Employee trust-repair practices: scale development and validation

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Abstract

Purpose – In this paper, the authors describe the step-by-step approach used to develop a trust-repair construct and a valid measurement scale for assessing employee perceptions of the most effective employee trust-repair practices.

Design/methodology/approach – The initial employee trust-repair scale (ETRS) was completed by 282 employees of a non-profit organization and validated by 101 employees of the administrative unit of the Finnish Army.

Findings – The 14-item seven-factor model was found to be reliable, valid and stable across the samples.

Research limitations/implications – This study contributes to the current literature on trust repair by presenting the first validated measure for employee trust repair.

Practical implications – The findings provide a valuable instrument for practitioners to assess the state of employee trust-repair practices.

Originality/value – To the best of the authors' knowledge, this is the first study in an organizational context demonstrating an operationally valid and comprehensive measure for employee trust-repair practices.

Keywords Employee trust repair, Trust-repair practices, Employee trust-repair scale, Scale development

Paper type Research paper

1. Introduction

Trust is a fundamental factor influencing almost all aspects of social and economic activities and impacting all organizations and their employees (McEvily *et al.*, 2003; Schoorman *et al.*, 2007). High organizational trust increases employee job satisfaction and productivity as well as and firm performance. However, in the current work environment, characterized by many unpredictable changes, it is challenging to develop employee trust (Gillespie and Dietz, 2009; Kähkönen *et al.*, 2021), and thus trust repair has become an important issue for organizations and their leaders. Active trust-repair practices can be seen as a way in which leaders protect and repair trust. Therefore, it is important to understand how different active trust-repair practices can improve employee-perceived loss of trust and which of the practices are most effective in an organizational context.

Although much is known about the benefits of organizational trust, less is known about its dynamic aspects (Kähkönen *et al.*, 2021). In the last decade, researchers have focused on understanding trust repair (Gillespie and Dietz, 2009; Kramer and Lewicki, 2010), but a comprehensive understanding of the effectiveness of trust-repair practices remains elusive. While conceptual research on organizational trust repair is well developed (see, e.g. Bachmann *et al.*, 2015; Gillespie and Dietz, 2009; Tomlinson and Mayer, 2009), empirical studies dealing with

multiple trust-repair responses are limited (Kähkönen, 2020). Moreover, many trust violations are becoming more complex, requiring focused management actions and a combination of several trust-repair responses (Kähkönen et al., 2021).

Research on organizational actors' trust-repair practices following trust violations has mostly relied on laboratory experiments and focused on single or a small number of trust-repair responses, such as apologies vs denial (e.g. Ferrin et al., 2007; Kim et al., 2004; Kim et al., 2012), penance vs regulation vs apologies (Dietz et al., 2011), or apologies alone (De Cremer and Schouten, 2008; Kim et al., 2006; Maddux et al., 2011). However, no comprehensive measurement scale has yet been developed to demonstrate the effectiveness of various trust-repair responses. Accordingly, there is a need for further research (from both scholars' and practitioners' perspectives) that (1) integrates and categorizes findings from previous studies regarding the measurable dimensions of employee trust-repair practices, (2) validates this comprehensive construct and (3) develops a scale to measure it. The primary motivation for this research is to develop and validate a scale to measure the effectiveness of the employee trust-repair responses utilized by researchers and practitioners. It has been often noted that only what gets measured gets managed (e.g. Kianto et al., 2018), and by utilizing the scale it would be possible for both academics as well as practitioners to systematically measure trust repair within the organizations. In case of problem issues arise, then it would be possible to focus on those issues by utilizing qualitative approach.

In this paper, we describe the step-by-step approach used to develop the trust-repair construct and a valid measurement scale for assessing employee perceptions of the most effective employee trust-repair practices. First, we discuss the nature of employee trust and trust repair. Second, we develop the construct and scale for measuring employee trust-repair practices used by leaders. Finally, we conclude with a discussion of the theoretical and practical implications of our research.

2. Nature of employee trust and trust repair

Trust can be defined as "*a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another*" Rousseau et al. (1998, p. 395), and this definition is also applicable to employee trust in organizations (Lewicki and Brinsfield, 2017). In the organizational context, employee evaluations of organizational trustworthiness include social and impersonal referents. When an employee trust violation occurs (e.g. through organizational changes and disruptions), it can encompass a variety of organizational levels or referents (Fulmer and Gelfand, 2012). Trust repair may be needed, for example, in bilateral interactions consisting of subordinate–superior pairs, in relationships between colleagues or working teams, or in relationships between middle and senior management. Organizational-level trust also comprises impersonal elements confined not to a particular person but to the trustworthiness of the organization more generally (Vanhala et al., 2011). For example, organizational human resources management (HRM) practices are impersonal aspects.

Dirks et al. (2009, p. 69) stated that relationship repair "*occurs when a transgression causes the positive state(s) that constitute(s) the relationship to disappear and/or negative states to arise, as perceived by one or both parties, and activities by one or both parties substantively return the relationship to a positive state.*" This definition is also applicable in the organizational context when leaders seek to repair employee trust. The process model developed by Dirks et al. (2009) for trust repair emphasizes the temporal nature of the trust-repair process. First, it distinguishes the state of trust before a disruption. Second, it identifies what things are changed during the disruption and how. Third, trust-repair actions are taken to repair trust after the violation, and finally, in the post-repair stage, the level of trust after the repair actions is evaluated.

In this trust-repair process, three major theoretical approaches and related mechanisms can be identified: attributional, structural and social-equilibrium (Dirks et al., 2009). The roots of attributional mechanism are based in attribution theory (Heider, 1958). On one hand, the

trustors attempt to explain the situation by using emotions, motives and external factors through changing attributions, while on the other hand, violators try to present themselves in a more trustworthy light by using explanations, denials, or social testimonies from sympathizers (Dirks *et al.*, 2009). The social-equilibrium mechanism addresses negative effects and exchanges and could also indirectly address trust repair itself (Ren and Gray, 2009). The aim is to restore the expectations of the relationship following the trust violation. From a social equilibrium viewpoint, conflicts can be resolved by using social rituals, such as apologies or punishment, or by offering compensation. From a structural perspective, trust violations increase negative exchanges. Trust-repair actions thus involve structural processes through which positive exchanges are encouraged (Dirks *et al.*, 2009). Effective trust repair includes monitoring, contracts and procedures intended to increase the reliability of future organizational behavior (Sitkin and Roth, 1993). In a complex organizational environment, different kinds of trust violations may occur. Consequently multiple trust repair responses are needed to repair employee trust. Thus, in this study we applied a perspective that combines all of these aforementioned theories and related trust-repair responses (Dirks *et al.*, 2009).

In addition to the above-mentioned theoretical approaches, many scholars have adopted a contingency approach to study how the nature of trust violation affects employee trust and trust repair (Grover *et al.*, 2014; Kim, 2018; Kähkönen, 2020; Sørensen *et al.*, 2011). In other words, the nature of trust violations is studied in work relationships in relation to the dimensions of trustworthiness (i.e. ability-, benevolence- and integrity-based trust violations, ABI model). Recently, scholars have focused on the need to combine several different trust-repair responses in an organizational context and study their effectiveness (Kähkönen, 2020). The most effective trust-repair practice after a competence-based trust violation would not necessarily be similarly effective following an integrity-based trust violation (see, e.g. Sørensen *et al.*, 2011). The ABI model (Mayer *et al.*, 1995) has been widely adopted by trust scholars and is well suited for looking into organizational actors' evaluations of the trustworthiness of another actor or their own organization. These dimensions of trustworthiness are also applied in this paper.

Previous empirical and conceptual studies argue that trust in work relationships can be repaired through active organizational responses, which we refer to as *trust-repair practices* (Dirks *et al.*, 2009; Gillespie and Dietz, 2009). In this study, we define trust-repair practices as active organizational and managerial practices that aim to repair employee trust to a positive state. Trust-repair practices can be compared to active human resources management (HRM) practices (Gillespie and Dietz, 2009) aimed to improve employee trust in management and to restore the trustworthiness of the organization in the eyes of its employees (Kramer and Lewicki, 2010).

3. Measure of trust-repair practices

Our construct and scale are based on a desire to improve employee trust in top leaders and the organization as well as a desire to measure the effectiveness of the trust-repair practices utilized by top management. Employees' trust levels may increase or decrease in response to the internal and external forces affecting work life. Thus, active and continuous trust repair is an important goal for leaders. A leader's ability to perform effective employee trust repair is driven by multiple factors. In developing this construct and scale, we investigated past constructs and measures for organizational use to identify relevant factors of trust-repair practices. In a recent systematic literature review, Kähkönen *et al.* (2021) provide a solid foundation for scale development by integrating different trust-repair practices and describe seven factors that are relevant for a trust-repair construct: (1) transparent information sharing, (2) strong management actions, (3) benevolent personnel policies, (4) emotional support, (5) apologies, (6) third-party involvement and (7) constructive behavior. Naturally

these same dimensions are also useful in trust building. However, based previous trust repair literature, especially these seven dimensions that would follow violations, have been found to be effective in repairing trust and therefore they are justified in being involved when developing a scale for trust repairing.

3.1 Attributes related to prior successful employee trust repair by leaders

3.1.1 Transparent information sharing. From a conceptual perspective, scholars have proposed that open information sharing about leaders' decision-making processes can repair employee trust (Bachmann *et al.*, 2015). Based on empirical studies, researchers have further proposed that the provision of open and honest information sharing can repair trust (Fisher and White, 2000). In the context of organizational change, Kähkönen (2020) found that adequate and open information along with a developed discussion culture within an organization are critical for repairing employee trust. Similarly, Grover *et al.* (2014) proposed that timely and honest information can help to repair employee trust in leadership. Thus, in the employee trust-repair process leaders should first openly discuss the issue with the employees and then propose a plan that will help the leaders to avoid future violations.

3.1.2 Strong management actions. According to Sørensen *et al.* (2011), employee trust in an organization can be repaired by strong management actions. They found that active attempts to protect trust conveying ability, integrity and benevolence are crucial because low trust may escalate into blatant distrust. Similarly, Kähkönen (2020) found that employees expect leaders to have the competence to make fact-based decisions and facilitate and effectively implement change. Thus, strong management actions can be valuable in repairing employee trust following organizational change. Further, Pate *et al.* (2012) argued that strong management actions could help to restore employee trust when the founding principle of respect has been violated in an organization. They also found a relationship between strong or weak communications/other personnel skills and the effectiveness of trust repair.

3.1.3 Benevolent personnel policies. In an organizational context, benevolence refers to acting responsibly, forgiving and being honest and loyal in relationships in which people have contact with each other (Mayer *et al.*, 1995). Professional leaders take care of their employees without any opportunistic or egocentric motives. Team leaders who want to preserve the welfare of their team members apply the organization's benevolence human resources (HR) strategy and do so visibly for employees through their everyday leadership routines. Benevolent behavior on the part of managers shows that they are interested in staff welfare at work. By implementing fair personnel policies, leaders can begin to repair employee trust following benevolence-based violations (Davis *et al.*, 2000; Kähkönen, 2020). Based on previous empirical studies (e.g. Kähkönen, 2020), there are sometimes problems with organizations' personnel policies (e.g. the HRM strategy is not visible to employees, or the HR department is overly bureaucratic). Thus, employees could feel that their employer does not value them enough. In fact, employees might feel they are only seen as an expense by leaders. Such experiences might cause benevolence-based trust violations among employees and weaken the trustworthiness of the organization in their eyes. Thus, benevolent personnel policies are crucial for repairing employee trust.

3.1.4 Emotional support. Pate *et al.* (2012) reported that bullying and harassment were causes of trust violations and consequent loss of respect for the organization. They found a positive relationship between the level of leaders' emotional intelligence and the effectiveness of trust repair. Thus, strong emotional intelligence on the part of managers and their capacity to provide emotional support to employees can preserve and repair employee trust (Kähkönen, 2020). From the perspective of an individual employee, emotional support means that managers and other leaders understand the feelings of subordinates, listen to them and talk with them (Pate *et al.*, 2012).

3.1.5 Apologies. Krylova *et al.* (2016) reported that apologies are not as effective as substantive responses following trust violations. They also argued that while some components of an apology are particularly important, including concrete actions (e.g. acknowledging responsibility), apologies can be interpreted as empty words or "cheap talk." De Cremer and Schouten (2008) proposed that an apology that conveys respect repairs trust far better than an apology lacking in respect. Moreover, Haesevoets *et al.* (2015) noted that an apology must be offered in a timely fashion to help repair a violation of trust. Henderson *et al.* (2020) examined six general verbal trust-repair responses, including penance (full or partial), denials, apologies, excuses and combined apologies/excuses. They sought to determine whether these responses decrease negative emotions and increase trust after a violation of the psychological contract in the employer–employee relationship. They found that all of the investigated tactics helped to repair trust except for denial. Apologies are a valid part of the trust-repair practices scale because they are almost always involved when repairing trust between two parties. However, it should be noted that trust cannot always be restored (Henderson *et al.*, 2020). The effectiveness of trust repair depends on whether the violated party notices concrete improvements in the violator's behavior or whether the violator appears to be indifferent. Thus, based on previous studies, it seems that verbal responses (e.g. apologies) must be accompanied by other more concrete trust-repairing practices to support their effectiveness.

3.1.6 Third-party involvement. Coleman (1990) proposed that third parties might act as mediators when repairing violated trust. However, the involvement of third parties to repair employee trust has received little research attention. Mueller *et al.* (2015) examined the involvement of third parties in the auditing process during a global financial crisis. Recently, Kähkönen (2020) found that the outsourcing of some processes and services related to trust repair may be advisable after organizational change. The rationale behind this is that professional third parties with specific expertise could support HR and management to maintain trust within the organization. Third parties might be especially helpful following competence-based trust violations involvement in terms of repairing trust in management. For example, if leaders lack knowledge about change management, outsourcing some functions may be wiser than operating internally without the proper knowledge and capabilities. External consultants, healthcare professionals, or psychologists are often trusted parties who can demonstrate leaders' care for the staff. Similarly, improving management through third-party evaluation (e.g. accreditation) can help to restore organizational trustworthiness in the eyes of the employees (Mueller *et al.*, 2015).

3.1.7 Constructive behavior. Constructive behavior can be defined as positive actions and attitudes that culminate in the optimal use of organizational resources (Einarsen *et al.*, 2007). Six and Skinner (2010) proposed that constructive and positive interactions by both parties in the trust relationship within an organization can lead to positive trust outcomes in interpersonal relationships between employees. In the change context, Kähkönen (2020) found that if superiors used power in an unpleasant way or if top management failed to display good manners, these disruptions caused competence- and benevolence-based trust violations. Ability and benevolence are typically personal attributes, and so it should be noted that trust violations in bilateral interactions do not necessarily undermine employee trust in the whole organization (Kähkönen *et al.*, 2021). However, Petriglieri (2015) suggested that benevolence- and competence-based trust violations by leaders and especially by top managers could undermine employee trust in an organization. In bilateral relationships, after these disruptions, the trustors' inability to forgive coupled with the violators' low motivation to repair trust and poor social exchange negatively affect the successful restoration of trust. Conversely, if the individual parties behave constructively, trust is easier to repair, and these positive effects might diffuse widely throughout the whole organization.

Accordingly, we have generated a trust-repair construct based on the findings from previous literature (DeVellis, 2012). We integrated seven factors, which are shown in Table 1. In the following, we discuss the development and validation of the trust-repair practices scale, outlining our empirical research, research methods and procedures.

4. Methods and procedures

The research adopted a qualitative–quantitative mixed-method approach to scale development (Creswell, 2009). First, previous literature was analyzed in the qualitative phase and then focus groups and interviews were used to further develop items for the Employee Trust-Repair Scale (ETRS) (Skulmoski et al., 2007). Experts then provided advice regarding the content of the items and the face validity (Crawforda and Kelder, 2019). Finally, the main studies were conducted, and confirmatory factor analysis (CFA) was performed. Our approach to scale development followed a procedure utilized widely in the literature (see, e.g. Hinkin, 1995, 1998): (1) domain specification, item generation and establishment of content validity; (2) questionnaire administration; (3) CFA; (4) determination of convergent, discriminant and nomological validity; and (5) validation of the results with an independent sample (CFA and validities). In the following, we explain each phase in more detail. The scale development procedure is shown in Figure 1.

4.1 Phase 1: qualitative phase

The first step in the scale development consisted of domain specification to clarify the construct to be measured (DeVellis, 2012). When a previous theoretical framework exists, the dimensions can be constructed deductively (Hinkin, 1998). Thus, we used existing literature and adopted a deductive approach to develop the factors (Johnson et al., 2012). We utilized the

Trust-repair factors	Definition	Example of authors
Transparent information sharing	Capability to be mentally open to new ideas, to freely share information, to be receptive and accept new ideas Butler (1991)	Bachmann et al. (2015), Grover et al. (2014), Kähkönen (2020)
Strong management actions	Series of competence, skills, and knowledge which are realized to be capable of increasing employee trust in management Butler (1991)	Kähkönen (2020), Pate et al. (2012), Sørensen et al. (2011)
Benevolent personnel policies	Benevolence is a value that shows a willingness to transcend selfish concerns for the benefit of others Schwartz (1992)	Davis et al. (2000), Dietz et al. (2011), Kähkönen (2020)
Emotional support	Leaders' expressions of care, affection, and interest, especially during times of stress or upset of employee Cutrona and Russell (1990)	Grover et al. (2014), Kähkönen (2020), Pate et al. (2012), Webber et al. (2012)
Apologies	Expression of error or discourtesy accompanied by an expression of regret Tavuchis and Culpa (1991)	Kim et al. (2004), Krylova et al. (2016), Kähkönen (2020), Lewicki et al. (2016)
Third-party involvement	The mutual friend of the violator and victim invited to mediate the process of trust repair by the violator, although this mediator is not previously connected with the trust violation Ying et al. (2017)	Bachmann et al. (2015), Kähkönen (2020), Mueller et al. (2015), Coleman (1990)
Constructive behavior	Individuals' positive actions and attitudes which lead to optimal use of organizational resources Einarsen et al. (2007)	Kähkönen (2020), Petriglieri (2015), Six and Skinner (2010)

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Table 1.
Trust-repair factors based on past literature
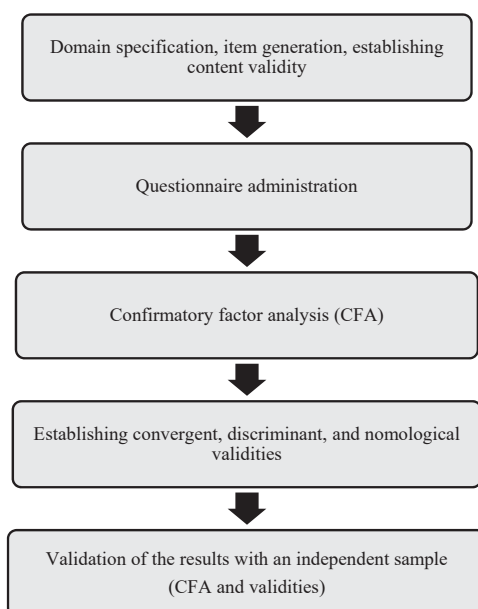
Source(s): Figure created by Author, Hinkin
(1995, 1998)

recent integrative framework by Kähkönen *et al.* (2021). It was justified, because in their paper systematically reviewed and took stock of the research on trust repair conducted in the past 2 decades to provide comprehensive insights for researchers. After this phase we inductively performed item generation. We used this deductive–inductive approach to verify the content validity of the final scale (Hinkin, 1998). This enabled us build on previous theory to specify, justify and explain elements related to organizational trust repair and provide clear definitions for each element (Crawforda and Kelder, 2019). In addition, were able to generate more empirical evidence for item formulation through focus groups and interviews. Trust-repair practices were defined as *active organizational and managerial practices which attempt to return employee trust to a positive state* based on the seven potential factors identified above: (1) transparent information sharing, (2) strong management actions, (3) benevolent personnel policies, (4) emotional support, (5) apologies, (6) third-party involvement and (7) constructive behavior.

4.1.1 Item generation. The researchers conducted three focus groups consisting of five to six participants each (16 participants in total) as well as six individual interviews. Both were conducted in the same organization with key informants (Tremblay, 1957), who had experience and long-term knowledge of the topics covered. A Finnish non-profit company in which continuous changes are present (e.g. mergers, layoffs, remote work during the COVID-19 pandemic) and thus trust-repair practices may be required was selected for this study. The sample provided a balance of gender, age, work roles (e.g. team leaders, team members and shop stewards) to ensure a well-developed and broad view of the topic (Minichiello *et al.*, 1995) and rich data (Tremblay, 1957). The focus groups and interviews both used a semi-structured approach to ensure a focus on the concept of employee trust repair in the organizational context but also allowed for flexibility in the discussions (Leavy, 2014).

4.1.2 Analysis and qualitative results. All focus group and interview responses were recorded and transcribed verbatim. We applied a three-step procedure for factor and item generation (Crawforda and Kelder, 2019). First, we established factors based on the previous literature to ensure that the data were from experts who are best versed in the relevant literature in this specific field. We used a data extraction technique (Nguyen *et al.*, 2018) to categorize trust-repair factors used in the previous literature. The data extraction technique provided us with the necessary tools to arrange items logically under the seven appropriate factors. In the first stage, the focus group and interview results generated 81 statements, which were examined as potential questions for the scale. Second, in order to avoid bias (Crawforda and Kelder, 2019) five of experts from the same business school but external to our research team evaluated the items. Finally, a holistic assessment was performed to ensure face validity (Crawforda and Kelder, 2019). We reviewed each item in light of the overarching definition to ensure that the items demonstrated logical coverage of the entire sub-dimension and overarching construct. During the second and third stages of item generation, we reduced the number of items by removing similar items and balanced the remaining items such that all factors received a roughly even number of items (about six items per factor). We retained only the strongest items that appeared in the previous literature. After the item generation stage, a total of 41 items were generated.

4.2 Questionnaire pretesting

We pre-tested the functionality of the questionnaire before launch and asked a research team outside of our study to complete a questionnaire and provide feedback. None of the items were excluded in this stage, but we made some changes to improve the functionality of the questionnaire. The questionnaire, administered in both Finnish and English, was double translated by a professional language editing firm, as suggested by Brislin (1980). Thus, we ensured that the meanings of the items in the Finnish version of the questionnaire were the same as those in the English version.

5. Study 1

5.1 Sample and data collection

After pretesting, the survey was published via the Webropol platform in May 2020, and the response link was personally provided to each employee via email. The survey was conducted in a non-profit, public-sector organization with 1,106 employees operating in education and research. A total of 282 completed survey responses were returned, yielding a useable response rate of 25.5%. We applied a seven-point scale to measure trust-repairing practices in the target organization. The wording and anchoring of the items are presented in Appendixes 1 and 2. The demographic information of the respondents is presented in Table 2.

5.2 Scale purification and dimensionality

5.2.1 Dimensionality – confirmatory factor analysis (CFA). According to the theoretical conceptualization, the organizational trust repair construct should have a seven-factor structure. We carried out CFA to test the dimensionality of the construct and scale in order to measure trust-repair practices. For this purpose, we conducted a random split of the data and utilized two sub-samples of 141 cases (sub-samples A and B). These two sub-samples were used separately for dimensionality testing and scale development. For both sub-samples, the 141 cases were processed using LISREL 8.80. Then, PRELIS 2.80 was used to compute the covariance matrix, and the maximum likelihood estimation method was applied.

5.2.1.1 Sub-sample A. CFA was conducted separately for each factor (i.e. each trust-repair practice). In this way, we were able to verify that the items were, in fact, grouped together. In

Background information	Category 1 (Freq. %)	Category 2 (Freq. %)	Category 3 (Freq. %)	Category 4 (Freq. %)	Category 5 (Freq. %)
Age	<25 (8%)	26–35 (28%)	36–45 (23%)	46–55 (23%)	>55 (18%)
Gender	Male (47%)	Female (52%)	Other (0%)	Not want to say (1%)	–
Highest level of education	Basic (1%)	Vocational (9%)	Univ. of applied sciences (14%)	University (76%)	–
Quality of work position	Fixed-term (46%)	Permanent (54%)	–	–	–
Working period	<1 year (15%)	1–5 years (31%)	6–10 years (14%)	11–15 years (11%)	>15 years (29%)
Working position	Leaders (10%)	Professors (8%)	Ass. Professors (18%)	Other researchers (32%)	Services/other (32%)
Superior	Yes (20%)	No (80%)	–	–	–
Time in the superior position	1 year (11%)	1–5 years (37%)	6–10 years (22%)	11–15 years (13%)	>15 years (17%)

Source(s): Table created by author

Table 2.
Demographic information of the respondents (study 1)

this first phase, four items were removed (one item at a time) because of their large standardized residuals with respect to the other items: one item from transparent information sharing, one from strong management actions and two from emotional support.

Next, in the second phase, all seven factors were tested together. The analysis and the initial model fit indices indicated that the original model needed to be re-specified to better fit the sample data. Based on the values of the standardized residuals, items were gradually removed. From each pair of items with a large, standardized residual, the item with a lower squared multiple correlation was removed, whereas the item resulting in larger improvement in model fit was retained. As a result, 17 items were removed (see Appendix 2 for details).

In sum, after the analysis of sub-sample A, a measurement model with adequate fit indices was developed, and 20 items remained in the scale.

5.2.1.2 Sub-sample B. In sub-sample B, all seven factors and the 20 items covering these factors were tested together. Again, the initial model fit indices indicated that the model needed to be re-specified to better fit the sample data. The analysis was conducted in a way similar to that for sub-sample A (i.e. items were removed one by one based on the standardized residuals and squared multiple correlations). In this phase, four items were removed, and the final scale consisted of 16 items.

Appendix 1 presents the final model and model fit indices for the structure of the trust-repair practices. We utilized three absolute-fit measures: (1) the likelihood-ratio chi-square value, (2) the root mean square error of approximation (RMSEA) and (3) the goodness-of-fit index (GFI). All of the measures fell within acceptable levels. However, incremental measures, i.e. the non-normed fit index (NNFI), the comparative fit index (CFI) and the incremental fit index (IFI), were needed to ensure that the model was acceptable from other perspectives. In sum, the various measures of overall goodness-of-fit lent sufficient support to the results, and thus we can consider them to be an acceptable representation of the hypothesized construct (see Appendix 1).

It can be debated whether the structure of trust-repair practices is different than suggested in this study. For example, one might argue that there are no distinct dimensions or that, e.g. strong management actions and benevolent personnel policies should not be examined separately. To further establish dimensionality, we compared three competing models.

Model 1 – the seven correlated factors model: Covariance among the items is accounted for by seven first-order factors, with each factor representing a distinct trust-repair practice and each item reflecting a single component. The seven factors are correlated.

Model 2 – the one-factor model: Trust-repair practices are conceptualized as a unidimensional construct, accounting for the covariance among the 16 items with a single factor.

Model 3 – the six correlated factors model (strong management actions and benevolent personnel policies are merged): Covariance among the items is accounted for by six first-order factors, with each factor representing a distinct trust-repair practice and each item reflecting only a single component. The six factors are correlated.

Table 3 presents the summarized statistics for these three models. Model 1 was found to outperform Models 2 and 3 on all measures.

5.2.2 Construct reliability and validity. To test the validity and reliability of the construct, we utilized sub-sample B, consisting of 141 cases.

5.2.2.1 Reliability. We evaluated the reliability of the items based on their path coefficients and squared multiple correlations (R^2). Composite reliability (CR; also known as construct reliability) was used to assess the reliability of each factor. We used a complementary measure, the average variance extracted (AVE), to directly show the amount of variance captured by the construct in relation to the amount of variance caused by measurement error.

The reliability statistics are shown in Appendix 1. All of the items were significantly related to their specified constructs, verifying the posited relationships among the indicators and constructs. The construct reliabilities ranged from 0.81 (for constructive behavior) to 0.95 (for transparent information sharing), with both exceeding the minimum recommended level of 0.60. The AVE reached the recommended 50% (cf. Diamantopoulos and Siguaw, 2000; Hair et al., 2006) for all factors. In addition, the squared multiple correlations were also over the limit of 0.50.

5.2.2.2 Convergent validity. When the factor loading on an item of interest is significant, weak evidence of convergent validity is obtained (Bagozzi and Yi, 1991). Strong evidence is obtained when the squared factor loading is greater than 0.5 (i.e. more than one-half of the total variation in the measures is due to the trait). Convergent validity can be assessed in terms of the degree to which the factors (which could be considered different measures of the construct) are correlated (Bagozzi and Yi, 1991; Smith et al., 1996).

As shown in Appendix 1, all of the item loadings were greater than 0.7 (the lowest loading was 0.744) and were statistically significant at the 0.01 significance level. In addition, all of the items had a squared factor loading (R2) greater than 0.5. Table 4 provides more evidence of convergent validity in that the correlations between the trust-repair practice factors are all significant, ranging from 0.451 to 0.889. This suggests that the components all measured some aspect of the same construct.

5.2.2.3 Discriminant validity. Discriminant validity was evaluated using two methods. The first method assessed whether the AVE was greater than the variance between the focal construct and the other constructs in the model (i.e. the squared correlation between two constructs; Fornell and Larcker, 1981). Almost all of the constructs fulfilled this condition. Mostly, the AVE was greater than the squared correlation between the constructs (see Table 4).

	Model 1 – seven correlated factors	Model 2 – one factor	Model 3 – six correlated factors
Chi-square (df)	125.37 (83)	487.30 (104)	144.05 (89)
p-value	0.00185	0.000	0.00020
RMSEA	0.060	0.162	0.066
GFI	0.899	0.697	0.886
CFI	0.992	0.931	0.990
NNFI	0.989	0.921	0.986
IFI	0.992	0.931	0.990
Source(s): Table created by Author			

Table 3.
Model comparison

	Mean	1	2	3	4	5	6	7
1. Transparent information sharing	5.47	0.85	0.596	0.588	0.371	0.480	0.336	0.228
2. Strong management actions	4.73	0.772*	0.76	0.790	0.496	0.585	0.480	0.263
3. Benevolent personnel policies	4,97	0.747*	0.889*	0.82	0.412	0.682	0.523	0.284
4. Apologies	4.58	0.609*	0.704*	0.642*	0.86	0.437	0.370	0.237
5. Constructive behavior	5.37	0.693*	0.765*	0.826*	0.661*	0.68	0.421	0.240
6. Emotional support	4.65	0.580*	0.693*	0.723*	0.608*	0.649*	0.73	0.203
7. Third-party involvement	4.55	0.477*	0.513*	0.533*	0.487*	0.490*	0.451*	0.70

Note(s): *Correlation is significant at the 0.01 level (2-tailed); AVEs are presented at the diagonal; Squared correlations are presented at the upper triangle
Source(s): Table created by Author

Table 4.
Correlation matrix and
squared correlations
(study 1, sub-sample B)

The only exception was the squared correlation between benevolent personnel policies and strong management actions, which was somewhat higher (0.79) than the AVE of strong management actions (0.76). However, discriminant validity was also evaluated with the method recommended by Anderson and Gerbing (1988). Thus, two models were compared for each possible pair of constructs. In the first model, the constructs were allowed to correlate freely, while in the second the correlations were fixed to be equal to one. All chi-square difference tests were significant, indicating that all pairs of constructs had a correlation less than one. Overall, these two tests indicate a sufficient level of discriminant validity.

5.2.2.4 Nomological validity. Nomological validity represents the ability of the construct to behave as expected with respect to other constructs to which it is theoretically related (e.g. Churchill, 1992). In other words, it refers to the degree to which the scale makes accurate predictions about other concepts in a theoretically based model. These theoretically supported relationships should be identified from previous research on accepted principles and then assessed in terms of whether the scale has corresponding relationships (Hair *et al.*, 2006).

To test the nomological validity of the scale, this study relied on structural equation modeling. Sub-sample B, which consisted of 141 cases, was utilized for this purpose.

First, the predictive ability of trust-repairing practices was tested against the degree to which trust in top management has developed during different organizational changes. Generally, employees expect top management to put effort into repairing employee trust after organizational disruptions (Kähkönen, 2020), as time alone cannot effectively repair trust after a violation (Gillespie and Siebert, 2018). Trust-repair practices are comparable to HRM practices insofar as they focus on restoring positive employee perceptions and expectations of the trustworthiness of top management (Gillespie and Siebert, 2018; Kramer and Lewicki, 2010). Thus, it is expected that, if trust-repair practices are utilized, they will affect trust in top management. This was operationalized as the extent to which respondents' trust in the ability, integrity, and benevolence of the top management has changed using the following anchoring system: 1 = significantly weakened, 4 = remained unchanged, 7 = significantly increased.

The results show (see Table 5) that trust-repair practices influence the development of trust in top management.

Secondly, in addition the predictive power of trust-repairing practices was tested against perceived organizational support. In a line with organizational support theory it can be argued that employees align their attitudes about the employer organization based on their perceptions of how they are treated (Eisenberger *et al.*, 1990; Rhoades and Eisenberger, 2002). Thus, employees interpret organizational practices (here trust-repair practices) as indicators of treatment by the employer organization, and that consequently affects their perception of

Path to development of trust in top management	Standardized parameter estimate	*t*-value
Transparent information sharing	0.55	6.93
Strong management actions	0.64	7.30
Benevolent personnel policies	0.58	7.33
Apologies	0.49	5.80
Constructive behavior	0.69	7.17
Emotional support	0.45	4.28
Third-party involvement	0.42	4.34

Note(s): Chi-square (df) = 190.94 (124), *p*-value = 0.00011, RMSEA = 0.062, GFI = 0.874, CFI = 0.990, NNFI = 0.986, IFI = 0.990
Source(s): Table created by author

Table 5.
Testing the nomological validity against trust in top management (study 1, sub-sample B)

the organizational support (Whitener, 2001; Albrecht and Travaglione, 2003). Organizational support was operationalized with three items by Eisenberger *et al.* (1990) covering recognition and caring by the employer organization with the anchoring: 1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree.

The results show (see Table 6) that all trust-repair practices are in connection to the perceived organizational support.

Thus, based on the evidence presented above, it can be concluded that the scale has nomological validity.

6. Study 2
In order to validate the results of Study 1, we conducted an additional study with a new dataset and analyses. The survey was performed in a different organization, the administrative unit of the Finnish Army, which operates in the field of national defense. This organization is clearly different from the one examined in Study 1, which operates in the field of education and research. The purpose here was to show that the results of Study 1 were not organization-specific by verifying them in a totally different organizational culture (e.g. in terms of hierarchical system or typical operating methods). In addition, these different organizations had experienced partially different change situations, which had challenged trust and even weakened it. In the first study, several structural changes had taken place in the organization (such as downsizing/redundancies, mergers and reforms regarding various departments), while in study 2, the most recent change, during which the validation was carried out, was the large-scale shift to remote work caused by Covid-19.

6.1 Sample and data collection
The survey was published using the Webropol platform in October 2020, and a response link was personally provided to 298 employees via email. A total of 101 completed surveys were returned, resulting in a useable response rate of 33.9%. We applied a seven-point scale to measure trust-repairing practices in the target organization. The wording and anchoring of the items are presented in Appendix 1 and Appendix 2. The respondents' demographic information is presented in Table 7.

6.2 Dimensionality – confirmatory factor analysis (CFA)
Again, we carried out CFA to test the dimensionality of the construct and the scale in order to measure trust-repair practices. A total of 101 cases were processed using LISREL 8.80. Then, PRELIS 2.80 was used to compute the covariance matrix, and the maximum likelihood estimation method was applied.

Path to perceived organizational support	Standardized parameter estimate	*t*-value
Transparent information sharing	0.43	4.96
Strong management actions	0.49	5.10
Benevolent personnel policies	0.51	5.96
Apologies	0.30	3.48
Constructive behavior	0.35	4.13
Emotional support	0.64	6.78
Third-party involvement	0.30	3.10
Note(s): Chi-square (df) = 169.29 (124), *p*-value = 0.00431, RMSEA = 0.051, GFI = 0.887, CFI = 0.991, NNFI = 0.987, IFI = 0.974	
Source(s): Table created by author	

Table 6.
Testing the
nomological validity
against perceived
organizational support
(study 1, sub-sample B)

Background information	Category 1 (Freq. %)	Category 2 (Freq. %)	Category 3 (Freq. %)	Category 4 (Freq. %)	Category 5 (Freq. %)
Age	<26 (0%)	26–35 (6.93%)	36–45 (45.55%)	46–55 (41.58%)	>55 (5.94%)
Gender	Male (78.22%)	Female (21.78%)	Other (0%)	Not want to say (0%)	–
Highest level of education	Basic (0%)	Vocational (8.91%)	Univ. of applied sciences (11.88%)	University (79.21%)	–
Quality of work position	Fixed-term (2.97%)	Permanent (97.03%)	–	–	–
Working period	<1 year (2.97%)	1–5 years (4.95%)	6–10 years (6.93%)	11–15 years (14.85%)	>15 years (70.3%)
Working position	Soldier (69.31%)	Civilian (30.69%)	–	–	–
Superior	Yes (35.64%)	No (64.36%)	–	–	–
Time in the superior position	<1 year (11.43%)	1–5 years (14.28%)	6–10 years (11.43%)	11–15 years (20%)	>15 years (42.86%)

Source(s): Table created by author

Table 7.
Demographic
information of the
respondents (study 2)

All seven factors and the 16 items covering these factors (based on Study 1) were tested together. Again, the initial model fit indices indicated that the model needed to be re-specified to better fit the sample data. The analysis was conducted in a way similar to that applied in Study 1 (i.e. items were removed one by one based on standardized residuals as well as squared multiple correlations). In this phase, two items were removed, and the final scale consisted of 14 items.

Appendix 1 presents the final model and model fit indices for the structure of the trust-repair practices. In sum, the various measures of overall goodness-of-fit lent sufficient support to the results to consider them to be an acceptable representation of the hypothesized construct (see Appendix 1).

6.3 Construct reliability and validity

6.3.1 Reliability. Reliability was assessed in a manner similar to that used in Study 1. The reliability statistics are shown in Appendix 1. All of the items were significantly related to their specified constructs, verifying the posited relationships among the indicators and constructs. The construct reliabilities ranged from 0.75 (for transparent information sharing) to 0.90 (for apologies), with both exceeding the minimum recommended level of 0.60. The AVE reached the recommended 50% (cf. Diamantopoulos and Siguaw, 2000; Hair *et al.*, 2006) for all factors. In addition, the squared multiple correlations also exceeded the limit of 0.50, with the exception of one item for transparent information sharing (0.417).

6.3.2 Convergent validity. As shown in Appendix 1, the vast majority of item loadings in Study 2 were greater than 0.7 (one item for transparent information sharing fell just under this at 0.646), and all loadings were statistically significant at the 0.01 significance level. In addition, most of the items ultimately had a squared factor loading (R2) greater than 0.5 (again with the exception of one item, mentioned above). Table 8 provides more evidence of convergent validity, showing that the correlations between the trust-repair practice factors are all significant, ranging from 0.368 to 0.808. This suggests that the components all measured some aspect of the same construct.

6.3.3 Discriminant validity. As in Study 1, discriminant validity was evaluated using two methods. First, it was assessed whether the AVE was greater than the variance between the focal construct and the other constructs in the model (i.e. the squared correlation between two constructs; Fornell and Larcker, 1981). In Study 2, all constructs fulfilled this condition (see Table 8). In addition, discriminant validity was evaluated by comparing each possible pair of constructs in two models (Anderson and Gerbing, 1988) in which the constructs were allowed to correlate freely and the correlations were fixed to be equal to one. The results of all chi-square difference tests were significant, indicating that all pairs of constructs had a correlated less than one. Overall, these two tests verified the discriminant validity.

	Mean	1	2	3	4	5	6	7
1. Transparent information sharing	*5.99*	*0.61*	0.452	0.423	0.278	0.450	0.297	0.135
2. Strong management actions	*5.24*	0.672*	*0.72*	0.653	0.324	0.473	0.533	0.256
3. Benevolent personnel policies	*5.57*	0.650*	0.808*	*0.79*	0.376	0.533	0.489	0.239
4. Apologies	*4.95*	0.527*	0.569*	0.613*	*0.81*	0.438	0.354	0.251
5. Constructive behavior	*6.00*	0.671*	0.688*	0.730*	0.662*	*0.81*	0.444	0.158
6. Emotional support	*5.32*	0.545*	0.730*	0.699*	0.595*	0.666*	*0.65*	0.259
7. Third-party involvement	*3.93*	0.368*	0.506*	0.489*	0.501*	0.398*	0.509*	*0.75*

Note(s): * Correlation is significant at the 0.01 level (2-tailed); AVEs are presented at the diagonal; Squared correlations are presented at the upper triangle
Source(s): Table created by author

Table 8.
Correlation matrix and
squared correlations
(study 2)

6.3.4 Nomological validity. As in Study 1, Study 2 relied on structural equation modeling to test the nomological validity of the scale, and 101 cases were utilized for this purpose. Again, the predictive ability of trust-repairing practices was tested against the degree to which trust in top management has developed during different organizational changes. The operationalization was similar to that used for Study 1, i.e. the extent to which respondents' trust in the ability, integrity and benevolence of top management has changed using the following anchoring system: 1 = significantly weakened, 4 = remained unchanged, 7 = significantly increased.

The results of Study 1 were validated, as the trust-repair practices influenced the development of trust in top management (see Table 9). Thus, based on this evidence, the nomological validity of the scale was verified.

7. Discussion

This study developed a construct and a scale for measuring the effectiveness of employee trust-repair practices in organizations called the ETRS, which demonstrated reliability, validity and stability across the sample. Despite increasing research interest in the concept of trust repair, no other valid and comprehensive measure of employee trust-repair practices has been developed. Thus, to the best of our knowledge, ours is the first study to provide a comprehensive and operationally valid measure of employee trust-repair practices in organizations.

7.1 Research implications

The present study offers several contributions to the trust-repair literature. First, we explored the nature of employee trust repair and then developed a conceptual model of employee trust-repair practices with seven factors: transparent information sharing, strong management actions, benevolent personnel policies, emotional support, apologies, third-party involvement and constructive behavior. The model integrates these focal elements to provide a comprehensive picture of employee trust-repair practices. Second, previous studies measuring organizational trust repair have focused mainly on measuring the differences between two or a few trust-repair practices, such as apologies vs denial (e.g. Ferrin *et al.*, 2007; Kim *et al.*, 2004, 2012), using laboratory experiments. Thus, this study contributes significantly to the trust-repair literature with the development of the ETRS. Third, the study provides empirical evidence showing that the ETRS is both reliable and valid. This, in turn, provides a solid foundation on which other researchers can develop their own theoretical and empirical research on employee trust repair.

Path to development of trust in top management	Standardized parameter estimate	*t*-value
Transparent information sharing	0.68	6.36
Strong management actions	0.68	6.69
Benevolent personnel policies	0.66	6.62
Apologies	0.54	5.35
Constructive behavior	0.61	5.92
Emotional support	0.68	6.55
Third-party involvement	0.50	4.52

Note(s): Chi-square (df) = 120.40 (91), *p*-value = 0.02124, RMSEA = 0.057, GFI = 0.876, CFI = 0.991, NNFI = 0.987, IFI = 0.991
Source(s): Table created by author

Table 9.
Testing the nomological validity (study 2)

Fourth, this study and the ETRS construct can enhance scholarly understanding of trust violations, trust repair and open new avenues of testing. Henderson *et al.* (2020) studied psychological contract breach in the employer–employee relationship by investigating six general repair tactics (full penance, partial penance, denial, apology, excuses, a combined apology/excuse) in terms of whether they improve trust and diminish the negative emotions following a breach. The study concluded that in breaches of trust, all five other tactics than denial, are capable of repairing trust. However, similarly to what Kim *et al.* (2006) and Grover *et al.* (2014) proposed at the individual level, Henderson *et al.* (2020) argued that at the organizational level avoiding breach altogether would be optimal as even after a repair tactic was used, trust did not return to its pre-breach level. However, we see that measuring trust repair is useful and would be one natural part of management. In the current dynamic and unpredictable environment, trust violations are becoming more common and complex in organizations, and these conditions require management to pay continuous and active attention to employee trust levels across the organization. Previous studies revealed that research on the processes of trust violations and repair (Dirks *et al.*, 2009) is still relatively scarce. Moreover, this study supported the previous findings that there is a broad acceptance of the need to separate trust violations according to trust dimensions (ability, benevolence, integrity) and to target trust repair accordingly (Sørensen *et al.*, 2011; Kim *et al.*, 2012). The developed ETRS takes full account of any violations in the different dimensions of trust.

Only what gets measured gets managed (e.g. Kianto *et al.*, 2018), and by utilizing the ETRS it would be possible for both academics as well as practitioners to systematically measure trust repair within the organizations. This study found ETRS to be effective in measuring the effectiveness of trust-repairing practices as it was showed that trust-repair practices are related to both the degree to which trust in top management has developed during different organizational changes, as well as to perceived organizational support. In case of problem areas arise, then it would be possible to dig those deeper by utilizing qualitative approach. The developed ETRS helps researchers understand the complexity of trust violations and repair. With the ETRS, it is now possible to test the effectiveness of trust-repairing practices with a more comprehensive scale than before. The developed ETRS is dynamic and can be further developed by researchers.

7.2 Managerial implications

Our findings provide valuable practical insights for managers regarding the relevant aspects of employee trust repair as well as an instrument that can be used for assessing the effectiveness of employee trust-repair practices. Along with HR professionals, managers can use this framework as a tool for developing employee trust within their organization and measuring the effectiveness of trust-repair practices. Building employee trust in an organization is an ongoing process for managers and supervisors, and attention must be focused on the practices that can best maintain and repair employee trust. Considering the unpredictable and dynamic business environment today, and numerously organizational changes, the importance of employee trust-repair practices is only expected to grow. Trust violations are becoming more complex and frequent, thus requiring vigilance and concerted action from top management, supervisors and HR alike.

We also suggest that measurement should be done systematically and at regular time intervals. In this the developed scale can be utilized. The longitudinal measurement with the scale gives a possibility to notice if something critical is happening in terms of trust and its repair. Moreover, after organizational changes, employees can expect that major trust-repair practices take place at the level of top management where the change decision originated. It would be in the interest of organizations to shape a trust repair and building strategy. This means that organizations select and implement the concrete trust-repair practices that most effectively maintain and build trust. Trust-building, maintaining and corrective practices can be compared to human resource management (HRM) practices with the focus on employees' positive perceptions

and expectations of organizational reliability. Consequently, utilization of these practices leads to improved trust in organization including top management and the line as well as team management levels. It would be beneficial for organizations to regularly measure the level of trust and the success of the chosen trust building strategy. The measurement results can form valuable employee feedback and longitudinal data for organization Thus, the practical trust tools that allow management to monitor the success of the trust-building and repair practices implemented and, if necessary, update the trust building strategy, taking into account the necessary areas for development.

7.3 Limitations

Although this study has provided relevant and interesting insights regarding employee trust-repair practices, it is important to recognize its limitations. The data used in this study were obtained from two non-profit organizations in Finland: one in the field of education and research and the other in the field of national defense. Although the sample represented a cross-section of a large organization, it would be useful to obtain broader and wider samples from other types of organizations, in other countries, and within other cultures. Since respondents' perceptions, attitudes and behaviors are influenced by their cultures, it would be valuable to test whether the ETRS can be generalized to other cultures and countries.

In addition, one limitation can be considered that trust is such an abstract thing. It may be challenging or impossible for a researcher to measure the levels of trust, for example, just before the change and immediately after the change, because trust can break in the blink of an eye. However, trust-repair practices can be compared to HR practices. Thus, they can be considered to be not only trust-repair practices after trust violations but more broadly useful also when building and maintaining trust. The success of trust-repairing (and building) practices can be measured in all kinds of organizations, not just those where trust levels can be assumed to have weakened.

7.4 Directions for future research

First, it would be useful to assess the generalizability of the ETRS developed in this study to other contexts, such as large or small businesses or different industries. Replicative research could lead to the development of a more generalizable conceptual framework related to employee trust repair in the future. Second, cultural differences in the organizational environments of different countries could influence the types of employee trust-repair practices developed and adopted by companies as well as the impact of these practices on employee trust. Third, it is important to note that various moderators—for example, communication and other personal skills, violators' prior wrongdoing, or the seriousness of the violation—may impact the effectiveness of employee trust-repair practices. Fourth, the antecedents of trust repair require both theoretical and empirical investigation, as managers need to understand how these antecedents, such as employee resilience, job satisfaction and turnover intentions, influence the effectiveness of employee trust-repair practices in their firms.

7.5 Conclusion

We hope that the new tool can be adopted by researchers and practitioners alike to evaluate effectiveness of employee trust-repair practices. We believe that the time is ripe for both trust researchers and practitioners to focus their efforts on more effective employee trust-repair practices, and we anticipate further developments in this highly relevant field for employees and their organizations.

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Appendix 1

	Key sources for the scale	The following are statements related to your organization, the ways in which top management respond to situations of change, and their ability to respond to change. Please rate the statements using the scale: 1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree	Non-profit firm, Finland (N = 141)	Administrative unit of the Finnish army, Finland (N = 101)
Transparent information sharing	Bachmann *et al.* (2015), Grover *et al.* (2014), Kähkönen (2020)	Provide timely information	0.926[a]	0.893[a]
		Provide honest information	0.932*	0.646*
		Provide adequate information	0.915	–
		CR	0.95	0.75
		AVE	0.85	0.61
				(*continued*)

Table A1.
Measurement items, factor loadings, and model fit indicates

	Key sources for the scale	The following are statements related to your organization, the ways in which top management respond to situations of change, and their ability to respond to change. Please rate the statements using the scale: 1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree	Non-profit firm, Finland ($N = 141$)	Administrative unit of the Finnish army, Finland ($N = 101$)
Strong management actions	Kähkönen (2020), Pate *et al.* (2012), Sørensen *et al.* (2011)	Lead changes well	0.887[a]	0.842[a]
		Know how to alleviate employees' uncertainty about the future	0.855*	0.850*
		CR	0.86	0.83
		AVE	0.76	0.72
Benevolent personnel policies	Davis *et al.* (2000), Dietz *et al.* (2011), Kähkönen (2020)	Manage staff fairly	0.918[a]	0.894[a]
		Value their employees	0.930*	–
		Take care of the well-being of employees at work	0.864*	0.880*
		CR	0.93	0.88
		AVE	0.82	0.79
Apologies	Kim *et al.* (2004), Krylova *et al.* (2016), Kähkönen (2020), Lewicki *et al.* (2016)	Regret with respect	0.894[a]	0.973[a]
		Regret in time	0.962*	0.822*
		CR	0.93	0.90
		AVE	0.86	0.81
Constructive behavior	Kähkönen (2020), Petriglieri (2015), Six and Skinner (2010)	Follow good manners	0.744[a]	0.840[a]
		Are not indifferent	0.902*	0.956*
		CR	0.81	0.89
		AVE	0.68	0.81
Emotional support	Grover *et al.* (2014), Kähkönen (2020), Pate *et al.* (2012), Webber *et al.* (2012)	Listen to me	0.914[a]	0.868[a]
		Understand my feelings	0.795*	0.738*
		CR	0.85	0.79
		AVE	0.73	0.65
Third-party involvement	Bachmann *et al.* (2015), Kähkönen (2020), Mueller *et al.* (2015), Coleman (1990)	Strive to improve management through third-party evaluation (accreditation)	0.803[a]	0.771[a]
		Provide practical support to staff from external parties	0.863*	0.955*
		CR	0.82	0.86
		AVE	0.70	0.75
Model fit indices		Chi-square (df)	125.37 (83)	72.11 (56)
		p-value	0.00185	0.07237
		RMSEA	0.060	0.054
		GFI	0.899	0.907
		CFI	0.992	0.992
		NNFI	0.989	0.987
		IFI	0.992	0.992

Note(s): *Statistically significant at 0.01 significance level; [a]significance level is not available because the coefficient is fixed at 1

Source(s): Relevant ETRS after purification

Table A1.

Appendix 2

	Key sources for the scale	The following are statements related to your organization, the ways in which top management respond to situations of change, and their ability to respond to change please rate the statements using the scale: 1 = strongly disagree, 4 = neither agree nor disagree, 7 = strongly agree	Stage in CFA where item was removed: A = study 1 (sub-sample A); B = study 1 (sub-sample B); C = study 2
Transparent information sharing	Bachmann et al. (2015), Grover et al. (2014), Kähkönen (2020)	Provide adequate information	C
		Promote the development of an open discussion culture	A*
		Learn and develop from mistakes	B
		Conduct ex-post evaluation in the work community after changes	B
Strong management actions	Kähkönen (2020), Pate et al. (2012), Sørensen et al. (2011)	Divide employees and work tasks in an appropriate way	A*
		Make reasoned decisions	B
		Withstand pressure well	A
		Retain the selected direction	A
Benevolent personnel policies	Davis et al. (2000), Dietz et al. (2011), Kähkönen (2020)	Value their employees	C
		Try to save money from other resources than staff and protect staff until the last	A
		Implement benevolent HR strategy prominently in everyday life	B
		Familiarize staff with new tasks and actively train them	A
Apologies	Kim et al. (2004), Krylova et al. (2016), Kähkönen (2020), Lewicki et al. (2016)	Make self-reflections and apologize	B
		Deeply regret if the situation is difficult	B
		Regret hastily and half-heartedly	A
		Never regret	A
Constructive behavior	Kähkönen (2020), Petriglieri (2015), Six and Skinner (2010)	Behave positively	A
		Do not avoid discussing changes	B
		Do not joke about serious things	A
		Do not sweep problems under the carpet	A
Emotional support	Grover et al. (2014), Kähkönen (2020), Pate et al. (2012), Webber et al. (2012)	Talk with me	A
		Are present for me if necessary	B
		Are easily approachable	A*
		Are encouraging	A*
Third-party involvement	Bachmann et al. (2015), Kähkönen (2020), Mueller et al. (2015), Coleman (1990)	Procure for top management change training provided by external actors	A
		Involve external parties in the practical implementation of change	B
		Provide emotional support to staff from external parties	A

Table A2.
ETRS items

Note(s): *Removed one item at a time
Source(s): Removed items in CFA

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