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Defensive Operations in a Decisive Action Training Environment

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14. ABSTRACT *(Maximum 200 words)*:

In a collaborative effort with members of the Joint Readiness Training Center Warrior Leadership Council, we explored if a guide on Defensive Operations (DO) could improve units' performance during their Combat Training Center (CTC) rotations. A comparison was made between control and experimental groups. The experimental group received a Guide for DO with the intent of improving performance on Planning, Execution, and Overall performance. There were no significant differences between control and experimental groups. Further analysis revealed that units with a Tactical Standard Operating Procedure (TSOP) for DO were more likely to carry out the necessary DO tasks and perform them better than units who did not have a TSOP. Additionally, units that had conducted a Field Training Exercise (FTX) within the past 12 months also performed consistently better than units who had not conducted an FTX. Conducting DO is critical to executing Decisive Action as part of Unified Land Operations. Units that have established operational procedures, and have had a chance to practice them, are likely to perform better on critical tasks during their CTC rotations.

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DEFENSIVE OPERATIONS IN A DECISIVE ACTION TRAINING ENVIRONMENT

EXECUTIVE SUMMARY

Research Requirement:

This report describes research conducted by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) with the Joint Readiness Training Center (JRTC) Warrior Leadership Council (WLC). The research focused on evaluating a brief guide developed to improve Defensive Operations (DO) during multiple rotations at the JRTC. The guide was intended to increase unit efficiency of DO in accordance with Field Manual (FM) 3-21.8, *Infantry Rifle Platoon and Squad,* FM 3-21.10, *Infantry Rifle Company*, FM 3-90.1 *Tank and Mechanized Infantry Company Team*, and ADP/ADRP 3-90 *Offense and Defense.* Unit efficiency was assessed via a DO Checklist developed by the WLC as a means for Observer/Coach/Trainers (OCT) to collect data on how well units were conducting DO in the Decisive Action Training Environment (DATE).

Procedure:

The checklists, filled out by OCTs, allowed for assessment of units on three areas: Planning, Execution, and Overall Performance. Data were collected from 472 checklists over eight unit training rotations. Four rotations were in the control group, and four of the rotations were in the experimental group. Based on the performance of four initial/baseline rotations, a Guide for DO was developed and distributed to the remaining four rotations in the experimental group. The performance of the baseline (control) group was compared to that of the experimental group. The effectiveness of the guide was determined by examining differences between the control (no guide) and experimental (guide) groups' performance based on the checklists collected at the end of each rotation.

Findings:

There were no significant differences found between control and experimental groups, indicating that the Guide for DO had no effect on performance. However, additional analyses indicated that units that had developed Tactical Standard Operating Procedures (TSOP) for DO performed better on the majority of critical tasks. Further, units that had conducted a Field Training Exercise (FTX) in the past 12 months also tended to conduct better defensive operations.

Utilization and Dissemination of Findings:

Summary findings were provided to members of the WLC in November 2016. As reported by OCTs, units that performed better on most DO tasks already had a TSOP. Defensive Operations are complex and involve numerous individuals working interdependently at multiple echelons (tactical echelons range from the fire team to division). The requirement to make effective decisions at multiple levels against a dynamic enemy adds to the complexity of

evolving conditions during Offensive and Defensive Operations. Encouraging units to iteratively establish, rehearse, and revise procedures for such operations at home station will likely improve performance during CTC rotations and beyond.

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DEFENSIVE OPERATIONS IN A DECISIVE ACTION TRAINING ENVIRONMENT

The Joint Readiness Training Center (JRTC) is one of the U.S. Army's Combat Training Centers (CTC), supporting individual and unit-level training in preparation for deployment. The JRTC Warrior Leadership Council (WLC) [1] continues to examine the nuances of operational unit performance and to propose methods to improve individual and unit operations (Dasse, Vowels, Thomas, & Getchell, 2016; Evans & Baus, 2006; Evans, Reese, & Weldon, 2007; Vowels, Dasse, Ginty, & Emmons, 2014).

The current research concentrated on evaluating a guide developed to improve Defensive Operations (DO). The guide was intended to increase the efficiency of DO in accordance with Field Manual (FM) 3-21.8, *Infantry Rifle Platoon and Squad,* FM 3-21.10, *Infantry Rifle Company,* FM 3-90.1 *Tank and Mechanized Infantry Company Team*, and ADP/ADRP 3-90 *Offense and Defense* (Department of Army, 2012a/b). The DO Checklist was created by the WLC as a means for JRTC Observer/Coach/Trainers (OCT) to collect data on how well units were conducting DO. The effectiveness of the guide was determined by examining differences between the control and experimental groups indicated by performance scored on the DO checklist by the OCTs.

Defensive Operations

ADP/ADRP 3-0, *Operations,* describes the achievement of Decisive Action (DA) through types of combat operations including Offense and Defense and through tactical enabling tasks (see also JP 3-0, *Joint Operations*). Decisive action, a fundamental concept of unified land operations, is defined as, "the continuous, simultaneous combinations of offensive, defensive, and stability or defense support of civil authorities' tasks" (Department of Army, 2016a/b, pg. 3-1). Despite sufficient planning, units will likely have to adjust to dynamic situations. Thus, units with reliable procedures should be able to respond to change effectively across any operational environment. As noted in ADP 3-90, *Offense and Defense,* "Techniques and procedures are established patterns that can be applied repeatedly with little or no judgment in a variety of circumstances" (pg. 1). Therefore units that have established Tactics, Techniques and Procedures (TTP), and have had sufficient opportunities to practice them, are likely to be able to conduct their missions effectively.

The primary purposes of DO include regaining initiative, denying enemy access to terrain, fixing the enemy to a location as a precursor to Offensive Operations, and increasing the enemy's vulnerabilities (ADP 3-90). Often, another purpose of DO is for units to respond to an unexpected enemy attack; the ability for units to quickly engage in trained maneuvers is particularly important in this condition. In all aspects of DO, the characteristics of the defense and the steps of engagement area development are critical. Characteristics include, among others, Flexibility and Disruption. Flexibility is primarily conducted during the planning phase and allows commanders and staffs to create detailed plans that include developing actions for counterattack and preparing to move into an offensive posture. By using Disruption, which is

[1]Led by the Deputy Commander and Command Sergeant Major of the Operations Group, the council consists of representatives from each Operations Group division, as well as the 1st Battalion (Airborne) 509th Infantry, and the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI). The primary purpose of the council is to leverage the expertise of JRTC Observer/Coach/Trainers (OCT) in order to identify and prioritize the most serious small unit leadership and training deficiencies found across rotations (ARI, 2005).

critical during execution, commanders attempt to interrupt the enemy's tempo and to separate and defeat enemy units. Engagement Area Development includes seven steps such as, "Identify likely enemy avenues of approach," "Determine where to kill the enemy," and "Conduct an engagement area rehearsal" (see Chapter 8, FM 3-21.8, *The Infantry Rifle Platoon and Squad)*. With careful planning and preparation accomplishing the steps will achieve the intent of destroying the enemy in the engagement area.

In order to best prepare units for contemporary operations for DA, JRTC's WLC determined that examining DO during JRTC training rotations would inform and possibly improve overall performance for future rotations, particularly in Decisive Action Training Environments (DATE). In cooperation with the JRTC WLC, we examined DO as rotational units conducted training in a DATE at JRTC. The Deputy Commander and Command Sergeant Major of the JRTC Operations Group provided oversight of the research developed by the WLC.

Data were collected on the effectiveness of DO conducted by units for eight rotations. Primary doctrinal references for DO include, Field Manual (FM) 3-21.8, *Infantry Rifle Platoon and Squad*, FM 3-21.10, *Infantry Rifle Company*, FM 3-90.1 *Tank and Mechanized Infantry Company Team*, and ADP/ADRP 3-90 *Offense and Defense*. Units were observed during all phases of Planning and Execution. Performance for all rotations was assessed using the DO Checklist (Appendix A). A pocket-sized reference guide (Appendix B) was presented to the final four rotations (experimental group) to assist the commander, staff member, or leader in the Planning and Execution of DO. Whether the guide improved performance was determined by comparing the responses on the checklist from the initial four rotations (control group) to the responses of the final four rotations (experimental group).

Materials and Methods

Sample

Data were collected from eight rotational Brigade Combat Teams (BCT). Over the course of the eight rotations, OCTs filled out 472 DO checklists at the respective echelon with which they were embedded. The control group consisted of the initial four rotations; 295 checklists were filled out for those units. The final four rotations were in the experimental group; 177 checklists were filled out for those units. The majority of data collected on rotation types in the control group were DATE rotations (87%), consisted mainly of active duty (67%), were either companies (41%) or platoons (33%), were Infantry (39%) or Field Artillery (10%), were observed during Force-on-Force (FOF) (56%) or Defense (25%), while conducting an Area Defense (71%). The majority of data collected on rotation types in the experimental group were DATE rotations (63%), consisted mainly of active duty (51%), were either companies (38%) or platoons (33%), were Infantry (41%) or Field Artillery (15%), were observed during Force-on-Force (52%), while conducting an Area Defense (63%). Over the course all eight rotations, the majority of data were collected on units conducting DATE rotations (78%) from companies (40%) and platoons (33%), while the remaining data were collected on battalions, detachments, sections, and troops. The most common unit types observed were Infantry (40%) and Field Artillery (12%). Force-on-Force was the most common phase type observed (54%), followed by Defense (12%). The majority of defense types were Area Defense (68%).

Defensive Operations Checklist

The WLC developed and approved the DO Checklist in order to examine operations across and within rotational units. The full checklist is presented in Appendix A. Measures of interest included Planning, Execution, and Overall Performance. Observer/Coach/Trainers were issued the checklists prior to each rotation through their JRTC Operations Group division leaders. Division leaders of the WLC were responsible for ensuring the OCT data collection in their respective division provided satisfactory data on the measures of interest. The WLC collected the checklists at the completion of each rotation.

The DO Checklist asked OCTs to respond to both dichotomous (Yes/No) and continuous (scaled) questions. For the continuous/scaled questions, OCTs reported "how well" the unit performed on Defensive tasks on a scale of 0 = *Unsatisfactory/not at all* to 4 = *Exceeds standard/performed all tasks and prepared for contingencies*. Examining data across multiple response categories rather than just two allows for both the use of multiple types of statistical tests in the analyses and can provide a more specific understanding of unit performance (Dasse, et al., 2016; Vowels et al., 2014).

In the first section of the checklist, OCTs were asked to provide general information on the unit, the mission, and rotation observed. More specific questions about the unit and their Standard Operating Procedure (SOP) followed in the second section of the checklist. The third section of the checklist examined aspects of task execution such as how well the units emplaced counter mobility obstacles, maintained supplies, and maintained fields of fire. The fourth section of the checklist addressed the seven steps of Engagement Area Development and the Characteristics of Defense.

Guide for Defensive Operations

Based on observations from the first four rotations (control group), the Guide for Defensive Operations (Appendix B) was developed by members of the WLC as a training aid to enhance DO performance. The pocket-sized guide was designed as a quick reference to improve Planning, Execution, and Follow-Up Operations. At 5.5 inches by 4.25 inches, the guide could fit in the pocket of leaders for easy access during exercises. This guide was issued to company/platoon/section leaders in the final four rotations during their initial JRTC rotation briefings (briefings occurred a few days prior to the start of the rotation). This guide served as the only independent variable.

The topics on the guide were based on the performance of initial rotations, observations of OCTs, and feedback from council members. Each topic contained several subtopics to assist units in conducting DO. For instance, the Planning section directed units to ensure the appropriate leaders were carrying out their responsibilities, reconnoitering and preparing the engagement area, developing an operations order, and rehearsing the plan. The Execution section further directed units to focus on working through the seven steps of Engagement Area Development (e.g., Determine when and where to kill the enemy). The Follow-Up section underscored the necessity of debriefing personnel and preparing for future operations.

Procedure

Through the JRTC Operations Group divisions, OCTs were issued the checklists prior to each rotation and those were collected upon completion of each rotation. The Guide for DO was given to each unit in the experimental group before their rotation. However, there was no verification of who received the guide, how many leaders used the guide during their rotation, or how frequently and to what extent. The OCTs were not blind to the purpose of the control versus the experimental groups or the purpose of the guide; OCTs are often replaced over the course of a project and that can induce potential variance as well.

Results

Six checklists were excluded because the majority of data were missing, leaving a total of 466 checklists that were used in the analyses. The excluded checklists accounted for approximately 1% of the total data collected and therefore did not influence later analyses. Additionally, for the continuous/scaled items, the "Not Applicable" responses (indicated by a "5" on the checklist) were recoded so as to not inaccurately increase the means and possibly affect the significance of our statistical tests. Analyses are discussed in the following sections.

Data were collected to examine Defensive Operations at JRTC as observed by OCTs and assess the potential effect the Guide for Defensive Operations had on performance. Additionally, whether units had a TSOP and whether or not units had completed a Field Training Exercise (FTX) in the past 12 months was examined in relation to DO performance.

The overall analysis and additional analyses follow the same structure. First, we examined results for each section of the checklist. Chi-square tests for independence were used to analyze the dichotomous items (Yes or No responses). Independent t-tests were used to analyze scale items (0-4 responses). Throughout the results and discussion, scale items are referred to as "continuous" items because the items ask "how well" the unit performed on a task instead of simply whether the unit performed the task (Yes/No). The magnitude of the differences (effect size) is also reported; we report *Phi coefficients* for the dichotomous data (Kotrlik & Williams, 2003) and *Cohen's d* for the continuous data (Cohen, 1988).

In order to control for possible Type I errors, we used a conservative alpha level of $p < 0.01$ as the threshold for statistical significance for all analyses. Though this adjustment decreased the power of the analyses (i.e., failing to find an effect when an effect exists), we thought it prudent given factors about our design and methodology that we could not control (how the guide is introduced to leaders, the extent the guide was used, etc.). Adjusting the alpha reduced the likelihood of mistaking a false result for a true finding/effect.

Control Versus Experimental Group Comparisons

Chi-square tests for independence indicated no significant differences between groups (control versus experimental; all $p > 0.01$) on any of the dichotomous items in any section of the checklist to include, "Did the unit conduct a reconnaissance of the defensive area?" and "Did the

unit continue to refine their fires and obstacle plans throughout the planning process?" – for remaining dichotomous items see the DO Checklist in Appendix A. Independent samples t-tests indicated no significant differences between groups (control versus experimental; all $p > 0.01$) on any of the continuous data in any section, including the seven steps to Engagement Area Development and the Characteristics of Defense.

Control Versus Experimental Group Discussion

The Guide for Defensive Operations covered the same primary mission phases we measured using the checklist, Planning, Execution, and Overall Performance. The final section of the guide provided pointers for Follow-Up Operations such as the securing the area and preparing for future operations. Thus, in an abbreviated manner, the Guide addressed the necessary phases of DO performance.

As noted, Defensive Operations involve multiple, complex steps which require subordinates and leaders, across multiple echelons, to work effectively together to plan, prepare, execute, and assess. Therefore, a brief guide may have had a limited effect on performance during this CTC rotation. However, as seen in previous research, units that had existing procedures in place (and possibly had practiced those) typically performed better during their rotations.

Additional Analyses

TSOP Versus No TSOP

Previous research examining units' performance during their JRTC rotation has indicated units with an SOP strongly predicted better performance on a majority of tasks. Therefore, we examined whether units that had a TSOP for DO performed better as indicated on the DO Checklist compared to units that did not have a TSOP. The results of the statistical tests for all sections are shown in Tables 1 (non-parametric), 2, 3, and 4 (parametric). When examining DO performance as scored dichotomously, OCTs indicated that units who did not have a TSOP often did not complete routine DO tasks (such as, not continuously improving positions in the engagement area). Units that had an established TSOP performed better on the majority of continuous checklist items in the Planning and Execution phases. On 18 of 21 continuous items, units with a TSOP had a higher item mean than units without a TSOP; half of those comparisons achieved statistical significance. When assessing Engagement Area Development and Characteristics of Defense, units with a TSOP performed better on all 14 items measuring those aspects of DO; 11 of those comparisons reached statistical significance.

Table 1

Non-parametric Tests: TSOP Versus No TSOP

Checklist Item	Sample Size	*Pearson's* χ^2	*p*	*Phi Coefficient*
II 2A Familiar	241	43.77	0.0001*	0.426
II 3 Warning Order	338	0.12	0.732	0.019
II 4 Situational Template (SITEMP)	304	7.34	0.007*	0.155
II 6 Reconnaissance	328	10.77	0.001*	0.181
II 7A Subordinate Leaders	284	4.08	0.044	0.120
II 7B Security	248	0.60	0.439	0.049
II 7C Fighting Positions	283	5.08	0.024	0.134
II 8A Operations Order (OPORD)	344	12.13	0.0001*	0.188
II 8B Channel	309	2.83	0.092	0.096
II 10 Refine Fires	317	4.58	0.032	0.120
II 11 Classes of Supply	345	1.42	0.234	0.064
II 12 Contingency	264	3.54	0.060	0.116
II 12A Rally Points	200	2.85	0.091	0.173
II 13 Effect Fires	238	0.08	0.784	0.018
II 17 Cover	279	0.47	0.491	0.041
II 18A Rehearsal	274	10.01	0.002*	0.191
III 1A Observation Post	354	1.36	0.243	0.063
III 1B Alert	266	7.67	0.006*	0.170
III 1B Rehearse	250	9.40	0.002*	0.194
III 2A Fighting Positions	343	0.14	0.355	0.050
III 2B Avenues	338	0.86	0.0001*	0.269
III 3 Password	291	4.49	0.034	0.124
III 3 Know Password	273	2.65	0.103	0.099
III 3 TSOP Password	265	2.25	0.134	0.092
III 4B Javelin	230	0.14	0.704	0.025
III 8 Appropriate Weapon	295	7.65	0.006*	0.161
III 10 Host Nation	212	1.46	0.226	0.083
III 11 Defeat/Defend/Delay	271	1.82	0.178	0.082
III 13 Improve	329	5.37	0.021	0.128
III 14 Traffic Control Point	187	2.36	0.124	0.112
III 17 Adequate Supply	332	1.42	0.234	0.065
III 18 Fields of Fire	321	0.13	0.715	0.020
III 19 Fratricide	324	0.42	0.518	0.036
III 20 Field Training Exercise	263	1.70	0.193	0.080

Note. For *Phi* coefficients, associations range from 0.00 to 0.01 for *negligible associations*, .20 to .40 for *moderate associations* and 0.80 to 1.00 for *very strong associations* (Kotrlik & Williams, 2003). Refer to Appendix A for the entire set of checklist items.
*Indicates a statistically significant difference at the alpha level of 0.01

Table 2

Parametric Tests: TSOP Versus No TSOP, Section II (Planning)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
II 1 Understanding	TSOP	133	2.39	0.96	1.05	0.296	0.11
	No TSOP	213	2.29	0.87			
II 5 Terrain	TSOP	130	2.17	0.83	2.87	0.004*	0.31
	No TSOP	208	1.88	1.01			
II 15A Resupply	TSOP	127	2.02	1.06	1.61	0.108	0.18
	No TSOP	196	1.83	1.04			
II 15B Maintenance/Recovery	TSOP	118	2.07	1.17	2.60	0.010*	0.30
	No TSOP	187	1.72	1.11			
II 15C Casualty Evacuation (CASEVAC)	TSOP	124	2.15	1.16	1.06	0.289	0.12
	No TSOP	201	2.00	1.16			
II 15D Transportation	TSOP	100	2.15	1.24	2.45	0.015	0.31
	No TSOP	150	1.79	1.08			
II 16 Civil	TSOP	99	1.48	1.19	2.62	0.009*	0.34
	No TSOP	136	1.10	1.07			
II 18A Rehearsal	TSOP	95	1.85	1.11	2.67	0.008*	0.37
	No TSOP	116	1.46	1.04			
II 19 Planning Overall	TSOP	128	2.05	0.82	3.52	0.001*	0.39
	No TSOP	202	1.73	0.77			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). Refer to Appendix A for the entire set of checklist items. *Indicates a statistically significant difference at the alpha level of 0.01.

FTX Versus No FTX

We additionally examined units that had/had not completed a Field Training Exercise (FTX) within the past 12 months. That set of training events is a home station approximation or preparation for CTC rotational training. Thus, an FTX represents a good opportunity to practice tactics, techniques, and procedures (TTP) before those TTPs are tested in a CTC environment. On almost half of the items (16) scored dichotomously, units that had completed an FTX were more likely to complete DO tasks. On the remaining dichotomous items, results indicated that units were unlikely to complete the DO task whether they had conducted an FTX in the past 12 months or not. Results from the Non-parametric tests are depicted in Appendix C, Table 5. Units that had conducted an FTX performed better than units that had not on all continuous items. Those results are show in Tables 6 through 8.

Since having a TSOP was a good indicator of better DO performance, we examined this in relation to whether units had/had not conducted an FTX. On the dichotomous items, results were less consistent. Whether units completed a DO task or not was sometimes driven by TSOP and sometimes by FTX. Results are shown in Appendix D, Table 9. Consistently, units that had a TSOP and had carried out an FTX had the best performance as indicated by the highest mean ratings for continuous items. Results are shown in Appendix D, Figures 1 through 4.

Table 3

Parametric Tests: TSOP Versus No TSOP, Section III (Execution)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
III 4A Mobility Obstacles	TSOP	109	1.57	1.10	0.017	0.915	0.002
	No TSOP	164	1.55	1.02			
III 5 Counter Mobility	TSOP	99	1.49	1.08	-0.035	0.972	-0.004
	No TSOP	152	1.50	1.12			
III 6 Tactical Plan	TSOP	106	1.63	1.12	-0.087	0.931	-0.011
	No TSOP	166	1.64	1.18			
III 7 Battle Positions	TSOP	111	1.38	1.12	1.54	0.125	0.18
	No TSOP	173	1.18	1.03			
III 9A Primary	TSOP	109	2.13	1.10	2.97	0.003*	0.35
	No TSOP	179	1.74	1.07			
III 9B Alternate	TSOP	74	1.42	1.29	2.66	0.009*	0.40
	No TSOP	101	0.96	0.99			
III 9C Supplementary	TSOP	59	1.05	1.25	3.43	0.001*	0.59
	No TSOP	80	0.45	0.81			
III 9D Subsequent	TSOP	49	0.94	1.25	2.40	0.018	0.43
	No TSOP	80	0.49	0.89			
III 12 Work Rest Cycle	TSOP	131	2.00	1.07	-0.085	0.932	-0.009
	No TSOP	197	2.01	1.04			
III 15 Classes of Supply	TSOP	127	2.13	1.03	1.20	0.233	0.14
	No TSOP	192	1.99	1.01			
III 20 Other Assets	TSOP	97	1.38	1.01	1.48	0.139	0.19
	No TSOP	142	1.18	1.02			
III 22 Execution Overall	TSOP	114	1.91	0.84	1.64	0.102	0.19
	No TSOP	184	1.75	0.83			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). Refer to Appendix A for the entire set of checklist items.
*Indicates a statistically significant difference at the alpha level of 0.01.

Table 4

Parametric Tests: TSOP Versus No TSOP, Section IV (Overall)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
Engagement Area Development							
IV 1 Avenues of Approach	TSOP	127	2.47	1.01	2.91	0.004*	0.32
	No TSOP	199	2.13	1.07			
IV 2 Enemy Scheme	TSOP	126	2.03	1.03	3.82	0.001*	0.43
	No TSOP	199	1.58	1.03			
IV 3 Kill the Enemy	TSOP	126	2.03	1.18	1.79	0.075	0.20
	No TSOP	197	1.80	1.13			
IV 4 Obstacles	TSOP	124	1.67	1.12	2.35	0.019	0.26
	No TSOP	198	1.36	1.14			
IV 5 Weapons Systems	TSOP	127	2.31	1.06	3.37	0.001*	0.37
	No TSOP	200	1.91	1.04			
IV 6 Indirect Fires	TSOP	126	1.52	1.21	3.29	0.001*	0.37
	No TSOP	195	1.08	1.06			
IV 7 Rehearsal	TSOP	127	1.24	1.22	4.11	0.001*	0.46
	No TSOP	200	0.71	1.00			
Characteristics of Defense							
IV 1 Disruption	TSOP	121	1.78	1.14	3.28	0.001*	0.37
	No TSOP	192	1.36	1.07			
IV 2 Flexibility	TSOP	122	1.93	1.07	2.50	0.013*	0.28
	No TSOP	194	1.61	1.16			
IV 3 Maneuver	TSOP	122	1.84	1.06	3.25	0.001*	0.37
	No TSOP	194	1.45	1.05			
IV 4 Mass and Concentrate	TSOP	122	1.89	1.08	3.42	0.001*	0.39
	No TSOP	194	1.46	1.08			
IV 5 Operations in Depth	TSOP	122	1.62	1.11	3.21	0.001*	0.36
	No TSOP	192	1.23	1.03			
IV 6 Preparation	TSOP	125	1.82	1.12	2.31	0.02	0.26
	No TSOP	195	1.54	0.99			
IV 7 Security	TSOP	125	2.09	1.08	3.50	0.001*	0.39
	No TSOP	193	1.65	1.08			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). Refer to Appendix A for the entire set of checklist items.
*Indicates a statistically significant difference at the alpha level of 0.01.

General Discussion

Defensive Operations were the principal focus of the present research. Given the performance of initial rotations (control group), a brief guide for DO was developed by the WLC. This guide was distributed to the remaining rotations (experimental group) in order to examine if the guide could improve performance on key tasks. In the primary analysis, the experimental group was compared to the control group on the tasks scored by OCTs using the checklist. That analysis indicated that the Guide for DO had minimal to no impact on task performance.

Research involving tactical concepts, such as Command Post Operations and Defensive Operations are dynamic, often evolving as the training environment changes. Such operations can be influenced by a number of factors, both internal and external to the unit. Thus, observation of large positive improvements in performance would likely involve repetitive training and evaluation over several months of a unit's training calendar. The training guide developed during this research could serve as an early step towards developing better, more detailed home station unit training. Through examination of weaknesses in initial units, a guide was developed to address those and, as a result, improve performance.

In past research (Dasse, Vowels, Daniels, & Volino, 2017; Dasse, Vowels, Fair, & Boyer, 2017) we found that comparing units with an established SOP to units without an SOP provided a clear distinction in task performance. This pattern surfaced in the current results. Units with a TSOP for DO tended to conduct crucial tasks and often conducted those tasks better than units without a TSOP. In further analyses, we examined whether units whom had conducted an FTX in the past 12 months were more likely to perform better. On approximately half of the dichotomous items (did a unit perform the task or not) the FTX units were more likely to have conducted the DO task in question. On all continuous items (how well units performed a task) units who had conducted an FTX were rated higher. Such results are not necessarily surprising. We might expect units to perform better during their CTC rotation if they have established procedures and have had an opportunity to practice them.

What is perhaps more important than any particular finding in the current project is the level at which units are performing during their JRTC training rotation. Other research involving the conduct of different operations suggests that most units perform at a minimum standard level (Dasse, Vowels, Daniels, & Volino, 2017; Vowels, Dasse, Ginty, & Emmons, 2014). Originally, one might suspect that ratings were subject to scale restriction or some such influence of the OCTs that were rating performance. However, various units, conducting different operations (sustainment, offensive, defensive) have consistently been rated at the lower end of the scale. Though CTC rotations are supposed to test the limits of a unit's ability to carry out its operations, the recurring finding of minimum performance may warrant a closer look at home station training preparation and CTC training and performance measurement.

Limitations

The limited impact of supplementary training guides has been observed in past research (e.g., Vowels et al., 2014). We also have limited control over how extensively guides are used and/or what training experiences that individuals or units have during their JRTC rotations. Since we only examine performance during JRTC rotations, future research might examine the use and impact of such guides and related materials at home station, after a unit's JRTC rotation is complete. Comprehensive data collections, with regard to training for Decisive Action, might help to clarify the strengths and weaknesses of our contemporary operational units.

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Appendix A

Defensive Operations Checklist

DEFENSIVE OPERATIONS CHECKLIST

Disclosure: Data collected with this form will be used for routine research purposes only. Information will not be used in whole or part in making any determination about an individual or unit. Information gathered will be used for statistical control purposes only and will not be disclosed to any unit undergoing rotations at the Joint Readiness Training Center.

SECTION I: GENERAL INFORMATION

DATES OBSERVED: FROM _____ **TO** _____ **ROTATION NUMBER:** _____

ROTATION TYPE: MRE DATE HYBRID CPX COMPONENT: AC RC NG

SIZE UNIT OBSERVED: CO BTRY TRP PLT SECT DET **TYPE UNIT OBSERVED:** IN AR SF MARSOC CAV FA EN OD ADA AVN SC MI MP MS RSTA CHEM QM TC CA PSYOP Multiple Types Other

ROTATION PHASE: FOF FE DEF CPX **TYPE OF DEFENSE:** AREA MOBILE RETROGRADE

SCALE: 0= Unsatisfactory/Not at all 1 = Sub-standard/Performed some tasks 2 = Minimum standard/Performed most tasks 3 = Standard/Performed all tasks 4 =Exceeds Standard/Performed all tasks and prepared for contingencies N/A = Not applicable

SECTION II: PLANNING

1. How well did the unit understand their mission? _____ 0 1 2 3 4 N/A

2. Did the unit have a current Defensive Operations TACSOP? Yes No NA Were Leaders/Soldiers familiar with the TACSOP? Yes No NA

3. Did the unit issue timely Warning Orders to subordinate units? _____ Yes No NA

4. Did the unit update the SITEMP that they received from their higher unit? _____ Yes No N/A

5. How well did the unit conduct a terrain analysis? _____ 0 1 2 3 4 N/A

6. Did the unit conduct a reconnaissance of the defensive area? _____ Yes No NA

7A. Did the unit commander/leader include key subordinate leaders in the reconnaissance? _____ Yes No NA

7B. Was security provided during the reconnaissance? _____ Yes No NA

7C. During the reconnaissance did the unit leaders identify Primary, Alternate and Supplementary Fighting positions? _____ Yes No NA

8A. Did the unit develop and issue an Operations Order? _____ Yes No

8B. Did the unit plan and establish an engagement area to channel the enemy force into and neutralize the enemy force? _____ Yes No NA

8C. Did the unit leader plan to: □ Mass and distribute direct and indirect fires, air support to accomplish the mission □ Avoid target overkill □ Minimize friendly exposure □ Prevent fratricide *(Mark X in appropriate box)*

8D. Did the unit plan include the following to control engagements: □ Engagement Criteria (Per key weapon system) □ Engagement Techniques □ Disengagement Criteria □ Direct fire control measures □ Fire commands □ Fire Control Process □ Methods of Fire Adjustment □ Alternate means of communication (Hand and Arm Signals, Pyrotechnics, Others) Other: _____ ____

9. How well did the unit coordinate with adjacent units, to include units to the rear of the defending unit? _____ ____ 0 1 2 3 4 N/A

10. Did the unit continue to refine their fires and obstacle plans throughout the planning process? _____ Yes No N/A

11. Did the unit plan, forecast and coordinate for Classes of Supply (Class IV, V) for the operation?_____Yes No

If Yes, What Classes were requested? I, II, III, IV, V, VI, VII, VIII? *(Please circle appropriate class/classes)*

12. Was there a contingency plan for an alternate displacement routes/Escape and Evasion plan in case a breach lane is closed or compromised prior to forward units conducting a Rearward Passage of Lines? Yes No NA Were rally points established? _____ Yes No N/A

13. Did the unit leader and or fire support team (FIST) determine the desired effect fires should have on the enemy? _____ Yes No N/A

14. Which phases were fires planned for? □ Reconnaissance □ Occupation □ Approach of the enemy main attack □ Enemy Assault □ Counterattack □ Consolidation and Reorganization *(Please mark all that apply)*

15. Rate each aspect of the unit's concept of support: Resupply _____ 0 1 2 3 4 N/A Maintenance/Recovery_____ 0 1 2 3 4 N/A CASEVAC _____ 0 1 2 3 4 N/A Transportation _____0 1 2 3 4 N/A

16. How well were civil considerations integrated into the unit plan? _____ 0 1 2 3 4 N/A

17. Did the unit cover the designated portion of the engagement area (EA) or sector of fire? _____ Yes No N/A

18A. Did the unit conduct a rehearsal? Yes No NA How effective were the unit's rehearsals? _____ 0 1 2 3 4 N/A

18B. If so, what type of rehearsal was executed? (Describe the portion of the operation that was rehearsed and annotate the type of rehearsal used)

1. Network 2. Map 3. Sketch Map 4. Digital Terrain Model 5. Terrain Model 6. Key Leader 7. Full Dress

Planning Overall: 0 1 2 3 4 _____

OCT Comments: _____

SECTION III: EXECUTION

1A.Did the unit establish an observation/listening post? _____ Yes No

1B. Did the unit have an alert plan? Yes No NA Did the unit rehearse the alert plan? Yes No NA

2A. Did the unit establish effective camouflaged fighting positions with interlocking fires, aiming stakes and grenade sumps? _____ Yes No

2B. Did the unit identify and cover the enemy avenues of approach? _____ Yes No

3. Did the unit have a challenge and password? Yes No NA Did all Soldiers of the unit know the challenge and password? ____ Yes No NA

Were the challenge and passwords frequently changed in accordance with the TSOP? _____ Yes No NA

4A. How well were counter mobility obstacles emplaced? _____ 0 1 2 3 4 N/A

4B. Did the unit properly position anti-armor/mechanized systems? (Javelin) _____ Yes No NA

5. How well were counter mobility obstacles integrated with direct and indirect fires? _____ 0 1 2 3 4 N/A

6. How well did obstacles support the tactical plan? _____ 0 1 2 3 4 N/A

7. How well were alternate, subsequent, and supplementary battle positions identified? _____ 0 1 2 3 4 N/A

8. Did the unit leader employ the appropriate weapon for the type of target engaged within its minimum and maximum ranges? _____ Yes No N/A

9. How well were protective measures emplaced at the following battle positions?

Primary: 0 1 2 3 4 N/A Alternate: 0 1 2 3 4 N/A Supplementary: 0 1 2 3 4 N/A Subsequent: 0 1 2 3 4 N/A

10. Were civilian or Host Nation Forces allowed to pass through the defensive positions? _____ Yes No N/A

11. Did the unit successfully defeat/defend against/delay the enemy within the assigned area? _____ Yes No N/A

12. How well did the unit implement a work rest cycle for defensive tasks? _____ 0 1 2 3 4 N/A

13. Did the unit continuously improve their positions? _____ Yes No N/A

14. Were directed procedures followed at the TCPS _____ Yes No N/A

15. How well did the unit track classes of supply? _____ 0 1 2 3 4 N/A

16. Which methods of LOGPAC were used? □ Tailgate □ Service Station □ In Position Resupply □ Other: _____

17. Did the unit maintain adequate supplies to accomplish their mission? _____ Yes No N/A

18. Did the unit maintain fields of fire? _____ Yes No N/A

19. Did the unit prevent fratricide? _____ Yes No N/A

20. How well did the unit utilize other assets such as Fires, Air support, ADA? _____ 0 1 2 3 4 N/A

21. What was used for early warning? □ LP/OPs □ R&S Patrols □ Raven (or similar) □ Sensors □ Other □ None

Execution Overall: 0 1 2 3 4

OCT Comments: _____

SECTION IV: OVERALL

Rate how the unit employed the 7 Steps of Engagement Area Development and comment:

Identify likely enemy avenues of approach.	0 1 2 3 4	_____
Identify the enemy scheme of maneuver.	0 1 2 3 4	_____
Determine where to kill the enemy.	0 1 2 3 4	_____
Plan and integrate obstacles.	0 1 2 3 4	_____
Emplace weapons systems.	0 1 2 3 4	_____
Plan and integrate indirect fires.	0 1 2 3 4	_____
Conduct an engagement area rehearsal.	0 1 2 3 4	_____

Rate how the unit employed the characteristics of the defense and comment:

Disruption	0 1 2 3 4	_____
Flexibility	0 1 2 3 4	_____
Maneuver	0 1 2 3 4	_____
Mass and Concentration	0 1 2 3 4	_____
Operations in Depth	0 1 2 3 4	_____
Preparation	0 1 2 3 4	_____
Security	0 1 2 3 4	_____

Has the unit conducted a defensive field training exercise in the last 12 months? _____ Yes No

OCT COMMENTS: _____

_____

OCT Initials_____ **OCT Call sign**_____ **Division/Task Force** _____ **Number of rotations OCT has observed** _____

Appendix B

Guide for Defensive Operations

GUIDE FOR DEFENSIVE OPERATIONS

REFERENCES

FM 3-21.8, Infantry Rifle Platoon and Squad, FM 3-21.10, Infantry Rifle Company, FM 3-90.1, Tank and Mechanized Infantry Company Team, ADP/ADRP 3-90, Offense and Defense.

1. UNIT INFORMATION.

a. Have and update a unit SOP for Defensive Operations.
b. Ensure personnel are fully trained and understand the SOP.
c. Ensure equipment is operational to include weapons (zeroed), communications systems, sensors and vehicles.

2. PLANNING.

a. Issue a Warning Order (WARNO) as soon as possible to subordinate units and individual Soldiers.

b. Have XO, 1SG, (other), request for and coordinate materials, classes of supply (Class IV, V) for the defense (wire, sensors, ammunition, pyrotechnics and sand bags).
c. With subordinate leaders and other key personnel (to include FIST) conduct a detailed reconnaissance of the defensive area.
   1) Ensure security is maintained during the reconnaissance.
   2) Identify Primary, Alternate and Supplementary fighting positions for all elements.
   3) Identify an engagement area to channel enemy into to neutralize the enemy force with mass direct and indirect fires.
   4) Identify the most likely and most dangerous enemy avenues of approach.
   5) Establish control measures for engagements.
   6) Plan and recon a route for displacement.
   7) Select locations for observation/listening posts.
   8) Coordinate with adjacent and other units operating in the area.
   9) Plan for survivability.
   10) Establish indirect fire preplanned targets.
d. Develop an Operations Order (OPORD), issue and rehearse the plan.
   1) Conduct PCIs and PCCs.
   2) Use all intelligence resources to include unmanned aerial systems UASs.
   3) Keep higher and adjacent units informed.
   4) Develop a plan for civilian traffic in the area and inform unit personnel.
   5) Develop and rehearse a casualty collection plan.
   6) Develop and rehearse a plan if the enemy penetrates the defensive area.

3. EXECUTION.

a. Secure the area and establish observation/listening posts.

Ensure communications is established and maintained with the OPs and LPs. Employ UASs.

b. Engagement Area Development.

1) Enemy Avenues of Approach.
   (a) Establish engagement area.
   (b) Cover most dangerous enemy avenue of approach.
   (c) Cover most likely enemy avenue of approach.
   (d) Cover other possible avenues of approach.
2) Determine Enemy Scheme of Maneuver.
   (a) What are the enemy capabilities to attack your defense?
   (b) What is the enemy's mission and objectives?
3) Determine Where and When to Kill the Enemy.
   (a) My task and purpose.
   (b) Where can I best achieve effects?
   (c) Develop a plan for a counter attack if the enemy starts to withdraw. Ensure the unit with the mission understands the plan.
4) Emplace Weapons Systems/Integrate Direct Fires.
   (a) Mutually supporting.
   (b) Overwatch obstacles.

(c) Cover and Concealment.
(d) Depth and Dispersion.

5) Plan and Integrate Obstacles
(a) Covered by Direct and Indirect Fires.
(b) Integrate mines (if available and claymore mines).

6) Rehearse Actions In EA.

c. Construct fighting positions that cover enemy avenues of approach that have interlocking fires, aiming stakes, grenade sumps.
d. Employ anti-tank and anti-vehicle weapons to cover likely enemy mechanized avenues of approach.
e. Construct obstacles and anti-tank ditches.
f. Employ sensors, mines, claymores, booby traps.
g. Establish and implement a rest plan.
h. Establish and mark a CCP and disseminate the information to all personnel.
i. Ensure all unit personnel are provided a "challenge and password" and ensure personnel are notified when it is changed.
j. Develop and disseminate a signal to fire and a signal to cease fires.

4. FOLLOW UP OPERATIONS.

a. Reorganize and Consolidate.
b. Secure area.
c. Conduct debriefing and after action review.
d. Prepare for future operations.

LEADER NOTES

Appendix C

FTX Versus No FTX Comparisons

Table C-1

Non-parametric Tests: FTX Versus No FTX

Checklist Item	Sample Size	*Pearson's* χ^2	*p*	*Phi Coefficient*
II 2A Familiar	252	11.16	0.001*	0.210
II 3 Warning Order	334	7.31	0.007*	0.148
II 4 Situational Template	308	0.35	0.553	0.034
II 6 Reconnaissance	320	5.20	0.023	0.127
II 7A Subordinate Leaders	275	4.12	0.042	0.122
II 7B Security	244	0.59	0.442	0.049
II 7C Fighting Positions	275	4.87	0.027	0.133
II 8A Operations Order	337	4.79	0.029	0.119
II 8B Channel	310	8.33	0.004*	0.164
II 10 Refine Fires	310	0.05	0.823	0.013
II 11 Classes of Supply	342	3.72	0.054	0.104
II 12 Contingency	264	5.35	0.021	0.142
II 12A Rally Points	204	9.79	0.002*	0.219
II 13 Effect Fires	244	0.27	0.605	0.033
II 17 Cover	279	1.03	0.310	0.061
II 18A Rehearsal	269	3.45	0.063	0.113
III 1A Observation Post	341	3.84	0.050	0.106
III 1B Alert	259	1.11	0.292	0.065
III 1B Rehearse	264	0.33	0.567	0.035
III 2A Fighting Positions	339	5.40	0.020	0.126
III 2B Avenues	339	0.92	0.337	0.052
III 3 Password	296	0.69	0.793	0.015
III 3 Know Password	279	1.78	0.182	0.080
III 3 TSOP Password	270	1.81	0.179	0.082
III 4B Javelin	227	0.46	0.499	0.045
III 8 Appropriate Weapon	293	8.82	0.003*	0.173
III 10 Host Nation	215	1.03	0.310	0.069
III 11 Defeat/Defend/Delay	270	0.56	0.452	0.046
III 13 Improve	324	11.52	0.001*	0.189
III 14 Traffic Control Point	186	5.16	0.023	0.167
III 17 Adequate Supply	333	1.63	0.202	0.070
III 18 Fields of Fire	319	2.94	0.087	0.096
III 19 Fratricide	322	6.01	0.014*	0.137

Note. For *Phi* coefficients, associations range from 0.00 to 0.01 for *negligible associations,* .20 to .40 for *moderate associations* and 0.80 to 1.00 for *very strong associations* (Kotrlik & Williams, 2003). *Indicates a statistically significant difference at the alpha level of 0.01.

Table C-2

Parametric Tests: FTX Versus No FTX, Section II (Planning)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
II 1 Understanding	FTX	195	2.52	0.91	4.19	0.0001*	0.45
	No FTX	148	2.09	0.95			
II 5 Terrain	FTX	187	2.03	0.96	1.41	0.160	0.16
	No FTX	145	1.88	0.98			
II 15A Resupply	FTX	177	2.12	0.98	3.38	0.001*	0.38
	No FTX	144	1.74	1.04			
II 15B Maintenance/Recovery	FTX	170	2.06	1.13	2.84	0.005*	0.33
	No FTX	137	1.70	1.10			
II 15C Casualty Evacuation	FTX	175	2.22	1.19	1.91	0.057	0.21
	No FTX	145	1.97	1.14			
II 15D Transportation	FTX	141	1.99	1.13	0.61	0.542	0.08
	No FTX	108	1.90	1.11			
II 16 Civil	FTX	128	1.44	1.11	1.19	0.234	0.16
	No FTX	102	1.25	1.20			
II 18A Rehearsal	FTX	126	1.79	1.11	3.26	0.001*	0.45
	No FTX	89	1.30	1.01			
II 19 Planning Overall	FTX	183	2.05	0.84	3.92	0.0001*	0.43
	No FTX	145	1.70	0.80			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). *Indicates a statistically significant difference at the alpha level of 0.01.

Table C-3

Parametric Tests: FTX Versus No FTX, Section III (Execution)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
III 4A Mobility Obstacles	FTX	160	1.63	1.09	1.71	0.088	0.21
	No FTX	117	1.40	1.04			
III 5 Counter Mobility	FTX	152	1.63	1.14	2.29	0.023	0.29
	No FTX	107	1.30	1.11			
III 6 Tactical Plan	FTX	159	1.72	1.16	1.90	0.058	0.23
	No FTX	117	1.45	1.17			
III 7 Battle Positions	FTX	166	1.46	1.09	4.11	0.0001*	0.49
	No FTX	122	0.97	0.93			
III 9A Primary	FTX	167	1.99	1.14	2.08	0.038	0.25
	No FTX	124	1.72	1.03			
III 9B Alternate	FTX	119	1.42	1.20	4.72	0.0001*	0.69
	No FTX	75	0.72	0.86			
III 9C Supplementary	FTX	95	0.97	1.20	3.25	0.001*	0.53
	No FTX	60	0.47	0.72			
III 9D Subsequent	FTX	84	0.87	1.25	2.16	0.032	0.37
	No FTX	56	0.50	0.76			
III 12 Work Rest Cycle	FTX	192	2.22	1.05	2.88	0.004*	0.32
	No FTX	134	1.89	0.99			
III 15 Classes of Supply	FTX	179	2.22	0.95	2.02	0.044	0.23
	No FTX	139	1.99	1.09			
III 20 Other Assets	FTX	145	1.43	1.07	2.64	0.009*	0.34
	No FTX	103	1.07	1.04			
III 22 Execution Overall	FTX	161	2.02	0.83	4.94	0.0001*	0.61
	No FTX	128	1.52	0.88			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). *Indicates a statistically significant difference at the alpha level of 0.01.

Table C-4

Parametric Tests: FTX Versus No FTX, Section IV (Overall)

Checklist Item	Group	*N*	*Mean*	*SD*	*t*	*p*	*Cohen's d*
Engagement Area Development							
IV 1 Avenues of Approach	FTX	190	2.39	1.01	2.91	0.004*	0.32
	No FTX	148	2.05	1.14			
IV 2 Enemy Scheme	FTX	189	1.93	1.06	3.61	0.0001*	0.39
	No FTX	148	1.51	1.09			
IV 3 Kill the Enemy	FTX	189	2.02	1.13	2.23	0.027	0.26
	No FTX	146	1.73	1.21			
IV 4 Obstacles	FTX	187	1.66	1.18	3.84	0.0001*	0.43
	No FTX	147	1.19	1.06			
IV 5 Weapons Systems	FTX	189	2.23	1.06	3.16	0.002*	0.35
	No FTX	148	1.86	1.07			
IV 6 Indirect Fires	FTX	186	1.44	1.23	3.15	0.002*	0.35
	No FTX	145	1.04	1.08			
IV 7 Rehearsal	FTX	188	1.11	1.23	4.53	0.0001*	0.50
	No FTX	148	0.59	0.90			
Characteristics of Defense							
IV 1 Disruption	FTX	183	1.71	1.14	3.56	0.0001*	0.39
	No FTX	146	1.27	1.05			
IV 2 Flexibility	FTX	184	1.92	1.18	3.35	0.001*	0.37
	No FTX	147	1.49	1.13			
IV 3 Maneuver	FTX	183	1.79	1.07	3.73	0.0001*	0.41
	No FTX	147	1.35	1.05			
IV 4 Mass and Concentrate	FTX	183	1.85	1.10	4.18	0.0001*	0.46
	No FTX	148	1.35	1.07			
IV 5 Operations in Depth	FTX	182	1.63	1.11	4.72	0.0001*	0.53
	No FTX	147	1.08	1.00			
IV 6 Preparation	FTX	186	1.85	1.01	3.36	0.001*	0.37
	No FTX	148	1.47	1.02			
IV 7 Security	FTX	186	2.03	1.01	3.31	0.001*	0.39
	No FTX	147	1.63	1.15			

Note. For *Cohen's d* 0.20 = small effect, 0.50 = medium effect, and 0.80 = large effect (Cohen, 1988). *Indicates a statistically significant difference at the alpha level of 0.01.

Appendix D

TSOP by FTX Comparisons

Table D-1

Non-parametric Tests: TSOP and No TSOP within FTX and No FTX

Checklist Item	Sample Size	*Mantel-Haenszel* χ^2	*p*	*Cramér's V*
II 2A Familiar	180	2.58	0.108	0.08
II 3 Warning Order	254	4.95	0.026	0.10
II 4 Situational Template	234	0.19	0.662	0.02
II 6 Reconnaissance	251	1.68	0.196	0.06
II 7A Subordinate Leaders	218	1.65	0.199	0.06
II 7B Security	190	0.01	0.929	0.01
II 7C Fighting Positions	217	1.74	0.187	0.06
II 8A Operations Order	258	1.33	0.249	0.05
II 8B Channel	241	4.36	0.037	0.10
II 10 Refine Fires	242	0.02	0.892	0.01
II 11 Classes of Supply	263	4.63	0.032	0.09
II 12 Contingency	203	5.20	0.023	0.11
II 12A Rally Points	158	9.16	0.002*	0.17
II 13 Effect Fires	187	0.01	0.932	0.01
II 17 Cover	213	0.72	0.396	0.04
II 18A Rehearsal	207	2.46	0.117	0.08
III 1A Observation Post	260	1.94	0.164	0.06
III 1B Alert	204	0.71	0.400	0.04
III 1B Rehearse	195	0.21	0.651	0.02
III 2A Fighting Positions	260	1.43	0.232	0.05
III 2B Avenues	257	0.30	0.587	0.02
III 3 Password	231	0.20	0.654	0.02
III 3 Know Password	214	2.30	0.130	0.07
III 3 TSOP Password	208	0.32	0.572	0.03
III 4B Javelin	179	0.09	0.766	0.02
III 8 Appropriate Weapon	226	3.59	0.058	0.09
III 10 Host Nation	164	0.09	0.755	0.02
III 11 Defeat/Defend/Delay	203	0.04	0.836	0.01
III 13 Improve	250	3.30	0.069	0.08
III 14 Traffic Control Point	137	2.33	0.127	0.09
III 17 Adequate Supply	252	0.46	0.496	0.03
III 18 Fields of Fire	247	0.74	0.388	0.04
III 19 Fratricide	247	2.95	0.086	0.08

Note. For *Cramér's V*, associations range from 0.00 to 0.01 for *negligible associations*, .20 to .40 for *moderate associations* and 0.80 to 1.00 for *very strong associations* (Kotrlik & Williams, 2003). *Indicates a statistically significant difference at the alpha level of 0.01.

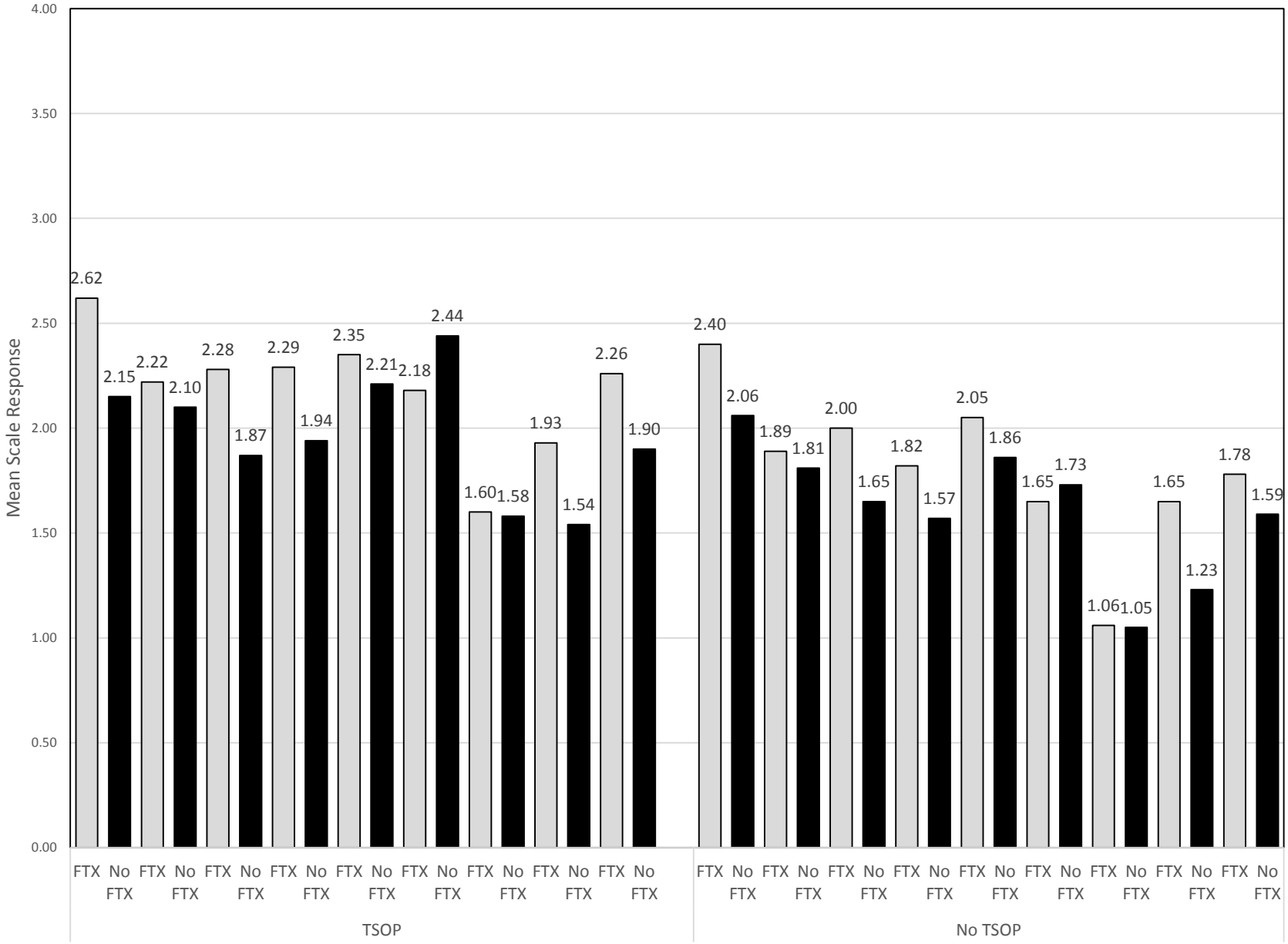

Figure D-1. Comparison of TSOP and No TSOP by FTX and No FTX Groups, Section II (Planning).

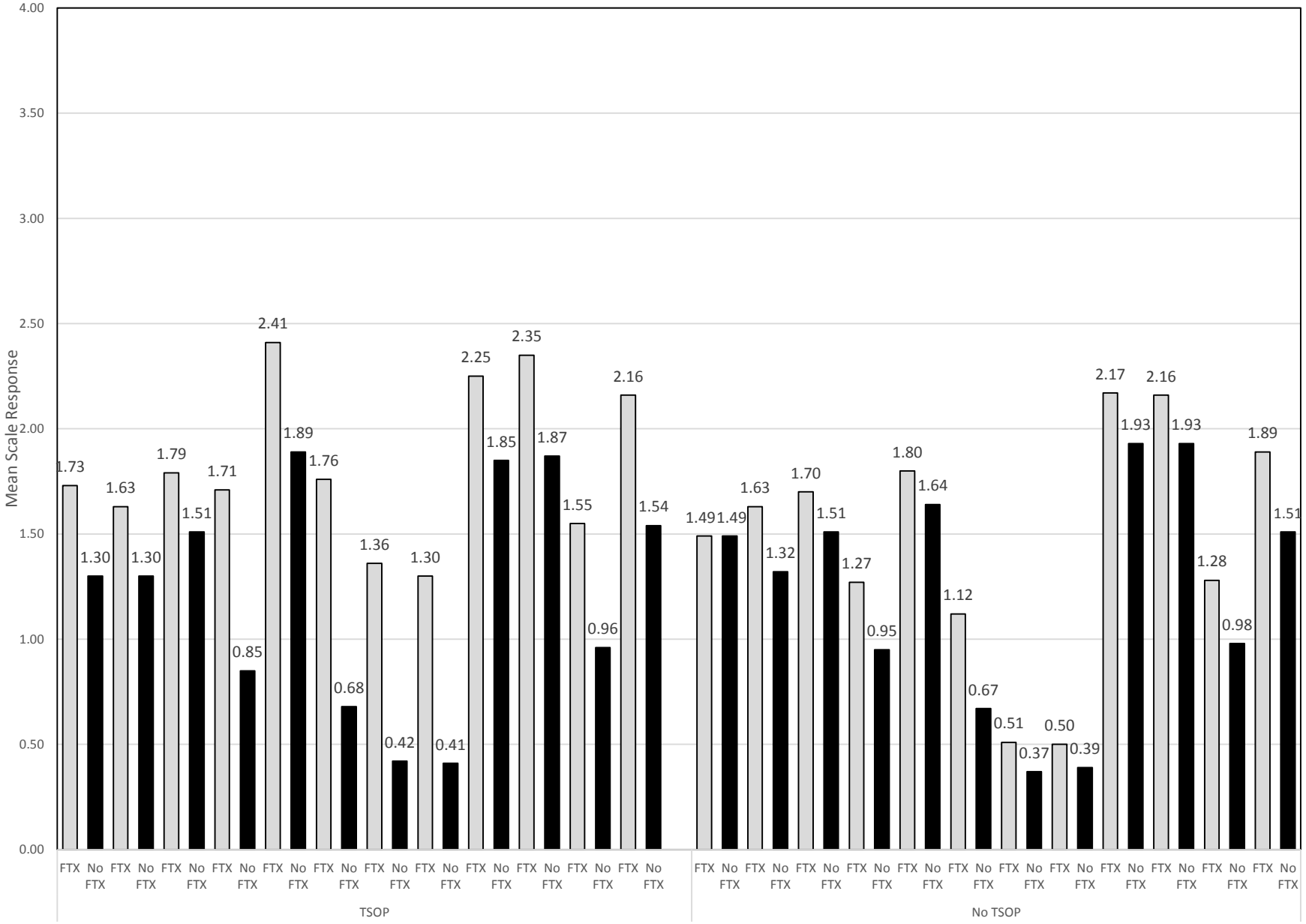

Figure D-2. Comparison of TSOP and No TSOP by FTX and No FTX Groups, Section III (Execution).

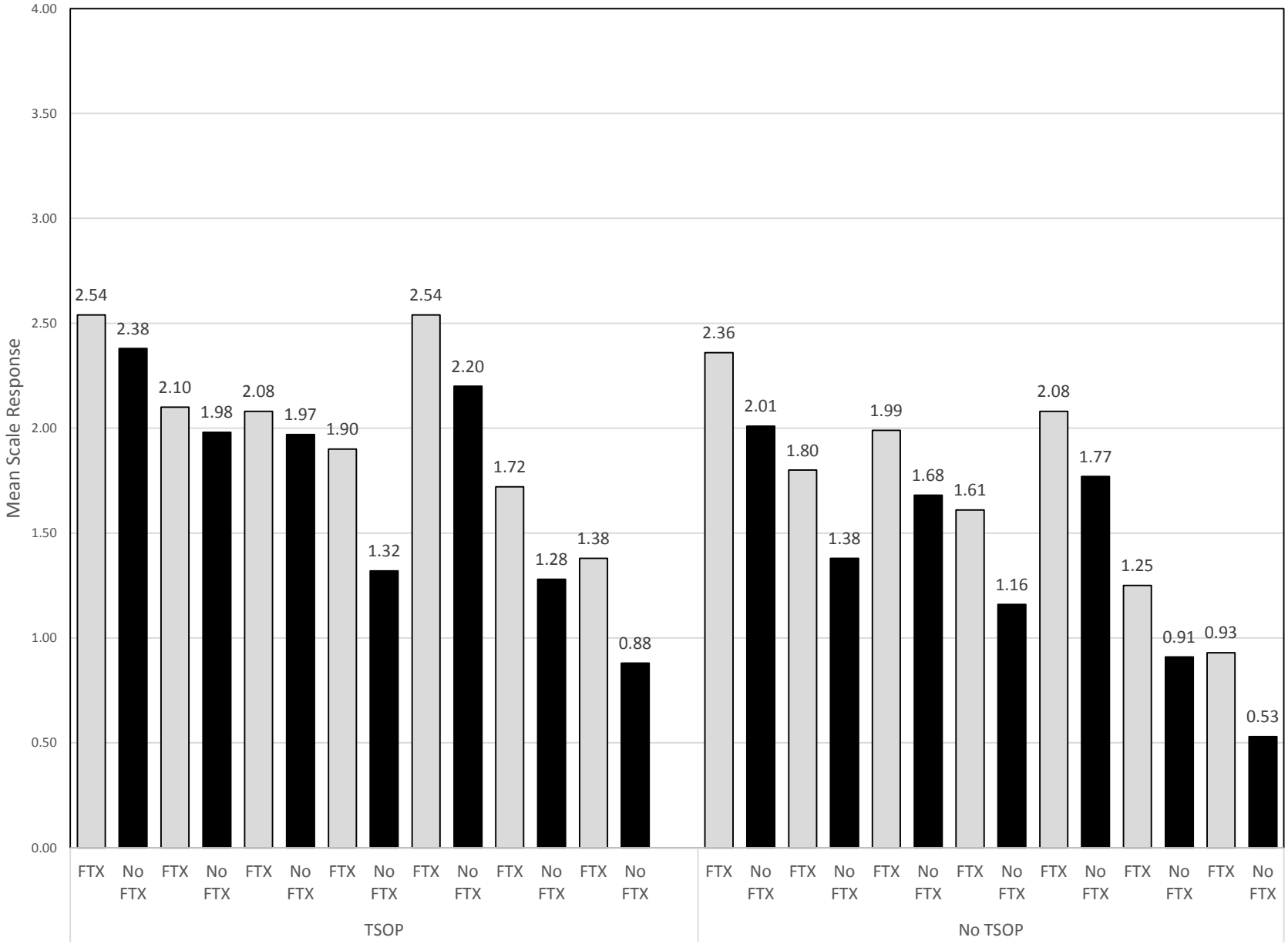

Figure D-3. Comparison of TSOP and No TSOP by FTX and No FTX Groups, Section IV (Engagement Area Development).

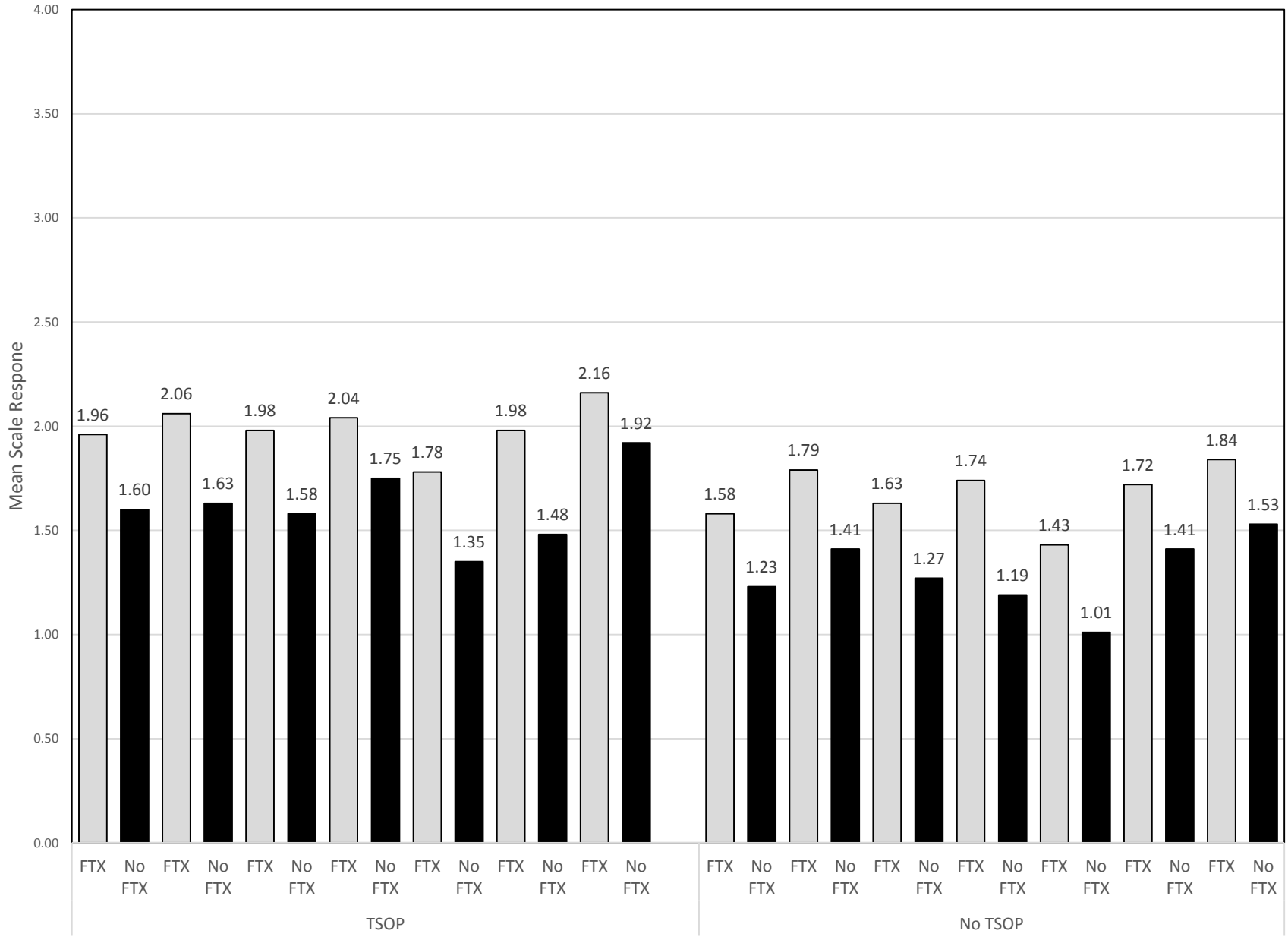

Figure D-4. Comparison of TSOP and No TSOP by FTX and No FTX Groups, Section IV (Characteristics of Defense).