model 2: $b = -0.22$, $p < .001$), and perceived counterpart openness (Model 4: $b = -0.37$, $p < .001$), but significantly proportionally associated with negative emotions (Model 3: $b = 0.34$, $p < .001$). The results of Model 5 also showed that with three emotional expressions as controls, positive emotions ($b = 0.30$, $p < .001$) and perceived counterpart openness ($b = 0.18$, $p = .003$) rather than negative emotions ($b = -0.03$, $p = .534$) significantly positively predicted work-related satisfaction.

We also used a bootstrapping method with 5,000 repetitions (Hayes, 2013) to estimate indirect effects via the three mediators. The results demonstrated that a counterpart's emotional complexity expression significantly proportionally predicted work-related satisfaction via an increase in positive emotions ($b = 0.05$, 95% CI = [0.02, 0.10]) and perceived counterpart openness ($b = 0.03$, 95% CI = [0.003, 0.059]) rather than negative emotions ($b = 0.00$, 95% CI = [-0.01, 0.01]). Moreover, a counterpart's positive emotion expression significantly proportionally predicted work-related satisfaction via an increase in positive emotions ($b = 0.07$, 95% CI = [0.04, 0.12]) and perceived counterpart openness ($b = 0.05$, 95% CI = [0.01, 0.10]) rather than negative emotions ($b = 0.01$, 95% CI = [-0.02, 0.04]). Furthermore, a counterpart's negative emotion expression significantly inversely predicted work-related satisfaction via a decrease in positive emotions ($b = -0.07$, 95% CI = [-0.11, -0.03]) and perceived counterpart openness ($b = -0.07$, 95% CI = [-0.13, -0.01]) rather than negative emotions ($b = -0.01$, 95% CI = [-0.06, 0.04]).

Overall, Study 1 demonstrated similar positive effects of a counterpart's emotional complexity and positive emotion expressions on work-related satisfaction via positive emotions and perceived counterpart openness. By contrast, a counterpart's negative emotion expression inversely predicted work-related satisfaction via positive emotions and perceived counterpart openness. However, Study 1 did not provide experimental evidence on the causal relationships between a counterpart's emotional expressions and other variables. We address this issue in our next study.

Study 2: An Experiment Involving Online Interactions

To examine the causal effects of a counterpart's emotional expressions, we used experimental manipulations that included specific instructions for a trained counterpart to discuss with participants over their different ideas in an assigned task. We also conducted Study 2 in an Eastern cultural context to examine the generalizability of our findings in Study 1. Study 1 used a Western sample. Westerners view positive and negative emotions as oppositional categories (Bagozzi et al., 1999) and are more likely to pursue positive emotions and avoid negative emotions than Easterners (Sims et al., 2015). Thus, the beneficial (or detrimental) effect of positive (or negative) emotion expression might be relatively strong in Study 1. Moreover, Study 2 employed an Eastern sample. Easterners are more likely to experience mixed emotions than Westerners (Sims et al., 2015). This more frequent experience might increase a preference for emotional complexity expression.

Participants and Design

We recruited 386 students from a university participant pool in Singapore, and they participated in an online study for monetary remuneration (six Singapore Dollars) or partial course credit. To improve the quality of our data, we removed the responses from eight

participants in our subsequent analyses because one of them did not indicate a commitment to provide the best responses during the survey, four of them failed to answer our study comprehension question correctly, and three of them suspected that their counterpart was intentionally arranged by their experimenter rather than determined by a pairing process between participants. Thus, the final sample contained 378 participants (age: M = 21.92, SD = 1.89; 77% female; work experience: M = 4.43 years, SD = 3.26). We employed random assignments to determine participants' conditions, including (1) emotional complexity expression (n = 94), (2) positive emotion expression (n = 95), (3) negative emotion expression (n = 95), and (4) control (n = 94).

Procedure

Participants undertook an online experiment during designated time slots. They first read the same motivational filter question as in Study 1, and one of them could not promise to offer the best responses to the study questions. Thus, the responses associated with the participant were removed from subsequent analyses. Moreover, participants also read a brief description of the study purpose (i.e., "We are interested in how you interact with another person based on specific instructions. We will ask you to act based on specific instructions.") and answered a study comprehension question. If participants initially failed to answer the question correctly, they had a second chance to answer the same question with a reminder for the description of the study purpose because the second opportunity can curb data loss and alleviate selection bias concerns (Cheung et al., 2017). After their second chance, four participants were still unable to answer the question correctly by indicating that they would "evaluate the quality of different ideas" rather than "read the instructions on how to interact with another person." Therefore, their data points were excluded from further analyses.

Afterward, participants read a task scenario that included the negative consequences of food waste, the methods of reducing food waste, and a request for generating a slogan to reduce food waste and exchanging the ideas of the slogan with another person. Participants indicated one slogan individually before their dyad discussions with their assigned counterparts. Participants communicated using a text message platform known as "ChatPlat" (Brooks & Schweitzer, 2011). All participants were also instructed not to share their personal information during the communication to avoid any possible confounding factors.

For the manipulations of emotional displays, a trained counterpart was instructed to use one specific slogan ("You can conserve the planet by conserving food.") during the task communication. We also found the differences between the slogan and all participants' slogans, thus creating our study setting where a participant and the counterpart discussed their different work-related ideas. To mitigate any potential confounding factors, the counterpart was also instructed not to share any personal information (e.g., name, age, gender) with participants. Moreover, the counterpart was requested to engage in different emotional expressions during task discussions depending on the conditions. In the emotional complexity expression condition, the counterpart was asked to display both positive and negative emotions about the participants' ideas (e.g., the message: "I feel both positive and negative about your slogan."). In the positive/[negative] emotion expression condition, the counterpart was asked to display only positive/[negative] emotions about the participants' ideas (e.g., the message: "I feel positive/[negative] about your slogan"). In the control condition, the counterpart was asked not to display any positive or negative emotions about the participants' ideas (e.g., the message: "I feel neutral about your slogan").

After engaging in the task discussions, participants indicated their emotions and

evaluated their counterparts' openness during the discussions. Moreover, they indicated their work-related satisfaction. They also reported their counterparts' three emotional expressions (i.e., displays of emotional complexity, positive emotions, and negative emotions) as manipulation check scales. Moreover, participants provided feedback on the study, and three of the participants suspected that their counterpart was deliberately arranged by their experimenter. Thus, we eliminated the three participants' data in our analyses. Lastly, participants shared their demographic information and reviewed a debriefing message.

Measures

Manipulation checks. We used three emotional expression scales adopted from Study 1, including a counterpart's emotional complexity (α = .96), positive emotion (α = .99), and negative emotion expressions (α = .99). We slightly modified the wording of the statements to fit our study context by changing the term from "My coworker" to "My counterpart" and using the past tense in the statements. An example statement of emotional complexity expression was: "My counterpart expressed both positive and negative emotions regarding my idea."

Positive and negative emotions. Participants indicated their emotions during the interactions with their counterparts using the same scales of positive emotions (α = .94) and negative emotions (α = .94) as those in Study 1.

Openness. Participants evaluated their counterparts' openness by rating three statements (α = .93) adopted from those in Study 1. An example statement was: "Good ideas got serious consideration from my counterpart."

Work-related satisfaction. Participants reported their work-relevant satisfaction (α = .95) by completing the 3-item scale adopted from the satisfaction scale in Study 1. A sample statement was: "I was very satisfied with the task."

Results

Table 3 presents the descriptive statistics and correlations of the focal variables in Study 2.

Validity of manipulations. To evaluate the impacts of the manipulations on perceptions of a counterpart's three emotional expressions, we used ANOVAs and planned contrast tests. The ANOVA results supported the significant condition differences in perceptions of a counterpart's emotional complexity expression ($F = 140.94$, $p < .001$), positive emotion expression ($F = 340.00$, $p < .001$), and negative emotion expression ($F = 279.51$, $p < .001$). Table 4 indicates the means and standard deviations of the manipulation check measures across the conditions. Furthermore, the results of planned contrast tests showed that participants in the emotional complexity expression condition perceived their counterparts as displaying significantly higher levels of emotional complexity than those in the positive emotion expression ($t = 17.31$, $p < .001$), negative emotion expression ($t = 18.28$, $p < .001$), or control ($t = 12.29$, $p < .001$) condition. Participants in the positive emotion expression condition also perceived their counterparts as exhibiting positive emotions at significantly higher levels than those in the emotional complexity expression ($t = 23.22$, $p < .001$), negative emotion expression ($t = 29.52$, $p < .001$), or control expression ($t = 23.46$, $p < .001$) condition. Moreover, participants in the negative emotion expression condition also perceived their counterparts as exhibiting negative emotions at significantly higher levels than those in the emotional complexity expression ($t = 22.10$, $p < .001$), positive emotion expression ($t = 27.23$, $p < .001$), or control expression ($t = 15.81$, $p < .001$) condition. Therefore, our results validated the effectiveness of the manipulations in Study 2.

Condition effects. To explore the condition effects on focal variables, we conducted ANOVAs. The ANOVA results indicated significant condition differences in positive emotions ($F = 51.68$, $p < .001$), negative emotions ($F = 75.29$, $p < .001$), perceived counterpart openness ($F = 138.99$, $p < .001$), and work-related satisfaction ($F = 39.68$, $p < .001$). Table 4 indicates the means and standard deviations of the focal variables across the conditions.

We also performed Tukey's honest significance tests for multiple comparisons between conditions to reduce the likelihood of false-positive findings (Tukey, 1949). The results demonstrated that participants in the conditions of emotional complexity expression (MD[3] = 1.57, $p < .001$) and positive emotion expression ($MD = 1.68$, $p < .001$) reported significantly higher levels of positive emotions than those in the control condition. Participants in the negative emotion expression condition also had lower levels of positive emotions than those in the control condition despite the non-significant difference ($MD = -0.17$, $p = .815$). Participants in the conditions of emotional complexity expression ($MD = 1.74$, $p < .001$) and positive emotion expression ($MD = 1.85$, $p < .001$) also experienced significantly higher levels of positive emotions than those in the negative emotion expression condition. We also did not find a significant difference in positive emotions between the conditions of emotional complexity expression and positive emotion expression ($MD = -0.11$, $p = .943$).

Furthermore, participants in the conditions of emotional complexity expression ($MD = -1.16$, $p < .001$) and positive emotion expression ($MD = -1.43$, $p < .001$) had significantly lower levels of negative emotions than those in the control condition. Participants in the negative emotion expression condition also reported significantly higher levels of negative emotions than those in the control condition ($MD = 1.11$, $p < .001$). Participants in the conditions of emotional

[3] MD refers to a mean difference between two conditions.

complexity expression (*MD* = -2.26, $p < .001$) and positive emotion expression (*MD* = -2.54, $p < .001$) also experienced significantly lower levels of negative emotions than those in the negative emotion expression condition. We also did not find a significant difference in negative emotions between the conditions of emotional complexity expression and positive emotion expression (*MD* = 0.27, $p = .478$).

Participants in the conditions of emotional complexity expression (*MD* = 2.10, $p < .001$) and positive emotion expression (*MD* = 2.20, $p < .001$) also perceived their counterparts as significantly more open than those in the control condition. Participants in the negative emotion expression condition also indicated significantly lower levels of perceived counterpart openness than those in the control condition (*MD* = -0.57, $p = .005$). Participants in the conditions of emotional complexity expression (*MD* = 2.67, $p < .001$) and positive emotion expression (*MD* = 2.77, $p < .001$) also reported significantly higher levels of perceived counterpart openness than those in the negative emotion expression condition. We also did not find a significant difference in perceived counterpart openness between the conditions of emotional complexity expression and positive emotion expression (*MD* = -0.10, $p = .944$).

Further, participants in the conditions of emotional complexity expression (*MD* = 1.14, $p < .001$) and positive emotion expression (*MD* = 1.56, $p < .001$) had significantly higher work-related satisfaction than those in the control condition. Participants in the negative emotion expression condition also indicated lower work-related satisfaction than those in the control condition despite the non-significant difference (*MD* = -0.12, $p = 0.918$). Participants in the conditions of emotional complexity expression (*MD* = 1.26, $p < .001$) and positive emotion expression (*MD* = 1.68, $p < .001$) also reported significantly higher work-related satisfaction than those in the negative emotion expression condition. We also did not find a significant

difference in work-related satisfaction between the conditions of emotional complexity expression and positive emotion expression (*MD* = -0.43, *p* = .107).

To reiterate, the results showed the significant effects of the positive (rather than negative) emotion (vs. control) condition on positive emotions and work-related satisfaction, and therefore the significant effects of the emotional complexity expression (vs. control) condition on these two variables might be deemed as driven by a counterpart's positive (but not negative) emotion expression. However, positive emotion expressions differed across the conditions. Specifically, the results showed that compared to participants in the positive emotion expression and control conditions, those in the emotional complexity expression perceived their counterparts as expressing significantly higher levels of *both* positive and negative emotions. By contrast, compared to participants in the emotional complexity expression and control conditions, those in the positive emotion expression perceived their counterparts as expressing significantly higher levels of *only positive emotions*. Thus, we cannot assess the "coexistence" of positive and negative emotion expressions or the significant effects of the emotional complexity expression (vs. control) condition through the condition comparison between expressions of "only" positive emotions and neutral feelings.

Effects of emotional expressions. To examine the effects of a counterpart's three emotional expressions on a perceiver's work-related satisfaction via three mediators, we used the same regression analyses and bootstrapping methods as in Study 1. We used dummy coding to focus on comparisons between each of the three emotional expression conditions vs. the control condition. Table 5 indicates all the regression results. The results demonstrated that a counterpart's emotional complexity expression significantly increased work-related satisfaction (Model 1: $b = 0.33$, $p < .001$), positive emotions (Model 2: $b = 0.43$, $p < .001$), and perceived

counterpart openness (Model 4: $b = 0.53$, $p < .001$), but significantly decreased negative emotions (Model 3: $b = -0.30$, $p < .001$). Moreover, a counterpart's positive emotion expression significantly increased work-related satisfaction (Model 1: $b = 0.46$, $p < .001$), positive emotions (Model 2: $b = 0.46$, $p < .001$), and perceived counterpart openness (Model 4: $b = 0.56$, $p < .001$), but significantly decreased negative emotions (Model 3: $b = -0.38$, $p < .001$). Furthermore, a counterpart's negative emotion expression non-significantly decreased work-related satisfaction (Model 1: $b = -0.04$, $p = .521$) and positive emotions (Model 2: $b = -0.05$, $p = .380$), significantly reduced perceived counterpart openness (Model 4: $b = -0.15$, $p < .001$), but significantly increased negative emotions (Model 3: $b = 0.29$, $p < .001$). The results of Model 5 also showed that with three emotional expressions as controls, positive emotions ($b = 0.20$, $p < .001$) and perceived counterpart openness ($b = 0.41$, $p < .001$) rather than negative emotions ($b = 0.00$, $p = .995$) significantly positively predicted work-related satisfaction.

The bootstrapping results also demonstrated that a counterpart's emotional complexity expression significantly increased work-related satisfaction by enhancing positive emotions ($b = 0.09$, 95% CI = [0.04, 0.15]) and perceived counterpart openness ($b = 0.22$, 95% CI = [0.14, 0.30]) rather than negative emotions ($b = 0.00$, 95% CI = [-0.03, 0.04]). Moreover, a counterpart's positive emotion expression significantly increased work-related satisfaction by enhancing positive emotions ($b = 0.09$, 95% CI = [0.04, 0.16]) and perceived counterpart openness ($b = 0.23$, 95% CI = [0.14, 0.32]) rather than negative emotions ($b = 0.00$, 95% CI = [-0.04, 0.05]). Furthermore, a counterpart's negative emotion expression significantly decreased work-related satisfaction by reducing perceived counterpart openness ($b = -0.06$, 95% CI = [-0.11, -0.02]) rather than positive emotions ($b = -0.01$, 95% CI = [-0.04, 0.01]) or negative emotions ($b = -0.00$, 95% CI = [-0.04, 0.03]).

To conclude, the findings of Study 2 replicated the significant results of Study 1 by demonstrating that a counterpart's emotional complexity and positive emotion expressions significantly increased a perceiver's work-related satisfaction by enhancing the perceiver's positive emotions and evaluation of the counterpart's openness. Moreover, a counterpart's negative emotion expression significantly decreased a perceiver's work-related satisfaction by reducing the perceiver's evaluation of the counterpart's openness. Although Study 1 showed a perceiver's positive emotions significantly mediated the association between a counterpart's negative emotion expression and the perceiver's work-related satisfaction, Study 2 did not support such a mediating effect due to a non-significant relationship between a counterpart's negative emotion expression and a perceiver's positive emotions, which suggested that affective contagion between emotions with different valences may be relatively weak or inconsistent.

General Discussion

In a three-wave field survey and an experiment, we consistently found significant positive impacts of a counterpart's emotional complexity and positive emotion expressions on a perceiver's work-related satisfaction by enhancing the perceiver's positive emotions and evaluation of the counterpart's openness. Conversely, a counterpart's negative emotion expression significantly decreased a perceiver's work-related satisfaction by reducing perceived counterpart openness. Contradictory to our predicted associations, a counterpart's emotional complexity did not consistently predict a perceiver's negative emotions. Specifically, we found an inverse association between emotional complexity expression and negative emotions, but this association was statistically significant in Study 1 and non-significant in Study 2. Moreover, a perceiver's negative emotions did not significantly predict the perceiver's work-related satisfaction, and thus the perceiver's negative emotions did not mediate the associations between

a counterpart's emotional expressions and the perceiver's work-related satisfaction. Therefore, our findings extended the EASI model to the associations between emotional expressions with single and both valences and work-related satisfaction by identifying perceived counterpart openness as the most significant mediator.

Implications

Our investigation contributes to growing evidence of the association between emotional expressions and work-related satisfaction. Previous research focused on a leader's emotional expressions with single valences, such as a positive association between a leader's gratitude display and a follower's work-related satisfaction (Ritzenhöfer et al., 2019) and a negative association between a leader's genuine anger expression and a follower's work-related satisfaction (Baker, 2020). These studies suggest when leaders display positive (vs. negative) emotions, followers experience high work-related satisfaction. Our research also demonstrates the similar advantage of positive (vs. negative) emotional expressions regarding work-related satisfaction in a novel context – discussion over different ideas without differentiation between the roles of leaders and followers. Furthermore, we find perceived counterpart openness as the most reliable mediator of the associations between a counterpart's emotional expressions and a perceiver's work-related satisfaction. These results suggest the formation of social perception as an essential process for the association between others' emotional expressions and perceivers' work-related satisfaction.

The current investigation serves as a pioneering study on the interpersonal impact of emotional complexity expression on work-related satisfaction. Previous research examined the undesirable consequences of emotional complexity within individuals because people with high emotional complexity overreacted to stimuli with different valences and failed to regulate

emotions effectively (Beal & Ghandour, 2011). For example, these people tend to have depressive symptoms (Grühn et al., 2013) and experience psychological distress (Fatima & Majeed, 2023). In contrast to the intra-personal associations between emotional complexity and its negative outcomes in the previous studies, we find that others' expressions of emotions with both valences increase perceivers' work-related satisfaction by enhancing perceived counterpart openness, which suggests a beneficial social influence process of emotional complexity expression. However, our results also show the corresponding adverse effect of negative emotional expression. The opposite effects of emotional complexity and negative emotion expressions suggest that perceivers did *not* focus on *only negative emotions* of emotional complexity expressions. Accordingly, our findings suggest that a display of both positive and negative emotions reduces negativity bias – a tendency to make negative (vs. positive) evaluations based on others' negative (vs. positive) emotion expressions (Vaish et al., 2008).

Incongruous with our expectations regarding a significant positive association between others' emotional complexity expression and perceivers' negative emotions, our results also demonstrate that the direction of the association is negative. Emotional complexity expression contains communications of both positive and negative emotions. Positive emotion communication can signal an expresser's appreciation of a perceiver's input (Terrill et al., 2018), which may lead the perceiver to interpret the expresser's negative emotion communication as beneficial, such as an intention to provide constructive comments on a topic. Thus, the perceiver may feel less negative about others' emotional complexity expressions. Moreover, a perceiver feels more negative about others' negative emotion expressions in our findings. When others only express negative emotions, their expressions can be interpreted as an intention to dominate and a signal of hostility (Friedman et al., 2004), thus creating a perceiver's negative responses.

Therefore, our research suggests that the inclusion of positive emotion expression mitigates negative emotional contagion.

The contemporary study also elucidates how others' emotional displays influence perceivers' work-related satisfaction. Our results indicate that positive emotions and perceived counterpart openness rather than negative emotions are significantly associated with work-related satisfaction. Our results are also consistent with the previous findings that positive emotions rather than negative emotions significantly predict job satisfaction (Todorova et al., 2014). Consequently, affective responses and social perceptions with a positive valence may serve as crucial precursors of worker-related satisfaction. Thus, the positivity valence may clarify why perceived openness and positive emotions mediate the positive interpersonal effects of emotional complexity expression and positive emotion expression on work-related satisfaction.

The current and previous studies also offer a practical implication on how individuals can display their emotions during discussions over their different ideas. Our investigation shows similar beneficial effects of emotional complexity and positive emotion expressions on work-related satisfaction by enhancing perceived counterpart openness but a corresponding detrimental effect of negative emotion expression. Furthermore, other researchers propose that a display of negative emotions can convey the existence of unresolved issues and the expresser's interest in the issues (Rees et al., 2020). Thus, when people intend to enhance others' work-related contentment and communicate their concerns regarding task issues, they can consider displaying both positive and negative emotions rather than only positive or negative emotions.

Limitations and Future Research

Although the current investigation provides new insights, its weaknesses offer productive areas for future exploration. For instance, further research can investigate whether the positive

effects of emotional complexity expression will remain consistently significant in a different context. Our study setting involves a discussion over different ideas, which may still allow participants to deliberate the pros and cons of specific issues. By contrast, when people are implementing a plan to complete the task, they form higher optimistic expectations than those in our study setting (Armor & Taylor, 2003), and thus expressions of emotional complexity may convey a dissenting viewpoint regarding plan implementation, leading to negative emotions and adverse social perceptions.

Researchers can also explore how specific categories of emotional complexity displays influence work-related satisfaction in subsequent studies. For instance, emotional ambivalence refers to tension caused by an experience of both positive and negative emotions (Rees et al., 2013; Rothman & Wiesenfeld, 2007). Expression of emotional ambivalence has been found to signal an expresser's unpredictability (Lim et al., 2021), which may lower perceivers' work-related satisfaction. By contrast, an expression of emotional differentiation (i.e., awareness of the differences between various emotions; Kang & Shaver, 2004) may signal a skill in distinguishing between viewpoints, which may promote perceivers' work-related satisfaction. These instances indicate how different types of emotional complexity expressions influence perceivers' work-related satisfaction.

Conclusion

The present research elucidates how others' emotional expressions with single and both valences affect perceivers' work-related satisfaction. Moreover, others' expressions of emotional complexity and positive emotions enhance perceivers' work-related satisfaction via an increase in the perceivers' positive emotions and assessment of the others' openness. Despite the similar effects of emotional complexity and positive emotion expressions, these two expressions have

different configurations of emotional expressions. Specifically, emotional complexity expression includes the coexistence of positive and negative emotion displays which allows for an interaction of the two components that may be different from simply the sum of its parts. Thus, emotional complexity and positive emotion expressions may generate beneficial effects via different reasons. Furthermore, others' expressions of negative emotions reduce perceivers' work-related satisfaction via a decrease in the perceivers' assessment of the others' openness. Consequently, when discussing different ideas, people can consider expressing both positive and negative emotions without worrying about reducing perceivers' work-related satisfaction. We hope that the current research prompts subsequent research endeavors on the interpersonal effects of emotional expressions and provides practical recommendations on how to promote work-related contentment.

Acknowledgment and Disclosure of interest

This research was supported by the Singapore Ministry of Education Academic Research Fund Tier 1 [C242/MSS21S004]. The author reports no conflict of interest.

References

Armor, D. A., & Taylor, S. E. (2003). The effects of mindset on behavior: Self-regulation in deliberative and implemental frames of mind. *Personality and Social Psychology Bulletin*, *29*(1), 86-95. https://doi.org/10.1177/0146167202238374

Bagozzi, R. P., Wong, N., & Yi, Y. (1999). The role of culture and gender in the relationship between positive and negative affect. *Cognition and Emotion*, *13*(6), 641-672. https://doi.org/10.1080/026999399379023

Baker, N. (2020). Authentic leadership, leader anger and follower job outcomes: A comparison of angry vs. non-angry leaders. *Beykoz Akademi Dergisi*, *8*(2), 106-126.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, *47*(4), 644-675.

Beal, D. J., & Ghandour, L. (2011). Stability, change, and the stability of change in daily workplace affect. *Journal of Organizational Behavior*, *32*(4), 526-546. https://doi.org/10.1002/job.713

Brooks, A. W., & Schweitzer, M. E. (2011). Can Nervous Nelly negotiate? How anxiety causes negotiators to make low first offers, exit early, and earn less profit. *Organizational Behavior and Human Decision Processes*, *115*(1), 43-54. https://doi.org/10.1016/j.obhdp.2011.01.008

Cheung, J. H., Burns, D. K., Sinclair, R. R., & Sliter, M. (2017). Amazon Mechanical Turk in organizational psychology: An evaluation and practical recommendations. *Journal of Business and Psychology*, *32*(4), 347-361. https://doi.org/10.1007/s10869-016-9458-5

Chi, S.-C. S., & Yang, M.-Y. (2015). How does negative mood affect turnover intention? The interactive effect of self-monitoring and conflict perception. *European Journal of Work*

& Organizational Psychology, *24*(1), 31-43. https://doi.org/10.1080/1359432X.2013.856299

Cooper, C. D., Kong, D. T., & Crossley, C. D. (2018). Leader humor as an interpersonal resource: Integrating three theoretical perspectives. *Academy of Management Journal*, *61*(2), 769-796. https://doi.org/10.5465/amj.2014.0358

Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and health: A meta-analysis. *Occupational and Environmental Medicine*, *62*(2), 105-112. https://doi.org/10.1136/oem.2002.006734

Farkas, A. J., & Tetrick, L. E. (1989). A three-wave longitudinal analysis of the causal ordering of satisfaction and commitment on turnover decisions. *Journal of Applied Psychology*, *74*, 855-868. https://doi.org/10.1037/0021-9010.74.6.855

Fatima, T., & Majeed, M. (2023). Detriments of exploitative leadership in the hotel industry: Role of conspiracy beliefs and forgiveness climate. *International Journal of Contemporary Hospitality Management, Ahead-of-print*. https://doi.org/10.1108/IJCHM-12-2021-1519

Fisher, C. D. (2000). Mood and emotions while working: Missing pieces of job satisfaction? *Journal of Organizational Behavior*, *21*(2), 185-202. https://doi.org/10.1002/(sici)1099-1379(200003)21:2<185::aid-job34>3.0.co;2-m

Forgas, J. P. (1995). Mood and Judgment: The Affect Infusion Model (AIM). *Psychological Bulletin*, *117*.

Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in experimental social psychology* (Vol. 47, pp. 1-53). Academic Press.

Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*(7), 678-686. https://doi.org/10.1037/0003-066x.60.7.678

Friedman, R., Anderson, C., Brett, J., Olekalns, M., Goates, N., & Lisco, C. C. (2004). The positive and negative effects of anger on dispute resolution: evidence from electronically mediated disputes. *Journal of Applied Psychology, 89*(2), 369-376.

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management, 26*(3), 463-488. https://doi.org/10.1016/S0149-2063(00)00043-X

Grühn, D., Lumley, M. A., Diehl, M., & Labouvie-Vief, G. (2013). Time-based indicators of emotional complexity: interrelations and correlates. *Emotion, 13*(2), 226-237. https://doi.org/10.1037/a0030363

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. Cambridge university press.

Hawk, S. T., Fischer, A. H., & Van Kleef, G. A. (2012). Face the noise: Embodied responses to nonverbal vocalizations of discrete emotions. *Journal of Personality and Social Psychology, 102*(4), 796-814. https://doi.org/10.1037/a0026234

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Hillebrandt, A., & Barclay, L. J. (2017). Comparing integral and incidental emotions: Testing insights from emotions as social information theory and attribution theory. *Journal of Applied Psychology, 102*(5), 732-752. https://doi.org/10.1037/apl0000174

Hoboubi, N., Choobineh, A., Kamari Ghanavati, F., Keshavarzi, S., & Akbar Hosseini, A. (2017). The impact of job stress and job satisfaction on workforce productivity in an Iranian petrochemical industry. *Safety and Health at Work*, *8*(1), 67-71. https://doi.org/10.1016/j.shaw.2016.07.002

Johnson, R. E., Rosen, C. C., & Djurdjevic, E. (2011). Assessing the impact of common method variance on higher order multidimensional constructs. *Journal of Applied Psychology*, *96*(4), 744-761. https://doi.org/10.1037/a0021504

Judge, T. A., & Ilies, R. (2004). Affect and job satisfaction: A study of their relationship at work and at home. *Journal of Applied Psychology*, *89*(4), 661-673. https://doi.org/10.1037/0021-9010.89.4.661

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, *127*(3), 376-407. https://doi.org/10.1037//0033-2909.127.3.376

Kang, S. M., & Shaver, P. R. (2004). Individual differences in emotional complexity: Their psychological implications. *Journal of Personality*, *72*(4), 687-726. https://doi.org/10.1111/j.0022-3506.2004.00277.x

Kanungo, R. N. (1982). Measurement of job and work involvement. *Journal of Applied Psychology*, *67*, 341-349. https://doi.org/10.1037/0021-9010.67.3.341

Lambert, E. G., Barton, S. M., & Hogan, N. L. (1999). The missing link between job satisfaction and correctional staff behavior: The issue of organizational commitment. *American Journal of Criminal Justice*, *24*(1), 95-116. https://doi.org/10.1007/BF02887620

Larsen, J. T., Hershfield, H. E., Stastny, B. J., & Hester, N. (2017). On the relationship between positive and negative affect: Their correlation and their co-occurrence. *Emotion, 17*(2), 323-336. https://doi.org/10.1037/emo0000231

Lim, J. H., Tai, K., & Kouchaki, M. (2021). Ambivalent bosses: An examination of supervisor expressed emotional ambivalence on subordinate task engagement. *Organizational Behavior and Human Decision Processes, 165*, 139-152. https://doi.org/10.1016/j.obhdp.2021.05.001

Litman, L., Robinson, J., & Abberbock, T. (2017). TurkPrime.com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods, 49*(2), 433-442. https://doi.org/10.3758/s13428-016-0727-z

Liu, Y., Prati, L. M., Perrewé, P. L., & Brymer, R. A. (2010). Individual differences in emotion regulation, emotional experiences at work, and work-related outcomes: A two-study investigation. *Journal of Applied Social Psychology*, *40*(6), 1515-1538. https://doi.org/10.1111/j.1559-1816.2010.00627.x

Minson, J. A., Mueller, J. S., & Larrick, R. P. (2017). The contingent wisdom of dyads: When discussion enhances vs. undermines the accuracy of collaborative judgments. *Management Science, 64*(9), 4177-4192. https://doi.org/10.1287/mnsc.2017.2823

Oh, V. Y. S., & Tong, E. M. W. (2021). Mixed emotions, but not positive or negative emotions, facilitate legitimate virus-prevention behaviors and eudaimonic outcomes in the emergence of the Covid-19 crisis. *Affective Science*, *2*(3), 311-323. https://doi.org/10.1007/s42761-021-00045-x

Owen, D. (2015). Collaborative decision making. *Decision Analysis*, *12*(1), 29-45. https://doi.org/10.1287/deca.2014.0307

Rees, L., Chi, S.-C. S., Friedman, R., & Shih, H.-L. (2020). Anger as a trigger for information search in integrative negotiations. *Journal of Applied Psychology*, *105*(7), 713-731. https://doi.org/10.1037/apl0000458

Rees, L., Rothman, N. B., Lehavy, R., & Sanchez-Burks, J. (2013). The ambivalent mind can be a wise mind: Emotional ambivalence increases judgment accuracy. *Journal of Experimental Social Psychology*, *49*(3), 360-367. https://doi.org/10.1016/j.jesp.2012.12.017

Ritzenhöfer, L., Brosi, P., Spörrle, M., & Welpe, I. M. (2019). Satisfied with the job, but not with the boss: Leaders' expressions of gratitude and pride differentially signal leader selfishness, resulting in differing levels of followers' satisfaction of those with relatively low power. *Journal of Business Ethics*, *158*(4), 1185-1202. https://doi.org/10.1007/s10551-017-3746-5

Rothman, N. B., & Melwani, S. (2017). Feeling mixed, ambivalent, and in flux: The social functions of emotional complexity for leaders. *The Academy of Management Review*, *42*(2), 259–282.

Rothman, N. B., & Wiesenfeld, B. M. (2007). The social consequences of expressing emotional ambivalence in groups and teams. *Research on Managing Groups and Teams*, *10*, 275-308.

Schwarz, N. (2012). Feelings-as-information theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 289-308). Sage Publications Ltd. https://doi.org/10.4135/9781446249215.n15

Sharma, S., Elfenbein, H. A., Sinha, R., & Bottom, W. P. (2020). The effects of emotional expressions in negotiation: A meta-analysis and future directions for research. *Human Performance*, *33*(4), 331-353. https://doi.org/10.1080/08959285.2020.1783667

Sims, T., Tsai, J. L., Jiang, D., Wang, Y., Fung, H. H., & Zhang, X. (2015). Wanting to maximize the positive and minimize the negative: Implications for mixed affective experience in American and Chinese contexts. *Journal of Personality and Social Psychology*, *109*(2), 292-315. https://doi.org/10.1037/a0039276

Spanjol, J., Tam, L., & Tam, V. (2015). Employer–employee congruence in environmental values: An exploration of effects on job satisfaction and creativity. *Journal of Business Ethics*, *130*, 117-130. https://doi.org/10.1007/s10551-014-2208-6

Terrill, A. L., Ellington, L., John, K. K., Latimer, S., Xu, J., Reblin, M., & Clayton, M. F. (2018). Positive emotion communication: Fostering well-being at end of life. *Patient Education and Counseling*, *101*(4), 631-638. https://doi.org/10.1016/j.pec.2017.11.018

Todorova, G., Bear, J. B., & Weingart, L. R. (2014). Can conflict be energizing? A study of task conflict, positive emotions, and job satisfaction. *Journal of Applied Psychology*, *99*(3), 451-467.

Trombetta, J. J., & Rogers, D. P. (1988). Communication climate, job satisfaction, and organizational commitment: The effects of information adequacy, communication openness, and decision participation. *Management Communication Quarterly*, *1*(4), 494-514. https://doi.org/10.1177/0893318988001004003

Tsai, M.-H. (2023). Can conflict cultivate collaboration? The positive impact of mild versus intense task conflict via perceived openness rather than emotions. *Journal of Experimental Psychology: Applied*, *29*(4), 813-830. https://doi.org/10.1037/xap0000448

Tsai, M.-H., & Bendersky, C. (2016). The pursuit of information sharing: Expressing task conflicts as debates vs. disagreements increases perceived receptivity to dissenting opinions in groups. *Organization Science*, *27*(1), 141-156. https://doi.org/10.1287/orsc.2015.1025

Tsai, M.-H., Melia, N. V., & Hinsz, V. B. (2020). The effects of perceived decision-making styles on evaluations of openness and competence that elicit collaboration. *Personality and Social Psychology Bulletin*, *46*(1), 124-139. https://doi.org/10.1177/0146167219843934

Tsai, M.-H., Wee, S., & Koh, B. (2019). Restructured frame-of-reference training improves rating accuracy. *Journal of Organizational Behavior*, *40*(6), 740-757. https://doi.org/10.1002/job.2368

Tukey, J. W. (1949). Comparing individual means in the analysis of variance. *Biometrics*, *5*(2), 99-114.

Ukangwa, C. C., Otuza, E. C., & Ehioghae, M. (2020). Influence of information sharing on job satisfaction of librarians in private universities in South-east and South-west, Nigeria. *Information Impact:: Journal of Information and Knowledge Management*, *11*(4), 1-12.

Vaish, A., Grossmann, T., & Woodward, A. (2008). Not all emotions are created equal: The negativity bias in social-emotional development. *Psychological Bulletin*, *134*(3), 383-403. https://doi.org/10.1037/0033-2909.134.3.383

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*(3), 184-188.

Van Kleef, G. A., Homan, A. C., Beersma, B., Van Knippenberg, D., Van Knippenberg, B., & Damen, F. (2009). Searing sentiment or cold calculation? The effects of leader emotional

displays on team performance depend on follower epistemic motivation. *Academy of Management Journal*, *52*(3), 562-580. https://doi.org/10.5465/AMJ.2009.41331253

Van Kleef, G. A., Homan, A. C., & Cheshin, A. (2012). Emotional influence at work: Take it EASI. *Organizational Psychology Review*, *2*(4), 311-339. https://doi.org/10.1177/2041386612454911

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, *76*, 820-838. https://doi.org/10.1037/0022-3514.76.5.820

Yip, J. A., & Schweinsberg, M. (2017). Infuriating impasses: Angry expressions increase exiting behavior in negotiations. *Social Psychological and Personality Science*, *8*, 706-714. https://doi.org/10.1177/1948550616683021

Zhang, L., Huang, L., Liu, M., Yan, H., & Li, X. (2016). Nurse-physician collaboration impacts job satisfaction and turnover among nurses: A hospital-based cross-sectional study in Beijing. *International Journal of Nursing Practice*, *22*(3), 284-290. https://doi.org/10.1111/ijn.12424

Zhang, X., Ma, L., Xu, B., & Xu, F. (2019). How social media usage affects employees' job satisfaction and turnover intention: An empirical study in China. *Information & Management*, *56*(6), 103136. https://doi.org/10.1016/j.im.2018.12.004

Table 1

Means, Standard Deviations, and Correlations in Study 1

	Mean	S.D.	1.	2.	3.	4.	5.	6.
1. Emotional Complexity Expression	4.55	1.43						
2. Positive Emotion Expression	3.95	1.56	-0.46***					
3. Negative Emotion Expression	2.49	1.24	0.19***	-0.11**				
4. Positive Emotions	5.28	1.12	0.02	0.18***	-0.21***			
5. Negative Emotions	2.09	1.26	0.15***	-0.26***	0.36***	-0.44***		
6. Openness	5.64	1.14	-0.06	0.27***	-0.38***	0.58***	-0.66***	
7. Satisfaction	5.16	1.48	0.06	0.18***	-0.10*	0.44***	-0.28***	0.39***

Notes. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed).

Table 2

Regression Results in Study 1

Dependent variable	Model 1	Model 2	Model 3	Model 4	Model 5
Predictors	Satisfaction	Positive Emotions	Negative Emotions	Openness	Satisfaction
Emotional Complexity Expression	0.20***	0.18***	-0.02	0.15***	0.12**
Positive Emotion Expression	0.26***	0.24***	-0.22***	0.29***	0.13**
Negative Emotion Expression	-0.11*	-0.22***	0.34***	-0.37***	0.04
Positive Emotions					0.30***
Negative Emotions					-0.03
Openness					0.18**
R^2	0.07	0.10	0.18	0.21	0.24
F	13.03***	18.39***	38.14***	46.41***	27.09***

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed). The table presents standardized regression coefficients.

Table 3

Means, Standard Deviations, and Correlations in Study 2

	Mean	S.D.	1.	2.	3.	4.	5.	6.
1. Emotional Complexity Expression	0.50	0.50						
2. Positive Emotion Expression	0.50	0.50						
3. Negative Emotion Expression	0.50	0.50						
4. Positive Emotions	4.28	1.58	0.51***	0.54***	-0.06			
5. Negative Emotions	2.45	1.65	-0.40***	-0.50***	0.33***	-0.37***		
6. Openness	4.07	1.70	0.69***	0.67***	-0.22**	0.61***	-0.56***	
7. Satisfaction	4.42	1.47	0.39***	0.52***	-0.04	0.50***	-0.35***	0.59***

Note. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed). "Emotional Complexity Expression" indicates the emotional complexity expression (coding = 1) vs. control (coding = 0) condition; "Positive Emotion Expression" indicates the positive emotion expression (coding = 1) vs. control (coding = 0) condition; "Negative Emotion Expression" indicates the negative emotion expression (coding = 1) vs. control (coding = 0) condition.

Table 4

Means and Standard Deviations Across the Conditions in Study 2

Mean and Standard Deviation	DV: Emotional Complexity Expression	DV: Positive Emotion Expression	DV: Negative Emotion Expression	DV: Positive Emotions	DV: Negative Emotions	DV: Openness	DV: Satisfaction
Emotional Complexity Expression							
Mean	5.85_a	2.62_b	2.32_b	5.08_a	1.66_c	5.24_a	4.91_a
Standard Deviation	1.03	1.36	1.19	1.21	1.03	0.97	1.19
Positive Emotion Expression							
Mean	2.54_b	6.39_a	1.44_b	5.19_a	1.39_c	5.33_a	5.34_a
Standard Deviation	1.40	0.98	0.84	1.18	0.87	1.18	1.09
Negative Emotion Expression							
Mean	2.35_b	1.61_b	6.15_a	3.34_b	3.93_a	2.56_c	3.65_b
Standard Deviation	1.46	0.89	1.05	1.47	1.61	1.27	1.36
Control							
Mean	3.50_b	2.59_b	3.41_b	3.52_b	2.82_b	3.14_b	3.77_b
Standard Deviation	1.33	1.18	1.57	1.46	1.56	1.25	1.49

Note. Subscript letters (i.e., a > b > c) indicate significantly different means ($p < .05$) based on the results reported in the text.

Table 5

Regression Results in Study 2

Dependent variable	Model 1	Model 2	Model 3	Model 4	Model 5
Predictors	Satisfaction	Positive Emotions	Negative Emotions	Openness	Satisfaction
Emotional Complexity Expression	0.33***	0.43***	-0.30***	0.53***	0.03
Positive Emotion Expression	0.46***	0.46***	-0.38***	0.56***	0.14*
Negative Emotion Expression	-0.04	-0.05	0.29***	-0.15***	0.03
Positive Emotions					0.20***
Negative Emotions					0.00
Openness					0.41***
R^2	0.24	0.29	0.38	0.53	0.39
F	39.68***	51.68***	75.29***	138.99***	39.39***

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed). The table presents standardized regression coefficients. “Emotional Complexity Expression” indicates the emotional complexity expression vs. control condition; “Positive Emotion Expression” indicates the positive emotion expression vs. control condition; “Negative Emotion Expression” indicates the negative emotion expression vs. control condition.

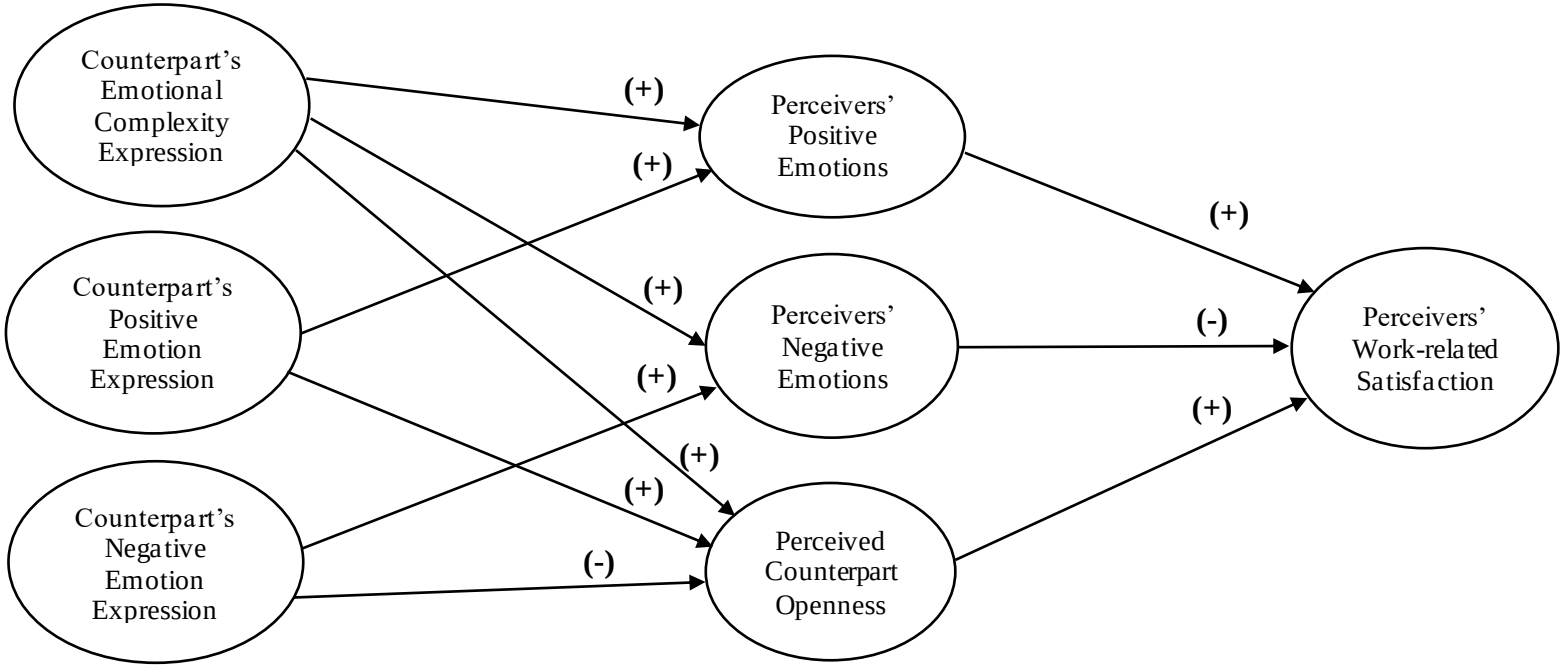

Figure 1. Predicted Effects of Emotion Expressions

Note: The positive and negative signs refer to positive and negative associations between variables, respectively.