

Technical Report 1415

Army Command Climate: Phase II Investigation of the Viability of Single-Item Measures

Jaclyn Martin

Kristen E. Horgen

Chelsey Byrd

Cory Adis

Personnel Decisions Research Institutes, LLC

Jessica Badger Darrow

U.S. Army Research Institute

Evan Hughes

Consortium of Universities of Washington

Eleanor Lovering

Personnel Decisions Research Institutes, LLC

Paul Bliese

University of South Carolina



November 2022

**United States Army Research Institute
for the Behavioral and Social Sciences**

Approved for public release; distribution is unlimited.

**U.S. Army Research Institute
for the Behavioral and Social Sciences**

**Department of the Army
Deputy Chief of Staff, G1**

Authorized and approved:

**MICHELLE L. ZBYLUT, Ph.D.
Director**

Research accomplished under contract
for the Department of the Army by

Personnel Decisions Research Institute, Inc.

Technical Review by

Nicole Harrington, U.S. Army Research Institute
Sarah Berger, U.S. Army Research Institute

DISPOSITION

This technical report has been submitted to the
Defense Information Technical Center (DTIC).

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
1. REPORT DATE (DD-MM-YYYY) November 2022		2. REPORT TYPE Final		3. DATES COVERED (From - To) September 2017 – September 2019	
4. TITLE AND SUBTITLE Army Command Climate: Phase II Investigation of the Viability of Single-Item Measures				5a. CONTRACT NUMBER W911NF-11-D-0001/DO 0404	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER 622785	
6. AUTHOR(S) Jaclyn Martin, Kristen E. Horgen, Chelsey Byrd, Cory Adis; Jessica Badger Darrow; Evan Hughes; Eleanor Lovering; Paul Bliese				5d. PROJECT NUMBER A790	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER 777	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Personnel Decisions Research Institutes, LLC 1911 N. Fort Myer Drive, Suite 410 Arlington, VA 22209				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U. S. Army Research Institute for the Behavioral & Social Sciences 6000 6 TH Street (Bldg. 1464 / Mail Stop 5610) Fort Belvoir, VA 22060-5610				10. SPONSOR/MONITOR'S ACRONYM(S) ARI	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) Technical Report 1415	
12. DISTRIBUTION/AVAILABILITY STATEMENT: Distribution Statement A: Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES ARI Research POC: Jessica Badger Darrow, Foundational Science Research Unit					
14. ABSTRACT Across two previous research studies, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) developed a prototype method for reducing the length of the command climate survey and found preliminary support for the feasibility of using a single-item assessment as a quick "health-check" on the command climate of a unit. This project builds on past work by investigating the reliability and validity of revised command climate measures. The project team first revised the survey measures of command climate by refining the number of climate dimensions for use in the current project, revising climate items, and refining and developing corresponding diagnostic items. In the next project phase, the project team collected survey data from 2,589 Soldiers from 107 companies across 14 locations to investigate the psychometric properties and criterion-related validities of the measures. Results showed strong support for the reliability of the multi-item assessment and moderate support for the reliability of the single-item assessment. Convergent validities of the single items with the multi-item scales were at or above .79 for all 12 scales, and predictive validities with proposed outcomes for the single items were comparable to predictive validities associated with the multi-item scales. Criterion-related validity evidence was generally strong for the multi-item and single-item measures. The team examined the validity of the practical application of the single-item assessment and results indicated that use of a single-item measure would produce almost exactly the same results regarding which dimensions might indicate a climate issue, as would a longer, multi-item survey. The measures developed for this project can provide Army leaders with a short, useful assessment to help them assess climate within their units and identify potential problems. The method would reduce survey burden by significantly shortening command climate surveys.					
15. SUBJECT TERMS Industrial Psychology, Military Psychology, Questionnaires (Surveys), Leadership, Teams (Personnel), Teamwork, Group Dynamics, Morale, Company Level Organizations					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 171	19a. NAME OF RESPONSIBLE PERSON Alexander Wind
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified	Unlimited Unclassified		19b. TELEPHONE NUMBER 703-851-9372

Technical Report 1415

Army Command Climate: Phase II Investigation of the Viability of Single-Item Measures

**Jaclyn Martin
Kristen E. Horgen
Cory Adis
Chelsey Byrd**

Personnel Decisions Research Institutes, LLC

Jessica Badger Darrow
U.S. Army Research Institute

Evan Hughes
Consortium of Universities of Washington

Eleanor Lovering
Personnel Decisions Research Institutes, LLC

Paul Bliese
University of South Carolina

Foundational Science Research Unit

Alexander Wind, Acting Chief

November 2022

ACKNOWLEDGMENTS

We would like to thank the numerous Soldiers who provided their input and feedback to help refine the unit climate item content and the Soldiers who completed the surveys required to conduct this research. While our goal is to reduce the survey burden on Soldiers, achieving that requires additional support, and we appreciate their time and thoughtful responses. We would also like to thank Ms. Pam Butler for all of her assistance in coordinating the numerous troop support requests that supported our data collection efforts, as well as Nicole Harrington and Sarah Berger for their suggestions and improvements on an earlier version of this manuscript.

ARMY COMMAND CLIMATE: PHASE II INVESTIGATION OF THE VIABILITY OF SINGLE-ITEM MEASURES

EXECUTIVE SUMMARY

Research Requirement:

All U.S. Army commanders conduct an initial command climate assessment within 60 days of assuming command and annually thereafter while in command (Army Regulation 600-20; U.S. Department of the Army, 2020). Given the frequency of administration of the command climate and other surveys, Soldiers are faced with significant survey burden. Additionally, research has demonstrated that increased survey burden can have a negative impact on the quality of the data collected. This project revised and evaluated a prototype approach developed in previous research that uses a single-item measure rather than multi-item scale to assess each command climate dimension. In addition, a diagnostic follow-up survey was developed for use to further detect potential problems identified in the initial climate assessment. This project builds on past command climate survey development work by investigating the reliability and validity of revised command climate measures.

Procedure:

Across two previous research studies, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) developed measures for 21 command climate dimensions, collected data to evaluate the measures' psychometric and criterion-related validity, and compared the results of the single items with the multi-item scales. They found preliminary support for the feasibility of using the single-item assessment as a quick "health-check" on the command climate of a unit. To continue research on the theoretical understanding of command climate and the single-item assessment approach, the project team first revised and refined the survey measures of command climate by reducing the number of climate dimensions for use in the current project, revising items, and revising and developing corresponding diagnostic items. This process included identifying a set of 12 climate constructs to retain based on factor analytic results and relationships with criterion measures, revising the single-item measures to improve reliability or selecting a new single item to better represent the construct, and conducting focus groups to review and evaluate content validity of newly generated diagnostic items. Criterion measures were also revised based on results from previous research.

In the next project phase, survey data were collected from 2,589 Soldiers from 107 companies across 14 locations to investigate the psychometric properties and criterion-related validities of both the revised single-item measures and multi-item scales. Soldiers completed the multi-item scales, single-item measures, diagnostic items, and a series of criterion measures such as collective efficacy, unit performance, and job satisfaction. Outcome measures for each company as a whole were also collected, from either the battalion commander or another member of the battalion leadership team.

Findings:

Results generally supported the feasibility of using a short, single-item assessment to assess company-level command climate. Results showed strong support for the reliability of the multi-item assessment and moderate support for the reliability of the single-item assessment. Convergent validities of the single items with the multi-item scales were at or above .79 for all 12 scales. Predictive validities with proposed outcomes for the single items were comparable to predictive validities associated with the multi-item scales. The project team used hierarchical regressions to determine whether the multi-item scales explained significant additional variance in the criteria over and above that explained by the single items. The multi-item scale added significant variance when added to the single item for only 35% of the relationships, indicating the single-item measures captured the majority of the variance in the outcomes. Criterion-related validity evidence was generally strong for the multi-item and single-item measures. Of the 12 multi-item scales that we aggregated to the company level, all were significantly related to at least one of the hypothesized outcome measures. All of the single-item measures that we aggregated to the company level, with the exception of hazing, were significantly related to at least one outcome. For all 12 dimensions, the multi-item and single-item measures showed similar magnitudes of criterion-related validity relationships.

We evaluated the validity of the practical application of the single-item assessments using two methods. First, we created confusion matrices for each dimension to examine the practical effectiveness of using a single-item measure by comparing the performance of the single items to the multi-item scales for identifying dimensions that were above or below a given mean threshold. A value above a given threshold would signal to a commander that there was a possible climate problem. Second, the magnitude of mean differences between the single item and multi-item scales were examined. These results indicated that use of a short, 12-item measure composed of single items measuring various aspects of climate would produce almost exactly the same results regarding which dimensions might indicate a climate issue, as would a much longer, multi-item survey. The virtually identical results demonstrate the potential usefulness of the single-item approach. Use of the short survey would allow commanders to quickly assess command climate within their units and follow up where needed to address areas of concern.

Utilization and Dissemination of Findings:

The measures developed for this project can provide Army leaders with a short, useful assessment to help them assess climate within their units and identify potential problems and concerns. The single-item measure and diagnostic follow-up approach shows promise for reducing survey burden by significantly shortening command climate surveys. The single-item assessment approach may be useful for other Army surveys, and the methodology used in this research can be applied to analyze the effectiveness of the single-item approach for other Army surveys.

ARMY COMMAND CLIMATE: PHASE II INVESTIGATION OF THE VIABILITY OF SINGLE-ITEM MEASURES

CONTENTS

	Page
ARMY COMMAND CLIMATE: PHASE II INVESTIGATION OF THE VIABILITY OF SINGLE-ITEM MEASURES	1
Phase I Research	2
Phase II Overview	2
Identifying and Reducing the Number of Climate Dimensions.....	3
Refining Single-Item Measures	5
Refining Multi-Item Scales.....	17
Refining and Adding Criterion Measures	19
Refining and Developing Diagnostic Items.....	21
Climate Strength as a Moderator	23
METHOD	26
Participants.....	26
Measures	28
RESULTS	38
Scales and Single Items	38
Company-Level Effects for the Full Scales and Single Items	42
Company-Level Descriptives for the Full Scales and Single Items	45
Construct Validity of Command Climate Scales.....	46
Criterion-Related Validity of Command Climate Dimensions.....	47
Climate Strength Analyses.....	60
Command Climate Diagnostics	64
Practical Application Testing.....	69
DISCUSSION	75
Reliability of the Full Scales and Single Items	75
Company-Level Effects	76
Construct Validity of Command Climate Scales.....	77
Criterion-Related Validity of the Full Scales and Single Items.....	77
Climate Strength	83
Diagnostic Items	84
Assessment of the Practical Application of Single-Item Measures	84
Phase I and Phase II Research Comparison.....	85
Limitations and Future Research	86
Conclusion	89
REFERENCES	90

APPENDICES

APPENDIX A: DIMENSION, DIAGNOSTIC, AND OUTCOME SCALES AND ITEMS....	A-1
APPENDIX B: FULL SCALE AND SINGLE-ITEM STATISTICS	B-1
APPENDIX C: OUTCOMES	C-1
APPENDIX D: ITEM LEVEL DESCRIPTIVES	D-1
APPENDIX E: BATTALION LEADER INTERVIEWS	E-1

LIST OF TABLES

TABLE 1. STEPS TO REFINE AND REVISE MEASURES.....	3
TABLE 2. DIMENSION REDUCTION QUESTIONS FOR CONSIDERATION.....	3
TABLE 3. PHASE I COMMAND CLIMATE DIMENSIONS & DEFINITIONS.....	4
TABLE 4. FLOW OF INFORMATION ITEMS AND ITEM STATISTICS	6
TABLE 5. AUTONOMY ITEMS AND ITEM STATISTICS	7
TABLE 6. RESPECT FOR THE INDIVIDUAL ITEMS AND ITEM STATISTICS	8
TABLE 7. HAZING ITEMS AND ITEM STATISTICS.....	9
TABLE 8. BULLYING ITEMS AND ITEM STATISTICS	10
TABLE 9. PEER SUPPORT FOR UNIT MEMBERS ITEMS AND ITEM STATISTICS.....	10
TABLE 10. LEADER SUPPORT FOR UNIT MEMBERS ITEMS AND ITEM STATISTICS.....	11
TABLE 11. LEADER SUPPORT FOR FAMILIES ITEMS AND ITEM STATISTICS	12
TABLE 12. PROFESSIONALISM ITEMS AND ITEM STATISTICS	13
TABLE 13. ETHICAL LEADERSHIP ITEMS AND ITEM STATISTICS	14
TABLE 14. TRUST ITEMS AND ITEM STATISTICS	14
TABLE 15. ADAPTABILITY ITEMS AND ITEM STATISTICS	15
TABLE 16. INITIAL AND MODIFIED SINGLE-ITEM MEASURES	16
TABLE 17. REVISIONS TO MULTI-ITEM SCALES.....	17
TABLE 18. BATTALION LEADER SURVEY ITEMS.....	21
TABLE 19. PHASE II DIAGNOSTIC ITEM SOURCES	22
TABLE 20. FOCUS GROUP PARTICIPANTS BY RANK	22
TABLE 21. FOCUS GROUP PARTICIPANTS BY MOS/BRANCH.....	22
TABLE 22. SAMPLE BY RANK.....	28

	Page
TABLE 23. SAMPLE BY MOS SERIES	28
TABLE 24. OUTCOMES ASSOCIATED WITH THE 12 COMMAND CLIMATE DIMENSIONS	30
TABLE 25. COMMAND CLIMATE DIMENSION SCALE AND SINGLE-ITEM RELIABILITIES.....	40
TABLE 26. COMMAND CLIMATE DIMENSION SCALES AND DESCRIPTIVE STATISTICS	41
TABLE 27. COMMAND CLIMATE SINGLE-ITEM DESCRIPTIVE STATISTICS	41
TABLE 28. INTRA-CLASS CORRELATIONS FOR FULL SCALES AND SINGLE ITEMS	42
TABLE 29. INTERRATER AGREEMENT STATISTICS FOR FULL SCALES AND SINGLE ITEMS.....	44
TABLE 30. COMMAND CLIMATE SCALE DESCRIPTIVE STATISTICS AT COMPANY LEVEL	45
TABLE 31. COMMAND CLIMATE SINGLE-ITEM DESCRIPTIVE STATISTICS AT COMPANY LEVEL	46
TABLE 32. FLOW OF INFORMATION SIMPLE AND HIERARCHICAL REGRESSION RESULTS	49
TABLE 33. AUTONOMY SIMPLE AND HIERARCHICAL REGRESSION RESULTS	50
TABLE 34. RESPECT FOR THE INDIVIDUAL SIMPLE AND HIERARCHICAL REGRESSION RESULTS	51
TABLE 35. HAZING SIMPLE AND HIERARCHICAL REGRESSION RESULTS	51
TABLE 36. BULLYING SIMPLE AND HIERARCHICAL REGRESSION RESULTS	52
TABLE 37. PEER SUPPORT FOR UNIT MEMBERS SIMPLE AND HIERARCHICAL REGRESSION RESULTS	53
TABLE 38. LEADER SUPPORT FOR UNIT MEMBERS SIMPLE AND HIERARCHICAL REGRESSION RESULTS	54
TABLE 39. LEADER SUPPORT FOR FAMILIES SIMPLE AND HIERARCHICAL REGRESSION RESULTS	55
TABLE 40. PROFESSIONALISM SIMPLE AND HIERARCHICAL REGRESSION RESULTS	56
TABLE 41. ETHICAL LEADERSHIP SIMPLE AND HIERARCHICAL REGRESSION RESULTS	57
TABLE 42. TRUST SIMPLE AND HIERARCHICAL REGRESSION RESULTS	58
TABLE 43. ADAPTABILITY SIMPLE AND HIERARCHICAL REGRESSION RESULTS	60

TABLE 44. CLIMATE STRENGTH COVARIATES.....	61
TABLE 45. DIAGNOSTICS-DEPENDENT VARIABLE ADJUSTED MULTIPLE R^2	65
TABLE 46. SUMMARY OF REGRESSION RESULTS FOR THREE SURVEY FORMATS	67
TABLE 47. CONFUSION INDICES FOR CLIMATE DIMENSIONS.....	70
TABLE 48. FLOW OF INFORMATION PRACTICAL APPLICATION CONFUSION MATRIX.....	71
TABLE 49. AUTONOMY PRACTICAL APPLICATION CONFUSION MATRIX.....	71
TABLE 50. RESPECT FOR THE INDIVIDUAL PRACTICAL APPLICATION CONFUSION MATRIX.....	72
TABLE 51. HAZING PRACTICAL APPLICATION CONFUSION MATRIX	72
TABLE 52. BULLYING PRACTICAL APPLICATION CONFUSION MATRIX.....	72
TABLE 53. PEER SUPPORT FOR UNIT MEMBERS PRACTICAL APPLICATION CONFUSION MATRIX.....	72
TABLE 54. LEADER SUPPORT FOR UNIT MEMBERS PRACTICAL APPLICATION CONFUSION MATRIX.....	73
TABLE 55. LEADER SUPPORT FOR FAMILIES PRACTICAL APPLICATION CONFUSION MATRIX.....	73
TABLE 56. PROFESSIONALISM PRACTICAL APPLICATION CONFUSION MATRIX..	73
TABLE 57. ETHICAL LEADERSHIP PRACTICAL APPLICATION CONFUSION MATRIX	73
TABLE 58. TRUST PRACTICAL APPLICATION CONFUSION MATRIX.....	74
TABLE 59. ADAPTABILITY PRACTICAL APPLICATION CONFUSION MATRIX.....	74
TABLE 60. MEAN CLIMATE DIFFERENCES BETWEEN SINGLE-ITEM AND MULTI- ITEM SCALES	75

LIST OF FIGURES

FIGURE 1. RESPECT FOR THE INDIVIDUAL CLIMATE STRENGTH AS A MODERATOR FOR RESPECT FOR THE INDIVIDUAL LEVEL PREDICTING COMMANDER RATINGS OF RESPECT OTHERS	62
FIGURE 2. BULLYING CLIMATE STRENGTH AS A MODERATOR FOR BULLYING LEVEL PREDICTING WITHDRAWAL	63
FIGURE 3. BULLYING CLIMATE STRENGTH AS A MODERATOR FOR BULLYING LEVEL PREDICTING COMMANDER RATINGS OF MORALE	64

ARMY COMMAND CLIMATE: PHASE II INVESTIGATION OF THE VIABILITY OF SINGLE-ITEM MEASURES

Organizational climate is a multidimensional and multilevel construct, commonly defined as “socially shared perceptions of organizational members regarding key characteristics of their organization” (Zohar & Hofmann, 2012, p. 643). Organizational climate research often focuses on measuring a specific aspect of climate, such as the level of support members receive from leaders and peers, perceptions of trust among organizational members, and perceptions of ethical leadership. Typically, organizational climate research assesses individual members’ perceptions of organizational climate, which can then be aggregated to the group level to represent the mean organization or group’s climate.

The Army defines organizational or command climate as “the organization’s tone—the characteristic atmosphere in which people work” (Army Doctrine Reference Publication [ADRP] 6-0, U.S. Department of the Army, 2012, p. 2-12). Command climate is influenced by the leader’s values, skills, and actions, and leaders are responsible for setting the “atmosphere” or “tone” of the unit (ADRP 6-22, U.S. Department of the Army, 2012, p. 7-2). Command climate remains a high priority for the U.S. Army. Former Secretary of the Army John McHugh stated that, “command climate assessments help commanders establish and maintain a positive command climate, which, in turn, helps sustain a Ready and Resilient Force” (Army Directive 2013-29, p. 1, McHugh, 2013). Further, the directive noted, “surveys give commanders insight into unit perceptions and serve as the starting point for assessing the overall climate of the command” (Army Directive 2013-29, p. Enclosure 2, McHugh, 2013). The importance of command climate was reaffirmed in the 2019 Army Posture Statement; “We are reinforcing leader responsibility for building a climate of trust and professionalism that emphasizes the Army Values” (Esper & Milley, 2019, p. 12).

Valid and reliable measures of command climate provide unit leaders with actionable insight into unit members’ shared perceptions of the unit. Command climate survey results provide a useful tool to help leaders quickly identify and resolve potential problems and develop positive unit climates. As of May 2018, Army directives require that all Active Army company commanders conduct an initial command climate assessment within 60 days of assuming command and annually thereafter while in command. Given the frequency of administration of the command climate and other surveys, Soldiers face significant survey burden. Additionally, researchers demonstrated that increased survey burden can have a negative impact on the quality of the data collected (Dillman et al., 1993; Stanton et al., 2002).

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has been conducting innovative research to develop and validate a prototype of single-item measures to assess command climate (Adis et al., 2020; Adis et al., 2021). Across two studies, ARI developed measures for 21 command climate dimensions, collected data to evaluate the measures’ psychometric and criterion-related validity, and compared the results of the single items with the multi-item scales. They found preliminary support for the feasibility of using the single-item assessment as a quick “health-check” on the command climate of a unit. ARI’s efforts to examine this new method for assessing command climate provides an opportunity to advance the theoretical understanding of command climate and to provide insight into a new methodology for assessing command climate.

The current effort extends ARI's research by revising and evaluating the prototype approach that uses a single item rather than a multi-item scale to assess command climate. In addition, the project team developed a multi-item diagnostic follow-up survey for use to detect additional information about potential problems identified in the initial climate assessment. This project builds on past command climate survey development work by investigating the reliability and validity of revised command climate measures. This report first briefly describes the Phase I research on the identification and development of the initial climate dimension measures. Next, the report describes Phase II efforts to refine and revise the climate dimension and outcome measures used in Phase I. Then the report details a validation study conducted to evaluate the psychometric properties and criterion validity of the revised single-item measures and associated multi-item command climate scales.

Phase I Research

In Phase I of this program of research, the project team developed and validated an initial set of 21 climate constructs across two waves. The first wave examined 13 climate constructs using data from 1,342 Soldiers and officers from 51 Army companies (Adis et al., 2020). The second wave examined eight additional climate constructs using data from 1,358 Soldiers and officers from 57 Army companies (Adis et al., 2021). We developed a set of multi-item scales, single items, and follow-up diagnostic items for each climate dimension. We designed diagnostic items to capture detailed information regarding sources of climate issues within units. If the single items identified potential problem areas, leaders could use the diagnostic items to further investigate the cause or source of the issues.

Soldiers completed multi-item scales, single-item measures, diagnostic items, and a series of criterion measures such as collective efficacy, unit performance, and job satisfaction. We collected outcome measures for each company from battalion leaders. The Phase I results generally supported the feasibility of using a short, single-item assessment to assess company-level command climate. Further, an evaluation of the practical application of the single-item approach demonstrated that the single-item measure would produce almost exactly the same results as would a much longer, multi-item survey. Use of the short survey comprised of single items would allow commanders to quickly assess command climate within their units and follow-up where needed to address areas of concern.

Phase II Overview

Based on the promising results of the Phase I research, ARI initiated Phase II to refine and further validate a unit-level survey measure of command climate. PDRI reanalyzed data collected as part of the Phase I command climate survey research (Adis et al., 2020; Adis et al., 2021) to identify the most promising dimensions and modify items to create a set of revised command climate dimension measures. These dimensions are measured using both multi-item scales and single-item measures. The single-item measures assess the same dimensions measured by the multi-item scales, using only a single item to assess each dimension. In addition to the revisions listed above, we refined the criterion measures used in the Phase I research and developed additional items to capture outcomes related to the climate dimensions. The project team conducted additional research to add to and revise diagnostic items for each of the command climate dimensions. Finally, the project team compiled the revised measures into a

survey and analyzed Soldiers' responses to validate the measures. These steps are illustrated in Table 1 below.

Table 1

Steps to Refine and Revise Measures

Step 1. Identify and reduce the number of climate dimensions
Step 2. Refine single-item measures
Step 3. Refine multi-item scales
Step 4. Refine and add criterion measures
Step 5. Develop and refine additional diagnostic items
Step 6. Validate measures

Identifying and Reducing the Number of Climate Dimensions

The project team developed a total of 21 climate dimensions during the Phase I research. One of the initial goals of the Phase II research was to reduce the number of climate dimensions to a number that would be more practical for data collection. The research version of a climate survey and the associated multi-item scale items and diagnostic items would have been too long to administer if all 21 dimensions were used. The project team utilized a rational-empirical approach to reduce the number of dimensions to be included in the Phase II survey. Table 2 lists questions that were considered when identifying the final set of command climate dimensions, and Table 3 lists the 21 dimensions and their definitions.

Table 2

Dimension Reduction Questions for Consideration

Rational Questions	Empirical Questions
1. How do the dimensions relate to overall Army priorities and needs?	1. Is there empirical overlap among dimensions?
2. With our final set, will we capture all the important outcomes?	2. Is there empirical evidence that the dimension is a unit-level construct and that it differs across units?
3. Is there conceptual overlap among dimensions?	3. Is there empirical evidence that the dimension is related to important unit outcomes?
4. How actionable and relevant is the dimension across different types of units?	
5. Do the final dimensions make sense conceptually? Would they resonate with SMEs and participants?	

Table 3*Phase I Command Climate Dimensions & Definitions*

Climate Dimension	Definition
1. Flow of Information	Information that is important for the unit's success is communicated effectively throughout the unit.
2. Autonomy	Unit leadership trusts and empowers unit members to make decisions and solve problems when appropriate.
3. Leadership Openness	Members of this unit feel they can approach unit leaders to discuss problems and concerns.
4. Respect for the Individual	All members of the unit are treated with dignity and value regardless of rank, position, or background.
5. Hazing	Members of the unit intentionally cause new members to suffer or be exposed to activities that are cruel, abusive, humiliating, oppressive, demeaning, or harmful as a "rite of passage."
6. Bullying	Soldiers in the unit exclude or reject other Soldiers through cruel, abusive, humiliating, oppressive, demeaning, or harmful behavior.
7. Fairness	Outcomes, such as promotions, rewards, and developmental opportunities, are distributed to unit members in an objective and impartial manner.
8. Inclusion	Unit members feel integrated into unit activities.
9. Peer Support for Unit Members	Members of the unit care about the well-being of other members and provide the support and assistance they need.
10. Leader Support for Unit Members	Leaders in the unit care about the well-being of unit members and provide the support and assistance they need.
11. Leader Support for Families	Unit leaders care about the well-being of unit members' families and provide the support and assistance they need.
12. Performance Orientation	Leaders and members of the unit encourage and strive for high performance outcomes.
13. Professionalism	The unit emphasizes the Profession of Arms, Army and unit standards, and adherence to rules, doctrine, and regulations.
14. Ethical Leadership	Unit leadership expects all unit members to behave ethically.
15. Trust	Members of this unit trust one another.
16. Safety	Members of this unit effectively maintain a safe work environment.
17. Learning Orientation	Leaders encourage unit members to help each other learn new skills.
18. Conflict Management	Members of this unit effectively manage conflict.
19. Adaptability	Members of this unit effectively adapt to changes in situations.
20. Behavioral Health Orientation	Unit members are encouraged to prioritize mental/behavioral health.
21. Stress Management	Leaders help unit members deal with stress in an effective manner.

Note. Bolded climate dimensions were retained for Phase II research.

ARI project leaders first examined the dimensions in relation to Army needs and priorities. For example, they retained the leader support for families and flow of information dimensions as they were frequently mentioned as important climate topic areas and considered to be related to unit outcomes in the early Phase I focus groups. ARI project leaders retained other dimensions due to their current importance in the Army (e.g., bullying, hazing, and ethical leadership). Adaptability, autonomy, and other dimensions are important and relevant to potential future changes in Army operational environments, such as multi-domain warfare and decentralization of command. The project team also recommended dropping dimensions that:

- may not being equally applicable across all units (e.g., safety climate),
- were at least partially conceptually redundant with other dimensions (e.g., leadership openness had some conceptual overlap with leader support for unit members; the communication aspect of flow of information conceptually overlapped with leadership openness),
- covered by other ARI research (e.g., inclusion),
- might not be best measured by the single-item approach (e.g., fairness), or
- were outside of ARI's area of expertise (e.g., behavioral health orientation and stress management).

Next, we examined the Phase I empirical results. We reviewed the correlations and factor analysis results, and when two constructs demonstrated empirical overlap, we discussed which of the two dimensions was the most valuable to keep. For example, the professionalism and performance orientation single items correlated at .45, and the factor analyses suggested that these two dimensions did not represent two distinct factors. In addition, we examined scale reliabilities and intraclass correlation coefficients (ICCs). Most of the scales had moderate to high reliabilities, and while the ICCs were not uniformly high, there were small differences across the dimensions. Finally, we examined the climate dimension-criterion relationships to determine if any of the climate dimensions had particularly weak relationships with individual- and unit-level outcomes. For example, safety and fairness both had relatively weaker relationships with the outcome measures. Ultimately, nine dimensions were dropped and twelve dimensions retained for inclusion in the Phase II research. The dimensions retained for Phase II are listed in bold in Table 3.

Refining Single-Item Measures

In the second step to refine and revise the command climate measures, we examined the Phase I research results and refined or modified the single-item measures for inclusion in the Phase II research. Single items work best when they are unidimensional and reflective of the core of a concrete underlying latent variable (Fuchs & Diamantopoulos, 2009; Rossiter, 2002). If the single item has a high correlation with a dimension scale measuring the same construct, and that scale is highly reliable, then the single item will be reliable as well (Wanous & Hudy, 2001). We examined the Phase I results for each of the 12 dimensions and sought single items with concrete, unidimensional wording and high item-total correlations¹ with their associated multi-

¹ Item-total correlations are the correlation between the score on an item and the total test score. A higher item-total correlation (at least .30) indicates that the item discriminates well between high and low scoring groups. An item-total correlation close to zero indicates the item discriminates poorly between high and low scoring groups.

item scales. Based on scale reliabilities with the single item excluded and corrected item-total correlations, we calculated reliability estimates for single items and considered how reliability would change if a different single item were selected. In addition, since these single items were intended to measure climate as a group-level construct, we considered single-item *ICC(1)* values² to maximize variance attributable to company membership.

Flow of Information

Table 4 presents the items and item statistics for the flow of information dimension. The multi-item scale internal consistency reliability for this dimension was .92 and the correlation between the dimension scale and Phase I (initial) single item (Info1) was .77. The initial single item had an estimated reliability of .64. The next best alternative (the item with the largest item-total correlation, Info2) would have produced a single-item reliability of .69. However, compared to the initial single item, the alternative item had about two percent less variance attributable to group membership as reflected by *ICC(1)* values. Given this, we retained the initial single item. However, we modified the initial single item by removing the phrase “that is important for the unit’s success” to make the item simpler and more global. This may improve the single item’s correlation with the dimension scale and improve reliability. The modified single item for flow of information is “Information is communicated effectively throughout the unit.”

Table 4

Flow of Information Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Info1	Information that is important for the unit’s success is communicated effectively throughout the unit	.77	.08
Info2	Important information is shared within my unit/organization	.80	.06
Info3	Information is effectively communicated by my chain of command	.79	.08
Info4	Members of my unit are kept informed of upcoming events and requirements	.76	.05
Info5	Members of my unit understand the information shared by the chain of command	.74	.05
Info6	Members of my unit feel that leaders provide enough information	.74	.05
Info7	Leaders in my unit communicate clearly about the commander’s intent	.75	.07
Info8	Leaders in my unit communicate clearly about unit members job requirements	.71	.05

² *ICC(1)* is an intra-class correlation used to evaluate the appropriateness of the group-level measurement. *ICC(1)* compares variability within units to variability across units, providing a percent of variance explained by the unit (in this case, the company). *ICC(1)* shows evidence that group-level effects are present if values are .05 or higher (LeBreton & Senter, 2008).

Autonomy

Table 5 presents the items and item statistics for the autonomy dimension. The internal consistency reliability for this dimension was .92 and the correlation between the dimension scale and initial single item was .74. The initial single item (Auton1) had an estimated reliability of .60. The next best alternative (Auton3) would have produced a single-item reliability of .69, with only a slightly lower *ICC(1)*.

Given the improvement in internal consistency, we selected the alternative item as the new single-item measure. We made an additional modification to remove the word “effectively” resulting in a new single item for autonomy: “Unit members are given enough flexibility to do their jobs without excessive control from leadership.”

Table 5

Autonomy Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Auton1	Unit leadership trusts the members of this unit to make decisions	.74	.07
Auton2	Unit members are given appropriate flexibility to make decisions to successfully accomplish the mission	.80	.07
Auton3	Unit members are given enough flexibility to do their jobs effectively without excessive control from leadership	.82	.07
Auton4	Unit members are given the opportunity to figure out problems on their own	.76	.06
Auton5	Members of my unit are given freedom to do their job without being micromanaged	.78	.06
Auton6	Unit members are allowed to take initiative when appropriate	.74	.07
Auton7	Leaders trust unit members to complete their jobs without giving unnecessary guidance	.76	.07

Since the autonomy dimension had a low single-item reliability estimate, we also looked for ways to modify the multi-item scale by adding items and modifying existing items. The multi-item scale modifications section summarizes these modifications to the scale.

Respect for the Individual

Table 6 presents the items and item statistics for the respect for the individual dimension. The internal consistency reliability for this dimension was .95 and the correlation between the dimension scale and initial single item was .87. The initial single item (Respect1) had an estimated reliability of .80. The best alternative item (Respect2) would have produced a single-item reliability of .83. The alternative item also had a large *ICC(1)* value. However, given the

similarity between the initial single item and the alternative and the more global nature of the initial single item, we retained the initial single item.

Table 6

Respect for the Individual Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Respect1	All members of this unit are treated with dignity and respect	.87	.08
Respect2	Leaders ensure that all members of this unit are treated with dignity and respect	.89	.10
Respect3	Leaders actively promote dignity and respect for members of this unit	.87	.08
Respect4	Leaders confront unit member actions that undermine dignity and respect	.82	.09
Respect5	Members of this unit feel that they are valued	.82	.10
Respect6	Leaders take action to show dignity and respect for unit members	.87	.09
Respect7	Members of this unit are valued for their contributions to the unit	.82	.08

Hazing

Table 7 presents the items and item statistics for the hazing dimension. The internal consistency reliability for this dimension was .93 and the correlation between the dimension scale and initial single item was .80. The initial estimated single item (Hazing1) reliability was .69. The best alternative item (Hazing2) would have produced a single-item reliability of .85. However, compared to the initial single item, the alternative had an *ICC(1)* that was about two percentage points below the *ICC(1)* of the initial single item. Since *ICC(1)* values were relatively low for both single item choices, we replaced the initial single item with the next best alternative to improve the internal consistency estimate.

Table 7*Hazing Items and Item Statistics*

Item ID	Item text	Item-total correlation	ICC(1)
Hazing1	Members of this unit engage in hazing (i.e., intentionally cause new members to suffer or be exposed to activities that are abusive, humiliating, or harmful as a “rite of passage”)	.78	.06
Hazing2	Members of my unit are forced to perform abusive tasks or actions as a “rite of passage”	.81	.04
Hazing3	New members are harassed or humiliated as a “rite of passage” when joining this unit	.83	.04
Hazing4	When unit members are promoted, they are harassed or humiliated as a “rite of passage”	.77	.04
Hazing5_R	Members of this unit would report hazing if it happened	.35	.02

Bullying

Table 8 presents the items and item statistics for the bullying dimension. The internal consistency reliability for this dimension was .83 and the correlation between the dimension scale and initial single item was .39. The initial single item (Bully1) had an estimated reliability of .18. The initial bullying scale had both positively and negatively worded items that were not highly correlated. This low correlation negatively impacted internal consistency. Reliability improved when two of the negatively worded items were dropped from the scale, but the remaining items still included three items with positive wording and one item with negative wording. The one negatively worded item was the single-item measure, which did not correlate well with the other items, even when reverse coded. This severely limited the potential for achieving higher reliability with the original bullying single item.

One approach was to change the wording of the single item by reverse coding one of the terms (i.e., changing “unit members bully” to “unit members *do not* bully”). However, this change would make the item more difficult to understand and less straightforward to answer. Instead, to address the issues with the bullying dimension, we developed two sets of additional items: a negatively worded set and a positively worded set. The multi-item scale section below describes more about these items, but ultimately we selected the negatively worded bullying items and designated an item that represented the core of the dimension as the single item. The new bullying single item was: “Leaders in the unit would ignore bullying if it occurred.”

Table 8*Bullying Items and Item Statistics*

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Bully1	Members of this unit bully other unit members (i.e., exclude or reject other unit members through abusive, humiliating, or harmful behavior)	.61	.04
Bully2	Members of my unit are the target of physical attacks by other unit members	.49	.04
Bully3_R	Leaders make it clear that bullying has no place in this unit	.51	.03
Bully4	Some members of my unit feel picked on by their peers	.45	.04
Bully5_R	Leaders take action to stop bullying if it occurs	.60	.03
Bully6_R	Leaders take action to prevent bullying in the unit	.67	.05

Peer Support for Unit Members

Table 9 presents the items and item statistics for the peer support for unit members climate dimension. The internal consistency reliability for this dimension was .82 and the correlation between the dimension scale and initial single item was .73. The initial single item (PSUM1) had an estimated reliability of .65. The next best alternative item (PSUM2) would have produced a single-item reliability of .72 but would have a much lower *ICC(1)* value. Therefore, we retained the initial single item for this dimension and did not modify the item.

Table 9*Peer Support for Unit Members Items and Item Statistics*

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
PSUM1	Members of this unit support each other	.70	.09
PSUM2	My peers care about the well-being of others in this unit	.76	.06
PSUM3_R	My peers show little concern for others in this unit	.35	.01
PSUM4	My peers care about the opinions of others in this unit	.58	.06
PSUM5	Members of my unit pitch in when someone needs help	.68	.05
PSUM6_R	Members of this unit are more focused on themselves than helping others	.43	.02
PSUM7	Members of this unit offer assistance to each other when someone needs help	.70	.06

Since the peer support for unit members dimension had a low scale reliability estimate, we looked for ways to modify the scale by removing items. The section on multi-item scale modifications summarizes these modifications to the scale.

Leader Support for Unit Members

Table 10 presents the items and item statistics for the leader support for unit members dimension. The internal consistency reliability for this dimension was .92 and the correlation between the dimension scale and initial single item was .80. The initial single item (LSUM1) had an estimated reliability of .70. The best alternative item (LSUM3) would have produced a single-item reliability of .78. Compared to the initial single item, the alternative item had about one percent less variance attributable to group membership as reflected by *ICC(I)* values. Despite the favorable characteristics of the alternative item, upon further review, the text of the item did not appear to reflect the core of the dimension. Rather than change items, we removed the word “assistance” from the initial single item. This change was intended to make the item less specific and more global. The modified single item for leader support for unit members was: “Leaders in this unit provide members with the support they need.”

Table 10

Leader Support for Unit Members Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(I)</i>
LSUM1	Leaders in this unit provide members with the support and assistance they need	.80	.11
LSUM2	Leaders in this unit care about the welfare of unit members	.84	.10
LSUM3	Leaders help members of this unit with problems that come up	.83	.10
LSUM4	Leaders in this unit are there when unit members need them	.83	.09
LSUM5	Leaders in this unit appropriately balance mission requirements with unit members' welfare	.69	.07

Leader Support for Families

Table 11 presents the items and item statistics for the leader support for families dimension. The internal consistency reliability for this dimension was .92 and the correlation between the dimension scale and initial single item was .79. The initial single item (LSFam1) had an estimated reliability of .68. The best alternative item (LSFam3) would have produced a single-item reliability of .78. Compared to the alternative item, the initial single item had about five percent less variance attributable to group membership as reflected by *ICC(I)* values. Despite the favorable statistics for the alternative item (LSFam3), we deemed the text of the initial single item to be more aligned with the core of the dimension. The alternative was a specific facet of the global definition of the dimension reflected in the initial single item. In addition, in order to keep the original single item in line with leader support for unit members,

we removed the word “assistance” from the item. The modified single item for leader support for families was: “Unit leaders provide families with the support they need.”

Table 11

Leader Support for Families Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
LSFam1	Unit leaders provide families with the support and assistance they need	.79	.07
LSFam2	Families in this unit receive the information they need	.82	.06
LSFam3	Unit leaders care about the well-being of unit members' families	.84	.12
LSFam4	Leaders in this unit are there for members' families when they need help	.84	.09
LSFam5	Leaders in this unit support the Family Readiness Group (FRG)	.76	.08
LSFam6	The Family Readiness Group (FRG) in this unit is effective	.73	.08

Professionalism

Table 12 presents the items and item statistics for the professionalism dimension. The internal consistency reliability for this dimension was .92 and the correlation between the dimension scale and initial single item was .73. The initial single item (Profes1) had an estimated reliability of .58. The next best alternative item (Profes2) would have produced a single-item reliability of .72. While the next best alternative had a higher item-total correlation, the internal consistency of the resulting scale was slightly lower, resulting in comparable reliability. The alternative item did have a better *ICC(1)*. Compared to the alternative, the initial single item for professionalism had about 2.5 percent less variance attributable to group membership as reflected by *ICC(1)* values. Given the improvement in *ICC(1)*, we replaced the professionalism single item with the next best alternative (Profes2), “Members of my unit maintain high standards of professionalism.”

Table 12*Professionalism Items and Item Statistics*

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Profes1	This unit emphasizes Army standards, doctrine, and regulations	.73	.06
Profes2	Members of my unit maintain high standards of professionalism	.81	.09
Profes3	Members of my unit uphold Army standards	.83	.06
Profes4	Members of my unit expect one another to uphold Army standards	.77	.06
Profes5	Leaders discipline unit members who are not in compliance with Army standards	.71	.08
Profes6	Leaders in my unit emphasize Army values and the Profession of Arms	.80	.08
Profes7	Leaders in my unit lead by example	.71	.09

Ethical Leadership

Table 13 presents the items and item statistics for the ethical leadership dimension. The internal consistency reliability for this dimension was .93 and the correlation between the dimension scale and initial single item was .73. The initial single item (Ethics1) had a reliability estimate of .57. The best alternative item (Ethics3) would have produced a single-item reliability of .80. The best alternative item had more than twice the variance attributable to group membership as reflected by *ICC(1)* values. Given the large improvement in internal consistency and the substantial increase in *ICC(1)*, we adopted a new single item measure (Ethics3), “Leaders of my unit value doing the right thing.”

Table 13*Ethical Leadership Items and Item Statistics*

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Ethics1	Unit leadership expects all unit members to behave ethically	.68	.03
Ethics2	Unit leaders behave ethically	.82	.07
Ethics3	Leaders of my unit value doing the right thing	.83	.08
Ethics4	Unit leaders hold all unit members to a high ethical standard	.82	.05
Ethics5	Unit leadership adheres to the Army Values of Honor and Integrity	.80	.05
Ethics6_R	Leaders in my unit tend to overlook unethical conduct	.33	.02
Ethics7	If unit members see unethical behavior, they report it to leadership	.57	.02

Trust

Table 14 presents the items and item statistics for the trust dimension. The internal consistency reliability for this dimension was .94 and the correlation between the dimension scale and initial single item was .80. The initial single item (Trust1) had a reliability estimate of .68. The best alternative item (Trust2) would have produced a single-item reliability of .72. The alternative item produced a slightly lower *ICC(1)*. Given that the decrease in *ICC(1)* was small, we changed the single item to the alternative (Trust2), “Members of this unit are trustworthy.”

Table 14*Trust Items and Item Statistics*

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Trust1	Members of this unit trust one another	.80	.10
Trust2	Members of this unit are trustworthy	.83	.10
Trust3	Unit members can count on our leaders	.80	.07
Trust4	Members of my unit have confidence in one another	.84	.07
Trust5	Unit leaders follow through on their commitments	.78	.07
Trust6	Members of my unit can count on each other	.83	.10
Trust7	Unit members can be trusted to follow through on their word	.82	.08

Adaptability

Table 15 presents the items and item statistics for the adaptability dimension. The internal consistency reliability for this dimension was .87 and the correlation between the dimension scale and initial single item was .72. The initial single item (Adapt1) had an estimated reliability of .59. The best alternative item (Adapt3) would have also produced a single-item reliability of .59. Despite the alternative having a better item-total correlation, the resulting internal consistency without the alternative would have been lower; therefore, the single-item reliability was not improved. Moreover, the alternative item had a slightly lower *ICC(1)*. Given the lack of improvements in the best alternative, we retained the initial single item.

Table 15

Adaptability Items and Item Statistics

Item ID	Item text	Item-total correlation	<i>ICC(1)</i>
Adapt1	Members of this unit effectively adapt to changes in situations	.72	.09
Adapt2	Leaders expect unit members to quickly respond to changing demands	.55	.04
Adapt3	Unit members effectively adjust when task assignments change	.76	.08
Adapt4	Members of the unit get the job done even when faced with unexpected situations	.72	.07
Adapt5	Unit members can switch gears quickly to respond to unexpected events	.75	.07
Adapt6_R	Members of my unit have difficulty coping with change	.35	.07
Adapt7	Unit leaders are adaptable	.64	.07

Table 16 provides a list of modified single items for all command climate dimensions, along with corresponding initial single items used in the Phase I data collections.

Table 16*Initial and Modified Single-Item Measures*

Construct	Phase I Single Item	Modified Single Item
Flow of Information	Information that is important for my unit's success is communicated effectively throughout the unit	Information is communicated effectively throughout the unit
Autonomy	Unit leadership trusts the members of this unit to make decisions	Unit members are given enough flexibility to do their jobs without excessive control from leadership
Respect for the Individual	All members of this unit are treated with dignity and respect	No change
Hazing	Members of this unit engage in hazing (i.e., intentionally cause new members to suffer or be exposed to activities that are abusive, humiliating, or harmful as a "rite of passage")	Members of my unit are forced to perform abusive tasks or actions as a "rite of passage"
Bullying	Members of this unit bully other unit members (i.e., exclude or reject other unit members through abusive, humiliating, or harmful behavior)	Leaders in the unit would ignore bullying if it occurred
Peer Support for Unit Members	Members of this unit support each other	No change
Leader Support for Unit Members	Leaders in this unit provide members with the support and assistance they need	Leaders in this unit provide members with the support they need
Leader Support for Families	Unit leaders provide families with the support and assistance they need	Unit leaders provide families with the support they need
Professionalism	This unit emphasizes Army standards, doctrine, and regulations	Members of my unit maintain high standards of professionalism
Ethical Leadership	Unit leadership expects all unit members to behave ethically	Leaders of my unit value doing the right thing
Trust	Members of this unit trust one another	Members of this unit are trustworthy
Adaptability	Members of this unit effectively adapt to changes in situations	No change

Refining Multi-Item Scales

In the third step of the project, we examined the Phase I research results and refined or modified the multi-item scales for inclusion in the Phase II research. Similar to the single-item measures, we evaluated the multi-item scales on internal consistency (Cronbach's alpha and corrected item-total correlations) and shared variance at the company-level (average $ICC(1)$). Excluding bullying, Cronbach's alphas for the Phase I research were high across all dimensions (ranging from .86 to .95). Within dimensions, item-total correlations were also high (averages by scale ranging from .70 to .85), with the exception of bullying.

We assessed shared variance at the company level with $ICC(1)$, and most dimensions reached the 5% level that suggests a (minimal) group-level effect in the Phase I research. Hazing and ethical leadership did not reach 5%; a subset, however, of ethical leadership items, to include Ethics2, Ethics3, Ethics4, and Ethics5, did reach this threshold. Since the 5% threshold is arbitrary, we kept both scales with the intent to reassess $ICC(1)$ when more data were available.

Given the favorable scale statistics, only a few dimensions required changes to the multi-item scales. We modified a few scales by dropping or revising items with low item-total correlations, and/or adding items in order to enhance scale statistics. We changed one item at a time and re-evaluated the statistics before making additional revisions. We describe these scale modifications below. Table 17 summarizes the changes.

Table 17

Revisions to Multi-item Scales

Item ID	Item text	Change to multi-item scale
Auton8	Unit leaders do not exert excessive control over the daily job activities of unit members	Added item
Auton9	Unit leaders allow unit members to get the job done without constant monitoring	Added item
Auton10	Unit members are expected to accomplish their mission without step by step guidance from leaders	Added item
Bully3	Leaders make it clear that bullying has no place in this unit.	Dropped item
Bully5	Leaders take action to stop bullying if it occurs.	Dropped item
Bully6	Leaders take action to prevent bullying in the unit.	Dropped item
Bully8	Leaders in this unit are unlikely to speak out against bullying	Added item
Bully9	If bullying occurred in this unit, leaders probably would not stop it	Added item
Bully10	Leaders in this unit do not take action to prevent bullying	Added item

(Continued)

Item ID	Item text	Change to multi-item scale
Bully11	Some members of my unit have felt humiliated by their peers	Added item
Bully12	Some members of my unit have felt excluded or rejected by other unit members	Added item
Bully13	Some members of my unit are abused or harmed by others in the unit	Added item
PSUM3	My peers show little concern for others in this unit	Dropped item (rephrased in PSUM10)
PSUM6	Members of this unit are more focused on themselves than helping others	Dropped item
PSUM8	Soldiers in my unit look out for one another	Added item
PSUM9	Soldiers in my unit back each other up	Added item
PSUM10	My peers show concern for others in this unit	Added item
Ethics6_R	Leaders in my unit tend to ignore unethical conduct	Revised item
Adapt2	Leaders expect unit members to quickly respond to changing demands	Dropped item
Adapt6	Members of my unit have difficulty coping with change	Dropped item (see revision in Adapt8)
Adapt8	Members of my unit easily cope with change	Revised item
Adapt9	Members of my unit are flexible in adjusting to changing mission requirements	Added item
Adapt10	Unit members adapt quickly	Added item
Adapt11	Members of my unit quickly respond to changing demands	Added item

Autonomy

Autonomy was a dimension with low single-item reliability, in part due to the correlation between the single item and the scale (item-total correlation). Our approach to addressing the single-item reliability for autonomy was to modify the autonomy scale and try to improve the correlation between the scale and single item. To do so, we created additional autonomy items that we expected to be similar to the single item. Table 17 displays the additional autonomy items.

Bullying

As described above, the initial bullying scale had positively and negatively worded items, which did not correlate as highly with each other as with similarly valenced items, which negatively impacted internal consistency. The single-item measure was negatively worded, and the scale items were positively worded items that we reverse coded; however, the two did not correlate well, which severely limited the reliability of the bullying single item. To address the issues with the bullying dimension, we developed new items and created a negatively worded set and a positively worded set. After we developed both sets of items, we compared the two and discussed strengths and weaknesses of each. Ultimately, we selected the negatively worded

bullying items so that higher scores would reflect more issues with bullying than lower scores. We retained several of the Phase I bullying items (Bully1, Bully2, Bully4) as they matched the negatively worded format. Then, we developed additional bullying items loosely based on several of the original positively worded items to include in the multi-item scale (see Table 17).

Peer Support for Unit Members

The peer support for unit members dimensions had a low Cronbach's alpha and average item-total correlations compared to other dimensions, so we developed additional items for this scale. We removed two negatively worded items due to low item-total correlations. We significantly rephrased another negatively worded item to reflect positive wording. We also developed two additional items and added those items to the multi-item scale. Table 17 lists the item modifications.

Adaptability

Adaptability also had lower internal consistency relative to other dimensions. Again, we addressed this problem by removing, modifying, and adding new items to existing items. Two items from the adaptability scale (Adapt2 and Adapt6) had low item-total correlations. Cronbach's alpha improved from .83 to .87 after excluding these items from the scale. We rephrased one negatively worded item (Adapt6) using positive wording and added it back into the scale (as Adapt8). We also generated an additional three items to improve the multi-item scale alpha.

Refining and Adding Criterion Measures

The project team reviewed the Phase I criterion measure content and results and made several modifications prior to collection of Phase II data. We reviewed the item content, scale reliabilities, item-level statistics, ICCs, empirical relationships with the climate dimensions, and the extent to which the criteria remained relevant given the set of climate dimensions retained for Phase II. Criterion measures included both individual-level measures to be completed by unit members and unit-level outcome ratings to be completed by battalion leaders.

Overall, the Phase I internal consistency for the individual-level criterion measures was quite good, with a few exceptions. Career intentions (3 items), family satisfaction (2 items), safety incidents (1 item), and stress amount (2 items) had alphas at or below .63. The *ICC(2)* values, which indicate whether the group-level construct is reliable, varied quite a bit, ranging from .17 to .91. Career intentions, continuance commitment, disciplinary actions, family satisfaction, stress amount, stress impact, and well-being had *ICC(2)s* at or below .33. We also examined the intercorrelations between the individual-level criteria. Several measures had moderate to high intercorrelations (e.g., job satisfaction and well-being correlated with affective commitment at .74 and .73, respectively; cohesion correlated highly with unit resilience, mutual trust, and morale at .93, .88, and .90, respectively). Some of these relationships were expected and predicted in the research literature as the underlying constructs are related. Thus, a moderate to high correlation between certain outcome measures was not a disqualifying factor for retention of the outcome measure. Finally, we examined the relationships between the climate dimensions and outcome measures. Several measures had no significant relationships with any of the

command climate dimensions in either of the Phase I research samples (career intentions, continuance commitment, and withdrawal). Additional measures that were administered in only one of the two research samples had no significant relationships with any climate dimension (engagement, counterproductive work behavior [CWB], job satisfaction, and safety incidents).

Based on these findings, several individual-level scales were dropped from the Phase II research effort including continuance commitment, well-being, CWB, and safety incidents. Continuance commitment is likely to be heavily influenced by other factors, such as perceptions of career opportunities outside the Army. Well-being is also likely to be more distally related to command climate, particularly in comparison to job satisfaction, satisfaction with unit leadership, and family satisfaction. The CWB scale contained a large number of items, was highly correlated with withdrawal, and was not related to any climate dimension.

In addition, we added and dropped outcome items from the battalion leader surveys. Three items from the Phase I research were dropped: “This Company demonstrates a high level of overall military/operational effectiveness,” “This Company demonstrates a high level of overall mission readiness,” and “This Company is well prepared to perform its training mission,” based on their similarity to two other items about overall performance and performance in collective training events. An additional item, “This Company is well prepared to perform its wartime duties/missions” was dropped as battalion leaders had commented that even low performing companies will pull together to prepare when needed. Another item was dropped as the outcome was no longer relevant to the Phase II climate dimensions (e.g., frequency of safety incidents).

Next, we added several items that were more proximal and conceptually similar to the command climate dimensions (see Table 18). For example, “This Company is efficient in accomplishing their day-to-day tasks without needing the battalion to check-in” was added to target outcomes that might be associated with a unit that has a strong, high autonomy climate more directly. Another example, “This Company is able to adjust effectively to changes and still accomplish their mission (e.g., changes in mission, last minute taskings)” was added to target outcomes likely related to adaptability climate.

Table 18*Battalion Leader Survey Items*

Item
How would you rate each Company's overall performance? ^a
How would you rate each Company on their performance in collective training events? ^a
This Company is proactive in preparing for their mission
This Company has high morale
This Company is proactive in supporting Soldier development (e.g., sending Soldiers to schools, ensuring Soldiers are on track for promotion)
This Company is efficient in accomplishing their day-to-day tasks without needing the Battalion to check-in
This Company is able to adjust effectively to changes and still accomplish their mission (e.g., changes in mission, last minute taskings)
This Company has strong family involvement (FRG participation, attendance at family activities like BBQs)
Soldiers in this Company are likely to re-enlist.
This Company takes a very proactive approach to physical training
In the last three months, how frequently has each Company had to take disciplinary actions (e.g., Article 15s, Flag Actions, formal counselings, placement on restrictions)? ^a
In the last three months, how frequently has each Company had problems that come to the attention of the Battalion due to lack of respect for others?

Note. ^a Battalion commander survey items retained from Phase I.

Refining and Developing Diagnostic Items

Diagnostic item development was not the primary focus of the Phase I projects, and researchers only developed 72 diagnostic items as part of Phase I. Thus, the Phase II project required additional diagnostic item development. We did not develop diagnostic items for the respect for the individual climate dimension, as another ARI project was conducting research on this topic area. We began generating diagnostic item content by reviewing Army references and military surveys. Next, we compiled a list of potential diagnostic items for each climate dimension. Where we identified existing survey content from another source, we modified items to fit the context of the command climate measure (e.g., focus on the unit vs. the individual). We then compared the list of items to the pool of existing diagnostic items to ensure the new content was unique and did not overlap with existing content. Table 19 lists the number of items derived from each source.

Table 19*Phase II Diagnostic Item Sources*

Source	Number of Items
Army Field Manual 6-22, Leader Development (U.S. Department of the Army, 2015)	228
Defense Organizational Climate Survey (DEOCS 4.1)	86
Army Regulation 600-20, Army Command Policy (U.S. Department of the Army, 2020)	3
Center for the Army Profession and Leadership (CAPL) Annual Survey of Army Leadership (CASAL) Report	6

Next, we conducted a series of focus groups to gather Army Subject Matter Expert (SME) input and feedback on the draft diagnostic items. We conducted focus groups with Soldiers at four locations (Fort Benning, Fort Drum, Fort Lee, and Fort Leonard Wood). These locations represented a variety of unit types so that we could gather inclusive and broad perspectives across the Army and ensure the proposed diagnostic items would be equally relevant for different Army units. Each focus group built on the results of the previous one, such that items were edited, refined, or dropped after each focus group. A total of 61 active Army NCOs and officers participated in the focus groups with an average of 11.06 years of service. Soldiers' last unit of assignment was primarily in Combat Arms units (47.5%), followed by Combat Support (32.8%), Combat Service Support units (16.4%) or other units (3.3%). Tables 20 and 21 provide the rank and branch/MOS breakdown for the Soldiers who participated in the focus groups.

Table 20*Focus Group Participants by Rank*

Rank	Frequency	Percent
SGT	10	16.4%
SSG	22	36.1%
SFC	7	11.5%
MSG/1SG	5	8.2%
1LT	6	9.8%
CPT	11	18.0%
Total	61	100.0%

Table 21*Focus Group Participants by MOS/Branch*

MOS Series	Frequency	Percent
11	16	26.2%
12	4	6.6%
13	2	3.3%
19	8	13.1%
25	1	1.6%
31	5	8.2%
68	1	1.6%
72	1	1.6%
88	5	8.2%
89	1	1.6%
90	1	1.6%
91	12	19.7%
92	4	6.6%
Total	61	99.9%

Note. Percentages may not add up to 100% due to rounding.

During the focus groups, Soldiers reviewed the single items for each of the 12 dimensions and example diagnostic items to ensure they understood the concept of the single item and follow-up diagnostic item approach. Then for each climate dimension, the group discussed potential causes of issues in each climate dimension. The project team used additional prompts to generate discussion about the types of Soldier or leader behaviors that might be associated with high or low scores in the climate dimension.

Following this discussion, Soldiers completed an item review and rating task, reviewing and then rating each diagnostic item on a 1 (low) to 3 (high) scale on the usefulness of the item. Soldiers also rated the extent to which the diagnostic item would provide useful information about a possible cause of a problem in the associated climate dimension. Finally, Soldiers provided edits to item content and wording and suggestions for additional items.

For one of the dimensions, ethical leadership, the focus group discussions suggested that asking about where in the company the issues are occurring would be more valuable and more likely to produce actionable results than asking about the myriad of potential problematic ethical behaviors themselves. Thus, for this set of diagnostic items, the content focuses solely on where in the organization ethical leadership issues might lie. Finally, in the final sets of workshops, we asked Soldiers to identify the top three most useful diagnostic items within each climate dimension. This rating, along with the usefulness ratings helped to refine the final set of 154 diagnostic items across 12 climate dimensions.

After the revisions to the climate dimensions, we compiled single-item measures, multi-item scales, diagnostic items, and criterion measures (see Appendix A). With the final items defined, we conducted a validation study to evaluate evidence relating to the reliability and construct and criterion-related validity of the measures. Before describing the validation study, we examine the use of climate strength in climate research.

Climate Strength as a Moderator

Discussions about the varying strength of the agreement statistics for different climate dimensions found in Phase I of this research highlighted the utility of evaluating climate strength (within-unit agreement regarding the climate) in addition to climate mean levels. Solely assessing climate mean levels ignores the variability of members' perceptions of climate within the group. Examining a group's mean can miss critical information, especially if the differences between members' perceptions of climate are large (Ehrhart et al., 2014). The agreement within a group about the group's climate (i.e., variance observed between members' climate scores) is operationalized as organizational climate strength (Lindell & Brandt, 2000; Schneider et al., 2002). The idea behind examining organizational climate strength is related to the concept of situational strength (Mischel, 1977). Situations vary in the amount of ambiguity present and how individuals perceive that ambiguity. For instance, when practices and policies are applied inconsistently to various members of the group or when practices reveal inconsistencies that become apparent to members, a weak climate may result (Zohar, 2000; Zohar & Luria, 2005).

Studies have examined antecedents and outcomes of climate strength as well as the interaction of climate strength and climate mean level in predicting outcomes of interest. For antecedents of climate strength, Colquitt and colleagues (2002) found team size and team age

diversity negatively predicted climate strength, such that larger teams and teams with diverse ages tended to have lower climate strength. In another study, group tenure was found to be positively related to safety climate strength (Beus et al., 2010). In terms of social antecedents, team collectivism (Colquitt et al., 2002), group cohesion (Luria, 2008), and dense social networks (Roberson & Williamson, 2012; Zohar & Tenne-Gazit, 2008) were all found to be positively related to climate strength. Research has also examined the role of leadership on climate strength. For example, Luria (2008) found that leader behaviors consistent with transformational leadership have a large positive relationship with climate strength ($r = .44$) whereas passive leadership behaviors have a large negative relationship with climate strength ($r = -.40$).

Researchers have also examined important outcomes of climate strength. Most of the research in this arena has focused on performance measures as outcomes of interest. For example, a study by Sowinski and colleagues (2008) found that climate strength affects organizational profitability and turnover. Some researchers have found non-linear relationships when examining outcomes of climate strength (e.g., Dawson et al., 2008). Researchers postulate if groups have an extremely high climate strength, employees within the group may be too homogenous and unable to innovate or adapt to changes in the environment, which may hurt group and organizational performance (Ehrhart et al., 2014). In addition to research on climate strength affecting performance measures, one study examined the impact of climate strength on employee stress and well-being (Rafferty & Jimmieson, 2010). In a study of 178 teams, they found evidence that the level of climate for change information (i.e., mean climate) was negatively related to employee role ambiguity, role overload, and distress and positively related to quality of work life; however, climate strength did not significantly moderate the relationships between climate level and outcomes.

Several researchers have highlighted the importance of examining the moderating role of climate strength on relationships between organizational climate mean levels and group outcomes (Ostoff & Bowen, 2000; Schneider et al., 2002; Zohar & Luria, 2005). Typically, the relationship is predicted to be stronger when climate strength is high than when it is weak. The reasoning behind this is that when there is increased agreement among members regarding climate perceptions, these members are more likely to behave in a consistent manner as a group, therefore leading to positive group outcomes. In support of this, studies found evidence for climate strength as a moderator for the relationship between a variety of climate dimensions and outcomes, such as commitment, customer service, leadership, performance, stress, and well-being (Dawson et al., 2008; Ehrhart et al., 2014; Shin, 2012). Specifically, Colquitt and colleagues (2002) found that climate strength moderated the relationship between mean climate level and both team performance and absenteeism, such that within groups with high climate strength, climate level had a stronger relationship with team performance and absenteeism than in groups where climate strength was low. Additionally, innovation climate strength moderated the effects of work groups' innovation climate on both group average satisfaction and commitment, such that innovation climate related to satisfaction and commitment more strongly when innovation climate strength was high than when it was low (González-Romá et al., 2002). The authors of this study also examined goal climate and found that goal climate strength moderated the impact of work groups' goals climate on average group commitment. Results showed that goal climate had a stronger relationship to commitment when goal climate strength was strong than when goal climate strength was weak (González-Romá et al., 2002).

While studies examining climate strength have highlighted its importance, researchers have yet to agree upon which measure best represents climate strength. Various measures of climate strength have been utilized, including interrater agreement, coefficient of variation, standard deviation, and average deviation, with each measure having different advantages and disadvantages. Interrater agreement (r_{wg}) captures the degree to which similarity in responses is observed due to the actual agreement between group members (James, 1982). Interrater agreement is calculated for each group; thus, this statistic is based on within-group variability rather than between-group variability (Luria, 2008). Interrater agreement is the most commonly used statistic and is considered the most appropriate statistic for assessing climate strength (Lindell & Brandt, 2000). One reason for this is that r_{wg} offers an extremely straightforward interpretation, as values are standardized and range between 0 and 1. The disadvantage to the use of r_{wg} is that inferences based on the statistic rely on strict assumptions, such as a unimodal distribution of the data, equal measurement intervals, discrete response formats, and uniformly distributed expected variance (James, 1982).

The coefficient of variation (CV) is another statistic used to assess climate strength. The CV is calculated by dividing the sample standard deviation by the sample mean (Allison, 1978). Some advantages of the coefficient of variation include usefulness when comparing the variability of multiple groups that have vastly different group means, as it is a scale-independent measure. Additionally, CV corrects for the lack of independence between central tendency and dispersion measures (Colquitt et al., 2002). A disadvantage of this statistic is that it is less likely to detect interaction effects. Researchers have also noted that CV has a decreased likelihood of finding a true relationship between the variability in members' perceptions of climate and group-level outcomes compared to other measures used to assess climate strength (Roberson et al., 2007).

Standard deviation (SD) has also been used to assess climate strength (e.g., Bedeian & Mossholder, 2000; Dickson et al., 2006; Lindell & Brandt, 2000). The standard deviation represents the average squared distance of a set of data points from the mean. Compared to the previous measures mentioned above, this statistic represents the lack of consensus or agreement within the group. SD is easy to calculate and interpret, but it is sensitive to extreme or abnormal values or distributions with long positive or negative distributions (Roberson et al., 2007). Additionally, researchers found that using SD to assess climate strength increases the likelihood of detecting statistical significance when interaction effects are present, compared to using the average deviation (Roberson et al., 2007). Average deviation represents the absolute mean deviation, which is calculated as the average of absolute differences between each member's individual score and the overall mean of the group. A disadvantage of using the average deviation as an indicator of climate strength includes that the statistic can only be interpreted in terms of the metric used for the organizational climate scale. Additionally, this measure is less sensitive when the data is not normally distributed and/or extreme scores are present in the data set (Stigler, 1973).

We used interrater agreement (r_{wg} for single items and $r_{wg(j)}$ for multi-item scales) in this study as an index of climate strength due to its advantages over alternative indices. Specifically, the expected distribution of scores (e.g., uniform, skewed, normal, triangular) can be specified to account for the distribution shape in the estimation of climate strength. This is preferred over

indices like standard deviation where the calculation is sensitive to extreme values and skewed distributions (Roberson et al., 2007).

Method

The project team conducted a unit-based data collection in order to capture command climate data at the Army company level. The project team collected data from 107 Active Army companies across 14 military installations both within the continental United States (CONUS) and outside the continental United States (OCONUS).

Participants

Participants in the study included 2,589 Soldiers and officers in units across U.S. Army Forces Command (FORSCOM) and outside of the continental United States (OCONUS) installations. The study team asked participants to complete the survey, which consisted of two parts: Part 1 and Part 2. Part 1 comprised 160 items that measured the climate dimensions (both single-item and scale measures of the climate constructs), the outcome scales, and three attention check items. Part 2 included 156 items that measured the climate diagnostic items and three attention check items. We considered responses valid and included in analyses if

- the respondent was not flagged during data collection for inattentive responding (e.g., selecting one response option for the entire survey),
- tenure in the company was greater than one month,
- the respondent answered at least two of the three attention check items correctly in at least one of the two survey parts (i.e., Part 1 and Part 2),
- the respondent completed at least 70% of the questionnaire, and
- the respondent answered *NA/Don't Know* to 25% or less of the items.

First, our review flagged eleven participants for inattentive responding (ten for inattentive responding on both parts and one for inattentive responding on Part 2 only). We removed data for these participants for the corresponding section(s). We removed an additional 22 participants because their tenure within their company was less than one month.

The study team evaluated the percentage of questionnaire completed inclusion criterion by part (i.e., Part 1, Part 2), rather than by individual, so the sample size varied by section. For the percentage of the questionnaire completed, we computed the percentage completed for the climate dimensions section, the outcome scales section, and the diagnostic questions section. We set these sections to missing for participants who completed less than 70% of the particular section. Sixteen individuals did not complete at least 70% of Part 1; therefore, we removed that section for those participants. Likewise, 115 individuals did not complete at least 70% of the diagnostic items (Part 2) and therefore we removed that section from the dataset for those individuals.

Similar to the percentage completed, we evaluated the attention checks inclusion criterion by survey part, rather than by the individual, so the sample sizes vary by part. We evaluated the attention checks separately for each section, such that if a participant did not answer any attention check items correctly in Part 2 but answered all attention check questions correctly in

Part 1, we only dropped their Part 2 survey data and retained the data from Part 1. There were a total of 176 participants who answered fewer than two of the three attention checks correctly on Part 1 and a total of 426 participants who answered fewer than two of the three attention checks correctly on Part 2. For the inclusion criterion involving *NA/Don't Know* responses, we removed participants by dimension rather than by individual, such that if a participant had greater than 25% *NA/Don't Know* for a given dimension, we did not analyze ratings on items in that dimension for that individual. Thus, the final sample sizes for dimension ratings vary by dimension. After we removed the data by part/section as described above, there were 137 participants who no longer had any data for both Part 1 and Part 2 due to some combination of failing attention checks, not completing a large portion of the survey, and/or *NA/Don't Know* responding.

In addition to the individual-level inclusion criteria, we excluded entire companies if they had fewer than 15 participants complete the survey. Out of the 107 participating companies, we excluded 23 from analyses because they had fewer than 15 survey respondents. This resulted in the exclusion of a total of 199 Soldiers' data. The final overall sample size was 84 companies and 2,238 individual respondents that provided usable data for analyses out of the 2,574 total individuals participating (86.94%).

Ranks for this sample ranged from PVT to MSG/1SG for enlisted Soldiers and from 2LT to CPT for officers. Table 22 presents the frequency of each represented rank. Average tenure within the Army was 4.34 years ($SD = 4.35$), and average tenure within the company was 15.73 months ($SD = 11.67$). The sample consisted of 48.8% Combat Arms, 38.0% Combat Support, and 13.2% Combat Service Support. Table 23 provides a breakdown of the MOS representation.

Table 22*Sample by Rank*

Rank	Frequency	Percent
PVT	1	0.04
PFC	9	0.40
SPC/CPL	201	9.00
SGT	414	18.50
SSG	800	35.75
SFC	357	15.95
MSG/1SG	208	9.29
WO1	84	3.75
CW2	7	0.31
CW4	1	0.04
CW5	4	0.18
2LT	37	1.65
1LT	81	3.62
CPT	6	0.27
Missing	28	1.25
Total	2,238	100.00

Table 23*Sample by MOS Series*

MOS	Frequency	Percent
11	505	22.56
12	287	12.82
13	161	7.19
14	79	3.53
15	68	3.04
19	156	6.97
25	61	2.73
27	7	0.31
31	52	2.32
35	87	3.89
42	26	1.16
68	57	2.55
74	58	2.59
88	153	6.84
89	13	0.58
91	214	9.57
92	173	7.73
94	19	0.85
Other	21	0.94
Missing	41	1.83
Total	2,238	100.00

In addition to the survey participants, 77 battalion commanders (or other battalion leadership) provided company-level ratings. Each commander rated between one and six companies, with an average of two companies per commander. The majority of those providing these ratings (53 out of 77, or 68.8%) were LTCs. Other ranks included one CSM (1.3%), 20 MAJs (26.0%), and three (3.9%) were missing rank information.

Measures

Similar to the approach used in previous command climate research (Adis et al., 2020; Adis et al., 2021), we collected data using three command climate measures. These measures consisted of single items, multi-item scales, and related diagnostic items associated with the 12 retained dimensions of command climate listed in Table 3. In addition to the command climate assessments, we administered criterion measures with the command climate measure in order to assess criterion-related validity. As our intent was to measure command climate at the company/troop/battery level, items appropriately reference perceptions shared at the “unit” or Company/Troop/Battery level (Kozlowski & Klein, 2000), and the prompt asked respondents to think about their Company/Troop/Battery when the statements refer to their “unit.”

Command climate multi-item scales

We measured 12 command climate dimensions with 12 scales encompassing between four and nine items. Appendix A shows the numbers of items for each dimension. Responses were measured on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*³. In addition, the scale provided a *NA/Don't Know* option. Appendix A, Table A1 provides item content.

Command climate single-item measures

The single items were developed to capture the dimension content using one concise and unidimensional item. The survey prompted respondents to indicate the extent to which they agreed with the description of their company provided in the single statement. Responses were recorded on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, the scale provided a *NA/Don't Know* option. Appendix A, Table A2 lists the 12 single items.

Command climate diagnostic assessment

For the diagnostic assessment, most items asked specifically about actions taken by either officers or NCOs (e.g., “To what extent do Officers do the following?”). However, the trust, professionalism, peer support for unit members, bullying, hazing, and adaptability diagnostic items also asked about actions taken by unit members (E1-E4). Appendix A, Table A3 shows the items for each dimension. Responses were recorded on a 5-point Likert scale with anchors ranging from *Not at all* to *A great extent*. In addition, the scale provided a *NA/Don't Know* option.

Outcomes

Table 24 lists constructs identified as theoretically related to each command climate dimension, the outcome measures used to assess the constructs, and the number of items. For the most part, the measures have been used or adapted from previous ARI research, including the Army Life Questionnaire (ALQ; Moriarty et al., 2009) and a measure of Army unit cohesion (Estrada et al., 2021). We gathered additional measures from the literature or adapted measures from other commonly used scales in the industrial/organizational psychology literature (e.g., engagement, job satisfaction). Because limited research was available to identify outcomes for command climate dimensions empirically, we selected outcomes for each command climate dimension based on the conceptual definition of each dimension in addition to the strength of relationships observed in prior research efforts (Adis et al., 2020; Adis et al., 2021). Appendix A, Tables A4 and A5, list the outcome items. This section lists a description of each of the outcome measures, first listing the outcome measures that were captured on the Soldier survey and second listing the outcome measures captured on the battalion commander survey.

³ For all scales, responses were recorded on a five-point scale with responses ranging from one to five. We recorded *NA/Don't Know* responses as missing data.

Table 24*Outcomes Associated with the 12 Command Climate Dimensions*

Climate Dimension	Correlate/Outcome	Source (Items)
Flow of Information	Morale	Soldier Survey (2)
	Unit performance	Soldier Survey (4)
	Unit performance (Officers)	Soldier Survey (4)
	Engagement	Soldier Survey (4)
	Unit performance (CDR)	CDR Survey (1)
	Morale (CDR)	CDR Survey (1)
Autonomy	Job satisfaction	Soldier Survey (6)
	Unit performance	Soldier Survey (4)
	Unit performance (Officers)	Soldier Survey (4)
	Withdrawal	Soldier Survey (6)
	Unit performance (CDR)	CDR Survey (1)
	Unit Autonomy (CDR)	CDR Survey (1)
	Mission Prep (CDR)	CDR Survey (1)
Respect for the Individual	Mutual Trust	Soldier Survey (2)
	Cohesion	Soldier Survey (10)
	Withdrawal	Soldier Survey (6)
	Respect for Others (CDR)	CDR Survey (1)
Hazing	Stress Amount	Soldier Survey (2)
	Stress Impact	Soldier Survey (2)
	Affective Commitment	Soldier Survey (4)
	Morale	Soldier Survey (2)
	Morale (CDR)	CDR Survey (1)
	Commitment (CDR)	CDR Survey (1)
Bullying	Stress Amount	Soldier Survey (2)
	Stress Impact	Soldier Survey (2)
	Morale	Soldier Survey (2)
	Affective Commitment	Soldier Survey (4)
	Withdrawal	Soldier Survey (6)
	Morale (CDR)	CDR Survey (1)
	Commitment (CDR)	CDR Survey (1)

(Continued)

Climate Dimension	Correlate/Outcome	Source (Items)
Peer Support for Unit Members	Morale	Soldier Survey (2)
	Stress Impact	Soldier Survey (2)
	Affective commitment	Soldier Survey (4)
	Cohesion	Soldier Survey (10)
	Unit resilience	Soldier Survey (4)
	Morale (CDR)	CDR Survey (1)
	Commitment (CDR)	CDR Survey (1)
Leader Support for Unit Members	Affective commitment	Soldier Survey (4)
	Unit resilience	Soldier Survey (4)
	Engagement	Soldier Survey (4)
	Career Intentions	Soldier Survey (2)
	Commitment (CDR)	CDR Survey (1)
Leader Support for Families	Family desire to remain in Army	Soldier Survey (3)
	Family Satisfaction	Soldier Survey (2)
	Career Intentions	Soldier Survey (2)
	Unit Performance (CDR)	CDR Survey (1)
	Family Involvement (CDR)	CDR Survey (1)
Professionalism	Weapons qualifications “scores”	Soldier Survey (1)
	Withdrawal	Soldier Survey (6)
	Engagement	Soldier Survey (4)
	Physical Training (CDR)	CDR Survey (1)
	Disciplinary Actions (CDR)	CDR Survey (1)
Ethical Leadership	Affective Commitment	Soldier Survey (4)
	Satisfaction with Unit Leadership	Soldier Survey (1)
	Unit Performance (Soldiers)	Soldier Survey (4)
	Unit Performance (Officers)	Soldier Survey (4)
	Unit Performance (CDR)	CDR Survey (1)
	Disciplinary Actions (CDR)	CDR Survey (1)
	Commitment (CDR)	CDR Survey (1)
Trust	Cohesion	Soldier Survey (10)
	Collective Efficacy	Soldier Survey (4)
	Mutual Trust	Soldier Survey (2)
	OCB	Soldier Survey (10)
	Engagement	Soldier Survey (4)
	Unit Performance (Officers)	Soldier Survey (4)
	Unit Performance (CDR)	CDR Survey (1)
	Unit Training Performance (CDR)	CDR Survey (1)

(Continued)

Climate Dimension	Correlate/Outcome	Measurement (items)
Adaptability	Collective Efficacy	Soldier Survey (4)
	Mutual Trust	Soldier Survey (2)
	Unit Resilience	Soldier Survey (4)
	Unit Performance (Soldiers)	Soldier Survey (4)
	Unit Performance (Officers)	Soldier Survey (4)
	Unit Performance (CDR)	CDR Survey (1)
	Adaptive Performance (CDR)	CDR Survey (1)
	Unit Training Performance (CDR)	CDR Survey (1)

Note. CDR = Battalion Commander.

The Soldier survey included the following 16 outcome measures.

Affective Commitment

Affective commitment is the degree to which a Soldier feels a personal attachment and sense of belonging in the Army (Gade et al., 2003). For example, one item asked Soldiers to rate how much they agreed with the statement, “I feel emotionally attached to the Army.” This outcome was measured with four items that were rated on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, a *NA/Don’t Know* option was provided. The scale had a reliability of .91.

Career Intentions

Career intentions measured a Soldier’s intention for completing his or her current term of service and continuing with a career in the Army with two items rated on a 5-point Likert scale with anchors ranging from *Very Unlikely* to *Very Likely*. The two items correlated .27. These items asked: “How likely is it that you will make the Army a career?” and “How likely is it you complete your current term of service?” (Moriarty et al., 2009). Due to inadequate reliability, we dropped this scale from the analyses.

Cohesion

Cohesion measured Soldiers’ perceptions of how close the unit is, pride in being a member of the unit, and how well unit members worked together as a team. This outcome comprised of 10 items adapted from Siebold and Kelly’s (1988) Platoon Cohesion Index (PCI) and Carless and De Paola’s (2000) version of the Group Environment Questionnaire (GEQ). For example, one item asked Soldiers to rate how much they agreed with the statement, “Members of my unit work together to get the job done.” The items had a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, a *NA/Don’t Know* option was provided. The scale had a reliability of .94.

Collective Efficacy

The collective efficacy items measured the extent to which respondents perceive that their unit can effectively complete their assigned tasks. The collective efficacy measure was comprised of 4 items developed by an ARI working group. A sample item from this scale is, “I

am confident that, as a unit, we can coordinate effectively with all members.” Soldiers rated items on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, a *NA/Don’t Know* option was provided. Scale reliability was .92.

Article 15s

Article 15s are non-judicial punishments for minor misconduct. Soldiers self-reported whether they received Article 15s in the last year and, if so, the number of Article 15s received (Moriarty et al., 2009).

Engagement

The engagement items assessed the extent to which respondents are enthusiastic and excited about the job they perform. The measure was comprised of four items from Schaufeli and Bakker’s (2010) work engagement scale. A sample item from this scale is, “I am proud of the work I do.” Soldiers rated items on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*, and the scale had a reliability of .90.

Family Desire to Stay

Family desire to stay measured the degree to which a Soldier’s family supported him or her staying in the Army. Adis and colleagues (2020) developed the items for this scale. The items asked about family desire to stay in the Army in general as well family support for a career in the Army. For example, one item asked Soldiers to rate how much they agreed with the statement, “My family wants me to stay in the Army.” This outcome was comprised of three items that Soldiers rated on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, the scale provided a *NA/Don’t Know* option. The scale had a reliability of .90.

Family Satisfaction

Family satisfaction measured the degree to which a Soldier’s family was satisfied with their experience with the unit and the Army in general. The project team developed items for this scale for this research. This outcome comprised of two items that asked: “How satisfied is your family with their experience in the Army?” and “How satisfied is your family with their experience with the Family Readiness Group (FRG)?” Soldiers rated items on a 5-point Likert scale with anchors ranging from *Very Unsatisfied* to *Very Satisfied*. The two items correlated .54. Due to inadequate reliability, we dropped this scale from the analyses.

Job Satisfaction

Job satisfaction measured the degree to which Soldiers were satisfied with their work and the opportunities they had on the job. For example, one item asked, “How satisfied are you with the amount of challenge in your work?” This outcome was comprised of six items that were rated on a 5-point Likert scale with anchors ranging from *Very Unsatisfied* to *Very Satisfied*. These items have been used in the Army Life Questionnaire (Moriarty et al., 2009). The scale had a reliability of .93.

Morale

Morale refers to employees' overall satisfaction, outlook, and attitudes toward their organization. The morale measure was comprised of two items that asked, "How would you rate the level of morale in your unit?" and "How would you rate your current level of morale?" The two morale items correlated .70 with one another. Soldiers rated items on a 5-point Likert scale with anchors ranging from *Very Low* to *Very High Amount*. Items came from a previous ARI Command Climate Survey (unpublished).

Mutual Trust

Mutual trust is the degree to which members of a unit trust one another. While related conceptually to cohesion, mutual trust focuses specifically on trust between members of the unit, while cohesion captures aspects such as unit pride, cooperation, and a sense of closeness between unit members. While somewhat similar to mutual trust, the climate trust dimension broadens the scope to include trust in unit leaders, a sense of confidence in unit members, and an expectation that unit members and leaders will follow through on their commitments. The mutual trust measure was comprised of two items that asked, "How much do members of your unit trust each other?" and "How much do members of your unit count on the other members of the unit?" The items in this scale came from Langfred's (2004) measure, which was based on Simmons and Peterson's (2000) mutual trust scale. The two mutual trust items correlated .73 with one another. Soldiers rated items on a 5-point Likert scale with anchors ranging from *Not at All* to *To a Great Extent*.

Organizational Citizenship Behavior

Organizational citizenship behaviors are behaviors that go beyond the normal requirements of the job to support co-workers or the organization. The organizational citizenship behavior measure was comprised of items from the short version of the Organizational Citizenship Behavior Checklist (OCB-C), a ten-item scale developed by Spector et al. (2010). The project team modified items slightly to be consistent with an Army environment. A sample item from the scale is, "How often have you helped a peer who had too much to do?" Soldiers rated items on a 5-point Likert scale with anchors ranging from *Never* to *Every Day*. The ten-item scale had a reliability of .90.

Satisfaction with Unit Leadership

We used a single item to assess Soldier satisfaction with their unit leaders. The project team developed the item, which simply asked, "How satisfied are you with your unit leadership?" Soldiers responded using a 5-point Likert scale with anchors ranging from *Very Unsatisfied* to *Very Satisfied*.

Stress Amount

Stress is a feeling of emotional or physical tension. This scale consisted of two items which measured the amount of stress a Soldier was experiencing at work and at home ($r = .50$). For example, one item asked, "How much stress, if any, are you experiencing now in your Army

job?” Soldiers used 5-point Likert scales with anchors ranging from *None* to *Very High Amount*. Due to inadequate reliability, we dropped the stress amount scale from the analyses.

Stress Impact

Two items measured the impact of stress or the degree to which it was affecting job performance and interpersonal relationships ($r = .73$). For example, one item asked Soldiers to rate “Stress and emotional/personal issues have made it difficult for me to do my work.” Soldiers used 5-point Likert scales with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Unit Performance

Unit performance refers to the extent to which the unit performs tasks properly. Three sources provided unit performance ratings: Soldiers and, when available, company-level officers and battalion leaders. Soldiers rated their perceptions of how well the unit was performing in general, as well as in comparison to other units (Estrada et al., 2021). For example, one item asked Soldiers to rate how much they agreed with the statement, “This unit performs better than most.” Soldiers responded using a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, the scale included a *NA/Don’t Know* option. The scale had a reliability of .79. Officers present at the data collections completed the same survey as other participants. In order to examine the unit performance ratings provided by officers, we selected the cases with officer and warrant officer ranks and calculated the mean of their responses for the unit. A total of 190 officers or warrant officers provided the unit performance data. The scale had a reliability of .84. Soldier ratings of unit performance correlated .63 ($p < .001$) with officer ratings.

Unit Resilience

Unit resilience measured Soldiers’ perceptions of how well the unit bounces back from adversity, conflict, and/or failure. This outcome was measured with four items (developed by an ARI working group) that asked respondents to provide a rating of unit-level resilience. For example, one item asked Soldiers to rate how much they agreed with the statement, “My unit can effectively overcome tough work-related challenges.” Soldiers responded to items on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*. In addition, a *NA/Don’t Know* option was provided. The scale had a reliability of .90.

Withdrawal

Withdrawal measured how often Soldiers exerted low levels of effort, came to work late, or left work early (Estrada et al., 2021). For example, one item asked, “How often have you gone to sick call to avoid work?” This outcome was comprised of six items that were rated on a 5-point Likert scale with anchors ranging from *Never* to *Always*. The scale had a reliability of .85.

The battalion commander survey included the following 12 outcome measures. If battalion commanders were not available to participate, battalion executive officers or command sergeants major provided ratings.

Adaptive Performance

Adaptive performance refers to a unit's ability to adapt to rapidly changing situations. Battalion commanders rated companies on adaptive performance with one item, "This Company is able to adjust effectively to changes and still accomplish their mission (e.g., changes in mission, last minute taskings)." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Commitment

Battalion commanders rated companies on the unit members' commitment to a career in the Army with one item, "Soldiers in this Company are likely to re-enlist." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Disciplinary Actions

Battalion commanders provided a single company-level rating of the number of disciplinary actions taken within the last three months to include Article 15s, Flag Actions, formal counselings, and placement on restrictions. This item was on a 5-point Likert scale with anchors ranging from *Never* to *Always*.

Family Involvement

Battalion commanders rated companies on family involvement with a single item, "This Company has strong family involvement (FRG participation, attendance at family activities like BBQs)." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Mission Preparation

Battalion commanders rated companies on mission preparation with one item, "This Company is proactive in preparing for their mission." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Physical Training

Battalion commanders rated companies on physical training with one item, "This company takes a very proactive approach to physical training." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Soldier Development

Battalion commanders rated companies on Soldier development with one item, "This company is proactive in supporting Soldier development (e.g., sending Soldiers to schools, ensuring Soldiers are on track for promotion)." This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Unit Autonomy

Unit autonomy refers to how much freedom employees have to do their jobs. Battalion commanders rated companies on autonomy with one item, “This company is efficient in accomplishing their day-to-day tasks without needing the Battalion to check-in.” This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Unit Morale

Unit morale refers unit members’ collective overall satisfaction, outlook, and attitudes toward their organization. Battalion commanders rated companies on morale with one item, “This company has high morale.” This item was on a 5-point Likert scale with anchors ranging from *Strongly Disagree* to *Strongly Agree*.

Unit Performance

Unit performance refers to the extent to which the unit performs tasks properly. In addition to the Soldier and officer ratings of unit performance, battalion commanders provided ratings of unit performance. This outcome comprised of one item, “How would you rate each Company’s overall performance?” This item had a 5-point Likert scale with anchors ranging from *Very Low* to *Very High*. Battalion commander ratings of unit performance did not correlate significantly at the company level with either Soldier or officer unit performance ratings, with correlations of .15 and .13 respectively.

Unit Respect for Others

Respect refers to treating others well and with dignity. Battalion commanders rated companies on respect for others with one item, “In the last three months, how frequently has each company had problems that come to the attention of the battalion due to lack of respect for others?” This item used a 5-point Likert scale with anchors ranging from *Never* to *Always*.

Unit Training Performance

Battalion commanders rated companies on unit training performance with one item, “How would you rate each Company on their performance in collective training events?” This item used a 5-point Likert scale with anchors ranging from *Very Low* to *Very High*.

Attention Check Questions

The survey included six attention check items (three in each survey part) in order to assess whether participants read the questions carefully or rushed through the survey answering in a random fashion. These items consisted of a simple statement directing the respondent to mark a specific letter for that question. We dichotomized these items into correct and incorrect answers based on whether the correct letter was chosen. Participants needed to answer at least two out of the three attention check questions correctly on each part of the survey for their data for that part to be included in the analyses.

Results

We first present results for the 12 command climate scales and single items followed by results for the command climate diagnostic items. For the full command climate scales, we calculated internal consistency reliabilities and estimated single-item reliabilities. Then we calculated ICCs to assess group-level effects. Following this, we present results for the evaluation of criterion-related validity of each dimension. Next, we detail climate strength analyses, including the evaluation of climate strength for each dimension and moderated regressions with climate strength as a moderator. In the diagnostic item section, we examine group-level effects based on ICCs. Finally, we evaluate the criterion-related validity of the diagnostic items in the form of overall model fit from the regression of outcomes on the sets of diagnostic items.

Scales and Single Items

We estimated initial reliabilities for the multi-item scales using Cronbach's alpha. Reliabilities were high for all 12 dimensions; however, a few dimensions had items that were problematic for their respective scale. Since scale reliabilities impact the estimation of single-item reliabilities, we addressed problematic items by removing items with low item-total correlations from the scale. Item text can be found in Appendix A.

- We removed one item in the ethical leadership scale (Ethics6), and the scale reliability improved from .77 to .90.
- We removed one item in the hazing scale (Hazing5) and the scale reliability improved from .82 to .91.

After these adjustments to the scales, scale reliabilities ranged from .90 to .94.

To estimate single-item reliabilities, we used the correction for attenuation formula (Nunnally & Bernstein, 1994, p. 257) but rearranged to solve for the reliability of the single item (Wanous & Hudy, 2001; Wanous et al., 1997). The correction for attenuation formula estimates the true correlation between two variables after eliminating the influence of unreliability in both variables. The estimated true correlation ρ_{xy} , is equal to

$$\rho_{xy} = \frac{r_{xy}}{\sqrt{r_{xx} * r_{yy}}}$$

where r_{xy} is the observed correlation between x and y , r_{xx} is the reliability of x , and r_{yy} is the reliability of y . For estimating single item reliability, the variables x and y represent the scale and single item, respectively. Since we designed the single item and scale as parallel measures, the true correlation between these should be 1.00. Substituting 1.00 for ρ_{xy} above, we see that the numerator and denominator must be equal to each other.

$$r_{xy} = \sqrt{r_{xx} * r_{yy}}$$

The equation was rearranged to solve for r_{yy} and to plug in obtained values for full-scale reliability and the correlation between the full scale and the single items. Thus, the single-item reliability formula is

$$r_{yy} = \frac{r_{xy}^2}{r_{xx}}$$

where the variables are as defined previously.

The estimated single-item reliabilities ranged from .68 to .78 with six of the 12 single items falling below the conventional value for acceptable reliability (.70). We calculated the reliabilities using the single items identified in the Refining Single-Item Measures section of this report (Info1, Auton3, Respect1, Hazing2, Bully7, PSUM1, LSUM1, LSFam1, Profes2, Ethics3, Trust2, and Adapt1). Prior to proceeding with the analyses, we evaluated all scale items to identify any alternative single items that performed better than the items initially developed for use as single items. The project team evaluated items with regard to the item-scale correlation, $ICC(1)$, $ICC(2)$, and the improvement in estimated single-item reliability over the original item. The alternative single-item wording was also evaluated to ensure it captured the same level of specificity and content as the original single item. For all dimensions except leader support for unit members and leader support for families, we identified an alternative single item to use for the remaining analyses. Appendix A, Table A2 lists the final single items (Info3, Auton2, Respect2, Hazing1, Bully10, PSUM8, LSUM1, LSFam1, Profes3, Ethics5, Trust6, and Adapt9). The updated estimated reliabilities for the single items ranged from .68 to .83. Table 25 shows the final scale reliabilities, the number of final items for the 12 command climate dimension scales, the correlation between the final full scales and single items, and the estimates of the final single-item reliabilities.

The ethical leadership dimension scale showed the lowest observed reliability at .90. Two of the dimensions, autonomy and bullying, showed high correlations between the single items and scales and good scale reliabilities; however, their single-item reliabilities did not reach traditional thresholds for adequacy (e.g., .70; Nunnally, 1970). The autonomy dimension had a good scale reliability of .93 and a correlation with the single item of .80; however, these scores resulted in a single-item reliability estimate of only .69. Similarly, for bullying, the dimension had a good scale reliability of .92 and a correlation with the single item of .79, resulting in a single-item reliability estimate of only .68. Still, these single items approached the .70 cutoff commonly used as a threshold for adequate reliability (attributed to Nunnally, 1970). The remaining single items for the other ten dimensions reached the threshold, with reliability estimates ranging from .71 to .83. In these cases, correlations between scales and single items were .80 or above and scale reliabilities were .90 or above.

Table 25*Command Climate Dimension Scale and Single-Item Reliabilities*

Dimension scale	Number of Items	Final Scale Cronbach's Alpha	SI with Scale Correlation	Estimate SI Reliability
Flow of Information	7	.91	.80	.71
Autonomy	9	.93	.80	.69
Respect	6	.92	.85	.78
Hazing*	3	.91	.87	.83
Bullying	9	.92	.79	.68
Peer Support for Unit Members	7	.94	.85	.76
Leader Support for Unit Members	4	.91	.84	.78
Leader Support for Families	5	.92	.84	.77
Professionalism	6	.91	.84	.78
Ethical Leadership*	5	.90	.83	.77
Trust	6	.94	.87	.80
Adaptability	8	.94	.84	.75

Note. SI = Single Item. *Scales with items removed: Ethical Leadership (1) and Hazing (1)

Appendix B presents detailed item-level means, standard deviations, skewness, and kurtosis for scale items and single items. In addition, the final column in Table B1 provides the percentage of respondents who indicated that the item was not applicable or for which they did not know the answer. The percent *NA/Don't Know* was below ten percent in all cases, except for the leader support for families items.

We calculated all scale-level statistics with the single item for the dimension separately from the scale items. Table 26 provides scale-level means and standard deviations for the eight command climate dimensions with individual-level data. Table 27 lists descriptive statistics for the single items. Distributions for both the scales and single items were generally non-normal, with ten dimensions showing significant negative skew and the two negatively worded scales and single items (hazing and bullying) showing significant positive skew. Nine of the 12 scales and seven of the 12 single items showed significant kurtosis. Though the skewness statistics were significant for all of the scales, the values for all scales except for hazing were less than the absolute value of 1, indicating that the skew was small to moderate. Moderate skew is typical in self-report scales. There were two single items (hazing and peer support for unit members) that were largely skewed (≥ 1). While these distributions could potentially limit the correlations of these variables with outcomes, we conducted tests of normality on the aggregated data prior to running the company-level analyses. The tests indicated that none of the scales or single items deviated significantly from normal at the company level.

Table 26*Command Climate Dimension Scales Descriptive Statistics*

Scale Dimension	N	Mean	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
Flow of Information	2,170	3.11	0.90	-0.19	0.05	-0.34	0.11
Autonomy	2,177	3.11	0.91	-0.24	0.05	-0.39	0.11
Respect for the Individual	2,163	3.18	1.00	-0.31	0.05	-0.52	0.11
Hazing	2,116	1.71	0.85	1.27	0.05	1.52	0.11
Bullying	2,029	2.18	0.85	0.47	0.05	-0.07	0.11
Peer Support for Unit Members	2,157	3.61	0.87	-0.84	0.05	0.84	0.11
Leader Support for Unit Members	2,144	3.39	0.98	-0.61	0.05	-0.03	0.11
Leader Support for Families	1,856	3.32	0.98	-0.47	0.06	-0.22	0.12
Professionalism	2,168	3.44	0.90	-0.65	0.05	0.35	0.11
Ethical Leadership	2,144	3.56	0.86	-0.75	0.05	0.75	0.11
Trust	2,146	3.21	0.97	-0.42	0.05	-0.31	0.11
Adaptability	2,143	3.57	0.83	-0.82	0.05	0.98	0.11

Note. Sample represents individual-level data. *SD* = Standard deviation; *SE* = Standard error.

Table 27*Command Climate Single-Item Descriptive Statistics*

Single Item Dimension	N	Mean	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
Flow of Information	2,162	3.03	1.15	-0.17	0.05	-0.96	0.11
Autonomy	2,157	3.08	1.11	-0.30	0.05	-0.74	0.11
Respect for the Individual	2,144	3.30	1.21	-0.44	0.05	-0.75	0.11
Hazing	2,112	1.72	0.96	1.45	0.05	1.74	0.11
Bullying	2,008	2.16	1.05	0.76	0.06	0.06	0.11
Peer Support for Unit Members	2,151	3.69	0.99	-1.00	0.05	0.90	0.11
Leader Support for Unit Members	2,133	3.47	1.05	-0.74	0.05	0.05	0.11
Leader Support for Families	1,842	3.29	1.13	-0.50	0.06	-0.49	0.11
Professionalism	2,164	3.41	1.05	-0.65	0.05	-0.17	0.11
Ethical Leadership	2,131	3.52	1.05	-0.75	0.05	0.10	0.11
Trust	2,134	3.36	1.05	-0.65	0.05	-0.12	0.11
Adaptability	2,131	3.61	0.95	-0.90	0.05	0.68	0.11

Note. Sample represents individual-level data. *SD* = Standard deviation; *SE* = Standard error.

Company-Level Effects for the Full Scales and Single Items

Because command climate is conceptualized as a unit-level construct, we aggregated individual-level data to company-level scores for use in validity analyses. We examined intra-class correlations ($ICC(1)$ and $ICC(2)$; Bliese, 2000) to evaluate the appropriateness of the group-level measurement. $ICC(1)$ compares variability within units to variability across units, providing a percent of variance explained by the unit. According to LeBreton and Senter (2008), $ICC(1)$ shows evidence that group-level effects are present if values are .05 or higher. $ICC(1)$ should be statistically significant to ensure that group-level analysis is appropriate (Bliese, 2000), and $ICC(2)$ should reach a cutoff of .80 to ensure that the group-level construct is reliable (van Mierlo et al., 2009). However, others have used a cutoff of .70 (LeBreton and Senter, 2008).

The formulae used for $ICC(1)$ and $ICC(2)$ were:

$$ICC(1) = \frac{MSc - MSw}{MSc + (K - 1)MSw}$$

$$ICC(2) = \frac{MSc - MSw}{MSc}$$

where MSc is the mean square between companies and MSw is the mean square within companies in a one-way, random effects analysis of variance (ANOVA). K in the $ICC(1)$ formula is the average number of respondents per company, which in this case ranged from 22 to 26. Table 28 shows the ICCs for each dimension's scale and single item.

Table 28

Intra-Class Correlations for Full Scales and Single Items

Climate Dimension	Scales		Single Items	
	$ICC(1)$	$ICC(2)$	$ICC(1)$	$ICC(2)$
Flow of Information	.09	.72	.08	.71
Autonomy	.08	.69	.06	.62
Respect for the Individual	.07	.66	.05	.59
Hazing	.05	.59	.05	.55
Bullying	.04	.52	.04	.51
Peer Support for Unit Members	.05	.59	.04	.52
Leader Support for Unit Members	.06	.62	.04	.53
Leader Support for Families	.08	.65	.06	.57
Professionalism	.07	.65	.06	.61
Ethical Leadership	.06	.64	.06	.64
Trust	.09	.71	.07	.66
Adaptability	.05	.58	.05	.59

Note. All $ICC(1)$ values significant at the $p < .05$ level.

All of the *ICC(1)* statistics were statistically significant at the $p < .05$ level. Most of the *ICC(1)*s reached the .05 threshold identified by LeBreton and Senter (2008) as indicative of a group-level effect. The bullying scale and the single-item measures for bullying, peer support for unit members, and leader support for unit members did not reach this level. The full scale for flow of information showed a medium group-level effect (.10 or greater; see Murphy & Myers, 1998, p. 47). A common threshold for *ICC(2)* is .70 (LeBreton & Senter, 2008); however, only three of the observed *ICC(2)*s reached this level. While many *ICC(2)* statistics reached the .60 level, there were a few that were much lower. For example, the single-item measure for bullying had the lowest *ICC(2)* value at .51. This suggests that the mean value for bullying, as measured by the single item, is not a reliable index of company standing on the bullying construct and that individual responses within the company differ substantially from person to person and should be interpreted cautiously. The group-level effect on single-item bullying for unit members was small (*ICC(1)* = .04), suggesting that there was disagreement within companies on this item. The respect for the individual, hazing, peer support for unit members, leadership support for unit members, leader support for families, and adaptability single items showed low group-level effects with smaller *ICC(2)* values ranging between .52 and .59.

As LeBreton and Senter (2008) discuss, an *ICC(2)* value might be low because of low interrater consistency, low interrater agreement, or both. Furthermore, scores can have low agreement and high consistency, or high agreement and low consistency (LeBreton et al., 2003). James and colleagues tested level of agreement using a within-group correlation, $r_{wg(j)}$ (James, 1982; James et al., 1984). Therefore, in addition to *ICC(2)*, we examined interrater agreement with r_{wg} and $r_{wg(j)}$ statistics. The single-item r_{wg} and multi-item $r_{wg(j)}$ statistics provide estimates of interrater agreement. The $r_{wg(j)}$ provides a measure of the interchangeability of raters by comparing observed variance in ratings to a hypothetical expected variance (the estimated variance obtained if the raters completely disagreed). It provides an estimate of the interrater agreement of a group (or in this case, a company).

We compared the observed variance in ratings to a uniform null distribution and a slightly skewed distribution reflecting random responding and leniency/strictness, respectively. A triangular distribution reflecting central tendency in responding might also be appropriate, but since expected variances for slightly skewed distributions and triangular distributions are similar (1.34 for slightly skewed, 1.32 for triangular; see LeBreton & Senter, 2008), we only calculated r_{wgs} for the slightly skewed distribution. There were many out-of-range $r_{wg(j)}$ and r_{wg} values (greater than 1 or less than 0) for the assumed slightly skewed null distribution. Out-of-range values occur when the observed variance exceeds the theoretical null variance (LeBreton & Senter, 2008). According to LeBreton & Senter (2008), there are at least three different explanations for out-of-range $r_{wg(j)}$ and r_{wg} values. First, sampling error can cause out-of-range values. Typically, sampling error would cause small negative values (e.g., $-.20 < r_{wg} < .00$; LeBreton et al., 2005), and the assumption is that with a greater number of Soldiers rating the items for each unit, the values would stabilize and conform to the typical range for r_{wg} and $r_{wg(j)}$ values. Second, a misspecified underlying distribution can result in out-of-range $r_{wg(j)}$ and r_{wg} values. For instance, if the underlying distribution is uniform, but we calculate the $r_{wg(j)}$ and r_{wg} values based on an assumed slightly skewed null distribution, the estimate of error variance would be downwardly biased and the resulting $r_{wg(j)}$ and r_{wg} values would be negative (LeBreton & Senter, 2008). Third, companies with systematic disagreement may result in a bimodal distribution, which would cause out-of-range $r_{wg(j)}$ and r_{wg} values. Specifically, there could be

multiple different true scores on a scale for a company based on different subgroups (LeBreton & Senter, 2008). LeBreton and Senter (2008) recommend that suspected bimodal distributions should be identified a priori in order to use the appropriate alternative calculation (r_{WGp}) and avoid capitalizing on chance.

The uniform underlying distribution produced few out-of-range values compared to the slightly skewed distribution, so Table 29 includes summary statistics for the r_{wg} values based on the uniform distribution. We computed the r_{wgs} for each unit, which resulted in 84 r_{wg} values and 84 $r_{wg(j)}$ values for each climate dimension. To more succinctly present the r_{wg} results, we included the mean, minimum, and maximum values in Table 29.

Table 29

Interrater Agreement Statistics for Full Scales and Single Items

Climate Dimension	Scale $r_{wg(j)}$			Single Item r_{wg}		
	Min	Max	Mean	Min	Max	Mean
Flow of Information	.04	.94	.82	-.05	.78	.39
Autonomy	.34	.95	.80	.07	.79	.41
Respect for the Individual	-.38	.91	.69	-.17	.74	.30
Hazing	.17	.96	.79	-.11	1.00	.56
Bullying	.34	.95	.85	-.21	.81	.47
Peer Support for Unit Members	.38	.96	.76	-.20	.84	.52
Leader Support for Unit Members	.24	.93	.71	-.01	.81	.47
Leader Support for Families	.08	.96	.74	-.07	.82	.39
Professionalism	.21	.94	.79	.02	.79	.46
Ethical Leadership	.38	.96	.81	-.03	.85	.48
Trust	.00	.93	.80	.05	.81	.48
Adaptability	.60	.97	.89	.11	.87	.57

Note. The r_{wgs} and $r_{wg(j)s}$ for two companies with extreme and out-of-range values were removed to compute the summary statistics in this table.

Using the commonly applied cut-off of .70 to the average $r_{wg(j)}$ value (LeBreton & Senter, 2008), all the dimension scale scores reached the threshold. Though agreement was moderately high on scales for all of the dimensions, there was low interrater consistency on single-item measures with the average r_{wg} for all 12 dimensions falling below the .70 cut-off value. This suggests that scores on these climate dimensions were range restricted and differences between groups were truncated (see LeBreton & Senter, 2008). Some researchers will include groups with low agreement statistics in the analyses if they use the agreement statistic as a variable. Specifically, researchers suggested that homogeneity statistics indicate the extent of consensus (such as climate strength) and therefore researchers should not consider level of agreement as part of aggregation criteria (Lindell & Brandt, 2000). Since we used climate strength, or the level of agreement on climate level, as a moderator for several of the company-level analyses (see Climate Strength Analyses section), we aggregated all climate dimensions to the company level regardless of the group-level effects demonstrated by $ICC(1)s$ and $ICC(2)s$. If we applied a cut-

off for the group-level effects to identify dimensions for aggregation to the company level, it would restrict the variance in the climate strength variable to eliminate low climate strength.

Company-Level Descriptives for the Full Scales and Single Items

See Table 30 for company-level scale descriptive statistics, and Table 31 for company-level single-item descriptive statistics. Appendix B, Table B2, lists the intercorrelations among scale dimensions. Appendix B, Table B3, includes a parallel table for the single items.

Table 30

Command Climate Scale Descriptive Statistics at Company Level

Climate Dimension	Mean	SD	Skewness		Kurtosis	
			Statistic	SE	Statistic	SE
Flow of Information	3.11	0.32	-0.33	0.26	-0.27	0.52
Autonomy	3.11	0.32	-0.32	0.26	-0.44	0.52
Respect for the Individual	3.18	0.34	-0.25	0.26	-0.72	0.52
Hazing	1.71	0.26	0.23	0.26	0.24	0.52
Bullying	2.10	0.25	0.05	0.26	0.85	0.52
Peer Support for Unit Members	3.62	0.28	-0.63	0.26	0.62	0.52
Leader Support for Unit Members	3.39	0.32	-0.42	0.26	-0.23	0.52
Leader Support for Families	3.33	0.35	0.00	0.26	-0.76	0.52
Professionalism	3.44	0.29	-0.30	0.26	-0.70	0.52
Ethical Leadership	3.56	0.28	-0.41	0.26	-0.54	0.52
Trust	3.20	0.36	-0.39	0.26	0.07	0.52
Adaptability	3.56	0.26	-0.19	0.26	-0.38	0.52

Note. $N = 83$; SD = Standard deviation; SE = Standard error.

Table 31*Command Climate Single-Item Descriptive Statistics at Company Level*

Climate Dimension	Mean	SD	Skewness		Kurtosis	
			Statistic	SE	Statistic	SE
Flow of Information	3.04	0.41	-0.19	0.26	-0.42	0.52
Autonomy	3.09	0.35	-0.36	0.26	-0.54	0.52
Respect for the Individual	3.30	0.37	-0.47	0.26	-0.16	0.52
Hazing	1.71	0.28	0.07	0.26	0.28	0.52
Bullying	2.14	0.31	-0.02	0.26	0.37	0.52
Peer Support for Unit Members	3.67	0.30	-0.33	0.26	0.49	0.52
Leader Support for Unit Members	3.48	0.31	-0.42	0.26	-0.64	0.52
Leader Support for Families	3.29	0.37	-0.07	0.26	-0.73	0.52
Professionalism	3.40	0.33	-0.48	0.26	-0.17	0.52
Ethical Leadership	3.52	0.34	-0.52	0.26	-0.29	0.52
Trust	3.35	0.37	-0.42	0.26	-0.01	0.52
Adaptability	3.60	0.31	-0.53	0.26	0.35	0.52

Note. $N = 83$; SD = Standard deviation; SE = Standard error.

Construct Validity of Command Climate Scales

In order to establish the validity of the command climate assessments, we examined evidence to determine whether the dimensions could be distinguished from one another. Intercorrelations among the climate dimensions provide some evidence that the dimensions are capturing different underlying constructs (see Appendix B, Table B2). The average intercorrelation among climate dimension scales in the individual-level data was .56, and the intercorrelations among the scales ranged in strength from .18 to .82. Correlations were much stronger in the company-level data. The average intercorrelation was .68 and intercorrelations ranged in strength from .18 to .90. Trust, respect for the individual, peer support for unit members, and leader support for unit members were more highly intercorrelated with one another, indicating there may be some construct overlap at the company level. In contrast, hazing and bullying had relatively smaller intercorrelations with other constructs.

The project team further examined construct validity through confirmatory factor analysis (CFA) measurement models. These models tested whether the items loaded onto the 12 dimensions we expected them to measure. We used individual-level data to conduct the CFA, as our sample of company-level data was too small (84 companies) to conduct a multi-level CFA. We tested two measurement models using maximum-likelihood (ML) estimation: 1) *a first-order or correlated factors model* with the 12 climate dimensions as correlated first-order factors and 2) *a higher-order factor model* with the 12 climate dimensions as uncorrelated first-order factors and a general climate factor as the higher-order factor. We evaluated these models based on the conventional goodness-of-fit statistics for CFAs; chi-square, CFI, TLI, RMSEA, and SRMR (Browne & Cudeck, 1993; Hu & Bentler, 1999).

The correlated factors model demonstrated adequate fit: SRMR = .04, RMSEA = .05, CFI = .90, TLI = .90. An examination of fit indices showed that the correlated factors model did have better fit than the higher-order factors model (see Appendix B, Table B4 for a summary table including the fit indices for each model). This provides evidence that the climate dimensions are distinct and cannot be completely accounted for by a second-order general climate factor. The factor loadings for the preferred model were generally high with an average of .82 and only six items falling below the conventional .70 cutoff (Auton10, Bully2, Bully8, Bully9, Bully13, and Ethics7; see Appendix B, Table B5 for factor loadings).

There is insufficient theory to specify the magnitude of correlations of these constructs with related and unrelated constructs, so the research team did not seek additional convergent or discriminant validity evidence for the multi-item scales. We assessed convergent validity evidence for the single items using the scale-to-single item correlations. As evidenced in the Scales and Single Items section above, we saw high correlations (ranging from .79 to .87) between single items and their respective scales indicating that the single items measured the intended climate dimensions.

Criterion-Related Validity of Command Climate Dimensions

In order to evaluate criterion-related validity, we conducted two simple regressions and one hierarchical regression for each examined relationship. In one simple regression, we regressed the outcome on the full-scale predictor; in the other, we regressed the outcome on the single-item predictor. This provided estimates of regression weights without the influence of collinearity between the full scale and single-item predictors that would occur in a multiple regression. In the hierarchical regression, we first entered the single item, and then examined the incremental R^2 change from adding the full scale. This analysis provided an indication of whether the full scale accounted for additional variance in the outcomes, beyond that of the single item.

Since we made multiple inferences from the same data, there was an elevated risk of finding significant results just by chance. A common approach to combating this risk (known as alpha inflation), is to use a correction, such as the Bonferroni correction, which divides the critical alpha level by the number of hypotheses. However, in many circumstances, this approach leads to exceedingly conservative correction. In order to minimize alpha inflation without overly inflating beta, we set the critical alpha level to a corrected significance level calculated using the method described by Benjamini and Hochberg (1995), called the False Discovery Rate (FDR). We based the corrected significance level computed with this correction method on the number of tests performed on the same data and p values obtained for each test. Tables 32 to 43 list the critical alpha levels used for each dimension.

Similar to the approach used with the climate single items and scales, we aggregated individual-level data for each outcome measure to form company-level scores. We examined intra-class correlations to evaluate the appropriateness of the group-level measurement. $ICC(1)$ compares variability within units to variability across units, providing a percent of variance explained by the unit. $ICC(2)$ provides an index of the reliability of the group-level measure. Appendix C, Table C1, provides the ICCs for each outcome measure. With the exception of OCB, the $ICC(1)$ statistics for all outcome measures were statistically significant at the $p < .05$

level. Many of the $ICC(1)$ s reached the .05 threshold indicative of a group-level effect, but several did not reach this level. $ICC(2)$ s for these same outcomes were also low (most ranging from .27 to .49), suggesting that the outcomes may not be reliable assessments of group-level constructs. One reason for these findings is that these constructs may be more appropriately represented as individual-level constructs rather than as group-level constructs. For example, affective commitment refers to the degree to which a Soldier feels a sense of attachment and belonging to the Army. Thus, aggregation of affective commitment to the company-level assessment would not be the most appropriate method to assess the relationship between climate scores and this outcome. For these outcomes, we assessed the effect of company-level climate scores on individual-level outcomes using hierarchical linear mixed-effects regression with the lme4 package in R (Version 3.0.1; Bates et al., 2014). We obtained p values using the lmerTest package (Version 3.1; Kuznetsova et al., 2017). Appendix C, Table C2, reports the intercorrelations among the outcome measures.

Flow of Information

The dimension of flow of information was used to predict morale, engagement, and unit performance (rated by Soldiers, officers, and battalion commanders; see Table 32). Flow of information climate predicted four out of the six outcomes. For the prediction of morale, standardized regression weights were .66 and .71 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .43 ($F(1, 81) = 61.87, p < .025$), but the scale contributed an additional eight percent ($F(1, 80) = 12.81, p < .025$) of the variance in morale. For the prediction of engagement, standardized regression weights were .57 and .67 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .32 ($F(1, 81) = 39.21, p < .025$), however the scale contributed a significant additional 15 percent ($F(1, 80) = 22.30, p < .025$) of the variance in engagement. Likewise, both the single item and scale significantly predicted unit performance as rated by unit members. The standardized regression weights were .67 and .73 for single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .45 ($F(1, 81) = 67.13, p < .025$), but the scale contributed an additional eight percent ($F(1, 80) = 13.65, p < .025$) of the variance in unit performance rated by unit members. Both the single item and scale significantly predicted unit performance as rated by officers. The standardized regression weights were .55 for both the single item and scale. In a hierarchical regression, the single item had a significant adjusted R^2 of .29 ($F(1, 73) = 31.68, p < .025$), and the scale did not contribute significant additional variance in unit performance rated by officers. The single item flow of information measure and the flow of information scale did not significantly predict unit performance ratings or morale ratings by battalion commanders in the simple regressions.

Table 32*Flow of Information Simple and Hierarchical Regression Results*

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Morale	.66*	.71*	.43*	.08*
Engagement	.57*	.67*	.32*	.15*
Unit Performance (Soldiers)	.67*	.73*	.45*	.08*
Unit Performance (Officers)	.55*	.55*	.29*	.01
Unit Performance (CDR)	.14	.12	.01	.00
Morale (CDR)	.20	.21	.02	.01

Note. * $p < .025$. All β -weights are standardized. SI=single item.

Autonomy

We expected the dimension of autonomy to predict job satisfaction, withdrawal, mission prep (rated by battalion commanders), unit autonomy (rated by battalion commanders), and unit performance (rated by Soldiers, officers, and battalion commanders; see Table 33). Autonomy climate predicted three of the seven outcomes. For the prediction of job satisfaction, standardized regression weights were .63 and .65 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .39 ($F(1, 81) = 53.04, p < .014$). The scale contributed an additional four percent of explained variance ($F(1, 80) = 4.92, p = .029$) in job satisfaction, but this did not meet the predetermined significance threshold of .014. For the prediction of unit performance (rated by Soldiers) the standardized regression weights were .67 for the single item and .62 for the scale. In a hierarchical regression, the single item had a significant adjusted R^2 of .44 ($F(1, 81) = 65.39, p < .014$) and the scale did not contribute significant additional variance in unit performance when rated by the Soldiers. For the prediction of unit performance (rated by officers), the standardized regression weights were .45 single item and .46 for the scale. In a hierarchical regression, the single item had a significant adjusted R^2 of .19 ($F(1, 73) = 18.22, p < .014$), and the scale did not contribute significant additional variance in unit performance. The single item and scale autonomy measures did not significantly predict unit performance, unit autonomy, or mission preparation ratings by battalion commanders in the simple regressions.

Table 33*Autonomy Simple and Hierarchical Regression Results*

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Job Satisfaction	.63*	.65*	.39*	.04
Unit Performance (Soldiers)	.67*	.62*	.44*	.00
Unit Performance (Officers)	.45*	.46*	.19*	.02
Unit Performance (CDR)	-.08	-.08	-.01	.00
Unit Autonomy (CDR)	-.05	.02	-.01	.02
Mission Prep (CDR)	.10	.18	-.06	.04

Note. * $p < .014$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for autonomy climate, withdrawal, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .03, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level autonomy climate on individual-level withdrawal using hierarchical linear mixed effects. Higher average company values on the single-item measure of autonomy climate did not significantly predict lower withdrawal at the .014 significance threshold ($\gamma_{01} = -.09, p = .048$). Similarly, average company values on the multi-item scale of autonomy climate did not significantly predict withdrawal ($\gamma_{01} = -.10, p = .041$). Neither the single-item measure nor multi-item scales significantly predicted withdrawal when entered into the same model.

Respect for the Individual

We expected the dimension of respect for the individual to predict mutual trust, cohesion, withdrawal, and respect for others (rated by battalion commanders; see Table 34). Respect for the individual climate significantly predicted two of the four outcomes. For the prediction of mutual trust, standardized regression weights were .60 and .67 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .35 ($F(1, 81) = 44.81, p < .025$) and the scale contributed nine percent of additional variance ($F(1, 80) = 13.33, p < .025$) in mutual trust. Similarly, both the single item and scale significantly predicted cohesion. The standardized regression weights were .72 and .79 for single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .52 ($F(1, 81) = 89.01, p < .025$) and the scale contributed 10 percent of additional variance in cohesion ($F(1, 80) = 19.85, p < .025$). The single item and scale respect for the individual measures did not significantly predict respect for others ratings by battalion commanders in the simple regressions.

Table 34*Respect for the Individual Simple and Hierarchical Regression Results*

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Mutual Trust	.60*	.67*	.35*	.09*
Cohesion	.72*	.79*	.52*	.10*
Respect for Others (CDR)	-.04	.01	-.01	.01

Note. * $p < .025$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for respect for the individual climate, withdrawal, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .03, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level respect for the individual climate on individual-level withdrawal using hierarchical linear mixed effects. Average company values on the single-item measure of respect for the individual climate did not significantly predict withdrawal ($\gamma_{01} = -.07, p > .025$). Similarly, average company values on the multi-item scale of respect for the individual climate did not significantly predict withdrawal ($\gamma_{01} = -.09, p > .025$).

Hazing

We expected the dimension of hazing to predict stress impact, affective commitment, morale, and unit morale and commitment (rated by battalion commanders; see Table 35). Hazing significantly predicted two of the five hypothesized outcomes. For the prediction of morale (rated by Soldiers), standardized regression weights were not significant for the hazing single item or scale. The single-item measure for hazing did not account for a significant amount of variance in any of the company-level tested outcomes (morale, unit morale, commitment). Moreover, the single item and scale hazing measures did not predict the battalion commander outcomes (unit morale and commitment) in the simple regressions.

Table 35*Hazing Simple and Hierarchical Regression Results*

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Morale	-.15	-.18	.01	.02
Unit Morale (CDR)	-.02	.01	-.02	.00
Commitment (CDR)	-.07	-.10	-.01	.01

Note. * $p < .03$. All β -weights are standardized. SI=single item.

Two of the theorized outcomes for hazing climate, stress impact and affective commitment, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .02, p < .05$; $ICC(1) = .01, p < .05$, respectively), suggesting that group-level measurement is

not appropriate for these variables. Thus, we assessed the effect of company-level hazing climate on individual-level stress impact and affective commitment using hierarchical linear mixed effects. Higher average company values on the hazing single-item measure significantly predicted higher stress impact ($\gamma_{01} = .31, p < .03$). Similarly, higher average company values on the hazing climate multi-item scale significantly predicted higher stress impact ($\gamma_{01} = .35, p < .03$). Neither the single item nor the multi-item scales significantly predicted stress impact when entered into the same model, suggesting a large degree of overlap between the measures. For the relationship between hazing climate and affective commitment, average company values on the single-item measure of hazing climate did not significantly predict affective commitment ($\gamma_{01} = -.19, p > .03$). On the other hand, lower average company values on the multi-item scale of hazing climate did significantly predict higher affective commitment ($\gamma_{01} = -.25, p < .03$). When entered into the model, neither the single item nor the scale measures significantly predicted affective commitment.

Bullying

We expected the dimension of bullying to predict stress impact, morale, affective commitment, withdrawal, and unit morale and commitment (rated by battalion commanders; see Table 36). Bullying predicted four of the six outcomes. Both the single item and scale significantly predicted morale (rated by Soldiers). The standardized regression weights were $-.50$ for the single item and $-.47$ for the scale. In a hierarchical regression, the single item had a significant adjusted R^2 of $.24$ ($F(1, 81) = 26.26, p < .033$) and the scale did not contribute significant additional variance in morale. The single item and scale bullying measures did not significantly predict unit morale and commitment ratings by battalion commanders in the simple regressions.

Table 36

Bullying Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Morale	$-.50^*$	$-.47^*$	$.24^*$	.00
Unit Morale (CDR)	$-.16$	$-.13$	.01	.00
Commitment (CDR)	$-.07$	$-.09$	$-.01$	.00

Note. $*p < .033$. All β -weights are standardized. SI=single item.

Three of the theorized outcomes for bullying climate, affective commitment, stress impact, and withdrawal, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .01, p < .05$; $ICC(1) = .02, p < .05$; $ICC(1) = .03, p < .05$, respectively), suggesting that group-level measurement is not appropriate for these variables. Thus, we assessed the effect of company-level bullying climate on individual-level affective commitment, stress impact, and withdrawal using hierarchical linear mixed effects. Lower average company values on the bullying climate single-item measure significantly predicted higher affective commitment ($\gamma_{01} = -.28, p < .033$). Similarly, lower average company values on the bullying climate multi-item scale significantly predicted higher affective commitment ($\gamma_{01} = -.40, p <$

.033). Neither the single-item nor the scale measures significantly predicted affective commitment when entered into the same model, suggesting a large degree of overlap between the measures. For the relationship between bullying climate and stress impact, higher average company values on the bullying climate single-item measure significantly predicted higher stress impact ($\gamma_{01} = .33, p < .033$). Similarly, higher average company values on the bullying climate multi-item scale significantly predicted higher stress impact ($\gamma_{01} = .51, p < .033$). When entered into the same model, the multi-item scale significantly predicted stress impact while the single item did not. For the relationship between bullying climate and withdrawal, higher average company values on the bullying climate single-item measure significantly predicted higher withdrawal ($\gamma_{01} = .13, p < .033$). Similarly, higher average company values on the multi-item scale of bullying climate significantly predicted higher withdrawal ($\gamma_{01} = .19, p < .033$). When entered into the same model, neither the single item nor scale significantly predicted withdrawal.

Peer Support for Unit Members

We expected the dimension of peer support for unit members to predict stress impact, morale, affective commitment, cohesion, unit resilience, and unit morale and commitment (rated by battalion commanders; see Table 37). Peer support for unit members significantly predicted five of the seven outcomes. Both the single item and scale significantly predicted morale (rated by Soldiers). The standardized regression weights were .47 and .60 for both the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .22 ($F(1, 81) = 23.24, p < .036$) and the scale contributed significant additional variance in morale (R^2 change = .17, $F(1, 80) = 22.53, p < .036$). Similarly, both the single item and scale significantly predicted cohesion. The standardized regression weights were .75 and .80 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .56 ($F(1, 81) = 103.59, p < .036$) and the scale contributed an additional eight percent of variance in cohesion ($F(1, 80) = 18.45, p < .036$). For the prediction of unit resilience, the standardized regression weights were .64 and .77 for both the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .40 ($F(1, 81) = 56.07, p < .036$) and the scale contributed significant additional variance in unit resilience (R^2 change = .21, $F(1, 80) = 42.56, p < .036$). The single item and scale peer support for unit members measures did not significantly predict unit morale and commitment ratings by battalion commanders in the simple regressions.

Table 37

Peer Support for Unit Members Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Morale	.47*	.60*	.22*	.17*
Cohesion	.75*	.80*	.56*	.08*
Unit Resilience	.64*	.77*	.40*	.21*
Unit Morale (CDR)	.11	.14	.00	.01
Commitment (CDR)	.01	.09	-.02	.04

Note. * $p < .036$. All β -weights are standardized. SI=single item.

Two of the theorized outcomes for peer support for unit members climate, stress impact and affective commitment, did not meet the *ICC(1)* threshold for variance explained by the company ($ICC(1) = .02, p < .05$; $ICC(1) = .01, p < .05$, respectively), suggesting that group-level measurement is not appropriate for these variables. Thus, we assessed the effect of company-level peer support for unit members climate on individual-level stress impact and affective commitment using hierarchical linear mixed effects. Higher average company values on the single-item measure of peer support for unit members climate significantly predicted lower stress impact ($\gamma_{01} = -.34, p < .036$). Similarly, higher average company values on the multi-item scale of peer support for unit members climate significantly predicted higher stress impact ($\gamma_{01} = -.49, p < .036$). When entered into the same model, the multi-item scale significantly predicted stress impact, while the single item did not. For the relationship between peer support for unit members climate and affective commitment, higher average company values on the single-item measure of peer support for unit members climate significantly predicted higher affective commitment ($\gamma_{01} = .32, p < .036$). Similarly, higher average company values on the multi-item scale of peer support for unit members climate significantly predicted higher affective commitment ($\gamma_{01} = .44, p < .036$). When entered into the same model, the multi-item scale significantly predicted stress impact while the single item did not.

Leader Support for Unit Members

We expected the dimension of leader support for unit members to predict affective commitment, unit resilience, engagement, and commitment (rated by battalion commanders; see Table 38). Leader support for unit members significantly predicted three of the four outcomes tested. Both the single item and scale significantly predicted unit resilience. The standardized regression weights were .85 and .88 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .72 ($F(1, 81) = 209.60, p < .038$) and the scale contributed an additional five percent of explained variance for unit resilience ($F(1, 80) = 18.56, p < .038$). Similarly, both the single item and scale significantly predicted engagement. The standardized regression weights were .64 and .67 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .40 ($F(1, 81) = 56.09, p < .038$). The scale contributed an additional four percent of explained variance for engagement ($F(1, 80) = 6.39, p = .013$). The leader support for unit members single item and scale did not significantly predict battalion commander ratings of commitment in the simple regressions.

Table 38

Leader Support for Unit Members Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Unit Resilience	.85*	.88*	.72*	.05*
Engagement	.64*	.67*	.40*	.04*
Commitment (CDR)	.12	.18	-.00	.03

Note. * $p < .038$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for leader support for unit members climate, affective commitment, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .01, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level leader support for unit members climate on individual-level affective commitment using hierarchical linear mixed effects. Higher average company values on the single-item measure of leader support for unit members climate significantly predicted higher affective commitment ($\gamma_{01} = .41, p < .038$). Similarly, higher average company values on the multi-item scale of leader support for unit members climate significantly predicted higher affective commitment ($\gamma_{01} = .47, p < .038$). When entered into the same model, only the multi-item scale significantly predicted affective commitment; the single item did not.

Leader Support for Families

We expected the dimension of leader support for families to predict family desire to remain in the Army and unit performance and family involvement (rated by battalion commanders; see Table 39). Leader support for families was a predictor of one of the three outcomes. Neither the single item nor scale leader support for families measures significantly predicted unit performance and family involvement ratings by battalion commanders in the simple regressions.

Table 39

Leader Support for Families Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Unit Performance (CDR)	.13	.06	.00	.02
Family Involvement (CDR)	.25	.24	.04	.00

Note. $*p < .017$. All β -weights are standardized. SI=single item.

Company membership did not explain a significant amount of variance in one of the theorized outcomes for leader support for family members climate, family desire to stay in the Army ($ICC(1) = .02, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level leader support for family members climate on individual-level family desire to stay in the Army using hierarchical linear mixed effects. Higher average company values on the single-item measure of leader support for family members climate significantly predicted higher family desire to stay ($\gamma_{01} = .23, p < .017$). Similarly, higher average company values on the multi-item scale of leader support for family members climate significantly predicted higher family desire to stay ($\gamma_{01} = .29, p < .017$). When entered into the same model, neither the multi-item scale nor single-item scale significantly predicted family desire to stay in the Army.

Professionalism

We examined professionalism climate as a predictor of weapons qualifications “scores,” withdrawal, engagement, and physical training and disciplinary actions (battalion commander ratings). Professionalism climate predicted two of the five outcomes (see Table 40). The professionalism single item and scale significantly predicted engagement, with standardized regression weights of .61 and .64, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .37 ($F(1, 81) = 48.17, p < .020$), however, the scale added an additional four percent of explained variance to the relationship between professionalism and engagement ($F(1, 80) = 5.72, p < .020$). The professionalism single item and scale measures did not significantly predict weapons qualifications “scores” or battalion commander ratings of disciplinary actions or physical training.

Table 40

Professionalism Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Weapons Qualifications “Scores”	.14	.20	.01	.04
Engagement	.61*	.64*	.37*	.04*
Physical Training (CDR)	.09	.20	-.01	.03
Disciplinary Actions (CDR)	-.23	-.26	.04	.02

Note. * $p < .020$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for professionalism climate, withdrawal, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .03, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level professionalism climate on individual-level withdrawal using hierarchical linear mixed effects. Average company values on the single-item measure of professionalism climate did not significantly predict withdrawal ($\gamma_{01} = -.08, p = .041$). However, higher average company values on the multi-item scale of professionalism climate significantly predicted lower levels of withdrawal ($\gamma_{01} = -.13, p < .020$). When entered into the same model, neither the multi-item scale nor single-item scale significantly predicted withdrawal.

Ethical Leadership

We examined ethical leadership climate as a predictor of affective commitment, satisfaction with unit leadership, unit performance (Soldier ratings, officer ratings, and battalion commander ratings), and disciplinary actions and commitment (battalion commander ratings). Ethical leadership climate predicted five of the seven outcomes (see Table 41). Both the single item and scale significantly predicted satisfaction with unit leadership. The standardized regression weights were .81 and .79, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .66 ($F(1, 81) = 158.43, p < .029$). Adding the scale to the regression did not significantly increase the predicted variance in satisfaction with unit

leadership. Both the single item and scale significantly predicted unit performance (rated by Soldiers). The standardized regression weights were .64 and .66 for the single item and scale, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .40 ($F(1, 81) = 55.47, p < .029$). Adding the scale to the regression did not significantly increase the predicted variance in unit performance (R^2 change = .03, $F(1, 80) = 4.60, p = .035$). Similarly, the ethical leadership single item and scale significantly predicted unit performance (rated by officers). The standardized regression weights for both the single item and the scale were .36. In a hierarchical regression, the single item had a significant adjusted R^2 of .12, ($F(1, 73) = 10.83, p < .029$). Adding the scale to the regression did not significantly increase the predicted variance in unit performance rated by officers. The ethical leadership climate measures did not significantly predict unit performance, disciplinary actions, or commitment rated by battalion commanders.

Table 41

Ethical Leadership Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Satisfaction with Unit Leadership	.81*	.79*	.66*	.01
Unit Performance (Soldiers)	.64*	.66*	.40*	.03
Unit Performance (Officers)	.36*	.36*	.12*	.00
Unit Performance (CDR)	.07	-.05	-.01	.00
Disciplinary Actions (CDR)	-.25	-.24	.05	.01
Commitment (CDR)	.18	.14	.02	.01

Note. * $p < .029$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for ethical leadership climate, affective commitment, did not have a significant amount of variance explained by the company ($ICC(1) = .01, p < .05$), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level ethical leadership climate on individual-level affective commitment using hierarchical linear mixed effects. Higher average company values on the single-item measure of ethical leadership climate significantly predicted higher affective commitment ($\gamma_{01} = .34, p < .029$). Similarly, higher average company values on the multi-item scale of ethical leadership climate significantly predicted higher affective commitment ($\gamma_{01} = .44, p < .029$). When entered into the same model, neither measure significantly predicted affective commitment, suggesting a large degree of overlap between the single item and multi-item scale.

Trust

We examined trust climate as a predictor of cohesion, collective efficacy, mutual trust, OCB, engagement, unit performance (officer ratings, and battalion commander ratings), and unit training performance (battalion commander ratings). Trust climate predicted six of the eight outcomes (see Table 42). Both the trust climate single item and scale significantly predicted cohesion. The standardized regression weights were .85 and .86, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .72 ($F(1, 81) = 212.46, p < .031$).

Adding the scale to the regression explained an additional eight percent of predicted variance in cohesion (R^2 change = .08, $F(1, 80) = 32.43$, $p < .031$). Likewise, the single item and scale both positively related to collective efficacy. The standardized regression weights were .73 and .80, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .54 ($F(1, 81) = 93.98$, $p < .031$). Adding the scale to the regression explained an additional ten percent of predicted variance in collective efficacy (R^2 change = .10, $F(1, 80) = 21.07$, $p < .031$).

Similarly, both the single item and scale significantly predicted mutual trust. The standardized regression weights were .85 and .86, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .71 ($F(1, 81) = 202.61$, $p < .031$). Though adding the scale to the regression did significantly increase the predicted variance in mutual trust, the change was relatively small (R^2 change = .03, $F(1, 80) = 10.70$, $p < .031$). The trust single item and scale both significantly predicted engagement, with significant regression weights of .58 and .63, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .34 ($F(1, 81) = 41.40$, $p < .031$). Adding the scale to the regression explained an additional seven percent of predicted variance in engagement (R^2 change = .07, $F(1, 80) = 8.69$, $p < .031$). The single item and scale showed positive significant relationships with unit performance (rated by officers). The standardized regression weights were .38 and .43, respectively. In a hierarchical regression, the single item had a significant adjusted R^2 of .14 ($F(1, 73) = 12.24$, $p < .031$). Adding the scale to the regression did not significantly increase the predicted variance in unit performance rated by officers. Trust climate did not significantly predict the outcomes rated by battalion commanders.

Table 42

Trust Simple and Hierarchical Regression Results

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Cohesion	.85*	.86*	.72*	.08*
Collective Efficacy	.73*	.80*	.54*	.10*
Mutual Trust	.85*	.86*	.71*	.03*
Engagement	.58*	.63*	.34*	.07*
Unit Performance (Officers)	.38*	.43*	.14*	.05
Unit Performance (CDR)	.02	-.01	-.02	.00
Unit Training Performance (CDR)	.22	.21	.03	.00

Note. * $p < .031$. All β -weights are standardized. SI=single item.

One of the theorized outcomes for trust climate, OCBs, did not meet the $ICC(1)$ threshold for variance explained by the company ($ICC(1) = .00$, ns), suggesting that group-level measurement is not appropriate for this variable. Thus, we assessed the effect of company-level trust climate on individual-level OCBs using hierarchical linear mixed effects. Higher average company values on the single-item measure of trust climate significantly predicted higher OCBs ($\gamma_{01} = .18$, $p < .031$). Similarly, higher average company values on the multi-item scale of trust climate significantly predicted higher OCBs ($\gamma_{01} = .19$, $p < .031$). Moreover, when entered into

the same model, neither measure significantly predicted OCBs, suggesting a large degree of overlap between the single-item and multi-item scale measures.

Adaptability

We examined the adaptability dimension of command climate as a predictor of collective efficacy, mutual trust, unit resilience, unit performance (Soldier ratings, officer ratings, and battalion commander ratings), and adaptive performance and unit training performance (battalion commander ratings). Adaptability climate predicted five of the eight outcomes (see Table 43). Adaptability climate showed a significant positive relationship with collective efficacy. The standardized regression weights for the single item and scale were .75 and .80, respectively. In a hierarchical regression, the single item adjusted R^2 was .56 ($F(1, 81) = 104.88, p < .025$). Adding the scale to the regression significantly increased the predicted variance in collective efficacy (R^2 change = .07, $F(1, 80) = 15.59, p < .025$). Similarly, the adaptability single item and scale significantly related to mutual trust. The standardized regression weights were .66 and .75, respectively. In a hierarchical regression, the single item adjusted R^2 was .43 ($F(1, 81) = 62.36, p < .025$). Adding the scale to the regression significantly increased the predicted variance in mutual trust (R^2 change = .14, $F(1, 80) = 26.74, p < .025$).

The adaptability single item and scale both positively predicted unit resilience, with standardized regression weights of .75 and .81, respectively. In a hierarchical regression, the single item adjusted R^2 was .57 ($F(1, 81) = 106.79, p < .025$). Adding the scale to the regression significantly increased the predicted variance in unit resilience (R^2 change = .09, $F(1, 80) = 21.81, p < .025$). Likewise, both the single item and scale significantly predicted unit performance (rated by Soldiers). The standardized regression weights were .62 and .67, respectively. In a hierarchical regression, the single item adjusted R^2 was .38 ($F(1, 81) = 49.33, p < .025$). Adding the scale to the regression significantly increased the predicted variance in unit performance rated by Soldiers (R^2 change = .08, $F(1, 80) = 10.98, p < .025$). As a predictor of unit performance (rated by officers), adaptability climate showed a significant positive relationship. The standardized regression weights for the single item and scale were .33 and .38, respectively. In a hierarchical regression, the single item adjusted R^2 was .11 ($F(1, 73) = 8.62, p < .025$). Adding the scale to the regression did not significantly increase the predicted variance in unit performance rated by officers (R^2 change = .05, $F(1, 72) = 15.53.919, p = .05$). Adaptability did not predict the outcomes rated by battalion commanders.

Table 43*Adaptability Simple and Hierarchical Regression Results*

	SI β -weight	Scale β -weight	SI Model adjusted R^2	SI + Scale Model R^2 change
Collective Efficacy	.75*	.80*	.56*	.07*
Mutual Trust	.66*	.75*	.43*	.14*
Unit Resilience	.75*	.81*	.57*	.09*
Unit Performance (Soldiers)	.62*	.67*	.38*	.08*
Unit Performance (Officers)	.33*	.38*	.11*	.05
Unit Performance (CDR)	.01	-.01	-.02	.00
Adaptive Performance (CDR)	.16	.16	.01	.00
Unit Training Performance (CDR)	.14	.14	.01	.00

Note. * $p < .025$. All β -weights are standardized. SI=single item.

Climate Strength Analyses

We examined covariates of climate strength (measured by $r_{wg(j)}$) for each of the climate dimensions for both the single-item and multi-item scales to examine whether unit attributes related to the level of agreement about command climate. Specifically, we tested the covariates of company size (number of Soldiers surveyed from the unit), company type (combat arms unit or support unit), and company tenure (average Soldier tenure in company). None of the covariates consistently related to climate strength across all climate dimensions. However, there were several significant relationships (see Table 44). Company size significantly and positively correlated with autonomy, respect for the individual, peer support for unit members, and professionalism climate strength for both the single items and multi-item scales. Company type (combat arms units versus support units) was positively related to climate strength for hazing using both single item and scale measures, such that support units tended to have higher agreement on hazing climate. Though most relationships were not significant, average company tenure was negatively related to climate strength across climate dimensions, such that higher average company tenure was related to lower climate strength.

Table 44*Climate Strength Covariates*

Climate Strength Dimension	Single Items			Multi-Item Scales		
	Company Size	Company Type	Company Tenure	Company Size	Company Type	Company Tenure
Flow of Information	.07	.09	-.09	.18	.09	-.12
Autonomy	.26*	-.06	-.13	.34**	-.07	-.15
Respect for the Individual	.23*	.15	-.15	.25*	-.07	-.12
Hazing	.06	.28**	-.02	.20	.24*	-.04
Bullying	.19	.22	-.10	.36**	.03	-.10
Peer Support for Unit Members	.27*	-.08	-.05	.25*	-.10	.13
Leader Support for Unit Members	.06	.08	-.06	.12	.05	-.20
Leader Support for Families	.00	.10	-.17	.04	.05	-.07
Professionalism	.25*	-.09	-.19	.26*	-.03	-.15
Ethical Leadership	.06	.08	-.14	.20	.07	-.07
Trust	.23*	-.12	-.07	-.14	.09	-.29**
Adaptability	.13	-.10	-.23*	.17	-.07	-.18

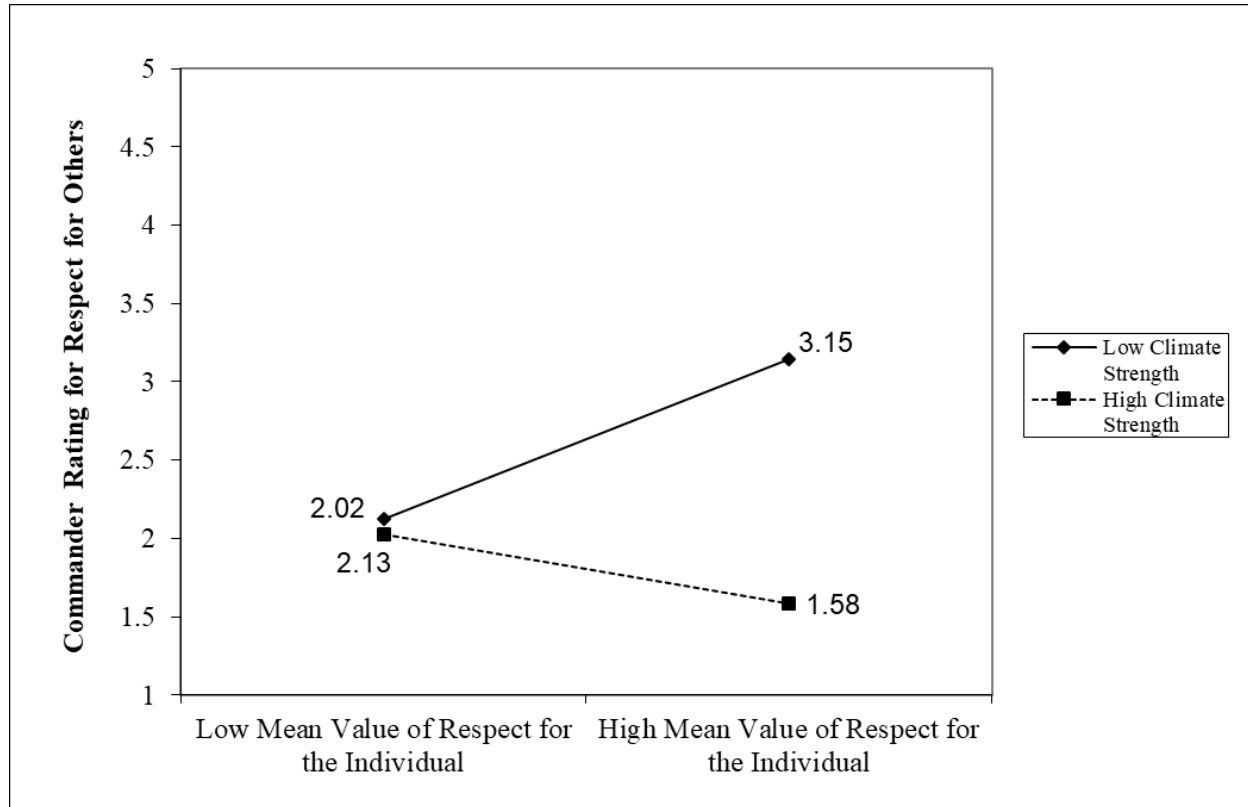
Note. Climate strength was measured using $r_{wg(j)}$. * $p < .05$, ** $p < .01$.

To explore whether climate strength influenced the criterion-related relationships, we ran moderated regressions for outcomes associated with respect for the individual, ethical leadership, hazing, and bullying as predictors with climate strength (measured by $r_{wg(j)}$) as the moderator. We focused on these dimensions because we theorized that lack of agreement about these dimensions of climate may impact outcomes. Out of the 16 moderated regressions tested, climate strength only significantly moderated three relationships (18.75%).

Climate strength moderated the relationship between respect for the individual climate level and commander ratings of respect for others (R^2 change = .08, $F(1, 60) = 5.70$, $p = .020$). When there is low climate strength for respect for the individual (low agreement about this climate level), there is a positive relationship in which higher respect for the individual climate level relates to higher commander ratings for respect for others. However, when there is high climate strength (high agreement about respect for others climate level), there is a negative relationship. That means as Soldier rated climate level increases, commander ratings for respect for others decreases. Therefore, when agreement about respect for the individual within a unit is weak and the climate level is high, the commanders ratings tend to be higher; however, when agreement is high, this relationship is reversed (i.e., the higher the climate level, the lower the commander ratings; see Figure 1).

Figure 1

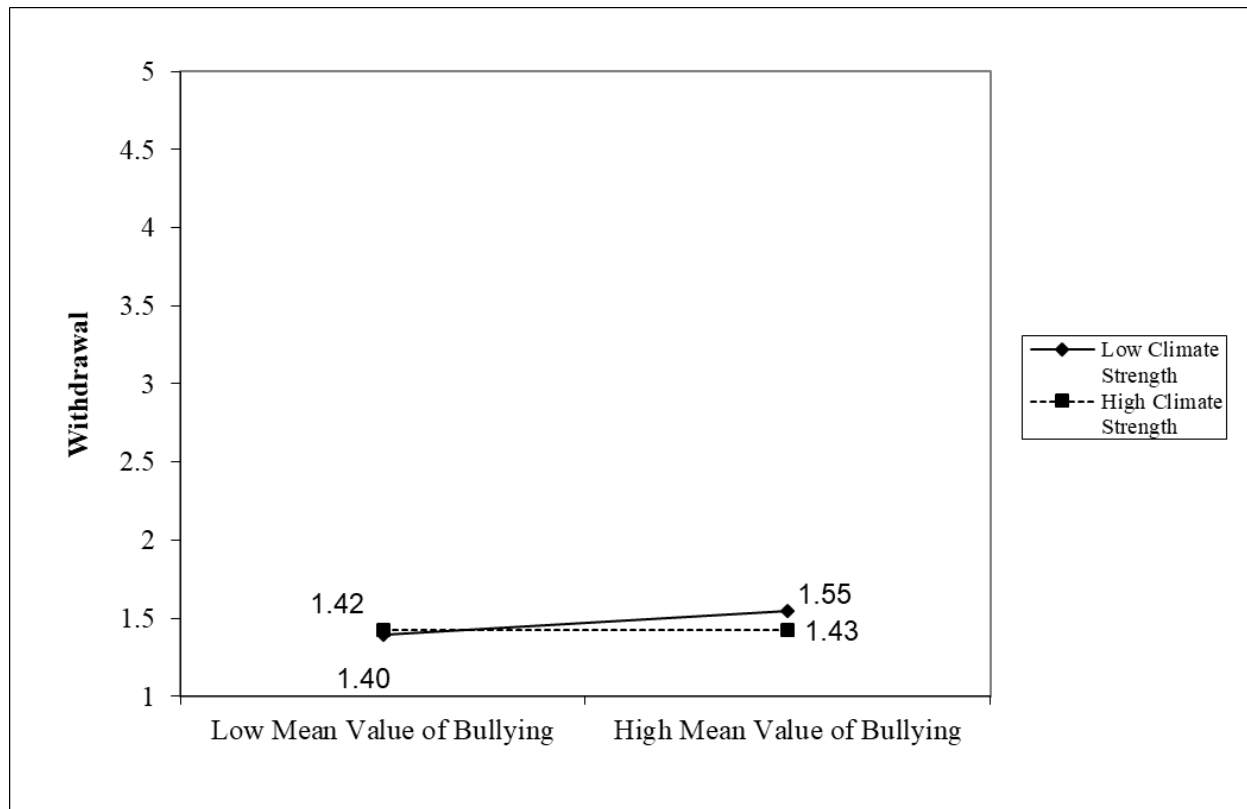
Respect for the Individual Climate Strength as a Moderator for Respect for the Individual Level Predicting Commander Ratings of Respect for Others



Climate strength also moderated the relationship between bullying climate level and withdrawal (R^2 change = .06, $F(1, 79) = 5.96$, $p = .017$). That is, when there is low climate strength for bullying (low agreement about bullying climate), there is a stronger relationship between the mean level of bullying climate and withdrawal, such that higher levels of reported bullying climate predict higher withdrawal. In other words, when there is not strong agreement about a climate to prevent bullying, people are more likely to withdraw when there is slightly more bullying reportedly occurring. Still, the practical difference between the strength of the relationships is minimal (see Figure 2).

Figure 2

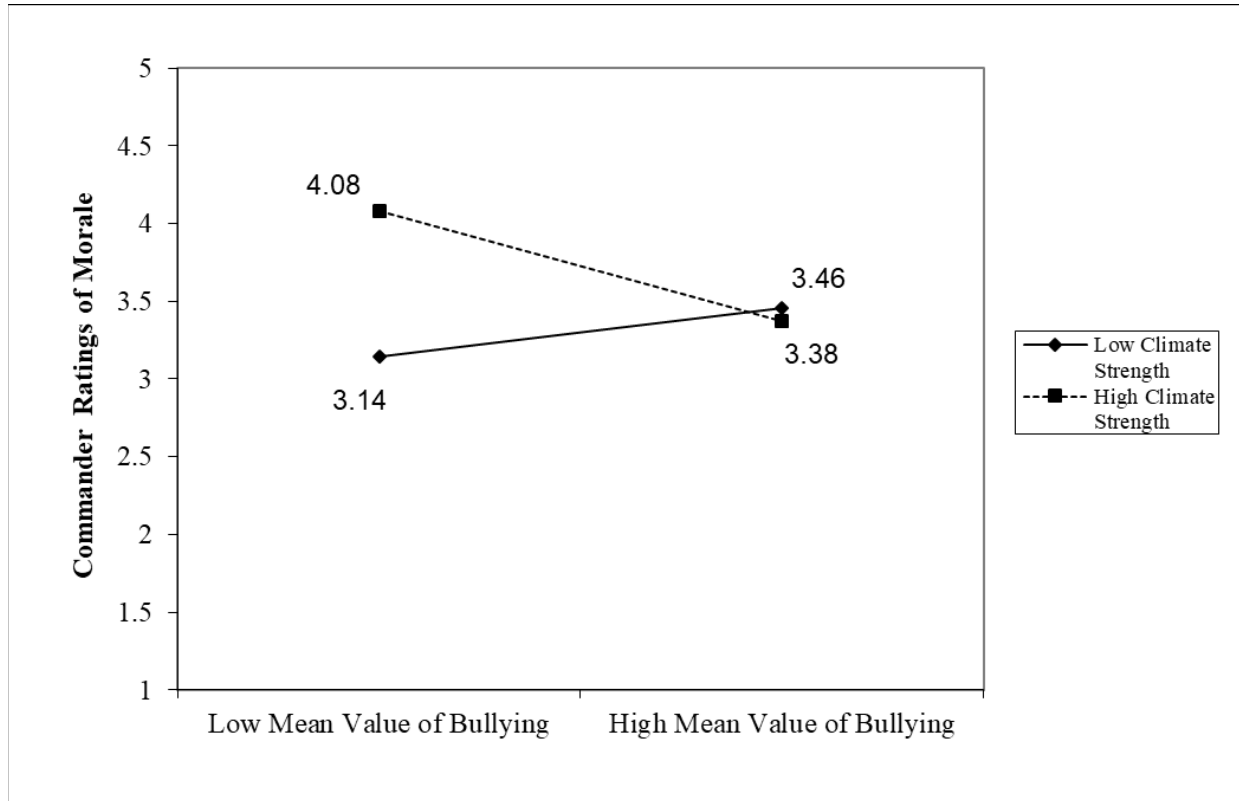
Bullying Climate Strength as a Moderator for Bullying Level Predicting Withdrawal



Finally, climate strength moderated the relationship between bullying climate level and commander ratings of morale (R^2 change = .07, $F(1, 62) = 4.85$, $p = .017$). This is, when there is low climate strength for bullying (low agreement about this climate level), there is a negative relationship in which higher bullying climate level relates to lower commander ratings for morale. However, when climate strength is high, there is a positive relationship in that higher bullying climate levels are associated with higher commander ratings of morale (see Figure 3).

Figure 3

Bullying Climate Strength as a Moderator for Bullying Level Predicting Commander Ratings of Morale



Command Climate Diagnostics

Appendix D lists item-level means and standard deviations for all diagnostic items (Table D1), as well as ICCs for the diagnostic items (Table D2). For the diagnostic items, we were not relying on ICCs to determine the appropriateness of aggregation because we were not expecting consensus in responses from all members of the unit. However, we did examine ICCs to identify whether the diagnostics scores were influenced by group-level structure in the data. While the *ICC(1)* for 99% of the command climate diagnostic items were statistically significant, many were small in magnitude. This suggests that although a company-level effect may exist, the effect size may be too small to be practically significant. Fifty-two percent of the items had an *ICC(1)* below the .05 threshold identified by LeBreton and Senter (2008) as indicative of a group effect. None of the diagnostic items reached the *ICC(2)* threshold of .70; *ICC(2)* values ranged from .11 to .68. We did not expect high interrater agreement and consistency for the diagnostic items, however, so the low *ICC(2)* statistics do not present analysis challenges.

Appendix D, Table D3 provides company-level descriptive statistics. We aggregated items to the company level by taking the mean item score within each company. Mean item scores at the company level ranged from 1.40 (bullying) to 3.91 (ethics). Appendix D, Tables D4

to D14, reports intercorrelations among company-level diagnostic items and correlations of diagnostic items with company-level scales and single items. Correlations between the diagnostic items for a given dimension and the full scale and single item were generally high, although there was a great deal of variance in correlations across the dimensions and items (.01 to .96). In addition, these correlations were generally not as high as the full scale intercorrelations or the correlations between the full scale and single item. We expected this because we did not design the diagnostic items to be parallel with the scales and single items. In general terms, diagnostic items correlated moderately to strongly with dimension scales and single items, but not as strongly as scales and single items correlated with each other (see Appendix D, Table D15).

Criterion-Related Validation of Diagnostics Items

We conducted regressions to examine the omnibus relationship between a set of diagnostic items for each climate dimension and the outcome variable of interest. A significant R^2 value suggests that the set of diagnostic items as a whole contributed to prediction of the outcome measure. We did not examine the regression weights for individual diagnostic items because there was a high degree of multi-collinearity in the items, producing coefficient estimates that have large standard errors and wide confidence intervals. Table 45 describes the adjusted R^2 value for each dependent variable associated with a dimension regressed on a set of diagnostics items.

Table 45

Diagnostics-Dependent Variable Adjusted Multiple R^2

Diagnostics	Dependent variable	Adjusted R^2	F ratio	Significance level
Flow of Information	Morale	.46	7.98	$p < .001$
	Unit Performance (Soldiers)	.33	5.04	$p < .001$
	Unit Performance (Officers)	.13	2.15	$p < .05$
	Engagement	.37	5.80	$p < .001$
	Unit Performance (CDR)	-.03	0.82	<i>ns</i>
	Morale (CDR)	.23	2.92	$p < .01$
Autonomy	Job Satisfaction	.34	3.60	$p < .001$
	Unit Performance (Soldiers)	.27	2.91	$p < .001$
	Unit Performance (Officers)	.07	1.37	<i>ns</i>
	Withdrawal	-.03	0.84	<i>ns</i>
	Unit Performance (CDR)	.06	1.27	<i>ns</i>
	Autonomy (CDR)	.00	1.01	<i>ns</i>
	Mission Prep (CDR)	-.06	0.78	<i>ns</i>
Hazing	Stress Impact	.16	2.18	$p < .05$
	Affective Commitment	.22	2.79	$p < .01$
	Morale	.26	3.26	$p < .001$
	Morale (CDR)	.01	1.05	<i>ns</i>
	Commitment (CDR)	-.01	0.95	<i>ns</i>

(Continued)

Diagnostics	Dependent variable	Adjusted R^2	F ratio	Significance level
Bullying	Stress Impact	.21	2.18	$p < .05$
	Morale	.37	3.55	$p < .001$
	Affective Commitment	.18	1.93	$p < .05$
	Withdrawal	.39	3.72	$p < .001$
	Morale (CDR)	.03	1.10	<i>ns</i>
	Commitment (CDR)	.03	1.09	<i>ns</i>
Peer Support for Unit Members	Morale	.36	12.35	$p < .001$
	Stress Impact	.15	4.77	$p < .05$
	Affective Commitment	.17	5.22	$p < .001$
	Cohesion	.49	20.86	$p < .001$
	Unit Resilience	.41	15.48	$p < .001$
	Morale (CDR)	.03	1.42	<i>ns</i>
	Commitment (CDR)	-.02	0.74	<i>ns</i>
Leader Support for Unit Members	Affective Commitment	.38	4.12	$p < .001$
	Unit Resilience	.64	9.96	$p < .001$
	Engagement	.54	6.94	$p < .001$
	Commitment (CDR)	-.12	0.56	<i>ns</i>
Leader Support for Families	Family Stay	.17	2.35	$p < .05$
	Unit Performance (CDR)	.02	1.12	<i>ns</i>
	Family Involvement	-.04	0.80	<i>ns</i>
Professionalism	Weapon Qualification score	.25	2.24	$p < .01$
	Withdrawal	.10	1.39	<i>ns</i>
	Engagement	.48	4.43	$p < .001$
	Physical Training	.01	1.03	<i>ns</i>
	Disciplinary Incidents (CDR)	.01	1.03	<i>ns</i>
Ethical Leadership	Affective Commitment	.26	5.82	$p < .001$
	Leader Satisfaction	.54	16.88	$p < .001$
	Unit Performance (Soldiers)	.32	7.41	$p < .001$
	Unit Performance (Officers)	.19	3.89	$p < .01$
	Unit Performance (CDR)	-.08	0.19	<i>ns</i>
	Disciplinary Incidents (CDR)	.02	1.26	<i>ns</i>
	Commitment (CDR)	.04	1.43	<i>ns</i>
Trust	Cohesion	.69	10.51	$p < .001$
	Collective Efficacy	.57	6.83	$p < .001$
	Mutual Trust	.60	7.49	$p < .001$
	OCB	.16	1.82	$p < .05$
	Engagement	.50	5.29	$p < .001$
	Unit Performance (Officers)	.28	2.50	$p < .01$
	Unit Performance (CDR)	-.15	0.55	<i>ns</i>
	Unit Training Performance (CDR)	-.06	0.81	<i>ns</i>

(Continued)

Diagnostics	Dependent variable	Adjusted R^2	F ratio	Significance level
Adaptability	Collective Efficacy	.45	5.83	$p < .001$
	Mutual Trust	.56	8.30	$p < .001$
	Unit Resilience	.61	10.14	$p < .001$
	Unit Performance (Soldiers)	.40	4.93	$p < .001$
	Unit Performance (Officers)	.12	1.70	<i>ns</i>
	Unit Performance (CDR)	.02	1.09	<i>ns</i>
	Adaptability (CDR)	-.08	0.68	<i>ns</i>
	Unit Training Performance (CDR)	.02	1.09	<i>ns</i>

Note. *ns* = not statistically significant.

In terms of criterion-related validation, the diagnostics results were very similar to those for the full scale and single items (examined at the company level and with the hierarchical linear mixed-effects models). We found many of the same patterns of relationships between diagnostics and criteria that were found for the single items or full scale, with the climate measures predicting some outcomes but not others (see Table 46 for a summary of the results). This suggests that the diagnostic items are generally aligned with the command climate dimensions and are measuring relevant aspects of the climate dimensions. Some exceptions existed where the scale or single item showed significant relationships but the set of diagnostic items did not significantly predict the outcome. This occurred for autonomy predicting unit performance (rated by officers) and withdrawal and adaptability predicting unit performance (rated by officers). Table 46 shows a summary of the scale, single item, and diagnostics results side-by-side.

Additional research is needed to determine if specific items in the diagnostic sets drive these differing relationships. In practical applications, it is possible that one or many diagnostic items would reveal a problem with a unit's climate, and one would not expect a one-to-one alignment with the single item and scale results. Subsequent research is needed to identify the weight of each factor in the diagnostic sets in determining the relevant outcomes.

Table 46

Summary of Regression Results for Three Survey Formats

Dimension	Dependent Variable	Full Scale	Single Item	Diagnostics
Flow of Information	Morale	☑	☑	☑
	Unit Performance (Soldiers)	☑	☑	☑
	Unit Performance (Officers)	☑	☑	☑
	Engagement	☑	☑	☑
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Morale (CDR)	<i>ns</i>	<i>ns</i>	☑

(Continued)

Dimension	Dependent Variable	Full Scale	Single Item	Diagnostics
Autonomy	Job Satisfaction	✓	✓	✓
	Unit Performance (Soldiers)	✓	✓	✓
	Unit Performance (Officers)	✓	✓	<i>ns</i>
	Withdrawal	✓*	✓*	<i>ns</i>
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Autonomy (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Mission Prep (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Respect for the Individual	Mutual Trust	✓	✓	NA
	Cohesion	✓	✓	NA
	Withdrawal	<i>ns</i> *	<i>ns</i> *	NA
	Respect for Others (CDR)	<i>ns</i>	<i>ns</i>	NA
Hazing	Stress Impact	✓*	✓*	✓
	Affective Commitment	✓*	<i>ns</i> *	✓
	Morale	<i>ns</i>	<i>ns</i>	✓
	Morale (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Commitment (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Bullying	Stress Impact	✓*	✓*	✓
	Morale	✓	✓	✓
	Affective Commitment	✓*	✓*	✓
	Withdrawal	✓*	✓*	✓
	Morale (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Commitment (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Peer Support for Unit Members	Morale	✓	✓	✓
	Stress Impact	✓*	✓*	✓
	Affective Commitment	✓*	✓*	✓
	Cohesion	✓	✓	✓
	Unit Resilience	✓	✓	✓
	Morale (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Commitment (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Leader Support for Unit Members	Affective Commitment	✓*	✓*	✓
	Unit Resilience	✓	✓	✓
	Engagement	✓	✓	✓
	Commitment (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Leader Support for Families	Family Desire to Stay in Army	✓*	✓*	✓
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Family Involvement	<i>ns</i>	<i>ns</i>	<i>ns</i>
Professionalism	Weapon Qualification Score	<i>ns</i>	<i>ns</i>	✓
	Withdrawal	✓*	<i>ns</i> *	<i>ns</i>
	Engagement	✓	✓	✓
	Physical Training	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Disciplinary Incidents (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>

(Continued)

Dimension	Dependent Variable	Full Scale	Single Item	Diagnostics
Ethical Leadership	Affective Commitment	☑*	☑*	☑
	Leader Satisfaction	☑	☑	☑
	Unit Performance (Soldiers)	☑	☑	☑
	Unit Performance (Officers)	☑	☑	☑
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Disciplinary Incidents (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Commitment (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Trust	Cohesion	☑	☑	☑
	Collective Efficacy	☑	☑	☑
	Mutual Trust	☑	☑	☑
	OCB	☑*	☑*	☑
	Engagement	☑	☑	☑
	Unit Performance (Officers)	☑	☑	☑
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Unit Training Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
Adaptability	Collective Efficacy	☑	☑	☑
	Mutual Trust	☑	☑	☑
	Unit Resilience	☑	☑	☑
	Unit Performance (Soldiers)	☑	☑	☑
	Unit Performance (Officers)	☑	☑	<i>ns</i>
	Unit Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Adaptive Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Unit Training Performance (CDR)	<i>ns</i>	<i>ns</i>	<i>ns</i>

Note. ☑ = a significant relationship was found; *ns* = relationship not statistically significant; NA = analyses were not conducted; *analyses were conducted using hierarchical linear mixed-effects models.

Practical Application Testing

In order to examine the practical effectiveness of the single-item measures, we conducted supplemental analyses to compare agreement between the climate dimension scale and the single item. This analysis allows a comparison of the practical effects of using scores from a single-item measure versus scores from a multi-item scale when assessing whether a company may need to improve command climate in a particular area. Strong agreement between the practical results using the two approaches would indicate that a single-item survey produces similar findings to a longer, multi-item scale survey, and that a unit would not be missing potential problems if they used a shorter, single-item survey.

We conducted two analyses to compare the agreement between mean climate results computed from the multi-item scales and the single-item measures. We first created confusion matrices for each climate dimension to compare the company-level results obtained using the single item to the results obtained from the multi-item scale. Next, we computed difference scores between the single-item and the multi-item scale means for each dimension. We describe results for each approach below.

For each of the 12 dimensions, we created a confusion matrix, which allows us to assess the performance of the single items compared to the multi-item scales for each dimension (see Tables 48 to 59 below). We used an arbitrary threshold of 3.0 to designate a healthy command climate, such that we considered company-level scores below 3.0 indicative of a potential problem in that particular climate dimension. The mid-point of the climate dimension response scales was a 3.0 (i.e., neither agree nor disagree). Note that for two dimensions, hazing and bullying, lower scores indicate a healthier climate. Next, we dichotomized each scale and single-item mean for each company to be: a) 3.0 and above, or b) below 3.0. For each company and each dimension we classified the agreement or disagreement of the single item to the multi-item scale into four categories: (a) a *true positive*, both the single item and multi-item scale indicated a healthy climate, (b) a *true negative*, both the single item and multi-item scale indicated an unhealthy climate, (c) a *false positive*, the single item reflected a healthy climate but the multi-item scale reflected an unhealthy climate, or (d) a *false negative*, the single item indicated an unhealthy climate but the multi-item scale reflected a healthy climate.

Based on these classifications, we computed several indices to assess the match between the two assessment approaches (see Table 47 below). The *accuracy index* refers to how often the single item (whether a healthy or unhealthy climate) results matched the multi-item scale results. The *misclassification rate* refers to the frequency with which the single-item results differed from the multi-item scale results. A *true positive rate*, also referred to as sensitivity or recall, provides the proportion of true positive units that the single item correctly identified, or the proportion of multi-item scale healthy climates that the single item identified as healthy. The *false positive rate* refers to the proportion of units the single item identified as being healthy when the multi-item scale identified the climate as unhealthy. The *true negative rate*, also known as specificity, indicates the proportion of units that both the single item and multi-item scale identified as having an unhealthy climate. Finally, the *precision index* illustrates when the single item predicts a healthy climate, how often this is correct as indicated by the multi-item scale.

Table 47

Confusion Indices for Climate Dimensions

Climate Dimension	Accuracy	Misclassification	True Positive	False Positive	True Negative	Precision
Flow of Information	0.84	0.15	0.83	0.13	0.87	0.92
Autonomy	0.89	0.11	0.89	0.11	0.89	0.94
Respect for the Individual	0.86	0.14	0.98	0.42	0.58	0.68
Hazing	1.00	0.00	--	--	1.00	--
Bullying	0.99	0.01	--	0.01	0.99	0.99
Peer Support for Unit Members	0.98	0.02	1.00	0.50	0.50	0.98
Leader Support for Unit Members	0.97	0.11	0.97	0.64	0.36	0.91
Leader Support for Families	0.89	0.11	0.92	0.22	0.78	0.94

(Continued)

Climate Dimension	Accuracy	Misclassification	True Positive	False Positive	True Negative	Precision
Professionalism	0.94	0.11	0.97	0.33	0.67	0.96
Ethical Leadership	0.98	0.02	0.99	0.17	0.83	0.99
Trust	0.83	0.17	1.00	0.54	0.46	0.81
Adaptability	0.98	0.02	0.98	0.00	1.00	1.00

Note. -- indicates that confusion statistics could not be calculated due to all scores being classified as “healthy.”

Overall, the single-item command climate survey results matched the multi-item scale results fairly closely. We could not compute some indices for hazing as both the multi-item scale and single item indicated that all unit hazing climates were healthy. When examining the practical effectiveness of the single-item measures, we were particularly interested in the precision (how often is the single item correctly identifying a healthy climate) and the false positive rates for the climate dimensions. Across dimensions, the single item correctly identified a healthy climate for at least 83% of the units in our sample. False positive rates were generally low. However, the climate dimensions peer support for unit members and trust had higher false positive rates where the single-item measures indicated there was a healthy climate when the multi-item scales indicated there was an unhealthy climate. We report confusion matrices for each climate dimension in Tables 48 to 59. Where the accuracy rates were lower and misclassification rates higher (e.g., flow of information and autonomy), the climate dimension means hovered around the 3.0 threshold (see Table 60). Thus, the lower accuracy rates were likely a result of company single-item and scale mean scores falling just above or just below the threshold.

Table 48

Flow of Information Practical Application Confusion Matrix

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	27 (87%)	4 (13%)	31
Multi-Item Scale “Healthy”	9 (17%)	44 (83%)	53
Total	36	48	84

Table 49

Autonomy Practical Application Confusion Matrix

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	25 (89%)	3 (11%)	28
Multi-Item Scale “Healthy”	6 (11%)	50 (89%)	56
Total	31	53	84

Table 50*Respect for the Individual Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	15 (58%)	11 (42%)	26
Multi-Item Scale “Healthy”	1 (2%)	57 (98%)	58
Total	16	68	84

Table 51*Hazing Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	0 (0%)	0 (0%)	0
Multi-Item Scale “Healthy”	0 (0%)	84 (100%)	84
Total	0	84	84

Table 52*Bullying Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	83 (99%)	1 (1%)	84
Multi-Item Scale “Healthy”	0 (0%)	0 (0%)	0
Total	83	1	84

Table 53*Peer Support for Unit Members Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	2 (50%)	2 (50%)	4
Multi-Item Scale “Healthy”	0 (0%)	80 (100%)	80
Total	2	82	84

Table 54*Leader Support for Unit Members Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	4 (36%)	7 (63%)	11
Multi-Item Scale “Healthy”	2 (3%)	71 (97%)	73
Total	6	78	84

Note. Due to rounding, the percentages may not add up to 100%.

Table 55*Leader Support for Families Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	14 (78%)	4 (22%)	18
Multi-Item Scale “Healthy”	5 (8%)	61 (92%)	66
Total	19	65	84

Table 56*Professionalism Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	6 (67%)	3 (33%)	9
Multi-Item Scale “Healthy”	2 (3%)	73 (97%)	75
Total	8	76	84

Table 57*Ethical Leadership Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	5 (83%)	1 (17%)	6
Multi-Item Scale “Healthy”	1 (1%)	77 (99%)	78
Total	6	78	84

Table 58*Trust Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	12 (46%)	14 (54%)	26
Multi-Item Scale “Healthy”	0 (0%)	58 (100%)	58
Total	12	72	84

Table 59*Adaptability Practical Application Confusion Matrix*

	Single Item “Unhealthy”	Single Item “Healthy”	
	<i>N</i>	<i>N</i>	Total
Multi-Item Scale “Unhealthy”	2 (100%)	0 (0%)	2
Multi-Item Scale “Healthy”	2 (2%)	80 (98%)	82
Total	4	80	84

In addition to the confusion matrices, we used a second approach to examine the agreement between the single-item climate dimension means and the multi-item scale means. We computed the difference scores between the single-item mean and multi-item scale mean for each company across each dimension. We computed the difference scores using Cohen’s *d* to allow for easier interpretation of the effect size of the differences. Cohen’s *d* is defined as the difference between two means divided by the pooled standard deviation. Cohen’s (1988) criteria defined meaningful differences as .20 for a small effect, .50 for a medium effect, and .80 for a large effect. Sawilowsky (2009) expanded Cohen’s rule of thumb to include very small (.01), very large (1.2), and huge (2.0) effect sizes. Table 60 illustrates the difference between the means. Across companies, the differences between the single item and multi-item scale means were very small to small.

Table 60*Mean Climate Differences Between Single-Item and Multi-Item Scales*

Climate Dimension	Single-Item Mean	Multi-Item Scale Mean	Mean Difference	Cohen's <i>d</i>
Flow of Information	3.03	3.11	0.08	0.08
Autonomy	3.08	3.11	0.03	0.03
Respect for the Individual	3.30	3.18	-0.12	-0.11
Hazing	1.72	1.71	-0.01	-0.01
Bullying	2.16	2.18	0.02	0.02
Peer Support Unit Members	3.69	3.61	-0.08	-0.09
Leader Support for Unit Members	3.47	3.39	-0.08	-0.08
Leader Support for Families	3.29	3.32	0.03	0.03
Professionalism	3.41	3.44	0.03	0.03
Ethical Leadership	3.52	3.56	0.04	0.04
Trust	3.36	3.21	-0.15	-0.15
Adaptability	3.61	3.57	-0.04	-0.05

Discussion

Recent policy and directives illustrate the continued importance of command climate for Army leaders (Army Directive 2013-29, McHugh, 2013; 2019 Army Posture Statement, Esper & Milley, 2019; U.S. Department of Defense Sexual Assault Prevention and Response Office, 2021). Army leaders need valid and reliable measures of command climate to quickly identify and resolve potential problems and to develop and maintain positive climates within their units. However, the frequency of administration of the command climate and other surveys may affect the quality and accuracy of the survey data collected from Soldiers.

Recent ARI research demonstrated preliminary support for the feasibility of using a single-item assessment as a quick “health-check” on the command climate of a unit (Adis, et al., 2020; Adis et al., 2021). The current effort extended ARI’s research by revising and evaluating the prototype approach that uses a single item rather than multi-item scale to assess command climate. In addition, we refined a multi-item follow-up survey for use in further diagnosing potential problems identified in the initial climate assessment. This project built on past command climate survey development work by investigating the reliability and validity of revised command climate measures.

Reliability of the Full Scales and Single Items

Results showed strong support for the reliability of the multi-item assessment and moderate support for the reliability of the single-item assessment. Examination of item-total correlations identified items in two of the multi-item scales that needed to be removed to improve reliabilities (ethical leadership and hazing). After these items were removed, the reliabilities for the climate scales ranged from .90 to .94. We based the calculation of reliability

for single-item measures on Wanous et al.'s (1997) approach, which uses the correction for attenuation formula and algebraically solves for single-item reliability. This approach assumes that the single item is perfectly parallel with the domain of the scale (an assumed true correlation of 1.0) and uses the correlation between the single item, the scale, and the reliability of the scale as inputs. After examining the item-scale correlations, $ICC(1)$, and $ICC(2)$, we selected a final set of single items to maximize the single-item reliability. Reliabilities for the single-item assessments were more moderate than those for the multi-scales, ranging from .68 (bullying) to .83 (hazing). Bullying, which had the lowest single-item reliability estimates (.68) also had the lowest correlations between the scale and single item (.79), limiting the single-item reliability estimate. Overall, the single-item reliabilities exceeded or closely approached the .70 cutoff commonly used for adequate reliability (Nunnally, 1970).

Company-Level Effects

Command climate is considered a shared, group-level perception and a unit-level construct. These shared perceptions among individuals within a specified level of the organization theoretically justify the aggregation of individual perceptions of climate to the group or organizational level (Isaksen & Akkermans, 2011). Best practices in group-level research indicate that researchers should test each construct to determine whether there is sufficient group-level variance to warrant conducting analyses at the group level. We used three indices to examine whether the multi-item scales and single-item assessments represented group-level constructs: $ICC(1)$, $ICC(2)$, and $r_{wg}/r_{wg(j)}$. We found mixed support for aggregating the measures to the group level.

For $ICC(1)$, results showed that all multi-item scales and most of the single-item measures reached statistical significance at the .05 effect size threshold, suggesting a small group effect (LeBreton & Senter, 2008). One multi-item scale, bullying, failed to reach the .05 effect size ($ICC(1) = .04$). Three single items, bullying, peer support for unit members, and leader support for unit members, did not reach .05 effect size. The flow of information scale approached the threshold for a medium group effect size (.10) at .09. These effect sizes are not particularly large – one interpretation of the effect sizes is that an effect of .10 corresponds to approximately 10% of the variance in ratings being due to systematic differences between companies. On the other hand, the significant level of the group effects suggests that ignoring the company-level influences on these variables would violate the regression assumption of independent residuals; therefore, an examination of group-level effects is important.

For the $ICC(2)$ statistic, an index of agreement within each company, two of the multi-item scales and one single item reached the .70 threshold. However, many reached .60. $ICC(2)$ can be interpreted as the reliability of the means of raters within each group. In other words, a measure with an $ICC(2)$ of .60, suggests that 60% of the score is unit-level variability, and the remaining 40% represents individual-level variability. Similar to coefficient alpha, one way to increase $ICC(2)$ scores is by including more unit members from each company in the company-level means. The average number of respondents per company was 26 ranging from 15 to 49 Soldiers. Including additional respondents would ensure that the company is adequately sampled and would likely produce more stable estimates. However, if consensus within the company is low because unit members are having differing experiences or perceive their experiences differently, having more raters will not necessarily produce a higher $ICC(2)$.

We further investigated within-group agreement with $r_{wg}/r_{wg(j)}$ to assess the single item and multi-item scale interrater agreement. Agreement was moderately high on the multi-item scales for all of the dimensions with mean company $r_{wg(j)s}$ ranging from .69 to .89. Single-item r_{wgs} were lower and ranged from .30 to .57 across companies. This might suggest differences within companies in how items are interpreted. For example, individuals in a unit may have very different perceptions regarding the climate for respect for the individual depending on their individual experiences in the unit. To the extent that some Soldiers in a unit had varied experiences, company-level results would demonstrate no or a low group-level effect. In these cases, using the mean to form aggregate data is not useful; rather, it would be important to examine climate strength as a moderator in the company-level analyses.

Construct Validity of Command Climate Scales

In order to establish the validity of the command climate dimension assessments, we examined both the intercorrelations among scales and the scales' factor structure to determine whether there is evidence that the dimensions are distinct. In the individual-level data, correlations among the scales ranged in strength from .18 to .82, with an average of .56. Correlations were higher in the company-level data ranging from .18 to .90 with an average of .68. On the surface, this suggests that many scales are closely related. For example, trust, respect for the individual, peer support for unit members, and leader support for unit members were more highly intercorrelated with one another suggesting some construct overlap. Hazing and bullying had relatively smaller intercorrelations with other dimensions.

We conducted CFAs to further examine the construct validity of the command climate items. The factor loadings indicated that the climate dimensions are distinct, and the correlated factors model fit better than the higher-order factors model. This provides evidence that the climate dimensions are distinct and cannot be completely accounted for by a second-order general climate factor. In addition, factor loadings were generally high with an average of .82. Finally, we assessed convergent validity evidence for the single items by examining the scale-to-single-item correlations. Correlations ranged from .79 to .87 between the single items and their respective multi-item scales indicating the single items are assessing their intended constructs.

Criterion-Related Validity of the Full Scales and Single Items

Criterion-related validity evidence was generally strong for the multi-item and single-item measures. All 12 multi-item scales and single items significantly related to at least one of the hypothesized outcome measures. Furthermore, the single-item and multi-item scales demonstrated similar profiles of significant relationships with outcomes and average difference of only .05 between the single-item and multi-item company-level regression coefficients and an average difference of .04 between the single-item and multi-item hierarchical linear model slopes. Only one of the 70 tested relationships found a significant relationship between the multi-item scale and the corresponding outcomes that the single item would have failed to detect (hazing and affective commitment). Still, this relationship approached significance, and the difference between the multi-item and single-item regression coefficients and hierarchical linear model slopes was small (.06).

We used hierarchical regressions to determine whether the multi-item scales explained significantly more variance in the associated outcomes than the single items alone. Of the 41 company-level dimension-criteria relationships that were significant, about two-thirds (63%) of the hierarchical relationships found that the multi-item scale added significant variance to the single item in predicting the criteria. The increases ranged from three (trust-mutual trust) to 21 percent (peer support for unit members-unit resilience), though the average increase was only seven percent.

Soldiers, officers, and battalion leaders (typically battalion commanders) provided criterion data for the outcome measures. Overall, 41 of the 70 relationships tested were significant (59%). Thirty-seven of the 42 relationships between the climate dimensions and Soldier-rated outcomes (88%) and all five of the relationships between the climate dimensions and Officer-rated outcomes were significant, but none of the 23 relationships between the climate dimensions and commander-rated outcomes were significant.

There was an average of 26 Soldiers in each company providing ratings that contributed to the aggregated Soldier-rated outcome score with 84 companies providing data for all Soldier-rated outcome measures. For the officer-rated outcome measure of unit performance, on average, three officers in each company provided ratings, and 75 companies had data from officers on unit performance. For battalion commanders, there was only one leader providing ratings for the commander-rated outcome measures, and battalion leaders rated 77 companies on outcomes. The relatively few raters providing ratings for the officer and battalion commander outcomes may have contributed to a less reliable measure for those outcomes. Additionally, the power was lower for detecting relationships between dimensions and officer- and commander-rated outcomes due to the lower number of companies with officer and battalion commander outcome data available.

It is also possible that the lack of significant relationships between the dimensions and the commander-rated outcomes could be due to differences in standards, perspectives, or opportunities to observe performance. For instance, it is likely that battalion leaders have fewer opportunities to observe company performance than do Soldiers in the company. The low correlation between Soldier ratings and battalion commander ratings of unit performance indicate that the two measures might have captured different aspects of performance. On the other hand, the strength of the relationships between the climate dimensions and Soldier-rated outcomes may be overstated or inflated due to common method bias because Soldiers also provided the climate dimension data. The following section summarizes the criterion-related validity results for each of the climate dimensions.

Flow of Information

The flow of information dimension predicted all four of the hypothesized outcomes rated by Soldiers and officers, predicting morale, engagement, and unit performance. Flow of information did not predict unit performance or morale, as rated by battalion leaders. The single item accounted for 29 to 45 percent of the variance in the predicted outcomes. Adding the multi-item scale to the regression equation contributed an additional eight to 15 percent of variance explained in morale, engagement, and unit performance rated by Soldiers but did not contribute significant additional variance explained to unit performance rated by officers. Flow of

information did not significantly predict battalion leader ratings of unit performance or morale. Overall, a climate for flow of information within companies was a strong predictor of not only unit performance, but of other outcomes of importance to the Army (morale and engagement). Units with members who feel information is effectively communicated by their chain of command are more likely to have higher morale, be enthusiastic about and inspired by their work, and perform more effectively. These findings are consistent with findings in previous research (Adis et al., 2020).

Autonomy

The autonomy dimension predicted all three of the hypothesized outcomes rated by Soldiers and officers: job satisfaction, unit performance (rated by Soldiers), and unit performance (rated by officers). Autonomy did not predict unit performance, unit autonomy or mission preparedness (rated by battalion leaders) or withdrawal (rated by Soldiers). The single item accounted for 19 to 44 percent of the variance in the predicted outcomes. Adding the multi-item scale to the regression equation did not contribute significant additional variance explained to any of the predicted outcomes. These results indicate that a climate in which Soldiers believe that they are trusted by leadership to make decisions, able to take initiative, and figure out problems is associated with Soldiers being satisfied with the opportunities and challenges of their job, and perceiving that their unit is performing well. These findings are consistent with findings from previous research (Adis et al., 2020) as well as with studies that show autonomy in job decisions has numerous positive effects on employee motivation, satisfaction, and performance (e.g., Fried & Ferris, 1987; Hackman & Oldham, 1976; Loher et al., 1985).

Respect for the Individual

The respect for the individual dimension predicted two of the three hypothesized outcomes rated by Soldiers, predicting mutual trust and cohesion, but not withdrawal or respect for others (rated by battalion leaders). The single item accounted for 35 to 52 percent of the variance in the predicted outcomes. Adding the multi-item scale to the regression equation contributed an additional nine percent of variance explained in mutual trust and an additional 10 percent of variance explained in cohesion. These relationships suggest that units in which members perceive that they are respected and valued also tend to develop a sense of trust, pride, and bonding among unit members. This reinforces the importance of a climate of mutual respect and dignity, which decades of research on command climate has identified as important (e.g., Bullis & Reed, 2003; Lempke, 1988).

Hazing

The hazing scale predicted two of the hypothesized Soldier-rated outcomes, stress impact and affective commitment. Hazing did not predict Soldier ratings of morale nor the commander-rated outcomes of unit morale and commitment. Though the single-item regression coefficients and hierarchical linear model slopes all differed less than .06 from those of the multi-item scales, they did not meet the criteria for significance for affective commitment and morale, but were significant for stress impact. The relationships between the hazing scale and the outcomes suggest that a higher climate for hazing (unit members perceive hazing is occurring in the company) is related to a greater impact of stress on unit members' perceived ability to complete

their work and get along with others, a lower sense of belonging to the Army, and a lower sense of morale. These results are consistent with those found in previous command climate research (Adis et al., 2020). The relatively smaller beta weights and hierarchical linear model scales found in the hazing relationships suggest that the scale and single item for hazing demonstrated lower criterion-related validity when compared to the other climate dimensions. It may be that the range restriction in the hazing measures attenuated these relationships. At the company level, the hazing climate scale score ranged from 1.16 to 2.51 and the single item ranged from 1.00 to 2.53, indicating that no companies reported a high level of hazing occurring within the unit.

Bullying

The bullying scale was significantly related to all four of the hypothesized Soldier-rated outcomes, predicting stress impact, affective commitment, morale, and withdrawal. Bullying did not predict the commander-rated outcomes of unit morale and commitment. The single item accounted for 24 percent of the variance in morale. Adding the multi-item scale to the regression equation did not significantly contribute additional variance. The relationships between the bullying scale and the outcomes suggest that a higher climate for bullying (unit members perceive bullying is occurring in the company) is related to a greater impact of stress on unit members' perceived ability to complete their work and get along with others, a lower sense of belonging to the Army, a lower sense of morale, and a higher sense of withdrawal from work (e.g., coming to work late, calling in sick, doing poor quality work). These results are consistent with those found in previous command climate research (Adis et al., 2020). Similar to hazing, bullying also generally has a low base rate and the single item and multi-item scale demonstrated range restriction. At the company level, the bullying climate scale score ranged from 1.41 to 2.97 and the single item ranged from 1.31 to 3.06, indicating that no companies reported a high level of bullying occurring within the unit. As with hazing, range restriction in the bullying measures may have attenuated the criterion relationships. These low means are not surprising given that Soldiers may be reluctant to report bullying and hazing incidents; Soldiers who are involved in these types of incidents may be unwilling to report it because they either do not perceive it as a negative activity or they may fear retribution (Keller et al., 2015).

Peer Support for Unit Members

The peer support for unit members dimension predicted all five of the hypothesized outcomes rated by Soldiers, predicting morale, stress impact, affective commitment, cohesion, and unit resilience. Peer support for unit members did not predict the commander-rated outcomes of unit morale and commitment. The single item accounted for 22 to 56 percent of the variance in the predicted outcomes tested at the company level. Adding the multi-item scale to the regression equation contributed an additional eight to 21 percent of variance explained in the outcomes at the company level. These relationships suggest that units in which members support one another tend to have higher morale, a lower impact of stress on unit members' perceived ability to complete their work and get along with others, a higher sense of belonging to the Army, a higher sense of closeness and bonding in the unit, and a greater perceived ability to handle stressors and overcome challenges. In contrast to the results found in the present study, prior research (Adis et al., 2020) did not find significant added variance when adding the multi-item scale to the single item for any of the relationships tested. The prior study used "Members of this unit support each other;" however, this study used an alternative single item "Soldiers in

this unit look out for one another” because it resulted in higher single-item reliability based on Adis and colleagues’ findings (see the Scales and Single Items section). It is possible that this change in single item resulted in the single item not fully capturing the construct of peer support for unit members climate in the current sample. Both studies had relatively small samples; therefore, additional research may be needed to determine which item would be the most appropriate single-item measure.

Leader Support for Unit Members

The leader support for unit members dimension predicted all three of the hypothesized outcomes rated by Soldiers, predicting affective commitment, unit resilience, and engagement. Leader support for unit members did not predict commander-rated commitment. The single item accounted for 72 percent of the variance in unit resilience. Adding the multi-item scale to the regression equation contributed an additional five percent of variance explained in unit resilience. Additionally, the single item accounted for 40 percent of the variance in engagement. Adding the multi-item scale to the regression equation contributed an additional four percent of variance explained in unit resilience. These relationships suggest that units in which members perceive that the leaders provide the support unit members need tend to have a higher sense of belonging to the Army, a greater perceived ability to handle stressors and overcome challenges, and a greater sense of enthusiasm and pride for their work. These results are generally consistent with those found in previous command climate research (Adis et al., 2020).

Leader Support for Families

The leader support for families dimension predicted Soldier-rated family desire to remain in the Army. Both the single item and the multi-item scale significantly predicted individual-level perceptions of this outcome. Leader support for families did not predict the commander-rated outcomes unit performance and family involvement. These results suggest that units in which members perceive that the leaders provide the support unit members’ families need tend to perceive that their families support their decision to remain in the Army.

Professionalism

The professionalism dimension predicted one of the three hypothesized outcomes rated by Soldiers, engagement, but it did not predict weapons qualifications “scores” or withdrawal. Professionalism did not significantly predict commander-rated physical training or disciplinary actions. These findings are consistent with Adis and colleagues’ (2020) findings that professionalism was not related to weapons qualifications “scores,” APFT scores, or Article 15s. The single item accounted for 37 percent of the variance in engagement. Adding the multi-item scale to the regression equation contributed an additional four percent of the variance explained in engagement. These results suggest that units in which members maintain standards of professionalism tend to have a greater sense of enthusiasm and pride for their work.

Ethical Leadership

The ethical leadership dimension predicted all four of the hypothesized outcomes rated by Soldiers and officers: affective commitment, satisfaction with unit leadership and unit performance (as rated by both Soldiers and officers). Ethical leadership did not predict

commander-rated disciplinary actions, unit performance, or commitment. The single item accounted for 12 to 66 percent of the variance in the predicted outcomes tested at the company level. Adding the multi-item scale to the regression equation contributed an additional three percent of variance explained in unit performance rated by Soldiers but did not contribute significant variance to the other outcomes tested at the company level. These relationships suggest that units in which members perceive that the leaders behave ethically (adhere to the Army values of honor and integrity) tend to have a higher sense of belonging to the Army, a higher satisfaction with unit leadership, higher perceived effective performance, and fewer disciplinary problems.

Trust

The trust dimension predicted all six of the hypothesized outcomes rated by Soldiers and officers, predicting cohesion, collective efficacy, mutual trust, OCB, engagement, and unit performance (as rated by officers). Trust did not predict any of the commander-rated outcomes. The single item accounted for 38 to 73 percent of the variance in the predicted outcomes tested at the company level. Adding the multi-item scale to the regression equation contributed an additional three to ten percent of variance explained in cohesion, collective efficacy, engagement, and mutual trust, but did not contribute significant variance for unit performance (rated by officers). Overall, a climate of trust within companies was a strong predictor of not only unit performance, but of outcomes that have been historically important to the Army (i.e., cohesion, collective efficacy). Units with members who feel like they can count on their peers and leaders are more likely to have members who feel a sense of cohesion and confidence in their ability to coordinate and execute their tasks, trust and help one another, find interest and enthusiasm in their work, and perform better as a unit. These results are consistent with previous ARI research findings regarding command climate for trust (Adis et al., 2021) and the positive relationship between cohesion, collective efficacy, mutual trust, and performance (Estrada et al., 2021). Trust is conceptually a necessary precursor to building cohesion, collective efficacy, and effective performance. The strong relationship between the trust climate measures and the mutual trust outcome measure may be due to the overlap in the trust construct.

Adaptability

Adaptability climate, as measured by both the single item and scale, was significantly related to all five of the outcomes rated by Soldiers. Similar to findings for other dimensions, the battalion leaders' ratings of unit performance, adaptive performance, and performance in training were not significantly related to unit members' perceptions of unit adaptability. The single item accounted for 33 to 75 percent of the variance in collective efficacy, mutual trust, unit resilience and unit performance (rated by Soldiers and officers). For most of these outcomes, the multi-item scale accounted for a significant increase in additional variance explained (eight to fourteen percent). However, including the scale did not significantly explain additional variance in officer-rated unit performance. These results are consistent with previous ARI research findings regarding command climate for adaptability (Adis et al., 2021). The very strong relationship between adaptability and collective efficacy, mutual trust, and unit performance may reflect unit-level perceptions about the importance of leader and unit member flexibility and ability to adjust to new environments.

Criterion-related Validity Summary

For most of the anticipated relationships, the results were consistent with our predictions, showing evidence for the criterion-related validity of the full scale and single items. Moreover, the single items generally demonstrated similar profiles of relationships with the criteria as the full scales, with an average difference of only .02 between the single items and multi-item scales tested at the company level and an average difference of .04 for mixed-effects relationships tested with outcomes at the individual level. There were only two instances in which there was a significant relationship between the multi-item scale and the criterion measure that would have been missed by the single item of the 70 tested relationships (hazing-affective commitment and professionalism-withdrawal).

Climate Strength

We examined covariates of climate strength (measured by $r_{wg(j)}$) for each of the climate dimensions for both the single-item and multi-item scales. Specifically, we tested the covariates of company size (number of Soldiers surveyed from the unit), company type (combat arms unit or support unit), and company tenure (average Soldier tenure in company). None of the covariates consistently related to climate strength across all climate dimensions; however, there were several significant relationships. For example, company size significantly and positively correlated with respect for the individual, peer support for unit members, and professionalism climate strength for both the single items and multi-item scales. Support units (versus combat arms) tended to have higher climate strength for peer support and unit leader support for unit members when measured by single items. On the other hand, combat arms units tended to have higher climate strength for flow of information climate measured by a single item. These differences were not present for the multi-item scales. For the multi-item scales, support units tended to have higher hazing climate strength. Though most relationships were not significant, average company tenure negatively related to climate strength across climate dimensions, such that higher average company tenure related to lower climate strength.

We ran exploratory moderated regressions for outcomes associated with respect for the individual, ethical leadership, hazing, and bullying as predictors with climate strength (measured by $r_{wg(j)}$) as the moderator. Out of the 16 moderated regressions tested, climate strength only significantly moderated three of the relationships: respect for the individual climate level and commander ratings of respect for others, bullying climate level and withdrawal, and bullying climate level and commander ratings of morale. In regard to respect, when there was low climate strength, or low agreement within the unit about respect for the individual, there was a positive relationship between the climate level and the commander ratings of respect for others. However, when agreement within the unit was high (high climate strength) there was a negative relationship between climate level and commander ratings. In regard to bullying climate, when there was low climate strength for bullying (low agreement about bullying climate), there were strong positive relationships for the relationships between bullying climate level and both withdrawal and commander ratings of morale. However, at higher levels of climate strength (or high agreement about bullying climate), the relationship was weaker, and the relationships between bullying climate level and withdrawal and commander ratings of morale became negative. Further testing of these relationships is required to draw meaningful inferences.

Diagnostic Items

To identify whether the group-level structure of the data influenced the diagnostics scores, we examined the ICCs. While 99% of the *ICC(1)*s for the command climate diagnostic items were statistically significant, many were small in magnitude. Fifty-two percent of the items had an *ICC(1)* that was below the .05 threshold identified by LeBreton and Senter (2008) as indicative of a group effect and none of the diagnostic items reached the *ICC(2)* threshold of .70. These findings were not surprising because we were expecting responses on the diagnostic items to identify nuanced problems within the unit that would not necessarily have consensus from all members of the unit.

To evaluate the strength of the relationship between diagnostic items and company-level scales and single items, we examined the intercorrelations among the different measures. Generally, the correlations between the single items and the diagnostic items were not as high as the correlations between the full scales and the diagnostic items, though the difference in correlation magnitude was small. Further, we did not intend for diagnostic items to have a high degree of overlap with the scales and single items since the operational intention behind the diagnostic items was to further understand any potential issues identified by the single items.

In terms of criterion-related validation, the diagnostics results were very similar to those for the full scale and single items (examined at the company level and with the hierarchical linear mixed-effects models). We found many of the same patterns of relationships between diagnostics and criteria that we found for the single items or full scale, with the climate measures predicting some outcomes but not others. As with the single items and full scale, the diagnostic items tended to predict the intended outcomes with the exception of those measured on the battalion commander survey. Operationally, we would recommend using the full scales whenever interested in conducting research about the relationships of climate dimensions to outcomes of interest. The single items are appropriate for unit leader use for health checks, and the diagnostic items are appropriate for unit leader use in gathering further information regarding climate dimensions identified as problematic for a unit.

Assessment of the Practical Application of Single-Item Measures

We examined the validity of the practical application of the single-item assessments using two methods. First, we created confusion matrices for each dimension to examine the practical effectiveness of using a single-item measure by comparing the performance of the single items to the multi-item scales for identifying dimensions that were above or below an arbitrary mean threshold. This threshold would signal to a commander that there was a possible climate problem. Second, we examined the magnitude of mean differences between the single-item and multi-item scales.

The confusion matrices and associated indices demonstrated the strong similarity between the multi-item scale and single-item results regarding whether there might be an issue in units' command climates. Across dimensions, the single item correctly (as compared to the multi-item scale result) identified a healthy climate for at least 83% of the units in our sample. In other words, in 83% of the units, a single-item survey would have resulted in the same indication of a command climate issue as the longer, multi-item scale survey. In addition, false positive

rates were generally low. However, the climate dimensions respect for the individual, peer support for unit members, and trust had higher false positive rates where the single-item measures indicated there was a healthy climate than when the multi-item scales indicated there was an unhealthy climate. Where there was a greater mismatch between the assessment approaches, the climate dimension means tended to hover around the arbitrary 3.0 threshold used to classify the climate dimension as “healthy” or “unhealthy” (see Table 60). Thus, small mean differences may be driving what appear to be larger mismatches between the two approaches.

We used a second method to examine the agreement between the approaches by computing the difference scores between the single-item mean and multi-item scale mean for each company across each dimension. We computed mean difference scores in terms of Cohen’s *d*, and the differences between the single-item and multi-item scale means were very small to small. Overall, the practical application results indicated that use of a short, 12-item measure composed of single items measuring various aspects of climate would produce very similar results regarding which dimensions might indicate a climate issue as would a much longer, multi-item survey. Use of the short survey would allow commanders to quickly assess command climate within their units and follow-up with a more detailed survey or sensing session to gather additional information where needed to address areas of concern.

Phase I and Phase II Research Comparison

In Phase I of this program of research, we developed and validated an initial set of 21 climate constructs across two waves. The first wave examined 13 climate constructs using data from 1,342 Soldiers and officers from 51 Army companies (Adis et al., 2020), and the second wave examined eight additional climate constructs using data from 1,358 Soldiers from 57 Army companies (Adis et al., 2021). Based on the promising results of the Phase I research, ARI initiated Phase II to refine and further validate a unit-level survey measure of command climate. In Phase II, we examined 12 climate constructs using data collected from 2,238 Soldiers from 84 companies. Overall, the Phase II results provided further support for the use of single item measures of command climate with increased single item reliabilities and comparable single item company effects, construct validity, criterion-related validity, and practical applications to the Phase I results.

After the revisions made to the single items as part of the Phase II research, the estimated single item reliabilities increased for all but one of the climate dimensions. Estimated single item reliability decreased from .80 in Phase I to .78 in Phase II for respect for the individual. For the other 11 climate dimensions, the reliability increased in Phase II. Most notably, the bullying climate dimension estimated single item reliability increased from .18 to .68.

In both phases, we computed *ICC(1)* and *ICC(2)* to evaluate the appropriateness of the group-level measurement for the climate dimensions. The *ICC(1)*s and *ICC(2)*s were generally higher for Phase I than Phase II; however, the differences were minimal. The average difference in *ICC(1)* across the 12 climate dimensions was .02 and the average difference in *ICC(2)* across the 12 climate dimensions was .07. The largest observed difference was in the leader support for unit members climate where the *ICC(1)* was .11 in Phase I and .04 in Phase II, and the *ICC(2)* was .76 in Phase I and .53 in Phase II. In order to establish the construct validity of the command

climate assessments, we examined factor analyses to determine whether the dimensions are distinguishable from each other. Both the EFAs in Phase I and the CFA in Phase II provided support for the distinct climate constructs.

In both Phases, we tested many predictor-criterion relationships to evaluate the criterion-related validity of the climate single items compared to the scales. Out of the 48 predictor-criterion relationships that we tested in both Phase I and Phase II, there were comparable results between the two phases. That is, predictor-criterion relationships that were significant in Phase I were significant in Phase II and predictor-criterion relationships that were not significant in Phase I were also not significant in Phase II, with one exception. The exception was the relationship tested with leader support for families predicting family desire to stay in the Army. In this case, there was not a significant relationship in Phase I, but there was a significant relationship in Phase II.

We assessed the practical application of the single items in Phase I by setting an arbitrary threshold of 3.0 for the command climate scores, such that we considered 3.0 and above a good climate and below 3.0 was considered to be a climate with a potential problem. We evaluated each company on whether the average single item score “matched” the average scale score in terms of being a good climate or potentially problematic. In Phase I, the match rate between single item and scale results for the 12 climate dimensions included in Phase II ranged from 83% to 100% matches. In Phase II, we used the same arbitrary threshold of 3.0 to distinguish between “healthy” and “unhealthy” climates, but we used confusion matrices to evaluate the practical effectiveness of the single items for each dimension. The accuracy index (how often the single item results matched the multi-item scale results) ranged from .83 to 1.00 for the climate dimensions.

In summary, both the Phase I and Phase II results generally supported the feasibility of using a short, single-item assessment to assess company-level command climate. Further, in both phases, an evaluation of the practical application of the single-item approach demonstrated that the single-item measure would produce almost exactly the same results as would a much longer, multi-item survey.

Limitations and Future Research

The results of the current research and the previous Phase I research demonstrate a highly promising approach for reducing survey burden in the Army. The current research offered the opportunity to refine the measures for 12 of the climate dimensions. We used these refined measures to collect additional evidence beyond that provided by the Phase I research regarding the psychometric characteristics, criterion-related validity, and practical application of the single-item approach. In the current research, we were able to build on the Phase I research to improve the reliability of the multi-item scales and the correlations between the single item and multi-item scale, while considering the item-level ICCs. By doing so, we were able to improve upon the single-item reliabilities found in the Phase I research. In future research, we recommend exploring additional methods for assessing single-item reliability such as test-retest reliability.

While the current research showed some promising results, there are some limitations to the findings. One of these limitations was our sample size. While we had a fairly large sample of

companies ($N=84$), there were on average only 26 unit members in each company. The present research set a minimum cutoff of 15 unit members per company, which may not have been enough responses to accurately represent the underlying company-level perceptions. Future research might explore whether there are differences in the mean climate level or climate strength with a larger percentage of the company represented. Further, research suggests that more reliable estimates of the climate dimension company-level means will result with larger number of responses within units, particularly when *ICC(1)* values are small (Bliese, 1998). Larger unit-level samples may also provide a better picture of climate strength within units.

Similar to the Phase 1 results, the criterion-related validity results were weak for outcomes assessed with battalion leader ratings. In both the current and Phase 1 research samples, the number of battalion leader ratings was low, reducing power to detect criterion relationships. Further, we typically collected these ratings from a single battalion leader. In future research, collecting additional ratings for each company could improve the reliability of the battalion ratings. With multiple battalion leader ratings, rater effects could also be examined to identify and correct for rater error. Additional sources of criterion data such as battalion staff, chaplains, and EEO, SHARP, or FRG (Family Readiness Group) representatives may also provide valuable information related to specific outcomes.

Additional sources of outcome data may also be useful to explore and to use as criteria in future research. For example, with Unit Information Codes, company command climate could be linked to administrative unit-level data to examine links with additional outcomes and covariates. Careful attention to the date climate information is collected would be needed to ensure information is being compared during the same time period. Changes in leadership and large swings in unit membership could change climate in the unit.

Unit leadership is not the only important factor in company climate. Army companies are made up of smaller, nested units (platoons, squads) that are nested within larger units (battalions, brigades). Consideration of smaller nested levels may help researchers understand the nature of the effects of platoon and company membership on group-level perceptions. With additional data from intact company units, researchers may be able to assess climate mean and climate strength at additional levels to further identify what's driving lower group agreement levels (e.g., variation in mean or strength across platoons), or micro-climates (e.g., females in a unit experiencing bullying; Office of People Analytics representative, personal communication, September 2019). That said, the command climate survey is intended as a company-level survey, and interventions to improve climate would occur at the company level.

In terms of the practical application of a single-item approach, additional research is needed to determine the type of data that would be most useful to commanders and how to best present that data. Research is needed to identify the appropriate cut-off threshold that would be indicative of an issue in the unit. Future researchers could compare results of different strategies for setting a cut-off or flag (e.g., flag results if mean score is less than 3.0). Certain dimensions (e.g., hazing) might require lower cut-offs and some climate dimensions may require additional information about the distribution of scores. For example, for hazing, company leaders would need to know not only the average response within their units, but also if there were any outliers in the distribution of responses that would indicate that a few or even one person in the unit is experiencing a different hazing climate. In this case, the cut-off score for hazing may need to be

lower than 3.0 and climate strength information may need to be presented⁴. Climate strength analyses can help identify variation in the distribution of scores, but may not be precise enough to detect a single outlier. Results from these analyses may help inform not only how to present the data back to unit leaders, but also would inform how leaders could best respond to those results. For example, the intervention to address a unit with high agreement (i.e., strong climate) about a low level of trust climate would be very different than the intervention needed to address a unit with low agreement (i.e., weak climate) or with several outliers.

Empirical results and an understanding of Army priorities and risks could inform strategies to establish cutoffs or flags. For example, if senior Army leadership is particularly concerned with ethical leadership, a higher cut-off threshold could be set for the ethical leadership climate dimension. Further, the type of unit or unit mission might influence these strategies. There were some unit differences noted for the climate strength covariate analyses. Larger samples would likely be needed to better estimate these covariates. Future research could examine how these covariates impact the relationship between climate and outcomes. With additional unit-level data, researchers may be able to investigate different cut-off strategies and how those strategies impact relationships with the outcome measures. Additional analyses might examine differences in unit outcomes when using different cut-off strategies and when considering covariates such as unit type, unit size, average unit tenure, and average leadership tenure.

Other areas of additional research regarding the application of the single-item measurement approach include determining how to best report climate survey results to commanders – the type of data to present, format, and types of comparisons that would be most meaningful for leaders (e.g., compare company results to other units in Brigade or other similar units across the installation or across the Army). As part of the data collection in the current research project, we collected anecdotal information from battalion leaders regarding the content of the survey and practicalities of administering, interpreting, and acting upon the command climate survey results. For example, most battalion leaders preferred to see some type of results breakout (by platoon or by level: junior enlisted, NCOs, officers) and found the open-ended responses informative. Battalion commanders indicated a wide variety of preferences for the type of information they would like presented; thus, having a way to customize results presentation might offer the best solution. Other survey results customization, like allowing company or battalion leaders to set the thresholds for what they consider a “healthy” climate themselves, may provide leaders with more flexibility in addressing specific concerns. Leaders would need guidance on typical threshold levels and when leaders may want to relax or constrain the threshold range. Additional information should be obtained from both battalion and company leaders to more precisely determine how to best present command climate results. Appendix E provides additional detail on the battalion leader interview methodology and results.

Company leaders will also need guidance for interpreting survey results, as well as suggestions for how to best use the diagnostic items in either a sensing session or follow-up survey to gather additional data from unit members (see Appendix E for additional suggestions). Finally, the command climate survey has been described as a method to detect issues or

⁴ Lower scores on the hazing and bullying single items and multi-item scales indicate better climate based on the item valences, so cut-off scores lower than 3.0 would represent a more conservative approach.

problems with unit climate. However, additional work is needed to determine whether unit leaders would find the diagnostic items useful or sufficient for understanding not only the source of problems within their units but also the basis for strong, healthy climates. Unit leaders need to understand and maintain the conditions that are contributing to positive climates in addition to those that are contributing to unhealthy climates. Finally, unit leaders should be informed that single items are intended to be used as a quick pulse check of a unit and may not identify all issues in their organization.

Conclusion

The current research provides continued support for the use of a single-item measurement approach for assessing command climate. Overall, the single items performed comparably to the longer, multi-item scales. Single-item command climate measures offer an innovative approach to reducing survey burden while providing unit leaders with accurate feedback regarding the climate in their units. Combined with the diagnostic items, this approach can provide unit leaders with an efficient assessment method and actionable information to develop and maintain positive command climates within their units. The single-item measurement approach may also have value for other Army surveys and the evaluation procedures described in this report can serve as a model for future Army research on reducing survey burden.

References

- Adis, C., Byrd, C., Horgen, K., Wisecarver, M., Darrow, J., Hoffman, R., Rahill, K., Martin, J., & Fletcher, K. (2021). *Army command climate: Construct development and continued investigation of the viability of single-item measures*. (Technical Report No. 1405). U.S. Army Research Institute for the Behavioral and Social Sciences.
<http://apps.dtic.mil/sti/pdfs/AD1165421.pdf>
- Adis, C., Byrd, C., Wisecarver, M., Horgen, K., Darrow, J., Hoffman, R., & Rahill, K. (2020). *Army command climate: The viability of single item measures*. (Technical Report No. 1381). U.S. Army Research Institute for the Behavioral and Social Sciences.
<http://apps.dtic.mil/sti/pdfs/AD1093932.pdf>
- Allison, P. D. (1978). Measures of inequality. *American Sociological Review*, 43(6), 865-880.
<https://doi.org/10.2307/2094626>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014, June 23). Fitting linear mixed-effects models using lme4. *arXiv:1406.5823*. <https://arxiv.org/abs/1406.5823>
- Bedeian, A. G., & Mossholder, K. W. (2000). On the use of the coefficient of variation as a measure of diversity. *Organizational Research Methods*, 3(3), 285-297. <https://doi.org/10.1177/109442810033005>
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, 57(1), 289-300. <https://doi.org/10.1111/j.2517-6161.1995.tb02031.x>
- Beus, J. M., Payne, S. C., Bergman, M. E., & Arthur, W., Jr. (2010). Safety climate and injuries: an examination of theoretical and empirical relationships. *Journal of Applied Psychology*, 95(4), 713-727. <https://doi.org/10.1037/a0019164>
- Bliese, P. D. (1998). Group size, ICC values, and group level correlations: A simulation. *Organizational Research Methods*, 1(4), 355-373. <https://doi.org/10.1177/109442819814001>
- Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In Klein, K. J. & Kozlowski, S. W. J. (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349-381). Jossey-Bass.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In Bollen, K. A. & Long, J. S. (Eds.), *Testing Structural Equation Models* (pp. 136-162). Sage.
- Bullis, R. C., & Reed, G. (2003). *Assessing leaders to establish and maintain positive command climate*. Army War College.

- Carless, S. A., & De Paola, C. (2000). The measurement of cohesion in work teams. *Small Group Research*, 31(1), 71-88. <https://doi.org/10.1177/104649640003100104>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. <http://doi.org/10.4342/9780203771587>
- Colquitt, J. A., Noe, R. A., & Jackson, C. L. (2002). Justice in teams: Antecedents and consequences of procedural justice climate. *Personnel Psychology*, 55(1), 83-109. <https://doi.org/10.1111/j.1744-6570.2002.tb00104.x>
- Dawson, J. F., González-Romá, V., Davis, A., & West, M. A. (2008). Organizational climate and climate strength in UK hospitals. *European Journal of Work and Organizational Psychology*, 17(1), 89-111. <https://doi.org/10.1080/13594320601046664>
- Dickson, M. W., Resick, C. J., & Hanges, P. J. (2006). When organizational climate is unambiguous, it is also strong. *Journal of Applied Psychology*, 91(2), 351-364. <https://doi.org/10.1037/0021-9010.91.2.351>
- Dillman, D. A., Sinclair, M. D., & Clark, J. R. (1993). Effects of questionnaire length, respondent-friendly design, and a difficult question on response rates for occupant-addressed census mail surveys. *Public Opinion Quarterly*, 57(3), 289-304. <https://doi.org/10.1086/269376>
- Ehrhart, M., Schneider, B., & Macey, W. (2014). *Organizational climate and culture: An introduction to theory, research, and practice*. (1st ed.) Routledge. <https://doi.org/10.4324/9781315857664>
- Esper, M. T., & Milley, M. A. (2019). *2019 Army Posture Statement*. https://www.army.mil/e2/downloads/rv7/aps/aps_2019.pdf?st
- Estrada, A. X., Horgen, K. E., Lentz, E., Severt, J. B., Parks, C., & Fletcher, K. A. (2021). *Development and test of a model of Army unit cohesion* [Unpublished manuscript]. U.S. Army Research Institute for the Behavioral and Social Sciences.
- Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, 40(2), 287-322. <https://doi.org/10.1111/j.1744-6570.1987.tb00605.x>
- Fuchs, C., & Diamantopoulos, A. (2009). Using single-item measures for construct measurement in management research: Conceptual issues and application guidelines. *Die Betriebswirtschaft*, 69(2), 195-210.
- Gade, P. A., Tiggler, R. B., & Schumm, W. R. (2003). The measurement and consequences of military organizational commitment in Soldiers and spouses. *Military Psychology*, 15(3), 191-207. https://doi.org/10.1207/S15327876MP1503_03

- González-Romá, V., Peiró, J. M., & Tordera, N. (2002). An examination of the antecedents and moderator influences of climate strength. *Journal of Applied Psychology*, 87(3), 465-473. <http://doi.org/10.1037/0021-9010.87.3.465>
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16(2), 250-279. [https://doi.org/10.1016/0030-5073\(76\)90016-7](https://doi.org/10.1016/0030-5073(76)90016-7)
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Isaksen, S. G., & Akkermans, H. J. (2011). Creative climate: A leadership lever for innovation. *The Journal of Creative Behavior*, 45(3), 161-187. <https://doi.org/10.1002/j.2162-6057.2011.tb01425.x>
- James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology*, 67(2), 219-229. <https://doi.org/10.1037/0021-9010.67.2.219>
- James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69(1), 85-98. <https://doi.org/10.1037/0021-9010.69.1.85>
- Keller, K. M., Matthews, M., Hall, K. C., Marcellino, W., Mauro, J. A., & Lim, N. (2015). *Hazing in the U.S. armed forces: Recommendations for hazing prevention policy and practice* (Research Report No. 941). RAND Corporation. https://www.rand.org/pubs/research_reports/RR941.html
- Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3-90). Jossey-Bass.
- Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest package: tests in linear mixed effects models. *Journal of statistical software*, 82(13), 1-26. <https://doi.org/10.18637/jss.v082.i13>
- Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal*, 47(3), 385-399. <https://doi.org/10.2307/20159588>
- LeBreton, J. M., Burgess, J. R. D., Kaiser, R. B., Atchley, E. K. P., & James, L. R. (2003). The restriction of variance hypothesis and interrater reliability and agreement: Are ratings from multiple sources really dissimilar? *Organizational Research Methods*, 6(1), 80-128. <https://doi.org/10.1177/1094428102239427>

- LeBreton, J. M., James, L. R., & Lindell, M. K. (2005). Recent issues regarding rwg, rwg, rwg (j), and rwg (j). *Organizational Research Methods*, 8(1), 128-138. [https://doi.org/ 10.1177/1094428104272181](https://doi.org/10.1177/1094428104272181)
- LeBreton, J. M., & Senter, J. L., (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*, 11(4), 815-852. <https://doi.org/10.1177/1094428106296642>
- Lempke, D. A. (1988). *Command climate: The rise and the decline of a military concept*. Army War College.
- Lindell, M. K., & Brandt, C. J. (2000). Climate quality and climate consensus as mediators of the relationship between organizational antecedents and outcomes. *Journal of Applied Psychology*, 85(3), 331. <https://doi.org/10.1037/0021-9010.85.3.331>
- Loher, B. T., Noe, R. A., Moeller, N. L., & Fitzgerald, M. P. (1985). A meta-analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology*, 70(2), 280-289. <https://doi.org/10.1037/0021-9010.70.2.280>
- Luria, G. (2008). Climate strength – How leaders form consensus. *The Leadership Quarterly*, 19(1), 42-53. <https://doi.org/10.1016/j.leaqua.2007.12.004>
- McHugh, J. M. (2013). *Army Directive 2013-29 (Army Command Climate Assessments)* [Memorandum].
- Moriarty, K. O., Campbell, R. O., Heffner, T., & Knapp, D., J. (2009). *Validating future force performance measures (Army class): Reclassification test and criterion development. Research Product 2009-11*. (Technical Report No. 1314). U.S. Army Research Institute for the Behavioral and Social Sciences. <https://apps.dtic.mil/sti/citations/ADA569570>
- Mischel, W. (1977). On the future of personality measurement. *American Psychologist*, 32(4), 246-254. <https://doi.org/10.1037//0003-066x.32.4.246>
- Murphy, K. R., & Myers, B. (1998). *Statistical power analysis: A simple and general model for traditional and modern hypothesis tests*. Routledge. <https://doi.org/10.4324/9781315773155>
- Nunnally, J. C., Jr. (1970). *Introduction to psychological measurement*. McGraw-Hill.
- Nunnally, J. C., Jr., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.
- Ostoff, C., & Bowen, B. E. (2000). Moving HR to a higher level: HR practices and organizational effectiveness. In Klein, K. J. & Kozlowski, S. W. J. (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. (pp. 211-266). Jossey-Bass.

- Rafferty, A. E., & Jimmieson, N. L. (2010). Team change climate: A group-level analysis of the relationships among change information and change participation, role stressors, and well-being. *European Journal of Work and Organizational Psychology, 19*(5), 551-586. <https://doi.org/10.1080/13594320903007869>
- Roberson, Q. M., Sturman, M. C., & Simons, T. L. (2007). Does the measure of dispersion matter in multilevel research? A comparison of the relative performance of dispersion indexes. *Organizational Research Methods, 10*(4), 564-588. <https://doi.org/10.1177/1094428106294746>
- Roberson, Q. M., & Williamson, I. O. (2012). Justice in self-managing teams: The role of social networks in the emergence of procedural justice climates. *Academy of Management Journal, 55*(3), 685-701. <https://doi.org/10.5465/amj.2009.0491>
- Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing, 19*(4), 305-335. [https://doi.org/10.1016/S0167-8116\(02\)00097-6](https://doi.org/10.1016/S0167-8116(02)00097-6)
- Sawilowsky, S. S. (2009). New effect size rules of thumb. *Journal of Modern Applied Statistical Methods, 8*(2), 597-599. <https://doi.org/10.22237/jmasm/1257035100>
- Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook for essential theory and research* (pp. 10-24). Psychology Press.
- Schneider, B., Salvaggio, A. N., & Subirats, M. (2002). Climate strength: a new direction for climate research. *Journal of Applied Psychology, 87*(2), 220-229. <https://doi.org/10.1037//0021-9010.87.2.220>
- Shin, Y. (2012). CEO ethical leadership, ethical climate, climate strength, and collective organizational citizenship behavior. *Journal of Business Ethics, 108*(3), 299-312. <https://doi.org/10.1007/s10551-011-1091-7>
- Siebold, G. L., & Kelly, D. R. (1988). *Development of the Platoon Cohesion Index (PCI)*. (Technical Report No. 816). U.S. Army Research Institute for the Behavioral and Social Sciences. <https://apps.dtic.mil/sti/citations/ADA205478>
- Simmons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology, 85*(1), 102-111. <https://doi.org/10.1037/0021-9010.85.1.102>
- Sowinski, D. R., Fortmann, K. A., & Lezotte, D. V. (2008). Climate for service and the moderating effects of climate strength on customer satisfaction, voluntary turnover, and profitability. *European Journal of Work and Organizational Psychology, 17*(1), 73-88. <https://doi.org/10.1080/13594320701473065>

- Spector, P. E., Bauer, J. A., & Fox, S. (2010). Measurement artifacts in the assessment of counterproductive work behavior and organizational citizenship behavior: Do we know what we think we know? *Journal of Applied Psychology*, 95(4), 781-790. <https://doi.org/10.1037/a0019477>
- Stanton, J. M., Sinar, E. F., Balzer, W. K., & Smith, P. C. (2002). Issues and strategies for reducing the length of self-report scales. *Personnel Psychology*, 55(1), 167-194. <https://doi.org/10.1111/j.1744-6570.2002.tb00108.x>
- Stigler, S. M. (1973). Studies in the history of probability and statistics. XXXII: Laplace, Fisher, and the discovery of the concept of sufficiency, *Biometrika*, 60(3), 439-445. <https://doi.org/10.1093/biomet/60.3.439>
- U.S. Department of Defense Sexual Assault Prevention and Response Office. (2021). *Department of Defense Annual report on Sexual Assault in the Military Fiscal Year 2020*. https://www.sapr.mil/sites/default/files/DOD_Annual_Report_on_Sexual_Assault_in_the_Military_FY2020.pdf
- U. S. Department of the Army (2012). *Army Leadership* (Army Doctrine Reference Publication 6-22). Headquarters, Department of the Army. https://ssilrc.army.mil/wp-content/uploads/2020/06/ADP_6-22.pdf
- U. S. Department of the Army (2012). *Mission Command* (Army Doctrine Reference Publication 6-0). Headquarters, Department of the Army. https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN19189_ADAP_6-0_FINAL_WEB_v2.pdf
- U. S. Department of the Army (2015). *Leader Development* (Field Manual 6-22). Headquarters, Department of the Army. https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/fm6_22.pdf
- U.S. Department of the Army. (2020). *Army Command Policy* (Army Regulation 600-20). Headquarters, Department of the Army. https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN30132-AR_600-20-001-WEB-2.pdf
- van Mierlo, H., Vermunt, J. K., & Rutte, C. G. (2009). Composing group-level constructs from individual-level survey data. *Organizational Research Methods*, 12(2), 368-392. <https://doi.org/10.1177/1094428107309322>
- Wanous, J. P., & Hudy, M. J. (2001). Single-item reliability: A replication and extension. *Organizational Research Methods*, 4(4), 361-375. <https://doi.org/10.1177/109442810144003>
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, 82(2), 247-252. <https://doi.org/10.1037/0021-9010.82.2.247>

- Zohar, D. (2000). A group-level model of safety climate: testing the effect of group climate on microaccidents in manufacturing jobs. *Journal of Applied Psychology*, 85(4), 587-596. <https://doi.org/10.1037/0021-9010.85.4.587>
- Zohar, D., & Hofmann, D. A., (2012). Organizational culture and climate. In S. W. J. Kozlowski (Ed.), *The Oxford handbook of organizational psychology* (Vol. 1, pp. 643-666). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199928309.001.0001>
- Zohar, D., & Luria, G. (2005). A multilevel model of safety climate: Cross-level relationships between organization and group-level climates. *Journal of Applied Psychology*, 90(4), 616-628. <https://doi.org/10.1037/0021-9010.90.4.616>
- Zohar, D., & Tenne-Gazit, O. (2008). Transformational leadership and group interaction as climate antecedents: A social network analysis. *Journal of Applied Psychology*, 93(4), 744-757. <https://doi.org/10.1037/0021-9010.93.4.744>

Appendix A. Dimension, Diagnostic, and Outcome Scales and Items

Soldiers were provided the following instructions for completing the Command Climate Scales:

INSTRUCTIONS: Please use the scale provided to answer the following questions. When the statements refer to your "unit," **please think about your Company/Troop/Battery as your unit.**

To what extent do you agree or disagree with the following statements?

Strongly disagree (A)	Disagree (B)	Neither agree nor disagree (C)	Agree (D)	Strongly agree (E)	N/A – Don't know (F)
--------------------------	-----------------	-----------------------------------	--------------	-----------------------	-------------------------

The multi-item scales can be seen in Table A1.

Table A1

Command Climate Scale Items

1. Flow of Information	
Info1	Information is communicated effectively throughout the unit
Info2	Important information is shared within my unit/organization
Info4	Members of my unit are kept informed of upcoming events and requirements
Info5	Members of my unit understand the information shared by the chain of command
Info6	Members of my unit feel that leaders provide enough information
Info7	Leaders in my unit communicate clearly about the commander's intent
Info8	Leaders in my unit communicate clearly about unit members' job requirements
2. Autonomy	
Auton1	Unit leadership trusts the members of this unit to make decisions
Auton3	Unit members are given enough flexibility to do their jobs without excessive control from leadership
Auton4	Unit members are given the opportunity to figure out problems on their own
Auton5	Members of my unit are given freedom to do their job without being micromanaged
Auton6	Unit members are allowed to take initiative when appropriate
Auton7	Leaders trust unit members to complete their jobs without giving unnecessary guidance
Auton8	Unit leaders do not exert excessive control over the daily job activities of unit members
Auton9	Unit leaders allow unit members to get the job done without constant monitoring
Auton10	Unit members are expected to accomplish their mission without step by step guidance from leaders

(Continued)

3. Respect for the Individual	
Respect1	All members of this unit are treated with dignity and respect
Respect3	Leaders actively promote dignity and respect for members of this unit
Respect4	Leaders confront unit member actions that undermine dignity and respect
Respect5	Members of this unit feel that they are valued
Respect6	Leaders take action to show dignity and respect for unit members
Respect7	Members of this unit are valued for their contributions to the unit
4. Hazing	
Hazing2	Members of my unit are forced to perform abusive tasks or actions as a “rite of passage”
Hazing3	New members are harassed or humiliated as a “rite of passage” when joining this unit
Hazing4	When unit members are promoted, they are harassed or humiliated as a “rite of passage”
Hazing5	Members of this unit would report hazing if it happened
5. Bullying	
Bully1	Members of this unit bully other unit members (i.e., exclude or reject other unit members through abusive, humiliating, or harmful behavior)
Bully2	Members of my unit are the target of physical attacks by other unit members
Bully4	Some members of my unit feel picked on by their peers
Bully7	Leaders in the unit would ignore bullying if it occurred
Bully8	Leaders in this unit are unlikely to speak out against bullying
Bully9	If bullying occurred in this unit, leaders probably would not stop it
Bully11	Some members of my unit have felt humiliated by their peers
Bully12	Some members of my unit have felt excluded or rejected by other unit members
Bully13	Some members of my unit are abused or harmed by others in the unit
6. Peer Support for Unit Members	
PSUM1	Members of this unit support each other
PSUM2	My peers care about the well-being of others in this unit
PSUM4	My peers care about the opinions of others in this unit
PSUM5	Members of my unit pitch in when someone needs help
PSUM7	Members of this unit offer assistance to each other when someone needs help
PSUM9	Soldiers in my unit back each other up
PSUM10	My peers show concern for others in this unit
7. Leader Support for Unit Members	
LSUM2	Leaders in this unit care about the welfare of unit members
LSUM3	Leaders help members of this unit with problems that come up
LSUM4	Leaders in this unit are there when unit members need them
LSUM5	Leaders in this unit appropriately balance mission requirements with unit members’ welfare

(Continued)

8. Leader Support for Families	
LSFam2	Families in this unit receive the information they need
LSFam3	Unit leaders care about the well-being of unit members' families
LSFam4	Leaders in this unit are there for members' families when they need help
LSFam5	Leaders in this unit support the Family Readiness Group (FRG)
LSFam6	The Family Readiness Group (FRG) in this unit is effective
9. Professionalism	
Profes1	This unit emphasizes Army standards, doctrine, and regulations
Profes2	Members of my unit maintain high standards of professionalism
Profes4	Members of my unit expect one another to uphold Army standards
Profes5	Leaders discipline unit members who are not in compliance with Army standards
Profes6	Leaders in my unit emphasize Army values and the Profession of Arms
Profes7	Leaders in my unit lead by example
10. Ethical Leadership	
Ethics1	Unit leadership expects all unit members to behave ethically
Ethics2	Unit leaders behave ethically
Ethics3	Leaders of my unit value doing the right thing
Ethics4	Unit leaders hold all unit members to a high ethical standard
Ethics6	Leaders in my unit tend to ignore unethical conduct
Ethics7	If unit members see unethical behavior, they report it to leadership
11. Trust	
Trust1	Members of this unit trust one another
Trust2	Members of this unit are trustworthy
Trust3	Unit members can count on our leaders
Trust4	Members of my unit have confidence in one another
Trust5	Unit leaders follow through on their commitments
Trust7	Unit members can be trusted to follow through on their word
12. Adaptability	
Adapt1	Members of this unit effectively adapt to changes in situations
Adapt3	Unit members effectively adjust when task assignments change
Adapt4	Members of the unit get the job done even when faced with unexpected situations
Adapt5	Unit members can switch gears quickly to respond to unexpected events
Adapt7	Unit leaders are adaptable
Adapt8	Members of my unit easily cope with change
Adapt10	Unit members adapt quickly
Adapt11	Members of my unit quickly respond to changing demands

Soldiers were provided the same instructions and responses options to complete the single-item measures as they were to complete the multi-item scales. The single items can be seen in Table A2.

Table A2

Command Climate Single Items

Command Climate	Item Name	Item Content
1. Flow of Information	Info3	Information is effectively communicated by my chain of command
2. Autonomy	Auton2	Unit members are given appropriate flexibility to make decisions to successfully accomplish the mission
3. Respect for the Individual	Respect2	Leaders ensure that all members of this unit are treated with dignity and respect
4. Hazing	Hazing1	Members of this unit engage in hazing (i.e., intentionally cause new members to suffer or be exposed to activities that are abusive, humiliating, or harmful as a “rite of passage”)
5. Bullying	Bully10	Leaders in this unit do not take action to prevent bullying
6. Peer Support for Unit Members	PSUM8	Soldiers in my unit look out for one another
7. Leader Support for Unit Members	LSUM1	Leaders in this unit provide members with the support they need
8. Leader Support for Families	LSFam1	Unit leaders provide families with the support they need
9. Professionalism	Profes3	Members of my unit uphold Army standards
10. Ethical Leadership	Ethics5	Unit leadership adheres to the Army Values of Honor and Integrity
11. Trust	Trust6	Members of my unit can count on each other
12. Adaptability	Adapt9	Members of my unit are flexible in adjusting to changing mission requirements

Soldiers were provided with the following instructions to complete the command climate diagnostic items:

INSTRUCTIONS: Please use the following scale to answer the questions below **about officers and NCOs in your Company/Troop/Battery.**

If the item does not apply to officers or NCOs, or is something you do not know, please select answer “F” for “N/A – Don't know.”

Not at all (A)	Very little (B)	Somewhat (C)	Quite a bit (D)	To a great extent (E)	N/A – Don't know (F)
-------------------	--------------------	-----------------	--------------------	--------------------------	-------------------------

The diagnostic items can be seen in Table A3. Note, no diagnostic items were developed for Respect for the Individual, as research on this topic was being conducted as part of another ARI project.

Table A3

Command Climate Diagnostic Items

1. Flow of Information	
To what extent do Officers do the following?	
InfoD3	Officers: Communicate clearly about the purpose of the unit's mission
InfoD7	Officers: Ask subordinates to back brief information to ensure they understand
InfoD8	Officers: Put systems in place to facilitate the sharing of information throughout the unit
InfoD9	Officers: Provide information at the last minute
InfoD10	Officers: Give unit members the information needed to do their jobs
To what extent do NCOs do the following?	
InfoD6	NCOs: Communicate clearly about the purpose of the unit's mission
InfoD11	NCOs: Ask subordinates to back brief information to ensure they understand
InfoD12	NCOs: Put systems in place to facilitate the sharing of information throughout the unit
InfoD13	NCOs: Provide information at the last minute
InfoD14	NCOs: Give unit members the information needed to do their jobs
2. Autonomy	
To what extent do Officers do the following?	
AutonD3	Officers: Enable unit members to do their jobs independently when appropriate
AutonD4	Officers: Counsel appropriately when unit members excel or make mistakes
AutonD9	Officers: Delegate sufficient responsibility to Soldiers to accomplish their assigned duties
AutonD10	Officers: Delegate decision making to the lowest appropriate level to encourage subordinate responsibility

(Continued)

2. Autonomy (Continued)

- AutonD11 Officers: Enable subordinates to determine how to best accomplish their work
AutonD12 Officers: Guide team members to think through problems for themselves
AutonD13 Officers: Allow subordinates the freedom to make mistakes so they may learn from them
AutonD14 Officers: Micromanage Soldiers

To what extent do **NCOs** do the following?

- AutonD7 NCOs: Enable unit members to do their jobs independently when appropriate
AutonD8 NCOs: Counsel appropriately when unit members excel or make mistakes
AutonD15 NCOs: Delegate sufficient responsibility to Soldiers to accomplish their assigned duties
AutonD16 NCOs: Delegate decision making to the lowest appropriate level to encourage subordinate responsibility
AutonD17 NCOs: Enable subordinates to determine how to best accomplish their work
AutonD18 NCOs: Guide team members to think through problems for themselves
AutonD19 NCOs: Allow subordinates the freedom to make mistakes so they may learn from them
AutonD20 NCOs: Micromanage Soldiers
-

4. Hazing

To what extent do **Officers** do the following?

- HazingD2 Officers: Encourage unit members to report hazing
HazingD5 Officers: Do not tolerate hazing
HazingD6 Officers: Allow unit members to engage in physically or psychologically harmful acts as part of an initiation process (without a proper military purpose)
HazingD7 Officers: Allow unit members to engage in illegal or dangerous acts as part of an initiation process (without a proper military purpose)
HazingD8 Officers: Discipline anyone who hazes others
HazingD9 Officers: Treat reports of hazing seriously

To what extent do **NCOs** do the following?

- HazingD4 NCOs: Encourage unit members to report hazing
HazingD10 NCOs: Do not tolerate hazing
HazingD11 NCOs: Allow unit members to engage in physically or psychologically harmful acts as part of an initiation process (without a proper military purpose)
HazingD12 NCOs: Allow unit members to engage in illegal or dangerous acts as part of an initiation process (without a proper military purpose)
HazingD13 NCOs: Discipline anyone who hazes others
HazingD14 NCOs: Treat reports of hazing seriously

To what extent do **Unit Members (E1-E4)** do the following?

- HazingD15 E1-E4: Encourage unit members to report hazing
-

5. Bullying

To what extent do **Officers** do the following?

- BullyD2 Officers: Make it clear that bullying has no place in the Army
BullyD3 Officers: Encourage unit members to report bullying
-

(Continued)

5. Bullying (Continued)

- BullyD6 Officers: Bully unit members in online unit communications (text messages, social media, blogs, emails, etc.)
- BullyD7 Officers: Target unit members who are seen as “different” with abusive or hateful pranks
- BullyD8 Officers: Target unit members who are seen as “different” with physical or psychological harm
- BullyD9 Officers: Prevent harassment of unit members
- BullyD10 Officers: Belittle, bully, or scold rather than offering constructive and specific feedback

To what extent do **NCOs** do the following?

- BullyD1 NCOs: Bully unit members in online unit communications (text messages, social media, blogs, emails, etc.)
- BullyD4 NCOs: Make it clear that bullying has no place in the Army
- BullyD5 NCOs: Encourage unit members to report bullying
- BullyD11 NCOs: Target unit members who are seen as “different” with abusive or hateful pranks
- BullyD12 NCOs: Target unit members who are seen as “different” with physical or psychological harm
- BullyD13 NCOs: Prevent harassment of unit members
- BullyD14 NCOs: Belittle, bully, or scold rather than offering constructive and specific feedback

To what extent do **Unit Members (E1-E4)** do the following?

- BullyD15 E1-E4: Bully unit members in online unit communications (text messages, social media, blogs, emails, etc.)
- BullyD16 E1-E4: Target unit members who are seen as “different” with abusive or hateful pranks
- BullyD17 E1-E4: Target unit members who are seen as “different” with physical or psychological harm
- BullyD18 E1-E4: Prevent harassment of unit members
- BullyD19 E1-E4: Belittle, bully, or scold rather than offering constructive and specific feedback

6. Peer Support for Unit Members

To what extent do **Unit Members (E1-E4)** do the following?

- PSUMD1 E1-E4: Care about what happens to each other
- PSUMD2 E1-E4: Know each other well enough to notice when something is wrong
- PSUMD3 E1-E4: Stick together when things get tough
- PSUMD4 E1-E4: Communicate effectively with one another
- PSUMD5 E1-E4: Trust one another
- PSUMD6 E1-E4: Work effectively together as a team

(Continued)

7. Leader Support for Unit Members

To what extent do **Officers** do the following?

- LSUMD1 Officers: Show concern for the well-being of unit members
- LSUMD2 Officers: Assist unit members in addressing personal issues
- LSUMD3 Officers: Assist unit members in addressing work-related issues
- LSUMD4 Officers: Ensure unit members are able to access support channels at the installation
- LSUMD5 Officers: Set up regular counseling, coaching, or mentoring sessions with subordinates
- LSUMD6 Officers: Ensure that Soldiers are getting the training and preparation they need to be successful
- LSUMD7 Officers: Respect subordinates' time
- LSUMD8 Officers: Show they care about Soldier morale

To what extent do **NCOs** do the following?

- LSUMD9 NCOs: Show concern for the well-being of unit members
- LSUMD10 NCOs: Assist unit members in addressing personal issues
- LSUMD11 NCOs: Assist unit members in addressing work-related issues
- LSUMD12 NCOs: Ensure unit members are able to access support channels at the installation
- LSUMD13 NCOs: Set up regular counseling, coaching, or mentoring sessions with subordinates
- LSUMD14 NCOs: Ensure that Soldiers are getting the training and preparation they need to be successful
- LSUMD15 NCOs: Respect subordinates' time
- LSUMD16 NCOs: Show they care about Soldier morale

8. Leader Support for Families

To what extent do **Officers** do the following?

- LSFamD7 Officers: Ensure subordinates' families' health, welfare, and development are provided for
- LSFamD8 Officers: Give subordinates time off during the workday to take care of family matters (e.g., family emergency)
- LSFamD9 Officers: Show a real interest in the welfare of families
- LSFamD10 Officers: Provide information about available resources for family members
- LSFamD11 Officers: Provide guidance to Soldiers when they have financial or budgeting problems
- LSFamD12 Officers: Ensure the unit has a strong FRG

To what extent do **NCOs** do the following?

- LSFamD13 NCOs: Ensure subordinates' families' health, welfare, and development are provided for
- LSFamD14 NCOs: Give subordinates time off during the workday to take care of family matters (e.g., family emergency)
- LSFamD15 NCOs: Show a real interest in the welfare of families
- LSFamD16 NCOs: Provide information about available resources for family members

(Continued)

8. Leader Support for Families (Continued)

LSFamD17 NCOs: Provide guidance to Soldiers when they have financial or budgeting problems

LSFamD18 NCOs: Ensure the unit has a strong FRG

9. Professionalism

To what extent do **Officers** do the following?

ProfesD1 Officers: Enforce Army standards

ProfesD2 Officers: Promote good order and discipline

ProfesD5 Officers: Display high standards of duty performance

ProfesD6 Officers: Obey the rules, regulations and policies

ProfesD7 Officers: Meet Army standards for personal appearance

ProfesD8 Officers: Meet Army standards for military and professional bearing

ProfesD9 Officers: Meet Army standards for physical fitness and health

ProfesD10 Officers: Use technical and tactical expertise to accomplish the mission to standard

To what extent do **NCOs** do the following?

ProfesD3 NCOs: Enforce Army standards

ProfesD4 NCOs: Promote good order and discipline

ProfesD11 NCOs: Display high standards of duty performance

ProfesD12 NCOs: Obey the rules, regulations and policies

ProfesD13 NCOs: Meet Army standards for personal appearance

ProfesD14 NCOs: Meet Army standards for military and professional bearing

ProfesD15 NCOs: Meet Army standards for physical fitness and health

ProfesD16 NCOs: Use technical and tactical expertise to accomplish the mission to standard

To what extent do **Unit Members (E1-E4)** do the following?

ProfesD17 E1-E4: Display high standards of duty performance

ProfesD18 E1-E4: Obey the rules, regulations and policies

ProfesD19 E1-E4: Meet Army standards for personal appearance

ProfesD20 E1-E4: Meet Army standards for military and professional bearing

ProfesD21 E1-E4: Meet Army standards for physical fitness and health

ProfesD22 E1-E4: Use technical and tactical expertise to accomplish the mission to standard

10. Ethical Leadership

To what extent do:

EthicsD11 Squad/Section/Team Leaders demonstrate ethical behavior

EthicsD12 Platoon Sergeants demonstrate ethical behavior

EthicsD13 Senior NCOs demonstrate ethical behavior

EthicsD14 Platoon Leaders demonstrate ethical behavior

EthicsD15 Other Junior Officers demonstrate ethical behavior

EthicsD16 Company leadership (XO, First Sergeant, Company Commander) demonstrate ethical behavior

(Continued)

11. Trust

To what extent do **Officers** do the following?

- TrustD1 Officers: Earn unit members' trust
- TrustD2 Officers: Follow through on their word
- TrustD13 Officers: Follow through on their commitments
- TrustD14 Officers: Use unit team building and training to build trust
- TrustD15 Officers: Correct actions or attitudes of those who undermine trust
- TrustD16 Officers: Discourage gossip
- TrustD10 Officers: Officers can be relied upon to do their jobs

To what extent do **NCOs** do the following?

- TrustD4 NCOs: Earn unit members' trust
- TrustD5 NCOs: Follow through on their word
- TrustD17 NCOs: Follow through on their commitments
- TrustD18 NCOs: Use unit team building and training to build trust
- TrustD19 NCOs: Correct actions or attitudes of those who undermine trust
- TrustD20 NCOs: Discourage gossip
- TrustD11 NCOs: NCOs can be relied upon to do their jobs

To what extent do **Unit Members (E1-E4)** do the following?

- TrustD7 E1-E4: Earn unit members' trust
 - TrustD8 E1-E4: Follow through on their word
 - TrustD21 E1-E4: Follow through on their commitments
 - TrustD22 E1-E4: Correct actions or attitudes of those who undermine trust
 - TrustD12 E1-E4: Unit Members can be relied upon to do their jobs
-

12. Adaptability

To what extent do **Officers** do the following?

- AdaptD1 Officers: Remain calm, focused, and effective when faced with unexpected challenges
- AdaptD2 Officers: Provide guidance to help unit members adjust easily to new situations
- AdaptD3 Officers: Train the unit to adapt to unexpected situations
- AdaptD18 Officers: Easily adapt to new equipment, procedures, or technology
- AdaptD19 Officers: Develop backup plans to prepare for unexpected events

To what extent do **NCOs** do the following?

- AdaptD8 NCOs: Remain calm, focused, and effective when faced with unexpected challenges
 - AdaptD9 NCOs: Provide guidance to help unit members adjust easily to new situations
 - AdaptD10 NCOs: Train the unit to adapt to unexpected situations
 - AdaptD20 NCOs: Easily adapt to new equipment, procedures, or technology
 - AdaptD21 NCOs: Demonstrate the will to adapt and persevere through in changing situations
 - AdaptD22 NCOs: Develop backup plans to prepare for unexpected events
-

(Continued)

12. Adaptability (Continued)

To what extent do **Unit Members (E1-E4)** do the following?

AdaptD15 E1-E4: Remain calm, focused, and effective when faced with unexpected challenges

AdaptD16 E1-E4: Easily adapt to new equipment, procedures, or technology

AdaptD23 E1-E4: Develop backup plans to prepare for unexpected events

The criterion measures can be seen in Tables A4 and A5. Items in Table A4 were completed by unit members as part of Part 1 of the climate survey. Items in Table A5 were completed by battalion leaders.

Soldiers were provided with the following instructions to complete the individual-level criterion measures. Items are provided in Table A4.

INSTRUCTIONS: Please use the scale provided to answer the following questions. When the statements refer to your "unit," **please think about your Company/Troop/Battery as your unit.**

Table A4

Command Climate Outcome Items – Individual Soldier Survey

Cohesion	
Instructions: To what extent do you agree or disagree with the following statements?	
Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don't know (F)	
Cohes1	Unit members feel a psychological bond or closeness among them
Cohes2	My unit is a close one
Cohes3	Members of my unit do NOT stick together
Cohes4	There is a lot of cooperation and teamwork among members of my unit
Cohes5	Members of my unit work together to get the job done
Cohes6	Members of my unit pull together to perform as a team
Cohes7	There is a sense of pride among members of this unit
Cohes8	Members are enthusiastic about being a part of this unit
Cohes9	Unit members are proud to be a part of this unit
Cohes10	Unit members consider this unit to be one of the most important groups to which they belong
Unit Resilience	
Instructions: To what extent do you agree or disagree with the following statements?	
Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don't know (F)	
UResil1	My unit works to find better ways to handle difficult personal situations
UResil2	My unit has the ability to identify and handle personal stressors encountered by unit members
UResil3	My unit can effectively overcome tough work-related challenges
UResil4	My unit uses work-related challenges or mistakes as opportunities to learn
Unit Performance	
Instructions: To what extent do you agree or disagree with the following statements?	
Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don't know (F)	
UPerf1	This unit performs better than most
UPerf2	This unit is not able to perform as well as it should

(Continued)

Unit Performance (Continued)

UPerf3 This unit is poor compared to other units doing similar training
UPerf4 This unit performed well at most tasks in the last 30 days

Collective Efficacy

Instructions: To what extent do you agree or disagree with the following statements:

Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don’t know (F)

I am confident that as a unit, we can...:

ColIEff1 Effectively execute contingency plans
ColIEff2 Coordinate effectively with all members
ColIEff3 Develop good strategies
ColIEff4 Help each other out if necessary

Affective Commitment

Instructions: To what extent do you agree or disagree with the following statements:

Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don’t know (F)

AffCom1 The Army has a great deal of personal meaning for me
AffCom2 I feel emotionally attached to the Army
AffCom3 I feel a strong sense of belonging to the Army
AffCom4 I feel like “part of the family” in the Army

Family Desire to Stay

Instructions: To what extent do you agree or disagree with the following statements:

Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E), N/A – Don’t know (F)

FamilyStay1 My family wants me to stay in the Army
FamilyStay2 My family supports my decision to stay in the Army
FamilyStay3 My family is supportive of a long career in the Army

Job Satisfaction

Instructions: Please use the scale provided to indicate the following:

Response Options: Very unsatisfied (A), Unsatisfied (B), Neutral (C), Satisfied (D), Very satisfied (E)

How satisfied are you with:

JobSat1 Your opportunity to perform work you find interesting
JobSat2 Your opportunity to learn new skills on the job
JobSat3 The amount of challenge in your work
JobSat4 The amount of variety in your work
JobSat5 Your opportunity to use your aptitudes, experience, and training
JobSat6 The day-to-day tasks on your job

(Continued)

Family Satisfaction

Instructions: Please use the scale provided to indicate the following:

Response Options: Very unsatisfied (A), Unsatisfied (B), Neutral (C), Satisfied (D), Very satisfied (E)

How satisfied is your family with:

FamSat1 Their experience with the Army

FamSat2 Their experience with the Family Readiness Group (FRG)

Career Intentions

Instructions: Please use the scale provided to indicate the likelihood of the following items.

Response Options: Very unlikely (A), Unlikely (B), Neither likely nor unlikely (C), Likely (D), Very likely (E)

How likely is it that you will:

CarInt1 Complete your current term of service

CarInt2 Make the Army a career

Engagement

Instructions: Please use the scale provided to rate the following items about yourself.

Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E)

Engage1 I am enthusiastic about my job

Engage2 My job inspires me

Engage3 When I get up in the morning, I feel like going to work

Engage4 I am proud of the work that I do

Organizational Citizenship Behavior

Instructions: Please use the scale provided to rate the following items about yourself.

Response Options: Never (A), Once or twice (B), Once or twice per month (C), Once or twice per week (D), Every day (E)

How often have you done each of the following in your current unit?

OCB1 Took time to advise, coach, or mentor a peer

OCB2 Helped a peer learn new skills or shared job knowledge

OCB3 Helped new Soldiers get oriented to the unit

OCB4 Lent a compassionate ear when someone had a problem

OCB5 Offered suggestions to improve how work is done

OCB6 Helped a peer who had too much to do

OCB7 Volunteered for extra work assignments

OCB8 Volunteered to work weekends or other days off to complete a project or task

OCB9 Volunteered to complete extra assignments on own time

OCB10 Volunteered to give up meal or other breaks to complete work

Withdrawal

Instructions: Please use the scale provided to rate the following:

Response Options: Never (A), Rarely (B), Sometimes (C), Often (D), Always (E)

How often have you done each of the following?

Withdra1 Come to work late without permission

(Continued)

Withdrawal (Continued)	
Withdra2	Went to sick call to avoid work
Withdra3	Taken a longer break than you were allowed to take
Withdra4	Left work earlier than you were allowed to
Withdra5	Done poor quality work
Withdra6	Neglected those tasks that wouldn't affect your performance evaluations
Mutual Trust	
Instructions: Please use the scale provided to rate the following items about your unit.	
Response Options: Not at all (A), Very little (B), Somewhat (C), Quite a bit (D), To a great extent (E)	
MuTrust1	How much do members of your unit trust each other
MuTrust2	How much do members of your unit count on the other members of the unit
Morale	
Instructions: Please use the scale provided to rate the following items about your unit.	
Response Options: Very low (A), Low (B), Moderate amount (C), High amount (D), Very high amount (E)	
Morale1	How would you rate the level of morale in your unit
Morale2	How would you rate your current level of morale
Stress Amount	
Instructions: Please use the scale provided to rate the following:	
Response Options: None (A), Slight amount (B), Moderate amount (C), High amount (D), Very high amount (E)	
How much stress, if any, are you experiencing...	
StressAmt1	Now in your Army job
StressAmt2	Now in your family/personal life
Stress Impact	
Instructions: Please use the scale provided to rate the following items about yourself.	
Response Options: Strongly disagree (A), Disagree (B), Neither agree nor disagree (C), Agree (D), Strongly agree (E)	
StressImp1	Stress and emotional/personal issues have made it difficult to do my work
StressImp2	Stress and emotional/personal issues have made it difficult to get along with other people
Leader Satisfaction	
Instructions: Please use the scale provided to indicate the following:	
Response Options: Very unsatisfied (A), Unsatisfied (B), Neutral (C), Satisfied (D), Very satisfied (E)	
How satisfied are you with:	
LeaderSat1	Your unit leadership

Battalion leaders were provided with the following instructions to complete the company-level criterion measures (see Table A5).

INSTRUCTIONS: Please use the scales provided for each COMPANY/TROOP/BATTERY within your battalion. Think carefully about how each of these companies/troops/batteries might be different from or similar to each other and the overall battalion.

Table A5

Command Climate Outcome Items – Battalion Leader Survey

Unit Performance	
Response Options: Very low (1), Low (2), Moderate (3), High (4), Very high (5)	
UnitPerfBN	How would you rate each Company's overall performance
Unit Training	
Response Options: Very low (1), Low (2), Moderate (3), High (4), Very high (5)	
UnitTrainPerfBN	How would you rate each Company on their performance in collective training events
Mission	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
MissionPrepBN	This Company is proactive in preparing for their mission
Morale	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
MoraleBN	This Company has high morale
Soldier Development	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
SoldDevBN	This Company is proactive in supporting Soldier development (e.g., sending Soldiers to schools, ensuring Soldiers are on track for promotion)
Unit Autonomy	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
AutoBN	This Company is efficient in accomplishing their day-to-day tasks without needing the Battalion to check-in
Adaptive Performance	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
AdaptBN	This Company is able to adjust effectively to changes and still accomplish their mission (e.g., changes in mission, last minute taskings)
Family Involvement	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
FamInvBN	This Company has strong family involvement (FRG participation, attendance at family activities like BBQs)

(Continued)

Commitment	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
CommitBN	Soldiers in this Company are likely to re-enlist
Physical Training	
Response Options: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly agree (5)	
PhysTrainBN	This Company takes a very proactive approach to physical training
Disciplinary Actions	
Response Options: Never (1), Rarely (2), Sometimes (3), Often (4), Always (5)	
DiscBN	In the last three months, how frequently has each Company had to take disciplinary actions (e.g., Article 15s, Flag Actions, formal counselings, placement on restrictions)
Respect for Others	
Response Options: Never (1), Rarely (2), Sometimes (3), Often (4), Always (5)	
RespectBN	In the last three months, how frequently has each Company had problems that come to the attention of the Battalion due to lack of respect for others

Appendix B. Full Scale and Single-item Statistics

Table B1

Item-Level Descriptive Statistics for 12 Command Climate Dimensions

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis		% <i>NA/</i> <i>Don't</i> <i>Know</i>
				Statistic	<i>SE</i>	Statistic	<i>SE</i>	
Flow of Information								
Info1	2165	2.77	1.20	0.12	0.05	-1.10	0.11	0.70
Info2	2157	3.15	1.13	-0.31	0.05	-0.82	0.11	1.20
Info3*	2162	3.03	1.15	-0.17	0.05	-0.96	0.11	0.90
Info4	2169	3.17	1.12	-0.32	0.05	-0.78	0.11	0.80
Info5	2159	3.31	1.03	-0.53	0.05	-0.32	0.11	1.30
Info6	2155	2.84	1.11	0.06	0.05	-0.85	0.11	1.80
Info7	2154	3.20	1.12	-0.37	0.05	-0.65	0.11	1.80
Info8	2156	3.32	1.08	-0.52	0.05	-0.38	0.11	1.50
Autonomy								
Auton1	2166	2.89	1.28	-0.05	0.05	-1.17	0.11	1.00
Auton2*	2155	3.01	1.18	-0.27	0.05	-0.92	0.11	1.60
Auton3	2157	3.08	1.11	-0.30	0.05	-0.74	0.11	1.50
Auton4	2162	3.31	1.07	-0.57	0.05	-0.38	0.11	1.10
Auton5	2170	2.74	1.25	0.04	0.05	-1.14	0.11	1.10
Auton6	2165	3.40	1.05	-0.70	0.05	-0.10	0.11	1.40
Auton7	2160	3.08	1.09	-0.25	0.05	-0.70	0.11	1.50
Auton8	2166	3.01	1.13	-0.21	0.05	-0.86	0.11	1.40
Auton9	2165	3.10	1.14	-0.29	0.05	-0.82	0.11	1.30
Auton10	2162	3.41	1.07	-0.63	0.05	-0.19	0.11	1.50
Respect for the Individual								
Respect1	2143	3.17	1.27	-0.31	0.05	-1.02	0.11	1.90
Respect2*	2144	3.30	1.21	-0.44	0.05	-0.75	0.11	1.70
Respect3	2155	3.37	1.15	-0.55	0.05	-0.46	0.11	1.70
Respect4	2134	3.32	1.14	-0.49	0.05	-0.52	0.11	2.60
Respect5	2132	2.83	1.19	-0.05	0.05	-0.96	0.11	2.50
Respect6	2152	3.28	1.10	-0.47	0.05	-0.43	0.11	1.70
Respect7	2153	3.09	1.20	-0.31	0.05	-0.88	0.11	1.50

(Continued)

				Skewness		Kurtosis		% <i>NA/</i> <i>Don't</i> <i>Know</i>
	<i>N</i>	Mean	<i>SD</i>	Statistic	<i>SE</i>	Statistic	<i>SE</i>	
Hazing								
Hazing1*	2093	1.73	0.92	1.30	0.05	1.36	0.11	3.60
Hazing2	2112	1.72	0.96	1.44	0.05	1.74	0.11	2.70
Hazing3	2110	1.71	0.94	1.44	0.05	1.77	0.11	2.70
Hazing4	2105	1.68	0.90	1.45	0.05	1.96	0.11	2.80
Hazing5**	2055	3.49	1.25	-0.64	0.05	-0.56	0.11	5.10
Bullying								
Bully1	2013	2.18	1.07	0.78	0.05	0.01	0.11	3.50
Bully2	2014	2.28	1.14	0.67	0.05	-0.38	0.11	3.40
Bully4	2020	2.17	1.11	0.79	0.05	-0.11	0.11	2.40
Bully7	2008	2.16	1.05	0.76	0.05	0.06	0.11	3.60
Bully8	2008	2.05	1.02	0.86	0.05	0.23	0.11	3.60
Bully9	2011	1.75	0.87	1.23	0.05	1.54	0.11	4.00
Bully10*	2012	2.42	1.19	0.47	0.05	-0.78	0.11	5.80
Bully11	2008	2.40	1.18	0.48	0.05	-0.74	0.11	6.60
Bully12	2007	2.43	1.19	0.44	0.05	-0.78	0.11	6.60
Bully13	1987	1.85	0.93	1.07	0.05	0.93	0.11	7.10
Peer Support for Unit Members								
PSUM1	2151	3.61	1.01	-0.89	0.05	0.51	0.11	1.30
PSUM2	2141	3.65	1.00	-0.93	0.05	0.70	0.11	1.90
PSUM4	2133	3.39	1.08	-0.63	0.05	-0.16	0.11	2.30
PSUM5	2148	3.62	1.03	-0.95	0.05	0.59	0.11	1.60
PSUM7	2150	3.68	0.99	-0.97	0.05	0.76	0.11	1.30
PSUM8*	2151	3.69	0.99	-1.00	0.05	0.90	0.11	1.70
PSUM9	2146	3.70	0.98	-1.02	0.05	0.97	0.11	1.90
PSUM10	2143	3.60	1.00	-0.90	0.05	0.67	0.11	2.00
Leader Support for Unit Members								
LSUM1*	2133	3.47	1.05	-0.73	0.05	0.04	0.11	1.90
LSUM2	2141	3.48	1.08	-0.76	0.05	-0.05	0.11	1.60
LSUM3	2141	3.56	1.02	-0.83	0.05	0.34	0.11	1.90
LSUM4	2135	3.50	1.05	-0.78	0.05	0.19	0.11	2.30
LSUM5	2119	3.00	1.24	-0.27	0.05	-1.03	0.11	2.70

(Continued)

				Skewness		Kurtosis		% <i>NA/Don't Know</i>
	<i>N</i>	Mean	<i>SD</i>	Statistic	<i>SE</i>	Statistic	<i>SE</i>	
Leader Support for Families								
LSFam1*	1842	3.29	1.13	-0.50	0.06	-0.49	0.11	10.40
LSFam2	1840	3.24	1.13	-0.50	0.06	-0.48	0.11	11.60
LSFam3	1852	3.32	1.15	-0.56	0.06	-0.46	0.11	9.50
LSFam4	1839	3.36	1.11	-0.59	0.06	-0.21	0.11	12.20
LSFam5	1848	3.48	1.08	-0.71	0.06	0.03	0.11	10.60
LSFam6	1796	3.16	1.19	-0.33	0.06	-0.69	0.12	14.50
Professionalism								
Profes1	2164	3.28	1.11	-0.47	0.05	-0.52	0.11	0.90
Profes2	2160	3.49	1.06	-0.73	0.05	-0.03	0.11	1.40
Profes3*	2164	3.41	1.05	-0.65	0.05	-0.17	0.11	1.10
Profes4	2161	3.61	0.99	-0.91	0.05	0.63	0.11	1.30
Profes5	2153	3.61	1.05	-0.91	0.05	0.39	0.11	1.70
Profes6	2151	3.51	1.03	-0.80	0.05	0.22	0.11	1.70
Profes7	2160	3.15	1.23	-0.39	0.05	-0.88	0.11	1.20
Ethical Leadership								
Ethics1	2132	3.54	1.05	-0.83	0.05	0.26	0.11	1.90
Ethics2	2131	3.80	0.94	-1.18	0.05	1.62	0.11	1.50
Ethics3	2126	3.51	1.05	-0.72	0.05	0.07	0.11	2.30
Ethics4	2131	3.61	0.98	-0.84	0.05	0.53	0.11	2.10
Ethics5*	2131	3.52	1.05	-0.75	0.05	0.10	0.11	2.10
Ethics6**	2091	2.63	1.13	0.27	0.05	-0.76	0.11	3.70
Ethics7	2057	3.30	1.08	-0.46	0.05	-0.42	0.11	5.50
Trust								
Trust1	2128	3.19	1.14	-0.47	0.05	-0.63	0.11	2.30
Trust2	2115	3.25	1.09	-0.48	0.05	-0.48	0.11	3.30
Trust3	2142	3.18	1.14	-0.48	0.05	-0.63	0.11	1.60
Trust4	2126	3.28	1.08	-0.53	0.05	-0.42	0.11	2.70
Trust5	2135	3.13	1.15	-0.36	0.05	-0.71	0.11	1.70
Trust6*	2134	3.36	1.05	-0.65	0.05	-0.11	0.11	2.40
Trust7	2128	3.20	1.13	-0.46	0.05	-0.56	0.11	2.30

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis		% <i>NA/</i> <i>Don't</i> <i>Know</i>
				Statistic	<i>SE</i>	Statistic	<i>SE</i>	
Adaptability								
Adapt1	2128	3.55	1.00	-0.81	0.05	0.29	0.11	2.10
Adapt3	2132	3.59	0.99	-0.87	0.05	0.47	0.11	1.70
Adapt4	2131	3.79	0.91	-1.16	0.05	1.68	0.11	1.80
Adapt5	2122	3.69	0.97	-0.99	0.05	0.90	0.11	2.20
Adapt7	2113	3.32	1.02	-0.53	0.05	-0.21	0.11	3.20
Adapt8	2135	3.48	0.99	-0.77	0.05	0.25	0.11	2.00
Adapt9*	2131	3.61	0.95	-0.89	0.05	0.68	0.11	2.10
Adapt10	2131	3.54	0.97	-0.81	0.05	0.43	0.11	2.60
Adapt11	2132	3.56	0.97	-0.82	0.05	0.46	0.11	2.10

Note. *Single-item measure. **Item was removed from scale to improve reliability. *SD* = Standard deviation; *SE* = Standard error.

Table B2*Intercorrelation Matrix for Command Climate Full Scales at Company and Individual Level*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Flow of Information	—	.80**	.83**	-0.18	-.48**	.66**	.83**	.68**	.80**	.77**	.76**	.72**
2. Autonomy	.69**	—	.86**	-.24*	-.53**	.70**	.82**	.68**	.81**	.78**	.79**	.76**
3. Respect for the Individual	.68**	.68**	—	-.38**	-.69**	.80**	.87**	.72**	.85**	.90**	.84**	.80**
4. Hazing	-.18**	-.20**	-.31**	—	.72**	-.42**	-.32**	-.21	-.25*	-.39**	-.22*	-.25*
5. Bullying	-.37**	-.38**	-.57**	.59**	—	-.66**	-.62**	-.51**	-.60**	-.70**	-.55**	-.56**
6. Peer Support for Unit Members	.53**	.51**	.65**	-.33**	-.53**	—	.81**	.67**	.79**	.80**	.87**	.81**
7. Leader Support for Unit Members	.66**	.63**	.73**	-.30**	-.51**	.71**	—	.76**	.83**	.84**	.83**	.77**
8. Leader Support for Families	.60**	.54**	.61**	-.20**	-.42**	.58**	.72**	—	.69**	.71**	.64**	.66**
9. Professionalism	.60**	.57**	.67**	-.27**	-.48**	.67**	.71**	.63**	—	.90**	.89**	.80**
10. Ethical Leadership	.61**	.59**	.71**	-.35**	-.54**	.68**	.74**	.64**	.82**	—	.86**	.78**
11. Trust	.64**	.63**	.72**	-.26**	-.50**	.72**	.75**	.63**	.74**	.75**	—	.84**
12. Adaptability	.54**	.54**	.56**	-.25**	-.40**	.61**	.61**	.52**	.66**	.66**	.67**	—

Note. Individual-level correlations are below the diagonal. Company-level correlations are above the diagonal. * $p < .05$, ** $p < .01$.

Table B3*Intercorrelation Matrix for Command Climate Single Items at Company and Individual Level*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Flow of Information	—	.71**	.72**	-.13	-.40**	.52**	.72**	.63**	.69**	.69**	.59**	.65**
2. Autonomy	.53**	—	.68**	-.17	-.49**	.54**	.74**	.73**	.78**	.73**	.70**	.73**
3. Respect for the Individual	.50**	.48**	—	-.35**	-.65**	.61**	.81**	.69**	.76**	.82**	.63**	.69**
4. Hazing	-.14**	-.14**	-.31**	—	.63**	-.33**	-.32**	-.18	-.24*	-.30**	-.21	-.20
5. Bullying	-.33**	-.34**	-.50**	.47**	—	-.34**	-.57**	-.47**	-.48**	-.57**	-.35**	-.42**
6. Peer Support for Unit Members	.36**	.36**	.47**	-.24**	-.37**	—	.61**	.61**	.69**	.61**	.81**	.68**
7. Leader Support for Unit Members	.53**	.49**	.62**	-.28**	-.45**	.54**	—	.77**	.73**	.79**	.70**	.69**
8. Leader Support for Families	.44**	.43**	.48**	-.15**	-.37**	.46**	.60**	—	.66**	.72**	.68**	.68**
9. Professionalism	.43**	.43**	.49**	-.22**	-.40**	.50**	.56**	.50**	—	.85**	.81**	.72**
10. Ethical Leadership	.47**	.46**	.58**	-.27**	-.48**	.49**	.64**	.53**	.64**	—	.77**	.67**
11. Trust	.46**	.46**	.53**	-.23**	-.40**	.60**	.60**	.52**	.58**	.61**	—	.69**
12. Adaptability	.37**	.40**	.42**	-.21**	-.30**	.45**	.47**	.40**	.49**	.48**	.54**	—

Note. Individual-level correlations are below the diagonal. Company-level correlations are above the diagonal. * $p < .05$, ** $p < .01$.

Table B4*Confirmatory Factor Analysis Model Summary Table*

Model	Chi-square	<i>df</i>	<i>p</i>	CFI	TLI	SRMR	RMSEA	AIC	BIC
12									
Corrected	12385.70	2634	<.001	.90	.90	.04	.05	226390	227528
Factors									
Higher									
Order	13568.84	2688	<.001	.89	.89	.06	.05	227555	228409
Factor									

Note. *df* = degrees of freedom, *p* = *p*-value, CFI = Comparative Fit Index, TLI = Tucker Lewis Index, SRMR = Standardized Root Mean Square Residual, RMSEA = Root Mean Square Error of Approximation, AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion.

Table B5*Confirmatory Factor Analysis Factor Loadings*

	1	2	3	4	5	6	7	8	9	10	11	12
	Flow of Information	Autonomy	Respect for the Individual	Hazing	Bullying	Peer Support for Unit Members	Leader Support for Unit Members	Leader Support for Families	Professionalism	Ethical Leadership	Trust	Adaptability
Info1	0.81											
Info2	0.83											
Info4	0.81											
Info5	0.77											
Info6	0.82											
Info7	0.77											
Info8	0.74											
Auton1		0.80										
Auton3		0.75										
Auton4		0.76										
Auton5		0.83										
Auton6		0.74										
Auton7		0.82										
Auton8		0.82										
Auton9		0.82										
Auton10		0.64										
Respect1			0.82									
Respect3			0.86									
Respect4			0.80									
Respect5			0.82									
Respect6			0.89									
Respect7			0.79									

(Continued)

	1	2	3	4	5	6	7	8	9	10	11	12
	Flow of Information	Autonomy	Respect for the Individual	Hazing	Bullying	Peer Support for Unit Members	Leader Support for Unit Members	Leader Support for Families	Professionalism	Ethical Leadership	Trust	Adaptability
Hazing2				0.82								
Hazing3				0.95								
Hazing4				0.90								
Bully1					0.79							
Bully2					0.67							
Bully4					0.84							
Bully7					0.74							
Bully8					0.65							
Bully9					0.67							
Bully11					0.86							
Bully12					0.83							
Bully13					0.69							
PSUM1						0.84						
PSUM2						0.87						
PSUM4						0.81						
PSUM5						0.85						
PSUM7						0.85						
PSUM9						0.83						
PSUM10						0.85						
LSUM2							0.89					
LSUM3							0.92					
LSUM4							0.91					
LSUM5							0.77					

(Continued)

	1	2	3	4	5	6	7	8	9	10	11	12
	Flow of Information	Autonomy	Respect for the Individual	Hazing	Bullying	Peer Support for Unit Members	Leader Support for Unit Members	Leader Support for Families	Professionalism	Ethical Leadership	Trust	Adaptability
LSFam2								0.85				
LSFam3								0.93				
LSFam4								0.94				
LSFam5								0.78				
LSFam6								0.74				
Profes1									0.82			
Profes2									0.83			
Profes4									0.82			
Profes5									0.77			
Profes6									0.88			
Profes7									0.78			
Ethics1										0.83		
Ethics2										0.87		
Ethics3										0.87		
Ethics4										0.87		
Ethics7										0.65		
Trust1											0.88	
Trust2											0.85	
Trust3											0.87	
Trust4											0.89	
Trust5											0.84	
Trust7											0.81	

(Continued)

	1	2	3	4	5	6	7	8	9	10	11	12
	Flow of Information	Autonomy	Respect for the Individual	Hazing	Bullying	Peer Support for Unit Members	Leader Support for Unit Members	Leader Support for Families	Professionalism	Ethical Leadership	Trust	Adaptability
Adapt1												0.85
Adapt3												0.88
Adapt4												0.84
Adapt5												0.86
Adapt7												0.80
Adapt8												0.78
Adapt10												0.89
Adapt11												0.88

Appendix C. Outcomes

Table C1

Intra-Class Correlations for Dependent Variables

	<i>ICC(1)</i>	<i>F for ICC(1)</i>	<i>ICC(2)</i>
Affective Commitment	.01	1.36*	.27
Cohesion	.08	3.25*	.69
Collective Efficacy	.08	3.21*	.69
Engagement	.07	2.87*	.65
Family Desire to Stay	.02	1.59*	.37
Family Satisfaction	.02	1.65*	.39
Job Satisfaction	.07	2.87*	.65
Morale	.08	3.39*	.70
Mutual Trust	.09	3.71*	.73
Organizational Citizenship Behavior	.00	0.99	-.01
Satisfaction with unit Leadership	.08	3.12*	.68
Stress Impact	.02	1.44*	.30
Unit Performance (Soldiers)	.10	4.02*	.75
Unit Performance (Officers)	.24	1.96*	.49
Unit Resilience	.08	3.25*	.69
Withdrawal	.03	1.67*	.40

Note. Outcomes assessed via Battalion Commander ratings are not included because there was a single Battalion Commander rating for each measure for each company; * $p < .05$.

Table C2*Intercorrelations among Company-Level Dependent Variables*

	1	2	3	4	5	6	7	8	9	10
1. Cohesion	—									
2. Unit Resilience	.86**	—								
3. Unit Performance (Soldier)	.79**	.77**	—							
4. Unit Performance (Officer)	.54**	.50**	.62**	—						
5. Collective Efficacy	.83**	.86**	.82**	.54**	—					
6. Affective Commitment	.46**	.59**	.50**	.16	.52**	—				
7. Family Stay	.23*	.44**	.37**	.10	.34**	.71**	—			
8. Job Satisfaction	.56**	.71**	.53**	.24*	.58**	.68**	.58**	—		
9. Family Satisfaction	.76**	.64**	.47**	.32*	.51**	.58**	.58**	.65**	—	
10. Career Intentions	.20	.39**	.25*	-.01	.32**	.73**	.62**	.50**	.51**	—
11. Engagement	.63**	.74**	.55**	.24*	.62**	.74**	.58**	.84**	.67**	.59**
12. OCB	.32**	.27*	.14	.07	.28*	.37**	.10	.24*	.27*	.24*
13. Withdrawal	-.08	-.14	-.11	-.02	-.20	-.12	-.10	-.07	-.08	-.24*
14. Mutual Trust	.90**	.73**	.70**	.48**	.71**	.36**	.15	.43**	.43**	.10
15. Morale	.76**	.86**	.69**	.41**	.72**	.59**	.42**	.78**	.68**	.39**
16. Stress Amount	-.40**	-.54**	-.37**	-.22	-.41**	-.35**	-.24*	-.42**	-.35**	-.29**
17. Stress Impact	-.33**	-.43**	-.37**	-.22	-.41**	-.38**	-.29*	-.37**	-.28*	-.40**
18. Unit Performance (CDR)	.04	-.02	.15	.13	-.05	.14	.08	.04	.17	.15
19. Unit Training (CDR)	.25*	.15	.31*	.31*	.20	.18	-.14	-.12	.09	.10
20. Mission Preparation (CDR)	.28*	.23	.39*	.34**	.27*	.14	-.05	-.02	.22	.03
21. Morale (CDR)	.29*	.24	.24*	.37**	.19	.11	-.01	.09	.22	-.01
22. Soldier Development (CDR)	.27*	.21	.21	.29*	.17	.05	-.10	-.07	.03	.11
23. Unit Autonomy (CDR)	.08	.01	.19	.18	.04	.15	.01	-.02	.23	.08
24. Adaptive Performance (CDR)	.27*	.15	.24	.04	.18	.26*	.06	.09	.31*	.24
25. Family Involvement (CDR)	.09	.07	.10	.14	.03	.08	.07	-.07	.24	.09
26. Commitment (CDR)	.12	.16	.11	.20	.09	.24	.17	.10	.25*	.20
27. Physical Training (CDR)	.23	.06	.20	.21	.12	-.01	-.18	-.18	.02	-.16
28. Disciplinary Actions (CDR)	-.34**	-.28**	-.25*	-.11	-.34**	-.25*	-.10	-.22	-.17	-.13
29. Respect for Others (CDR)	-.19	-.08	-.07	-.13	-.03	-.06	.13	-.05	-.03	.02

(Continued)

	11	12	13	14	15	16	17	18	19	20
1. Cohesion										
2. Unit Resilience										
3. Unit Performance (Soldier)										
4. Unit Performance (Officer)										
5. Collective Efficacy										
6. Affective Commitment										
7. Family Stay										
8. Job Satisfaction										
9. Family Satisfaction										
10. Career Intentions										
11. Engagement	—									
12. OCB	.35**	—								
13. Withdrawal	-.10	.07	—							
14. Mutual Trust	.50**	.35**	-.09	—						
15. Morale	.76**	.27*	.01	.65**	—					
16. Stress Amount	-.45**	-.02	.26*	-.32**	-.54**	—				
17. Stress Impact	-.43**	-.07	.36**	-.32**	-.40**	.67**	—			
18. Unit Performance (CDR)	.01	-.07	.08	.01	.05	-.08	.01	—		
19. Unit Training (CDR)	.00	.00	.03	.24	.11	-.18	-.13	.66**	—	
20. Mission Preparation (CDR)	.02	-.03	.05	.23	.20	-.12	-.05	.49**	.53**	—
21. Morale (CDR)	.22	.00	.03	.25*	.29*	-.26*	-.12	.58**	.48**	.38**
22. Soldier Development (CDR)	-.06	.03	-.09	.32**	.11	-.27*	-.17	.26*	.44**	.44**
23. Unit Autonomy (CDR)	.02	-.12	-.08	.09	.11	-.08	-.06	.59**	.54**	.58**
24. Adaptive Performance (CDR)	.15	.13	-.20	.30*	.19	-.15	-.21	.45**	.52**	.46**
25. Family Involvement (CDR)	.08	-.07	-.08	.12	.13	-.22	-.18	.26*	.34**	.22
26. Commitment (CDR)	.17	.03	-.09	.10	.24	-.16	-.13	.49**	.41**	.34**
27. Physical Training (CDR)	-.08	.09	.07	.26*	-.02	.05	.07	.24*	.32*	.20
28. Disciplinary Actions (CDR)	-.18	.10	-.03	-.28*	-.38*	.21	.03	-.17	-.13	-.06
29. Respect for Others (CDR)	-.01	.07	.02	-.15	-.08	.10	.06	-.15	-.11	-.18

(Continued)

	21	22	23	24	25	26	27	28	29
1. Cohesion									
2. Unit Resilience									
3. Unit Performance (Soldier)									
4. Unit Performance (Officer)									
5. Collective Efficacy									
6. Affective Commitment									
7. Family Stay									
8. Job Satisfaction									
9. Family Satisfaction									
10. Career Intentions									
11. Engagement									
12. OCB									
13. Withdrawal									
14. Mutual Trust									
15. Morale									
16. Stress Amount									
17. Stress Impact									
18. Unit Performance (CDR)									
19. Unit Training (CDR)									
20. Mission Preparation (CDR)									
21. Morale (CDR)	—								
22. Soldier Development (CDR)	.39**	—							
23. Unit Autonomy (CDR)	.50**	.43**	—						
24. Adaptive Performance (CDR)	.39**	.45**	.56**	—					
25. Family Involvement (CDR)	.44**	.15	.34**	.21	—				
26. Commitment (CDR)	.62**	.50**	.61**	.38**	.39**	—			
27. Physical Training (CDR)	.20	.25*	.09	.46**	.13	.15	—		
28. Disciplinary Actions (CDR)	-.25*	-.12	-.24*	-.23*	-.13	-.11	-.05	—	
29. Respect for Others (CDR)	-.40**	-.37**	-.30**	-.34**	-.23	-.30**	-.14	.35**	—

Note. CDR=Battalion Commander rating; * $p < .05$, ** $p < .01$.

Appendix D. Item Level Descriptives

Table D1

Item-Level Descriptive Statistics for Diagnostic Items (Individual-level)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Flow of Information							
InfoD3	1767	3.32	1.09	-0.32	0.06	-0.53	0.12
InfoD6	1779	3.39	1.09	-0.46	0.06	-0.33	0.12
InfoD7	1749	3.24	1.13	-0.35	0.06	-0.58	0.12
InfoD8	1753	3.17	1.13	-0.21	0.06	-0.67	0.12
InfoD9	1765	3.58	1.14	-0.42	0.06	-0.64	0.12
InfoD10	1776	3.40	1.03	-0.40	0.06	-0.22	0.12
InfoD11	1778	3.41	1.11	-0.48	0.06	-0.41	0.12
InfoD12	1770	3.37	1.11	-0.47	0.06	-0.42	0.12
InfoD13	1777	3.61	1.13	-0.52	0.06	-0.49	0.12
InfoD14	1777	3.54	1.03	-0.67	0.06	0.15	0.12
Autonomy							
AutonD3	1685	3.55	1.06	-0.55	0.06	-0.19	0.12
AutonD4	1647	3.12	1.17	-0.23	0.06	-0.77	0.12
AutonD7	1694	3.49	1.06	-0.61	0.06	-0.10	0.12
AutonD8	1686	3.46	1.10	-0.56	0.06	-0.32	0.12
AutonD9	1691	3.42	1.05	-0.52	0.06	-0.18	0.12
AutonD10	1672	3.21	1.12	-0.31	0.06	-0.56	0.12
AutonD11	1684	3.25	1.09	-0.39	0.06	-0.46	0.12
AutonD12	1675	3.27	1.07	-0.36	0.06	-0.44	0.12
AutonD13	1670	3.19	1.10	-0.27	0.06	-0.57	0.12
AutonD14	1681	2.90	1.25	0.20	0.06	-0.96	0.12
AutonD15	1705	3.50	1.01	-0.67	0.06	0.16	0.12
AutonD16	1697	3.34	1.08	-0.50	0.06	-0.31	0.12
AutonD17	1707	3.34	1.06	-0.49	0.06	-0.34	0.12
AutonD18	1706	3.39	1.07	-0.50	0.06	-0.28	0.12
AutonD19	1702	3.29	1.12	-0.42	0.06	-0.50	0.12
AutonD20	1696	3.15	1.25	-0.07	0.06	-0.96	0.12

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Hazing							
HazingD2	1566	3.80	1.22	-0.91	0.06	-0.06	0.12
HazingD4	1588	3.83	1.19	-0.93	0.06	0.05	0.12
HazingD5	1589	3.94	1.21	-1.10	0.06	0.33	0.12
HazingD6	1587	1.64	1.11	1.67	0.06	1.69	0.12
HazingD7	1583	1.56	1.08	1.90	0.06	2.53	0.12
HazingD8	1510	3.77	1.22	-0.84	0.06	-0.21	0.13
HazingD9	1550	4.01	1.14	-1.17	0.06	0.64	0.12
HazingD10	1589	3.83	1.23	-0.90	0.06	-0.15	0.12
HazingD11	1595	1.73	1.16	1.45	0.06	0.93	0.12
HazingD12	1593	1.59	1.09	1.78	0.06	2.08	0.12
HazingD13	1560	3.88	1.18	-0.94	0.06	0.06	0.12
HazingD14	1577	3.96	1.16	-1.10	0.06	0.48	0.12
HazingD15	1483	3.48	1.31	-0.52	0.06	-0.79	0.13
Bullying							
BullyD1	1536	1.55	1.03	1.93	0.06	2.87	0.12
BullyD2	1614	3.86	1.22	-0.93	0.06	-0.07	0.12
BullyD3	1608	3.82	1.22	-0.91	0.06	-0.09	0.12
BullyD4	1615	3.75	1.28	-0.80	0.06	-0.43	0.12
BullyD5	1615	3.73	1.26	-0.79	0.06	-0.38	0.12
BullyD6	1499	1.40	0.88	2.45	0.06	5.67	0.13
BullyD7	1613	1.49	0.96	1.96	0.06	3.02	0.12
BullyD8	1611	1.49	0.97	2.00	0.06	3.15	0.12
BullyD9	1579	3.82	1.22	-0.92	0.06	-0.04	0.12
BullyD10	1605	1.70	1.11	1.49	0.06	1.16	0.12
BullyD11	1624	1.60	1.07	1.69	0.06	1.83	0.12
BullyD12	1621	1.60	1.08	1.73	0.06	1.97	0.12
BullyD13	1602	3.71	1.26	-0.79	0.06	-0.38	0.12
BullyD14	1614	1.93	1.25	1.11	0.06	0.03	0.12
BullyD15	1432	1.83	1.15	1.19	0.06	0.34	0.13
BullyD16	1548	1.81	1.16	1.28	0.06	0.59	0.12
BullyD17	1553	1.77	1.16	1.37	0.06	0.81	0.12
BullyD18	1518	3.37	1.33	-0.37	0.06	-1.00	0.13
BullyD19	1540	2.04	1.24	0.89	0.06	-0.38	0.12

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Peer Support for Unit Members							
PSUMD1	1726	3.64	1.10	-0.69	0.06	-0.04	0.12
PSUMD2	1749	3.71	1.08	-0.75	0.06	0.09	0.12
PSUMD3	1743	3.69	1.06	-0.67	0.06	0.04	0.12
PSUMD4	1748	3.59	1.04	-0.50	0.06	-0.17	0.12
PSUMD5	1734	3.52	1.08	-0.51	0.06	-0.23	0.12
PSUMD6	1748	3.73	1.02	-0.72	0.06	0.25	0.12
Leader Support for Unit Members							
LSUMD1	1714	3.58	1.12	-0.60	0.06	-0.30	0.12
LSUMD2	1685	3.46	1.15	-0.48	0.06	-0.53	0.12
LSUMD3	1704	3.53	1.10	-0.56	0.06	-0.29	0.12
LSUMD4	1694	3.61	1.10	-0.64	0.06	-0.21	0.12
LSUMD5	1639	3.10	1.24	-0.15	0.06	-0.96	0.12
LSUMD6	1703	3.40	1.16	-0.46	0.06	-0.55	0.12
LSUMD7	1705	3.16	1.26	-0.25	0.06	-0.96	0.12
LSUMD8	1720	3.18	1.28	-0.28	0.06	-0.95	0.12
LSUMD9	1732	3.62	1.10	-0.71	0.06	-0.03	0.12
LSUMD10	1726	3.63	1.08	-0.71	0.06	-0.03	0.12
LSUMD11	1731	3.68	1.06	-0.77	0.06	0.17	0.12
LSUMD12	1719	3.65	1.09	-0.69	0.06	-0.03	0.12
LSUMD13	1719	3.45	1.16	-0.49	0.06	-0.54	0.12
LSUMD14	1722	3.54	1.14	-0.62	0.06	-0.29	0.12
LSUMD15	1720	3.20	1.27	-0.31	0.06	-0.93	0.12
LSUMD16	1720	3.19	1.29	-0.31	0.06	-0.94	0.12
Leader Support for Families							
LSFamD7	1540	3.44	1.20	-0.52	0.06	-0.53	0.12
LSFamD8	1561	3.41	1.23	-0.48	0.06	-0.66	0.12
LSFamD9	1562	3.34	1.21	-0.39	0.06	-0.69	0.12
LSFamD10	1568	3.40	1.18	-0.47	0.06	-0.58	0.12
LSFamD11	1541	3.37	1.21	-0.43	0.06	-0.67	0.12
LSFamD12	1494	3.25	1.25	-0.32	0.06	-0.84	0.13
LSFamD13	1575	3.59	1.13	-0.65	0.06	-0.20	0.12
LSFamD14	1573	3.53	1.19	-0.61	0.06	-0.44	0.12
LSFamD15	1577	3.49	1.16	-0.57	0.06	-0.37	0.12
LSFamD16	1579	3.55	1.13	-0.60	0.06	-0.25	0.12
LSFamD17	1572	3.57	1.15	-0.65	0.06	-0.28	0.12
LSFamD18	1513	3.22	1.26	-0.28	0.06	-0.89	0.13

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Professionalism							
ProfesD1	1735	3.70	1.08	-0.76	0.06	0.11	0.12
ProfesD2	1744	3.72	1.05	-0.79	0.06	0.25	0.12
ProfesD3	1765	3.88	1.01	-0.99	0.06	0.84	0.12
ProfesD4	1764	3.81	1.02	-0.90	0.06	0.52	0.12
ProfesD5	1743	3.75	1.05	-0.77	0.06	0.18	0.12
ProfesD6	1738	3.79	1.04	-0.82	0.06	0.30	0.12
ProfesD7	1750	3.89	1.00	-0.90	0.06	0.52	0.12
ProfesD8	1749	3.87	1.02	-0.90	0.06	0.55	0.12
ProfesD9	1741	3.91	1.02	-0.95	0.06	0.61	0.12
ProfesD10	1729	3.77	1.03	-0.77	0.06	0.26	0.12
ProfesD11	1765	3.72	1.07	-0.79	0.06	0.17	0.12
ProfesD12	1765	3.71	1.07	-0.75	0.06	0.10	0.12
ProfesD13	1764	3.79	1.03	-0.81	0.06	0.30	0.12
ProfesD14	1762	3.74	1.06	-0.80	0.06	0.23	0.12
ProfesD15	1758	3.68	1.04	-0.69	0.06	0.06	0.12
ProfesD16	1755	3.80	1.05	-0.88	0.06	0.43	0.12
ProfesD17	1733	3.41	1.00	-0.35	0.06	-0.09	0.12
ProfesD18	1736	3.36	0.99	-0.27	0.06	-0.14	0.12
ProfesD19	1735	3.42	0.97	-0.35	0.06	-0.03	0.12
ProfesD20	1735	3.38	1.01	-0.34	0.06	-0.13	0.12
ProfesD21	1737	3.37	0.99	-0.31	0.06	-0.06	0.12
ProfesD22	1730	3.44	1.02	-0.37	0.06	-0.15	0.12
Ethical Leadership							
EthicsD11	1802	3.83	1.01	-0.88	0.06	0.60	0.12
EthicsD12	1806	3.87	1.07	-0.95	0.06	0.45	0.12
EthicsD13	1805	3.82	1.08	-0.88	0.06	0.33	0.12
EthicsD14	1774	3.93	1.01	-0.96	0.06	0.66	0.12
EthicsD15	1745	3.88	1.02	-0.92	0.06	0.62	0.12
EthicsD16	1748	3.91	1.13	-1.02	0.06	0.44	0.12

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Trust							
TrustD1	1693	3.43	1.12	-0.51	0.06	-0.40	0.12
TrustD2	1690	3.44	1.13	-0.52	0.06	-0.39	0.12
TrustD4	1716	3.53	1.11	-0.61	0.06	-0.21	0.12
TrustD5	1721	3.48	1.11	-0.52	0.06	-0.37	0.12
TrustD7	1680	3.48	1.01	-0.44	0.06	-0.02	0.12
TrustD8	1684	3.39	1.01	-0.35	0.06	-0.13	0.12
TrustD10	1703	3.72	1.08	-0.87	0.06	0.33	0.12
TrustD11	1709	3.72	1.07	-0.86	0.06	0.31	0.12
TrustD12	1711	3.64	0.99	-0.69	0.06	0.38	0.12
TrustD13	1685	3.46	1.11	-0.56	0.06	-0.29	0.12
TrustD14	1691	3.28	1.20	-0.37	0.06	-0.75	0.12
TrustD15	1652	3.41	1.17	-0.49	0.06	-0.53	0.12
TrustD16	1641	3.36	1.24	-0.43	0.06	-0.76	0.12
TrustD17	1721	3.51	1.10	-0.57	0.06	-0.24	0.12
TrustD18	1717	3.43	1.16	-0.52	0.06	-0.49	0.12
TrustD19	1702	3.59	1.10	-0.67	0.06	-0.09	0.12
TrustD20	1684	3.35	1.24	-0.41	0.06	-0.78	0.12
TrustD21	1685	3.38	1.00	-0.33	0.06	-0.13	0.12
TrustD22	1664	3.21	1.13	-0.21	0.06	-0.61	0.12
Adaptability							
AdaptD1	1678	3.68	1.00	-0.68	0.06	0.28	0.12
AdaptD2	1684	3.55	1.04	-0.55	0.06	-0.10	0.12
AdaptD3	1688	3.49	1.07	-0.49	0.06	-0.27	0.12
AdaptD18	1676	3.54	1.05	-0.57	0.06	-0.09	0.12
AdaptD19	1679	3.51	1.09	-0.58	0.06	-0.20	0.12
AdaptD8	1714	3.61	1.04	-0.68	0.06	0.13	0.12
AdaptD9	1714	3.65	1.01	-0.73	0.06	0.36	0.12
AdaptD10	1710	3.59	1.05	-0.64	0.06	0.00	0.12
AdaptD20	1711	3.57	1.02	-0.60	0.06	0.08	0.12
AdaptD21	1713	3.65	1.02	-0.74	0.06	0.28	0.12
AdaptD22	1708	3.53	1.10	-0.62	0.06	-0.17	0.12
AdaptD15	1683	3.32	1.02	-0.27	0.06	-0.28	0.12
AdaptD16	1686	3.44	1.02	-0.42	0.06	-0.16	0.12
AdaptD23	1674	3.09	1.15	-0.14	0.06	-0.71	0.12

(Continued)

Table D2*ICCs for Diagnostic Items*

Item	<i>ICC(1)</i>	<i>F</i> value	<i>ICC(2)</i>
InfoD3	0.06	2.40*	0.58
InfoD6	0.04	1.92*	0.48
InfoD7	0.06	2.38*	0.58
InfoD8	0.06	2.33*	0.57
InfoD9	0.02	1.53*	0.35
InfoD10	0.06	2.42*	0.59
InfoD11	0.04	1.77*	0.43
InfoD12	0.04	1.99*	0.50
InfoD13	0.03	1.76*	0.43
InfoD14	0.05	2.00*	0.50
AutonD3	0.08	2.66*	0.62
AutonD4	0.05	2.15*	0.53
AutonD7	0.05	2.15*	0.54
AutonD8	0.04	1.73*	0.42
AutonD9	0.05	2.14*	0.53
AutonD10	0.05	1.94*	0.49
AutonD11	0.06	2.22*	0.55
AutonD12	0.05	2.00*	0.50
AutonD13	0.03	1.59*	0.37
AutonD14	0.03	1.58*	0.37
AutonD15	0.05	2.03*	0.51
AutonD16	0.04	1.89*	0.47
AutonD17	0.03	1.72*	0.42
AutonD18	0.04	1.88*	0.47
AutonD19	0.04	1.77*	0.44
AutonD20	0.03	1.72*	0.42
BullyD1	0.02	1.33*	0.25
BullyD2	0.05	2.02*	0.50
BullyD3	0.04	1.87*	0.46
BullyD4	0.02	1.40*	0.29
BullyD5	0.03	1.69*	0.41
BullyD6	0.03	1.53*	0.35
BullyD7	0.02	1.41*	0.29
BullyD8	0.03	1.49*	0.33
BullyD9	0.05	1.98*	0.49
BullyD10	0.02	1.44*	0.31
BullyD11	0.04	1.88*	0.47
BullyD12	0.04	1.82*	0.45
BullyD13	0.04	1.88*	0.47
BullyD14	0.02	1.44*	0.31

(Continued)

Item	<i>ICC(1)</i>	<i>F</i> value	<i>ICC(2)</i>
BullyD15	0.02	1.40*	0.28
BullyD16	0.02	1.31*	0.23
BullyD17	0.02	1.36*	0.26
BullyD18	0.01	1.12	0.11
BullyD19	0.03	1.50*	0.33
PSUMD1	0.04	1.86*	0.46
PSUMD2	0.03	1.66*	0.40
PSUMD3	0.04	1.86*	0.46
PSUMD4	0.03	1.72*	0.42
PSUMD5	0.06	2.37*	0.58
PSUMD6	0.05	2.04*	0.51
LSUMD1	0.04	1.81*	0.45
LSUMD2	0.04	1.74*	0.43
LSUMD3	0.03	1.73*	0.42
LSUMD4	0.05	2.03*	0.51
LSUMD5	0.04	1.89*	0.47
LSUMD6	0.04	1.86*	0.46
LSUMD7	0.03	1.73*	0.42
LSUMD8	0.04	1.97*	0.49
LSUMD9	0.03	1.58*	0.37
LSUMD10	0.03	1.63*	0.39
LSUMD11	0.04	1.78*	0.44
LSUMD12	0.04	1.87*	0.47
LSUMD13	0.02	1.46*	0.32
LSUMD14	0.04	1.93*	0.48
LSUMD15	0.03	1.75*	0.43
LSUMD16	0.04	1.86*	0.46
LSFamD7	0.05	2.03*	0.51
LSFamD8	0.05	2.08*	0.52
LSFamD9	0.06	2.30*	0.56
LSFamD10	0.06	2.19*	0.54
LSFamD11	0.06	2.21*	0.55
LSFamD12	0.07	2.34*	0.57
LSFamD13	0.04	1.70*	0.41
LSFamD14	0.06	2.28*	0.56
LSFamD15	0.03	1.62*	0.38
LSFamD16	0.04	1.72*	0.42
LSFamD17	0.04	1.72*	0.42
LSFamD18	0.04	1.83*	0.45
ProfesD1	0.05	2.03*	0.51
ProfesD2	0.06	2.32*	0.57
ProfesD3	0.04	1.89*	0.47

(Continued)

Item	<i>ICC(1)</i>	<i>F</i> value	<i>ICC(2)</i>
ProfesD4	0.05	2.00*	0.50
ProfesD5	0.07	2.52*	0.60
ProfesD6	0.05	2.16*	0.54
ProfesD7	0.06	2.30*	0.57
ProfesD8	0.05	2.01*	0.50
ProfesD9	0.08	2.78*	0.64
ProfesD10	0.08	2.80*	0.64
ProfesD11	0.04	1.97*	0.49
ProfesD12	0.05	2.09*	0.52
ProfesD13	0.05	2.02*	0.50
ProfesD14	0.04	1.94*	0.48
ProfesD15	0.03	1.72*	0.42
ProfesD16	0.05	2.04*	0.51
ProfesD17	0.04	1.83*	0.45
ProfesD18	0.05	2.01*	0.50
ProfesD19	0.05	2.02*	0.50
ProfesD20	0.06	2.25*	0.56
ProfesD21	0.05	2.11*	0.53
ProfesD22	0.05	2.20*	0.55
EthicsD11	0.04	1.92*	0.48
EthicsD12	0.05	2.18*	0.54
EthicsD13	0.04	1.91*	0.48
EthicsD14	0.05	2.09*	0.52
EthicsD15	0.05	2.10*	0.52
EthicsD16	0.09	3.16*	0.68
TrustD1	0.09	2.88*	0.65
TrustD2	0.08	2.62*	0.62
TrustD4	0.05	1.99*	0.50
TrustD5	0.06	2.26*	0.56
TrustD7	0.05	2.11*	0.53
TrustD8	0.04	1.94*	0.48
TrustD10	0.09	2.90*	0.66
TrustD11	0.06	2.29*	0.56
TrustD12	0.05	2.21*	0.55
TrustD13	0.08	2.69*	0.63
TrustD14	0.05	2.11*	0.53
TrustD15	0.04	1.88*	0.47
TrustD16	0.05	2.14*	0.53
TrustD17	0.05	2.13*	0.53
TrustD18	0.04	1.76*	0.43
TrustD19	0.04	1.97*	0.49
TrustD20	0.03	1.71*	0.41

(Continued)

Item	<i>ICC(1)</i>	<i>F</i> value	<i>ICC(2)</i>
TrustD21	0.04	1.88*	0.47
TrustD22	0.05	2.09*	0.52
HazingD2	0.05	1.94*	0.48
HazingD4	0.04	1.81*	0.45
HazingD5	0.03	1.65*	0.39
HazingD6	0.03	1.66*	0.40
HazingD7	0.03	1.58*	0.37
HazingD8	0.05	1.97*	0.49
HazingD9	0.06	2.22*	0.55
HazingD10	0.04	1.84*	0.46
HazingD11	0.02	1.42*	0.30
HazingD12	0.02	1.38*	0.27
HazingD13	0.06	2.20*	0.54
HazingD14	0.06	2.23*	0.55
HazingD15	0.04	1.79*	0.44
AdaptD1	0.06	2.38*	0.58
AdaptD2	0.07	2.40*	0.58
AdaptD3	0.07	2.46*	0.59
AdaptD8	0.04	1.98*	0.49
AdaptD9	0.04	1.83*	0.45
AdaptD10	0.05	2.02*	0.50
AdaptD15	0.05	2.01*	0.50
AdaptD16	0.03	1.55*	0.35
AdaptD18	0.07	2.51*	0.60
AdaptD19	0.08	2.64*	0.62
AdaptD20	0.03	1.75*	0.43
AdaptD21	0.05	2.00*	0.50
AdaptD22	0.05	2.04*	0.51
AdaptD23	0.03	1.68*	0.40

Note. * $p < .05$.

Table D3*Item-Level Descriptive Statistics for Diagnostic Items (Company-level)*

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Flow of Information							
InfoD3	83	3.31	0.36	-0.53	0.26	0.19	0.52
InfoD6	83	3.39	0.33	-0.17	0.26	-0.34	0.52
InfoD7	83	3.23	0.38	-0.07	0.26	0.75	0.52
InfoD8	83	3.17	0.38	-0.31	0.26	-0.48	0.52
InfoD9	83	2.43	0.30	-0.50	0.26	0.37	0.52
InfoD10	83	3.40	0.35	-0.46	0.26	-0.23	0.52
InfoD11	83	3.40	0.31	-0.13	0.26	-0.42	0.52
InfoD12	83	3.37	0.34	-0.37	0.26	-0.33	0.52
InfoD13	83	2.40	0.31	-0.21	0.26	-0.19	0.52
InfoD14	83	3.54	0.32	-0.60	0.26	0.25	0.52
Autonomy							
AutonD3	83	3.56	0.38	-0.51	0.26	0.30	0.52
AutonD4	83	3.11	0.38	0.09	0.26	-0.22	0.52
AutonD7	83	3.49	0.36	-0.70	0.26	0.96	0.52
AutonD8	83	3.46	0.33	-0.46	0.26	0.57	0.52
AutonD9	83	3.42	0.35	-0.37	0.26	-0.19	0.52
AutonD10	83	3.22	0.37	-0.12	0.26	-0.05	0.52
AutonD11	83	3.26	0.38	0.19	0.26	0.33	0.52
AutonD12	83	3.27	0.34	-0.21	0.26	0.26	0.52
AutonD13	83	3.19	0.32	-0.50	0.26	0.32	0.52
AutonD14	83	3.09	0.34	-0.16	0.26	0.42	0.52
AutonD15	83	3.51	0.32	-0.67	0.26	0.10	0.52
AutonD16	83	3.34	0.34	-0.30	0.26	-0.15	0.52
AutonD17	83	3.34	0.33	-0.29	0.26	0.37	0.52
AutonD18	83	3.40	0.33	-0.35	0.26	0.51	0.52
AutonD19	83	3.31	0.34	-0.35	0.26	-0.05	0.52
AutonD20	83	2.83	0.33	0.25	0.26	0.24	0.52

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Bullying							
BullyD1_R	83	1.54	0.28	0.03	0.26	-0.54	0.52
BullyD2	83	2.18	0.38	0.44	0.26	0.06	0.52
BullyD3	83	2.23	0.36	0.47	0.26	-0.17	0.52
BullyD6_R	83	1.40	0.26	0.93	0.26	0.88	0.52
BullyD7_R	83	1.49	0.27	0.50	0.26	0.26	0.52
BullyD8_R	83	1.50	0.28	0.59	0.26	0.53	0.52
BullyD9	83	2.23	0.37	0.46	0.26	0.43	0.52
BullyD10_R	83	1.71	0.32	0.73	0.26	0.42	0.52
BullyD11_R	83	1.60	0.33	0.54	0.26	0.31	0.52
BullyD12_R	83	1.60	0.33	0.73	0.26	0.69	0.52
BullyD14_R	83	1.94	0.35	0.38	0.26	0.19	0.52
BullyD15_R	83	1.84	0.35	0.35	0.26	0.05	0.52
BullyD16_R	83	1.79	0.32	-0.04	0.26	0.67	0.52
BullyD17_R	83	1.76	0.33	0.18	0.26	0.23	0.52
BullyD19_R	83	2.03	0.36	0.52	0.26	-0.16	0.52
Hazing							
HazingD2	83	2.26	0.36	0.39	0.26	0.31	0.52
HazingD4	83	2.21	0.33	0.47	0.26	0.55	0.52
HazingD5	83	2.09	0.35	0.54	0.26	-0.44	0.52
HazingD6_R	83	1.63	0.33	0.30	0.26	-0.39	0.52
HazingD7_R	83	1.55	0.32	0.55	0.26	0.71	0.52
HazingD8	83	2.24	0.39	0.23	0.26	-0.66	0.52
HazingD9	83	1.99	0.37	0.64	0.26	-0.03	0.52
HazingD10	83	2.19	0.35	0.61	0.26	0.40	0.52
HazingD11_R	83	1.71	0.32	0.16	0.26	-0.36	0.52
HazingD12_R	83	1.59	0.30	0.65	0.26	0.27	0.52
HazingD13	83	2.15	0.37	0.15	0.26	-0.13	0.52
HazingD14	83	2.06	0.36	0.23	0.26	0.01	0.52
HazingD15	83	2.58	0.40	0.27	0.26	-0.23	0.52
Peer Support for Unit Members							
PSUMD1	83	3.64	0.34	-0.13	0.26	-0.52	0.52
PSUMD2	83	3.71	0.33	-0.72	0.26	2.25	0.52
PSUMD3	83	3.69	0.33	-0.25	0.26	0.87	0.52
PSUMD4	83	3.59	0.32	-0.14	0.26	0.45	0.52

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Leader Support for Unit Members							
LSUMD1	83	3.58	0.34	-0.44	0.26	-0.22	0.52
LSUMD2	83	3.46	0.35	-0.31	0.26	-0.26	0.52
LSUMD3	83	3.54	0.33	-0.33	0.26	0.37	0.52
LSUMD4	83	3.61	0.36	-0.49	0.26	0.12	0.52
LSUMD5	83	3.10	0.40	-0.16	0.26	-0.45	0.52
LSUMD6	83	3.40	0.36	-0.42	0.26	-0.23	0.52
LSUMD7	83	3.16	0.38	-0.10	0.26	0.19	0.52
LSUMD8	83	3.19	0.41	-0.23	0.26	0.07	0.52
LSUMD9	83	3.62	0.33	-0.26	0.26	0.91	0.52
LSUMD10	83	3.63	0.32	-0.57	0.26	0.55	0.52
LSUMD11	83	3.68	0.33	-0.12	0.26	-0.27	0.52
LSUMD12	83	3.66	0.35	-0.18	0.26	0.57	0.52
LSUMD13	83	3.46	0.32	0.00	0.26	0.32	0.52
LSUMD14	83	3.54	0.37	-0.32	0.26	0.43	0.52
LSUMD15	83	3.21	0.40	0.34	0.26	0.66	0.52
LSUMD16	83	3.21	0.41	0.14	0.26	0.00	0.52
Leader Support for Families							
LSFamD7	83	3.45	0.42	-0.10	0.26	0.40	0.52
LSFamD8	83	3.42	0.43	-0.18	0.26	1.20	0.52
LSFamD9	83	3.35	0.45	-0.73	0.26	0.86	0.52
LSFamD10	83	3.42	0.43	-0.31	0.26	0.22	0.52
LSFamD11	83	3.36	0.45	-0.53	0.26	0.15	0.52
LSFamD12	83	3.26	0.47	-0.05	0.26	-0.62	0.52
LSFamD13	83	3.60	0.36	-0.87	0.26	2.34	0.52
LSFamD14	83	3.53	0.43	-1.29	0.26	5.04	0.52
LSFamD15	83	3.51	0.36	-0.50	0.26	1.28	0.52
LSFamD16	83	3.56	0.36	-0.75	0.26	0.97	0.52
LSFamD17	83	3.57	0.37	-0.58	0.26	0.26	0.52
LSFamD18	83	3.24	0.42	0.27	0.26	0.51	0.52
Professionalism							
ProfesD1	83	3.71	0.35	-0.69	0.26	1.64	0.52
ProfesD2	83	3.72	0.36	-0.79	0.26	1.28	0.52
ProfesD3	83	3.87	0.32	-0.54	0.26	0.59	0.52
ProfesD4	83	3.80	0.33	-0.71	0.26	0.92	0.52
ProfesD5	83	3.75	0.37	-0.81	0.26	1.38	0.52
ProfesD6	83	3.78	0.34	-0.76	0.26	0.82	0.52
ProfesD7	83	3.88	0.34	-0.99	0.26	1.95	0.52
ProfesD8	83	3.86	0.32	-0.71	0.26	0.68	0.52
ProfesD9	83	3.90	0.38	-0.94	0.26	0.99	0.52
ProfesD10	83	3.77	0.39	-0.89	0.26	1.08	0.52

(Continued)

				Skewness		Kurtosis	
	<i>N</i>	Mean	<i>SD</i>	Statistic	<i>SE</i>	Statistic	<i>SE</i>
Professionalism (continued)							
ProfesD11	83	3.71	0.34	-0.60	0.26	0.59	0.52
ProfesD12	83	3.70	0.35	-0.69	0.26	0.62	0.52
ProfesD13	83	3.78	0.33	-0.46	0.26	0.54	0.52
ProfesD14	83	3.74	0.34	-0.44	0.26	1.02	0.52
ProfesD15	83	3.68	0.32	-0.48	0.26	1.66	0.52
ProfesD16	83	3.80	0.34	-0.66	0.26	0.35	0.52
ProfesD17	83	3.40	0.31	-0.04	0.26	1.44	0.52
ProfesD18	83	3.36	0.32	-0.09	0.26	0.87	0.52
ProfesD19	83	3.42	0.33	-0.09	0.26	1.29	0.52
ProfesD20	83	3.38	0.35	-0.02	0.26	1.68	0.52
ProfesD21	83	3.37	0.34	-0.13	0.26	1.06	0.52
ProfesD22	83	3.43	0.35	-0.60	0.26	1.76	0.52
Trust							
TrustD1	83	3.44	0.42	-0.57	0.26	-0.09	0.52
TrustD2	83	3.44	0.41	-0.36	0.26	-0.48	0.52
TrustD4	83	3.52	0.36	-0.38	0.26	0.35	0.52
TrustD5	83	3.48	0.38	-0.15	0.26	-0.03	0.52
TrustD7	83	3.48	0.34	-0.55	0.26	1.83	0.52
TrustD8	83	3.39	0.33	-0.56	0.26	1.21	0.52
TrustD10	83	3.72	0.41	-0.67	0.26	0.11	0.52
TrustD11	83	3.71	0.36	-0.45	0.26	0.06	0.52
TrustD12	83	3.64	0.33	-0.31	0.26	0.05	0.52
TrustD13	83	3.47	0.41	-0.47	0.26	-0.03	0.52
TrustD14	83	3.28	0.39	-0.58	0.26	-0.49	0.52
TrustD15	83	3.41	0.37	-0.52	0.26	0.31	0.52
TrustD16	83	3.36	0.42	-0.06	0.26	0.03	0.52
TrustD17	83	3.51	0.38	-0.45	0.26	0.51	0.52
TrustD18	83	3.43	0.36	-0.51	0.26	0.96	0.52
TrustD19	83	3.59	0.36	-0.48	0.26	0.44	0.52
TrustD20	83	3.34	0.38	-0.39	0.26	1.29	0.52
TrustD21	83	3.38	0.32	-0.76	0.26	1.05	0.52
TrustD22	83	3.20	0.38	-0.62	0.26	0.84	0.52

(Continued)

	<i>N</i>	Mean	<i>SD</i>	Skewness		Kurtosis	
				Statistic	<i>SE</i>	Statistic	<i>SE</i>
Adaptability							
AdaptD1	83	3.67	0.35	-0.84	0.26	0.14	0.52
AdaptD2	83	3.54	0.36	-0.72	0.26	0.41	0.52
AdaptD3	83	3.49	0.37	-0.82	0.26	0.81	0.52
AdaptD8	83	3.61	0.33	-0.34	0.26	0.11	0.52
AdaptD9	83	3.66	0.31	-0.27	0.26	-0.10	0.52
AdaptD10	83	3.60	0.34	-0.36	0.26	0.64	0.52
AdaptD15	83	3.32	0.33	-0.12	0.26	-0.14	0.52
AdaptD16	83	3.44	0.30	0.01	0.26	-0.08	0.52
AdaptD18	83	3.54	0.37	-0.69	0.26	0.47	0.52
AdaptD19	83	3.51	0.40	-0.40	0.26	-0.04	0.52
AdaptD20	83	3.57	0.32	-0.04	0.26	0.17	0.52
AdaptD21	83	3.65	0.33	-0.42	0.26	0.32	0.52
AdaptD22	83	3.53	0.37	0.01	0.26	-0.17	0.52
AdaptD23	83	3.11	0.35	0.50	0.26	0.65	0.52
Ethical Leadership							
EthicsD11	83	3.82	0.30	-0.48	0.26	0.10	0.52
EthicsD12	83	3.86	0.34	-0.47	0.26	0.08	0.52
EthicsD13	83	3.81	0.32	-0.54	0.26	0.13	0.52
EthicsD14	83	3.91	0.31	-0.40	0.26	-0.16	0.52
EthicsD15	83	3.87	0.32	-0.45	0.26	-0.08	0.52
EthicsD16	83	3.89	0.42	-1.02	0.26	1.42	0.52

Note. *SD* = Standard deviation; *SE* = Standard Error.

Table D4*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Flow of Information)*

	D3	D6	D7	D8	D9	D10	D11	D12	D13	D14	Scale	Single Item
InfoD3	—											
InfoD6	.66**	—										
InfoD7	.83**	.52**	—									
InfoD8	.87**	.68**	.81**	—								
InfoD9	.42**	.28*	.42**	.45**	—							
InfoD10	.86**	.65**	.73**	.85**	.37**	—						
InfoD11	.65**	.83**	.67**	.69**	.41**	.67**	—					
InfoD12	.61**	.87**	.48**	.67**	.32**	.70**	.83**	—				
InfoD13	.28**	.45**	.33**	.32**	.63**	.27*	.44**	.43**	—			
InfoD14	.63**	.83**	.47**	.68**	.18	.71**	.75**	.84**	.31**	—		
Scale	.71**	.73**	.58**	.76**	.44**	.71**	.75**	.76**	.37**	.71**	—	
Single Item	.64**	.64**	.54**	.72**	.43**	.66**	.69**	.68**	.36**	.63**	.94**	—

Note. $N = 83$; ** $p < .01$, * $p < .05$.

Table D5*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Autonomy)*

	D3	D4	D7	D8	D9	D10	D11	D12	D13
AutonD3	—								
AutonD4	.63**	—							
AutonD7	.65**	.41**	—						
AutonD8	.59**	.61**	.73**	—					
AutonD9	.84**	.74**	.60**	.59**	—				
AutonD10	.79**	.66**	.61**	.60**	.86**	—			
AutonD11	.84**	.65**	.65**	.61**	.87**	.92**	—		
AutonD12	.79**	.71**	.59**	.58**	.84**	.85**	.84**	—	
AutonD13	.77**	.58**	.54**	.58**	.80**	.81**	.80**	.81**	—
AutonD14	.56**	.43**	.32**	.31*	.55**	.67**	.61**	.58**	.54**
AutonD15	.66**	.44**	.84**	.76**	.67**	.66**	.69**	.62**	.57**
AutonD16	.61**	.49**	.83**	.77**	.67**	.67**	.68**	.62**	.60**
AutonD17	.59**	.48**	.86**	.76**	.62**	.65**	.69**	.61**	.59**
AutonD18	.58**	.46**	.83**	.74**	.63**	.57**	.61**	.60**	.59**
AutonD19	.55**	.37**	.76**	.62**	.56**	.53**	.53**	.53**	.58**
AutonD20	.17	.01	.48**	.23*	.13	0.20	.24*	.17	.09
Scale	.70**	.51**	.71**	.63**	.68**	.72**	.72**	.67**	.63**
Single Item	.58**	.49**	.59**	.58**	.60**	.64**	.63**	.58**	.55**

	D14	D15	D16	D17	D18	D19	D20	Scale	Single Item
AutonD3									
AutonD4									
AutonD7									
AutonD8									
AutonD9									
AutonD10									
AutonD11									
AutonD12									
AutonD13									
AutonD14	—								
AutonD15	.35**	—							
AutonD16	.39**	.87**	—						
AutonD17	.33**	.86**	.90**	—					
AutonD18	.26*	.83**	.85**	.88**	—				
AutonD19	.24*	.72**	.77**	.77**	.79**	—			
AutonD20	.17	.41**	.48**	.52**	.42**	.35**	—		
Scale	.57**	.68**	.68**	.67**	.65**	.56**	.42**	—	
Single Item	.53**	.57**	.61**	.62**	.58**	.47**	.43**	.89**	—

Note. $N = 83$; ** $p < .01$, * $p < .05$.

Table D6*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Hazing)*

	D2	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	Scale	Single Item
HazingD2	—														
HazingD4	.75	—													
HazingD5	.74	.74	—												
HazingD6_R	.40	.38	.40	—											
HazingD7_R	.44	.42	.43	.85	—										
HazingD8	.78	.73	.83	.51	.48	—									
HazingD9	.76	.73	.80	.53	.58	.84	—								
HazingD10	.65	.78	.82	.29	.34	.73	.75	—							
HazingD11_R	.44	.42	.36	.82	.71	.51	.53	.33	—						
HazingD12_R	.48	.43	.43	.74	.73	.50	.54	.34	.83	—					
HazingD13	.65	.76	.76	.46	.39	.78	.80	.77	.46	.41	—				
HazingD14	.70	.81	.78	.47	.46	.79	.84	.83	.50	.45	.91	—			
HazingD15	.60	.72	.61	.30	.35	.60	.62	.62	.35	.31	.60	.61	—		
Scale	.41	.48	.50	.50	.48	.46	.45	.51	.45	.42	.53	.57	.37	—	
Single Item	.36	.44	.43	.44	.44	.42	.42	.50	.44	.41	.52	.52	.35	.93	—

Note. $N = 83$; All correlations are significant at the $p < .05$ level.

Table D7

Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Bullying)

.	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
BullyD1_R	—										
BullyD2	.53**	—									
BullyD3	.59**	.91**	—								
BullyD4	.49**	.76**	.76**	—							
BullyD5	.57**	.77**	.81**	.86**	—						
BullyD6_R	.68**	.50**	.53**	.41**	.45**	—					
BullyD7_R	.64**	.41**	.49**	.42**	.50**	.66**	—				
BullyD8_R	.61**	.34**	.44**	.40**	.46**	.65**	.87**	—			
BullyD9	.51**	.83**	.84**	.79**	.80**	.44**	.47**	.45**	—		
BullyD10_R	.58**	.39**	.43**	.24*	.32**	.61**	.67**	.63**	.37**	—	
BullyD11_R	.72**	.45**	.52**	.46**	.48**	.60**	.79**	.73**	.54**	.60**	—
BullyD12_R	.75**	.49**	.52**	.45**	.49**	.62**	.76**	.74**	.57**	.59**	.92**
BullyD13	.51**	.75**	.72**	.83**	.83**	.46**	.51**	.50**	.83**	.34**	.53**
BullyD14_R	.63**	.38**	.42**	.43**	.47**	.44**	.61**	.63**	.48**	.56**	.73**
BullyD15_R	.63**	.29**	.36**	.29**	.34**	.59**	.48**	.48**	.35**	.42**	.53**
BullyD16_R	.56**	.32**	.37**	.30**	.34**	.56**	.61**	.55**	.37**	.52**	.65*
BullyD17_R	.55**	.27*	.29**	.27*	.30**	.45**	.58**	.59**	.37**	.44**	.63**
BullyD18	.37**	.60**	.58**	.69**	.69**	.25*	.35**	.27*	.68**	.21	.37**
BullyD19_R	.56**	.31**	.34**	.38**	.41**	.41**	.46**	.43**	.38**	.40**	.55**
Scale	.44**	.53**	.56**	.63**	.65**	.35**	.41**	.39**	.64**	.25*	.51**
Single Item	.45**	.57**	.57**	.58**	.63**	.29**	.34**	.28**	.61**	.26*	.45**

(Continued)

	D12	D13	D14	D15	D16	D17	D18	D19	Scale	Single Item
BullyD1_R										
BullyD2										
BullyD3										
BullyD4										
BullyD5										
BullyD6_R										
BullyD7_R										
BullyD8_R										
BullyD9										
BullyD10_R										
BullyD11_R										
BullyD12_R	—									
BullyD13	.57**	—								
BullyD14_R	.69**	.51**	—							
BullyD15_R	.55**	.39**	.41**	—						
BullyD16_R	.66**	.40**	.54**	.67**	—					
BullyD17_R	.66**	.42**	.56**	.60**	.84**	—				
BullyD18	.44**	.75**	.35**	.33**	.41**	.35**	—			
BullyD19_R	.58**	.46**	.44**	.61**	.54**	.51**	.49**	—		
Scale	.47**	.70**	.46**	.45**	.45**	.39**	.60**	.40**	—	
Single Item	.40**	.64**	.46**	.32**	.40**	.34**	.52**	.27*	.89**	—

Note. $N = 83$; ** $p < .01$, * $p < .05$.

Table D8*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Peer Support for Unit Members)*

	D1	D2	D3	D4	D5	D6	Scale	Single Item
PSUMD1	—							
PSUMD2	.78	—						
PSUMD3	.76	.87	—					
PSUMD4	.80	.86	.93	—				
PSUMD5	.77	.80	.90	.88	—			
PSUMD6	.73	.77	.82	.82	.87	—		
Scale	.67	.65	.63	.64	.66	.60	—	
Single Item	.64	.68	.67	.66	.69	.62	.91	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D9*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Leader Support for Unit Members)*

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	Scale	Single Item
LSUMD1	—																	
LSUMD2	.90	—																
LSUMD3	.88	.90	—															
LSUMD4	.89	.89	.86	—														
LSUMD5	.67	.77	.70	.68	—													
LSUMD6	.76	.82	.81	.79	.77	—												
LSUMD7	.77	.80	.81	.74	.71	.84	—											
LSUMD8	.78	.78	.81	.63	.70	.82	.92	—										
LSUMD9	.70	.73	.72	.74	.54	.68	.71	.70	—									
LSUMD10	.66	.76	.68	.68	.57	.65	.67	.64	.91	—								
LSUMD11	.68	.76	.76	.76	.55	.67	.68	.63	.88	.90	—							
LSUMD12	.66	.72	.67	.67	.52	.66	.67	.61	.89	.89	.90	—						
LSUMD13	.65	.75	.71	.71	.67	.68	.75	.71	.84	.83	.86	.84	—					
LSUMD14	.64	.72	.68	.68	.57	.75	.73	.68	.88	.86	.87	.86	.85	—				
LSUMD15	.48	.59	.61	.61	.47	.60	.73	.68	.77	.73	.73	.73	.80	.83	—			
LSUMD16	.50	.56	.58	.58	.53	.60	.68	.67	.78	.72	.71	.74	.76	.76	.83	—		
Scale	.65	.73	.66	.66	.56	.72	.73	.69	.78	.76	.76	.74	.74	.80	.72	.70	—	
Single Item	.62	.68	.64	.64	.51	.68	.69	.66	.75	.71	.71	.70	.69	.75	.65	.65	.94	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D10*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Leader Support for Families)*

	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	Scale	Single Item
LSFamD7	—													
LSFamD8	.89	—												
LSFamD9	.91	.93	—											
LSFamD10	.89	.90	.92	—										
LSFamD11	.83	.86	.87	.88	—									
LSFamD12	.75	.67	.73	.78	.71	—								
LSFamD13	.77	.84	.83	.80	.73	.57	—							
LSFamD14	.69	.78	.69	.72	.61	.42	.82	—						
LSFamD15	.76	.84	.80	.79	.69	.56	.94	.80	—					
LSFamD16	.76	.81	.78	.80	.69	.59	.91	.79	.93	—				
LSFamD17	.77	.84	.80	.84	.82	.60	.86	.78	.86	.89	—			
LSFamD18	.73	.67	.72	.75	.66	.87	.65	.45	.65	.66	.65	—		
Scale	.68	.67	.70	.69	.62	.75	.63	.50	.62	.63	.62	.72	—	
Single Item	.68	.68	.69	.64	.59	.62	.65	.55	.63	.65	.62	.61	.92	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D11*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Professionalism)*

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
ProfesD01	—											
ProfesD02	.94	—										
ProfesD03	.67	.71	—									
ProfesD04	.74	.76	.93	—								
ProfesD05	.92	.92	.69	.74	—							
ProfesD06	.88	.89	.62	.68	.90	—						
ProfesD07	.85	.86	.62	.69	.88	.89	—					
ProfesD08	.89	.91	.68	.71	.93	.91	.93	—				
ProfesD09	.76	.80	.60	.63	.84	.79	.87	.85	—			
ProfesD10	.88	.92	.65	.70	.90	.86	.85	.88	.84	—		
ProfesD11	.70	.72	.90	.95	.72	.66	.64	.70	.60	.67	—	
ProfesD12	.70	.70	.87	.93	.70	.68	.63	.66	.58	.64	.93	—
ProfesD13	.74	.73	.87	.91	.73	.67	.70	.71	.64	.70	.90	.89
ProfesD14	.70	.69	.91	.92	.70	.62	.64	.68	.59	.65	.92	.90
ProfesD15	.73	.71	.88	.90	.70	.67	.66	.67	.60	.66	.91	.90
ProfesD16	.74	.76	.85	.89	.75	.71	.70	.73	.66	.76	.90	.87
ProfesD17	.66	.66	.70	.71	.65	.59	.57	.58	.52	.62	.72	.74
ProfesD18	.61	.58	.70	.68	.59	.52	.49	.52	.45	.56	.69	.71
ProfesD19	.66	.63	.74	.74	.66	.60	.58	.59	.56	.63	.75	.77
ProfesD20	.67	.67	.76	.77	.68	.61	.58	.60	.54	.62	.78	.79
ProfesD21	.55	.53	.66	.64	.58	.53	.49	.49	.47	.54	.69	.69
ProfesD22	.68	.66	.66	.71	.65	.60	.58	.58	.56	.63	.76	.76
Scale	.63	.66	.73	.74	.69	.66	.64	.66	.58	.61	.76	.76
Single Item	.61	.64	.74	.75	.66	.63	.59	.60	.51	.57	.74	.70

(Continued)

	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	Scale	Single Item
ProfesD01												
ProfesD02												
ProfesD03												
ProfesD04												
ProfesD05												
ProfesD06												
ProfesD07												
ProfesD08												
ProfesD09												
ProfesD10												
ProfesD11												
ProfesD12												
ProfesD13	—											
ProfesD14	.91	—										
ProfesD15	.90	.91	—									
ProfesD16	.87	.88	.88	—								
ProfesD17	.72	.69	.72	.71	—							
ProfesD18	.71	.70	.70	.69	.87	—						
ProfesD19	.74	.74	.77	.72	.90	.89	—					
ProfesD20	.78	.77	.79	.75	.91	.89	.92	—				
ProfesD21	.67	.67	.71	.66	.80	.85	.89	.87	—			
ProfesD22	.71	.67	.74	.68	.86	.82	.88	.89	.86	—		
Scale	.70	.73	.72	.70	.67	.66	.70	.77	.63	.72	—	
Single Item	.70	.71	.71	.69	.64	.68	.70	.78	.65	.72	.94	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D12

Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Ethical Leadership)

	D11	D12	D13	D14	D15	D16	Scale	Single Item
EthicsD11	—							
EthicsD12	.77	—						
EthicsD13	.81	.89	—					
EthicsD14	.73	.83	.83	—				
EthicsD15	.82	.80	.85	.87	—			
EthicsD16	.67	.74	.77	.75	.79	—		
Scale	.71	.65	.70	.63	.66	.74	—	
Single Item	.71	.68	.73	.65	.69	.76	.94	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D13*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Trust)*

	D1	D2	D4	D5	D7	D8	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	Scale	Single Item
TrustD1	—																				
TrustD2	.94	—																			
TrustD4	.70	.75	—																		
TrustD5	.68	.76	.93	—																	
TrustD7	.66	.72	.76	.75	—																
TrustD8	.63	.73	.77	.76	.89	—															
TrustD10	.90	.87	.70	.67	.60	.61	—														
TrustD11	.66	.68	.81	.82	.62	.65	.71	—													
TrustD12	.75	.77	.75	.74	.79	.78	.74	.76	—												
TrustD13	.93	.96	.75	.75	.69	.68	.90	.69	.78	—											
TrustD14	.92	.91	.70	.67	.67	.67	.84	.61	.70	.90	—										
TrustD15	.88	.91	.74	.72	.70	.69	.83	.63	.75	.90	.88	—									
TrustD16	.83	.83	.71	.68	.63	.58	.76	.63	.68	.86	.77	.86	—								
TrustD17	.71	.78	.91	.96	.73	.75	.67	.80	.75	.75	.69	.73	.70	—							
TrustD18	.63	.67	.88	.87	.72	.72	.60	.72	.67	.64	.67	.66	.62	.87	—						
TrustD19	.71	.76	.88	.87	.70	.69	.71	.77	.72	.74	.70	.77	.75	.88	.83	—					
TrustD20	.60	.68	.85	.82	.75	.74	.61	.73	.66	.66	.61	.70	.77	.83	.81	.85	—				
TrustD21	.68	.75	.76	.75	.90	.94	.64	.66	.79	.71	.70	.71	.60	.74	.73	.68	.72	—			
TrustD22	.67	.75	.74	.76	.87	.87	.57	.64	.74	.68	.70	.71	.61	.77	.75	.66	.71	.89	—		
Scale	.63	.67	.74	.72	.77	.72	.58	.69	.69	.65	.65	.63	.57	.72	.70	.66	.67	.74	.75	—	
Single Item	.59	.63	.68	.67	.74	.71	.56	.62	.65	.60	.63	.58	.50	.67	.62	.62	.61	.72	.74	.94	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D14*Intercorrelations Among Diagnostic Items, Dimension Scales and Single Items (Adaptability)*

	D1	D2	D3	D8	D9	D10	D15	D16	D18	D19	D20	D21	D22	D23	Scale	Single Item
AdaptD1	—															
AdaptD2	.92	—														
AdaptD3	.87	.91	—													
AdaptD8	.68	.67	.67	—												
AdaptD9	.67	.67	.64	.89	—											
AdaptD10	.66	.65	.67	.85	.91	—										
AdaptD15	.64	.60	.64	.76	.76	.84	—									
AdaptD16	.61	.57	.58	.67	.67	.74	.87	—								
AdaptD18	.91	.92	.93	.68	.66	.67	.68	.62	—							
AdaptD19	.84	.83	.91	.74	.70	.74	.71	.66	.90	—						
AdaptD20	.64	.63	.63	.86	.84	.84	.81	.74	.68	.69	—					
AdaptD21	.68	.67	.65	.85	.90	.89	.81	.71	.69	.73	.90	—				
AdaptD22	.60	.62	.63	.81	.88	.88	.80	.71	.65	.74	.85	.91	—			
AdaptD23	.46	.46	.50	.61	.64	.70	.80	.78	.50	.58	.69	.67	.72	—		
Scale	.60	.57	.58	.60	.59	.65	.68	.67	.58	.64	.62	.64	.60	.57	—	
Single Item	.54	.49	.49	.61	.56	.62	.64	.63	.50	.57	.62	.63	.58	.60	.93	—

Note. $N = 83$; All correlations are significant at $p < .01$.

Table D15

Correlations Between Single Items and Scales, Diagnostic Items and Scales, and Single Items and Diagnostic Items

	Correlation: Single Items with Scales	Correlation Range: Diagnostic Items with Scales	Correlation Range: Single Items with Diagnostic Items
1. Flow of Information	.94	.37 - .78	.36 - .72
2. Autonomy	.89	.42 - .72	.43 - .64
3. Respect for the Individual	.92	NA	NA
4. Hazing	.93	.37 - .57	.35 - .52
5. Bullying	.89	.25 - .70	.26 - .64
6. Peer Support for Unit Members	.91	.60 - .67	.62 - .69
7. Leader Support for Unit Members	.94	.56 - .80	.51 - .75
8. Leader Support for Families	.92	.50 - .76	.55 - .70
9. Professionalism	.94	.58 - .78	.51 - .78
10. Ethical Leadership	.94	.63 - .74	.65 - .76
11. Trust	.94	.57 - .77	.50 - .74
12. Adaptability	.93	.57 - .68	.49 - .64

Note. NA = not available.

Appendix E. Battalion Leader Interviews

Project team members interviewed battalion leaders about their perceptions of the command climate survey, the usefulness of the results, and resources that are available to address command climate issues. We interviewed 77 battalion leaders about the command climate survey as part of the effort to collect company-level outcome ratings. The majority of the interview participants were LTCs (69%), but ranks included one CSM (1%), eleven MAJ (26%), and four percent were missing rank information. Table E1 lists the interview questions. Interviews were approximately 15 to 30 minutes, depending on the availability of the battalion leaders.

Table E1

Battalion Leader Interview Questions

Interview Question
What aspects/factors of the survey do you view as most important?
When you receive the command climate results, what information would be helpful for you to further identify and implement changes, (i.e., you get the survey results, now what)?
If you had poor results, what would you want to know?
How would you go about addressing any problems?
What information would help you interpret the results (e.g., comparison to Army, installation, other similar units)?
What resources would you want more information on (e.g., Army Resilience)?
What resources do you view as the most helpful, (e.g., something every commander should know about)?
Anything else you can think of that would be helpful to you or you think would be helpful for other commanders?

Battalion leaders were supportive of the command climate survey and thought the survey provided an opportunity for Soldiers to voice issues and provide anonymous feedback that leaders may not otherwise receive. Leader concerns about the command climate survey centered on survey length, quality of Soldier responses, or difficulty of administration. The following paragraphs provide a summary of battalion leader comments in five areas: survey content, administration, response quality, results interpretation, and resources to address climate issues.

Survey Content

Leaders found the open-ended comments section of the command climate survey to be one of the most useful sections of the survey. One leader commented that Soldiers may rush through a long survey, but if they took the time to write out a comment, the leader found the

comment to be sincere. Many leaders thought that the open-ended comments added a level of context lacking in the statistical results and helped to better identify the nature of climate issues.

Many leaders commented that the survey is too long and that Soldiers do not take it seriously. A shorter survey would improve the quality of the results, although leaders did not want to lose any of the content areas or the option for Commanders to add their own survey questions. Leaders also mentioned that the current survey questions are too general/broad. More specific questions about areas Commanders have the ability to address were considered helpful. One suggestion was to ask follow-up questions in the survey to help determine the root cause of an issue.

Specific content areas identified as important by battalion leaders included respect for others, hazing, and bullying. Several leaders said they check these results first because these areas are easily addressed but infrequently reported elsewhere. Other important topics mentioned were ethical leadership, family-related items, and SHARP items. Battalion leaders mentioned several additional topics areas that they would like to see on the climate survey such as outcome or performance-related questions (e.g., about efficiency). Many particularly liked the ability to add their own questions to the survey.

Survey Administration

While battalion leaders were not specifically asked about the survey administration process, they frequently mentioned the challenges associated in this area. Computer-based surveys, especially those that require Common Access Cards, can be difficult to support and time-consuming to administer. Many suggested developing a smart phone-based app for the command climate survey. Others commented on the timing of the survey administration with some indicating that administration right after the change of command was too early and others commenting that the frequency was appropriate, with administration in the first 60 days and again one year later. Finally, battalion leaders emphasized the importance of communicating the purpose of the survey, particularly to younger Soldiers who may not understand the value of the survey.

Survey Response Quality & Integrity

Some leaders expressed concerns about the quality of survey responses and provided several reasons that might compromise the quality of the results including lack of attention to the survey items, retaliatory behaviors, or a lack of understanding of the target or content of the item. Several leaders mentioned that Soldiers are over-surveyed, which can affect the quality of the responses and cause Soldiers to choose not to pay attention to the items or to answer items randomly. Leaders considered attention check questions as a possible helpful addition to the survey. Leaders mentioned that low response rates may impact the generalizability of the results. Leaders also thought that Soldiers can become confused about the intended target of the item when an item asks them to rate their “Chain of Command,” or may answer items based on their squad instead of their company. Other leaders expressed concern that lower ranking Soldiers might not always understand actions at the leadership level and may not be able to contribute useful information. Possible solutions included tailoring questions to account for Soldier rank (e.g., short answers for experienced officers and senior NCOs, multiple choice for junior enlisted

and new officers). Finally, several leaders mentioned that Soldiers with disciplinary issues may retaliate on the survey with biased opinions about leadership.

Interpreting Results

Overall, leaders thought the results were easily understood. Comments about interpreting command climate survey results focused on additional breakouts or details that would improve their understanding of their organizations' results compared to others. Leaders noted that they do get comparison results through the Army Readiness Assessment Program (ARAP), but these comparisons are against the Army as a whole or CONUS units so the results are not as useful as comparisons to units similar to their own. Leaders thought comparisons to like units (e.g., other Infantry units, similar CONUS or OCONUS units, units in same brigade or division) would help them understand how their units compared to those most similar to their own units. Trends over time would also help leaders understand the current status of the unit in comparison to past results and would allow them to see change over time. Many leaders mentioned that results breakouts by pay grade (e.g., E4 and below; E5 and above) or platoon would help them interpret the results and would help to identify the source of the issue. Context (e.g., OPTEMPO, staffing level, previous command, current mission, deployment status, recent casualties) affects Soldiers' views on climate, and leaders noted the importance of understanding the results in light of those factors. Leaders varied in their comfort-level with the statistical results. Some were familiar with the meaning of the statistical terms, while others expressed some difficulty in understanding what the statistical results really meant. Several mentioned that it would be helpful to have an executive summary to highlight high priority results.

Addressing Issues

Overall, commanders thought they were well equipped to address the command climate survey results using a variety of tools (local Army resources, peer or supervisor mentors, UCMJ, articles and professional journals, military psychologists, chaplains, EO and SHARP representatives, etc.). Several leaders expressed that additional best practice guidance on how to best collect additional information or how to resolve specific climate issues would be helpful. For example, one commander noted that she would like more guidance on how to conduct sensing sessions, with pre-developed follow-up questions to further diagnose issues. Several other leaders mentioned that it would be helpful to tie specific resources (e.g., Army organization, FRG, BOSS, ADRP 6-22) to the climate survey items so leaders know exactly where to find help for each climate topic area. Finally, best practice advice and specific recommendations presented along with the survey results (e.g., the top 3 actions to address a particular area) would help leaders take quick action to resolve climate issues. Additional resources such as literature on climate change implementation would also be useful.

Regarding addressing climate issues, commanders utilized a variety of approaches such as holding sensing sessions to gather additional information or resolve issues, having Soldiers anonymously complete index cards with targeted questions or asking Soldiers to provide solutions (e.g., what would you change?), involving lower level leadership, or even addressing issues at formation. Several leaders noted that providing Soldiers with feedback about the survey results and intended leader actions was critical to communicating that the survey is important,

leaders care and value Soldier input, and that leaders are taking action based on the survey results.