2019 Technical Manual for the Government and Maryland Integrated Science Assessment (High School Level)

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Foreword

The technical information included in this report is intended for use by those who evaluate tests, interpret scores, or use test results in making educational decisions. It is assumed that the reader has some technical knowledge of test construction and measurement procedures, as stated in *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 2014).

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Section 1. Introduction

The Maryland High School Assessments (HSAs) are tests that cover core academic areas in Science and Government. The HSAs consist of an end-of-course exam in Government and a cumulative exam in Science, the High School Maryland Integrated Science Assessment (HS MISA). The HSAs are intended to meet the testing requirements for Maryland high school graduation. The HS MISA meets the high school testing requirements for the federal Every Student Succeeds Act of 2015 (ESSA). The HSA Government exam meets the high school testing requirements from Maryland Code Educational Article §7-203 Education Accountability Program 2017. This report provides information about the January, May, and summer 2019 administrations for the HSA Government and the January and May administrations for the HS MISA.

The Government test administrations began in 2002 and continued until 2011. From summer 2011 to October 2012, the Government test was excluded from the Maryland HSAs. Starting in January 2013, the Government test was reintroduced into the Maryland HSAs. HSA Government is referred to as an "end-of-course" test because students take it as they complete the appropriate coursework, while HS MISA is an integrated assessment taken at the end of a locally decided sequence of courses. Starting in 2018, the HS MISA, a high-school level science assessment that is aligned to the Next Generation Science Standards (NGSS), replaced the existing end-of-course assessment in Biology.

Starting in 2016, the end-of-course tests in Algebra and English were replaced by Partnership for Assessment of Readiness for College and Careers (PARCC) assessments. Students who were enrolled in HSA-aligned courses (Government and Biology) during the 2016-2017 school year were required to pass the HSA, achieve an approved combined score, or satisfy the graduation requirement via the Bridge Plan[1]. Students entering 9th grade in school year 2013-14 and beyond must pass HSA Government, achieve an approved combined score, or satisfy the graduation requirement via the Bridge Plan. The combined score options varied, depending on whether or not students have a score from the previous HSA English or HSA Algebra assessments. Students taking the HS MISA in 2019 were not required to pass the HS MISA but were required to participate in the HS MISA to meet the graduation requirement[2] of a Science assessment.

Since May 2009, the Maryland HSAs have been administered online as well as in the paper-and-pencil format. Studies of the comparability of online and paper forms of the Maryland HSAs were conducted in 2009 and 2010. The 2009 report is provided in the 2009 HSA Technical Report in Appendix 1C. The 2010 results were provided to the Maryland State Department of Education (MSDE) (Educational Testing Service, October 29, 2010). Further mode comparability studies have not been conducted.

For the 2019 administration year, the paper-based testing was reserved for accommodations only. The computer-based testing was provided via the eMetric-based platform. The online administrations were conducted using the HSA Kiosk web-based software application. The HSA Kiosk allows students to respond to the selected-response (SR) items electronically by selecting an answer choice. Students

[1] The Bridge Plan provides a process that helps ensure all students have a fair opportunity to demonstrate their knowledge and skills if traditional testing instruments are not effective measures for them. See more details at: http://www.marylandpublicschools.org/programs/Documents/Testing/GraduationsRequirements2018.pdf

[2] More information on the testing requirement for graduation is available on the Maryland State Department of Education Website at: http://www.marylandpublicschools.org/programs/Documents/Testing/GraduationsRequirements2018.pdf.

respond electronically to the constructed-response (CR) items by typing their answers into the response boxes using the computer keyboard. The HSA Kiosk also allows students to respond electronically to the technology-enhanced (TE) items in a variety of formats.

All SR and TE items were machine scored. The CR items were first scored by a human scorer and then received a second score from artificial intelligence (AI). When the scores from the two scorers were adjacent, the higher score was used. When the two scores differed by more than one point, the scoring supervisor would decide on a final resolution score. Additional detailed information about HSA Government and HS MISA is provided below.

HSA Government

The HSA Government exam was administered in January, May, and summer 2019. The January 2019 administration had two operational item sets and six field test (matrix) items sets. One of the operational item sets was combined with each of three field test item sets. The other operational item set was combined with the other three field test items. The result was a total of six distinct test forms for the January 2019 administration. The May 2019 administration had two operational item sets and 12 field test (matrix) items sets. One of the operational item sets was combined with each of six field test item sets. The other operational item set was combined with the other six field test items. The result was a total of 12 distinct test forms for the May 2019 administration. The summer 2019 administration had only one operational and field test item set, resulting in a single test form.

As just noted, each HSA Government test form consisted of operational and field test items. The operational items were used to produce student scores; students' scores on the field test items were not included in the computation of their scores. For the January administration, field test item performance was analyzed, and all flagged items were reviewed. The field test items that were approved by both the MSDE and Cognia content specialists were then calibrated and marked as available for use in the item bank. Items that were deemed unacceptable were marked as unavailable and may be revised and field tested again in the future. Apart from items selected for public release, which are not reused, the operational items that are returned to the item bank remain unused for at least one year to minimize item exposure.

The operational items in the HSA Government test consisted of SR items, which require students to choose between four short response options; and brief constructed-response (BCR) items, which require students to write a short response. All items are based on the content outlined in Maryland's Social Studies Standards.[3]

Beginning in 2019, new item types were field-tested as part of the HSA Government test: TE items, including matching, drag and drop, and hot spot items; and evidence-based argument sets (EBAS), which consist of a series of stimuli, SR items, and an extended CR item.

Item response models were used to estimate total test scores and subscores via item-pattern (IP) scoring. For HSA Government, the three-parameter logistic (3PL) model was used for the SR items (see Section 2 for an introduction to item types) and the generalized partial credit model (GPCM) was used for the BCR items. Refer to *Scale Scores* of Section 4 for the details of the item response theory (IRT) models used

[3] The HSA Standards documents can be found on the Maryland School Improvement Website at http://www.marylandpublicschools.org/about/Pages/DAAIT/Assessment/HSA/index.aspx.

and the IP scoring procedure. Total test results on the scale score metric and the performance level based on pass/fail are reported to students. Subscores are not reported to students but are aggregated at the classroom level to provide teachers and administrators with additional information about student performance in each of the subscore categories.

Pre-equated item parameter estimates were used to generate student scores on the Government assessment. When pre-equated item parameter estimates are used, the parameters are not estimated following an administration; instead, existing bank parameter estimates are used to produce student scores. Using this approach, scores can be calculated and assigned to students immediately after their answer documents have been processed. (Prior to 2004, students' scores were based on item parameter estimates after each administration.)

HS MISA

The HS MISA is the final assessment in a series of science assessments, including the grade 5 and grade 8 MISA, that students take aligned to the NGSS. The HS MISA is given in January and May of each school year.

Following the pattern established by the elementary and middle school MISA, the HS MISA consists of item sets that are organized around common stimuli. Students read a stimulus and then answer a set of six questions about the stimulus. These item sets are made up of a combination of MSR, SR, TE, and CR items.

The January 2019 HS MISA administration had two operational item sets and six field test (matrix) items sets. One of the operational item sets was combined with each of three field test item sets. The other operational item set was combined with the other three field test items. The result was a total of six distinct test forms for the January 2019 administration. The May 2019 administration had two operational item sets and 18 field test (matrix) items sets. One of the operational item sets was combined with each of nine field test item sets. The other operational item set was combined with the other nine field test items. The result was a total of 18 distinct test forms for the May 2019 administration. There was no summer 2019 administration for HS MISA.

Standard setting for the HS MISA assessment was conducted in August 2019, using a panel of 20 Maryland educators. The panel-recommended cut scores were reviewed by the MSDE. MSDE opted to make small policy-based adjustments to the panel-recommended cut scores. These final cut scores were transformed into scaled scores via the test characteristic curve of the test form used for standard setting. Please see the 2019 HS MISA Standard Setting Report for further details.

Item response models were used to estimate total test scores and subscores via item-pattern (IP) scoring. For HS MISA, the two-parameter logistic (2PL) model was used for the SR items and the generalized partial credit model (GPCM) was used for non-SR items.

All technical support and analyses were carried out in accordance with the *Standards for Educational and Psychological Testing*, issued jointly by the American Educational Research Association (AERA), American Psychological Association (APA), and National Council on Measurement in Education (NCME) (2014).

This Maryland HSA technical report consists of eight sections and two appendices.

- Section 1 introduces the Maryland HSA program.
- Section 2 describes the procedures used for test construction and administration.
- Section 3 presents validity evidence for the use of Maryland HSAs.

- Section 4 delineates the scoring procedures and score types.
- Section 5 describes the reporting of 2019 Maryland HSA Government and HS MISA results.
- Section 6 summarizes the results of the analyses of test reliability, decision consistency, and decision accuracy.
- Section 7 provides summary statistics and descriptive information about student characteristics.
- Section 8 gives the results of the analysis of the test data, including classical item analysis, differential item functioning, and field test item calibration and scaling.
- Appendix A provides classical item statistics for operational items by administration for both content areas.
- Appendix B provides classical item statistics for field test items by administration for both content areas.

Section 2. Test Construction and Administration

Test Development

Planning

For the 2019 High School Assessment Government (HSA Government) test, Cognia content leaders collaborated with their content counterparts at Maryland State Department of Education (MSDE) to build operational forms using existing selected-response (SR) and brief constructed-response (BCR) items from the existing HSA Government item bank. Field test items were embedded in the operational form according to the test design.

For the High School Maryland Integrated Science Assessment (HS MISA), Cognia content leaders collaborated with their content counterparts at MSDE to select operational items according to the test designs. Field test items were selected to continue to build an operational item bank for the HS MISA. In addition, the field test and operational items were planned with consideration to the design of the Maryland Integrated Science Assessment (MISA), in grades 5 and 8, to ensure continuity across the science assessments.

In adherence to these considerations, science "clusters" were developed to create a strong, three-dimensional alignment[4] to the Next Generation Science Standards (NGSS), incorporating two NGSS performance expectations. Each cluster was designed around a common stimulus that is based upon valid scientific research and contains six items.

Item Types

As noted in Section 1, four item types were included on the 2019 HSA Government tests. These item types included the following:

- SR—questions in multiple-choice format with four answer options and one correct answer;
- BCR—an item type used in Government only, for which the students need to write a short response;
- Technology-enhanced (TE) items—including matching, drag and drop, and hot spot items;
- Evidence-based argument sets (EBAS)—which consist of a series of stimuli, SR items, and an extended constructed-response (ECR) item.

HSA Government

Table 2-1 shows how the operational item types were distributed on each HSA Government form for the 2019 administrations. Each SR item is worth one point, and each BCR is worth four points.

[4] The Next Generation Science Standards are organized by Performance Expectations (PEs). In the NGSS, the content and the practices of science work together. Therefore, each PE is tied to a Disciplinary Core Idea (DCI) or content piece as well as to a Science and Engineering Practice (SEP) and a Crosscutting Concept (CCC), which are the over-arching science concepts that tie the content and practices. Items developed for Maryland HS Science must be aligned to two, if not all three dimensions of the NGSS.

Table 2-1. Number of Operational Items and Points Possible by Item Type for Each HSA Government Form

	SR	BCR	Total
Number of items	62	5	67
Points possible	62	20	82

HS MISA

As also noted in Section 1, four item types were included on the 2019 HS MISA tests. These item type included the following:

- SR—questions in multiple-choice format with four answer options and one correct answer;
- Multiple selected-response (MSR)—questions in multiple-choice format with multiple correct answers;
- Constructed-response (CR)—an item type for which the students need to write a response (2-point, 3-point, and 4-point CR items are included on the HS MISA test);
- Technology-enhanced (TE) items—including matching, drag and drop, ordering, graphing, hot spot, fill-in-the-blank (numerical entry only) and inline choice. (1-point and 2-point TE items are included on the HS MISA test).

As previously noted, the operational HS MISA test is designed with item sets, or clusters. Clusters on the operational form contained a stimulus, five machine-scored items (which include SR, MSR, and TE items) and one CR item, in one of three configurations based on the point value of the CR item.

- 2-point CR configuration: three 1-point SR/TE items, two 2-point SR/TE items, one 2-point CR item, or
- 3-point CR configuration: four 1-point SR/TE items, one 2-point SR/TE item, one 3-point CR item, or
- 4-point CR configuration: five 1-point SR/TE items, one 4-point CR item

Table 2-2. Number of Operational Items and Points Possible by Item Type for Each HS MISA Form

	SR, MSR, TE	CR	Total
Number of items	30	6	36
Points possible	36	18	54

Test Specifications and Design

HSA Government

For the HSA Government test, MSDE predetermined the preliminary test design and provided it to Cognia as following the existing HSA Government test blueprints. The final forms were selected by MSDE to adhere to content and psychometric guidelines. The basic test design document provided information based on specified expectations and the distribution of the number of items by item type for each reporting category. The variety of item types represented ensure that a variety of levels of cognitive complexity are addressed, although these levels are note specifically mandated by the test blueprints. Specific items were placed throughout the forms by Cognia content specialists, with the approval of MSDE. Construction of the forms was based on test blueprints approved by MSDE. The HSA Government Operational Blueprint is presented in Table 2-3.

Table 2-3. HSA Government Operational Blueprint

	Number of Items	Total Points Per Category
Goal 1		
Expectation 1.1 U.S. Government Structure, Functions, and Principles	21	24
Expectation 1.2 Protecting Rights and Maintaining Order	17	20
Goal 2 Systems of Government and U.S. Foreign Policy	9	12
Goal 3 Impact of Geography on Governmental Policy	8	11
Goal 4 Economic Principles, Institutions, and Processes	12	15
Total	**67**	**82**

Information on the referenced learning goals can be found in the Maryland Social Studies Standards for Government, available on the Maryland School Improvement Website at http://www.marylandpublicschools.org/about/Pages/DCAA/Social-Studies/AGHSH.aspx.

HS MISA

For the HS MISA test, MSDE and Cognia worked collaboratively to design an operational form consisting of six NGSS-aligned clusters, each containing one shared stimulus and six items. Each cluster included various item types as outlined above, always including one CR item. The variety of item types represented, as well as the complexity and three-dimensionality of the NGSS ensure that a variety of levels of cognitive complexity are addressed, although these levels are not specifically mandated by the test design.

The HS MISA operational subscore categories and test blueprint are as follows:

- Each test form contained a total of 36 items and 54 possible points, typically in the following cluster configurations: two 2-point CR clusters, two 3-point CR clusters, and two 4-point CR clusters.
- Each test form contained approximately 33 percent Physical Science items, 33 percent Life Science items, and 33 percent Earth and Space Science items across the six operational clusters.
- Each test form contained some same-domain clusters (PS-PS, LS-LS, ESS-ESS) and some integrated clusters (PS-LS, PS-ESS, LS-ESS).

Table 2-4. HS MISA Operational Blueprint

	Approximate Number of Items
Physical Science	12
Life Science	12
Earth and Space Science	12
Total Number of Items	**36**
Total Possible Points	**54**

In addition, test designs are also aligned to groupings of Practices and Crosscutting Concepts as illustrated in table 2-5.

Table 2-5. Test Design Alignments

Practices Subscore Category	***Min-Max Percentage***	***Crosscutting Concepts Subscore Category***	***Min-Max Percentage***
Investigating and Evaluating (IE) **Investigations* **Data* **Math*	***22-65%*** *(12-35 pts)*	***Patterns and Cause and Effect (PCE)*** **Patterns* **Cause and Effect*	***22-70%*** *(12-38 pts)*
Developing Explanations and Solutions (DES) **Models* **Explanations* **Argument* **Communicating*	***35-78%*** *(19-42 pts)*	***Systems and Their Properties (SP)*** **Scale, Proportion, Quantity* **System and System Models* **Energy and Matter* **Structure and Function* **Stability and Change*	***30-78%*** *(16-42 pts)*

The HS MISA items and clusters were designed to align to a subset of the high school grade band standards, which may be found here: https://mdk12.msde.maryland.gov/Pages/home.aspx.
Item development and field test form construction were designed to support future operational test blueprints.

Item Writing

In the 2018-2019 development year, new item development occurred for both the HSA Government and HS MISA tests.

All test items were originally developed by item writers. Item writers were employed to develop high-quality test items that aligned with the Social Studies Standards (Government) or the NGSS. For the HSA Government test, the items were developed by Maryland educators. For HS MISA, item writers were Maryland educators, Cognia content specialists, and Cognia scoring specialists who are experienced in the NGSS. It is anticipated that as the implementation of the NGSS continues, an increasing number of item writers will be Maryland educators.

Item writers were trained on general item writing techniques as well as writing guidelines that are specific to the HS MISA and HSA Government program. After an initial item writer training occurred, follow-up training was provided in the form of individual feedback and specialist review. After this follow-up training occurred, item writers received additional feedback and coaching as necessary.

Upon completion of their writing assignment, the item writers submitted their items to Cognia. Items and clusters that were accepted by the Cognia content team proceeded to the item review and revision process.

Item Review and Revision

All items on the forms underwent a series of reviews in accordance with the following procedures:

- Items were edited according to standard rules, including those detailed by the Maryland Overview Document, Style Guide, and Item Specification documents, developed in conjunction with MSDE.
- Items were reviewed for accuracy, organization, comprehension, style, usage, consistency, fairness/sensitivity, and accessibility.
- Item content was reviewed to establish whether the item measured the intended standards.
- Copyright and/or trademark permissions were verified for any materials requiring permissions, for both field test and operational material.
- Items were reviewed by Cognia editorial staff to ensure the item adhered to both the stated MSDE Style Guide and standard grammar rules.
- Internal reviews were conducted, and historical records were established for all version changes.

After Cognia performed the required internal reviews, items were submitted to MSDE for review. MSDE content specialists performed a review of the items and provided feedback to Cognia content specialists. The edits suggested by the MSDE specialists were then incorporated into the items. At this stage, items were also reviewed for accessibility and universal design.

Finally, the items were prepared for review by the Content, Bias/Sensitivity, and Accommodations Review Committees. These committees, selected by MSDE, were composed of diverse groups of Maryland educators. The committees reviewed each item to ensure that the content (a) accurately reflected what was taught in Maryland schools; (b) correctly aligned to the intended standards; (c) did not unfairly favor or disadvantage an individual or group; and (d) were universally designed and accessible to students with disabilities who utilize various presentation and response accommodations.

Upon completion of this final round of reviews, MSDE and Cognia content specialists conducted face-to-face meetings to evaluate and reconcile the reviews. Cognia then applied the requested edits to the items and/or revisions to the accompanying graphics.

For the HS MISA assessment, 36 science clusters were presented for review by the Content, Bias/Sensitivity, and Accommodations Review Committees. These clusters included 36 multi-part stimuli and 540 items. Because of the integrated nature of the clusters, acceptance rates depended on the entire cluster, not individual items. Of the 36 clusters, one cluster was rejected. Two clusters were put on hold due to questions about the assessment of a particular Performance Expectation, additional data needed, and/or sensitivity concerns.

For the HSA Government assessment, 191 items were presented for review by the Content, Bias/Sensitivity, and Accommodations Review Committees. Nine items were rejected following committee recommendations and two items were put on hold due to current events or curriculum changes.

Testing Accommodations

Several alternate test formats were available to Maryland HSA/HS MISA test takers, including large-print, braille, and online audio versions of the Maryland HSA/HS MISA tests. For 2019, reprints of all three alternate test formats were available at each administration.

Test Construction

HSA Government

The HSA Government forms administered in May of 2019 were constructed using items from the Maryland HSA government item bank. The pool of items that was available for use in the construction of the 2019 forms included all items that had been administered, calibrated, and linked to the operational scale. For Government, the Maryland HSA operational scale was defined in 2003 and included items administered in 2002 and 2003. Items flagged for poor fit were excluded from the item pool. Items flagged for substantial differential item functioning (DIF) against any of the comparison groups are marked as such in the item bank and they are not used unless required to fulfill content specifications, and then, only after review and approval by MSDE. (See Section 8 for a more detailed account of these analyses and flagging criteria.)

Each HSA Government test form was constructed to meet specific test blueprint specifications. Table 2-2 indicates the distribution of items within each reporting category and the number of score points associated with each item type.

HS MISA

The HS MISA forms administered in May of 2019 were constructed using items from the 2018 HS MISA stand-alone field tests. Items flagged for substantial DIF against any of the comparison groups are marked as such in the item bank and they are not used unless required to fulfill content specifications, and then, only after review and approval by MSDE. (See Section 8 for a more detailed account of these analyses and flagging criteria.)

Each HS MISA form was designed to meet the operational test blueprint outlined above. Each form was designed with five sessions consisting of two integrated clusters each. Four field test clusters were

embedded with the six operational clusters. Each session was designed to be completed in approximately 40 minutes.

As previously stated, each cluster included one shared stimulus and six items. Each cluster contained one CR item worth two, three, or four points. The remaining five items in the cluster were a variety of SR and TE item types.

Item Selection and Form Design

HSA Government

To conserve the item pool, when multiple forms were included in an administration, each test form consisted of a common set of operational items shared across forms within an administration, as well as a unique set of items. Within these administrations (i.e., January, May, and summer), approximately 60 percent of the operational items in each form were common across the test sections. The remaining items in the forms consisted of combinations of items that varied across forms. The percent of common items across forms was determined by MSDE and is consistent with the test specifications for previous administrations of the HSA Government assessment.

The guidelines used to construct the forms are provided in Tables 2-6 through 2-8. The exact composition of the forms varied slightly based on available items in the pool.

Table 2-6. Form Construction Specifications for the HSA Government January 2019 Administration

Form A, B, and C	Form AA, AB, AC	Form X (Accom.)
Common set ~ 60% Unique items ~ 40%	Common set ~ 60% Unique items ~ 40%	Same as Form A
Field test selection – Unique items	Field test selection – Unique items	Field test selection – Same as Form A

Table 2-7. Form Construction Specifications for the HSA Government May 2019 Administration

Form D, E, F, G, H, J	Form K, L, M, N, O, P	Form Y (Accom.)
Common set ~ 60% Unique items ~ 40%	Common set ~ 60% Unique items ~ 40%	Same as Form D
Field test selection – Unique items	Field test selection – Unique items	Same as Form D

Table 2-8. Form Construction Specifications for the HSA Government Summer 2019 Administration

Form Q	Form Z (Accom.)
Common set ~ 60% Unique items ~ 40%	Same as Form Q
Field test selection – Reuse of a prior administration field test set	Field test section – Reuse of a prior administration field test set (unique from Form Q)

In addition to the operational items, embedded field test items were included with each version of the test form, resulting in multiple versions of a test form containing different sets of field test items. Field test items accounted for approximately 15 percent of the total items on each form (12 field test items out of the total of 79 items). The government field test items included newly written items, new item types, and new content standards. The content standards, item types, and item specifications added to the assessment and field tested in 2019 were developed and reviewed by Maryland educators to be representative of the knowledge, concepts, and skills taught in Maryland government courses and designed to be measured by the test.

For administrations in which there was more than one form available at the same time (January and May), the forms were spiraled at the student level. Spiraling at the student level means that multiple forms of the test were distributed to students randomly by the computer-based testing platform. Spiraling at the student level helps ensure that all forms are randomly distributed throughout the state.

The 2019 HSA Government forms were constructed using the test construction software associated with the customer item bank. The goal was to match the test characteristic curves (TCCs) and the conditional standard error of measurement (CSEM) curves with the "target" form defined as the base form used to set the operational scale. For Government, the base forms were originally developed in 2003. These base forms contained BCR items. Between summer 2009 and October 2013, BCR items were discontinued on the HSA Government and the target TCCs for the HSAs were revised so that they were no longer influenced by the characteristics of CR items. Refer to the Educational Testing Service (ETS) memorandum: *Considerations for Setting New Target Test Characteristic Curves for the Maryland High School Assessments (HSAs)* (ETS, 2009) for details on how new target TCCs were created. However, starting in January 2014, BCR items were reintroduced to the HSA Government so the Government target TCCs have been revised back to include BCR items in the calculation of TCCs and CSEMs.

The following general steps were completed during the test construction process for the HSA Government forms:

1. For each administration, all forms were constructed simultaneously in order to provide the best opportunity to construct parallel forms.
2. Items that matched the test blueprint were selected to match the target TCCs and CSEMs.

3. Test developers were careful to ensure that the item selections met all content specifications, including matching items to the test blueprint, distribution of keys, and avoidance of clueing[5] or clanging.[6]
4. After the operational items were selected for the test forms, the field test sets were constructed. Field test sets consisted of SR, BCR, TE, and ECR item types. While the field test sets were not constructed to meet any psychometric criteria, they were constructed to meet content criteria. For HSA Government, the field test sets were estimated to be able to be completed by students in approximately 30 to 35 minutes. The field test items were embedded in the test according to a variety of content and template criteria, including, but not limited to, coverage of the reporting categories and assessment limits, cognitive balance, key balance/distribution, and clueing/clanging within the field test set and among the surrounding operational items.

Figures 2-1 and 2-2 show the plots of the TCCs and CSEMs of the operational forms used for HSA Government in 2019. The vertical line in each figure represents the proficiency scaled cut score. The CSEMs in Figure 2-2 are CSEM values on the scaled score metric (i.e., scaled CSEMs). HSA Government has only one cut: Proficient. It is important to note that the TCCs and CSEMs shown in the plots are based on pre-equated item parameters and therefore are curves calculated prior to administration of the tests. In January 2019, HSA Government Operational Form 1 corresponded to the operational items shared Forms A, B, C, and X and Operational Form 2 corresponded to Forms AA, AB, and AC. In May 2019, HSA Government Operational Form 1 corresponded to Forms D, E, F, G, H, J, and Y and Operational Form 2 corresponded to Forms K, L, M, N, O, and P. In Summer 2019, HSA Government Operational Form 1 corresponded to Forms Q and Z.

The CSEMs in Figure 2-2 are CSEM values on the scaled score metric (i.e., scaled CSEMs). HSA Government has only one cut: Proficient. It is important to note that the TCCs and CSEMs shown in the plots are based on pre-equated item parameters and therefore are curves calculated prior to administration of the tests.The TCC plots indicate that all forms for HSA Government were within or very close to each other for across the range of scale scores. When forms varied in difficulty, differences between forms were typically less than 5 percent of the total raw score across the score range, especially in the range of the cut scores. When forms had differences slightly greater than 5 percent, these larger differences were typically seen at the very low end of the scale score range and at the high end of the scale. As expected, the CSEM plots indicate that the scaled CSEMs were lowest at and above the scaled cut score, which represents the middle and upper ranges of scale scores. Typically, this is where most student scores are located.

[5] ***Clueing*** refers to information within a passage, stimulus, item, graphic, or other test component that allows respondents to select/construct the correct answer to one or more items in an assessment without the knowledge and/or skill targeted by the item.
[6] ***Clanging*** occurs when an identical or similar word(s) appears in both the item stem and one or more item distractors. Also, if two or more items that are near each other share common key words, even if the item content does not clue, the items are said to clang because the interpretation of the word in one item can affect the interpretation of another item.

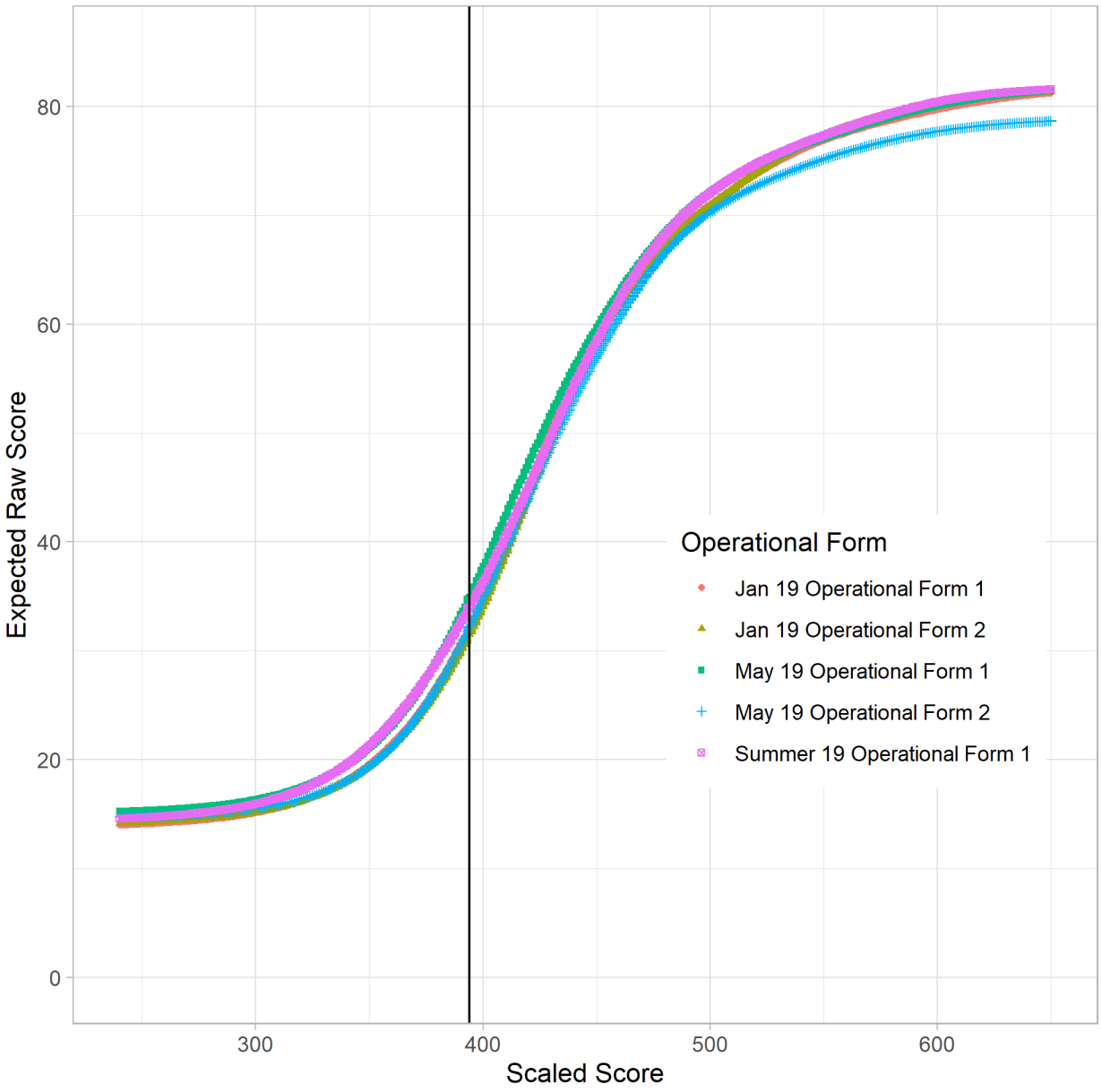

Figure 2-1. Test Characteristic Curves for the 2019 Maryland HSA Government Forms

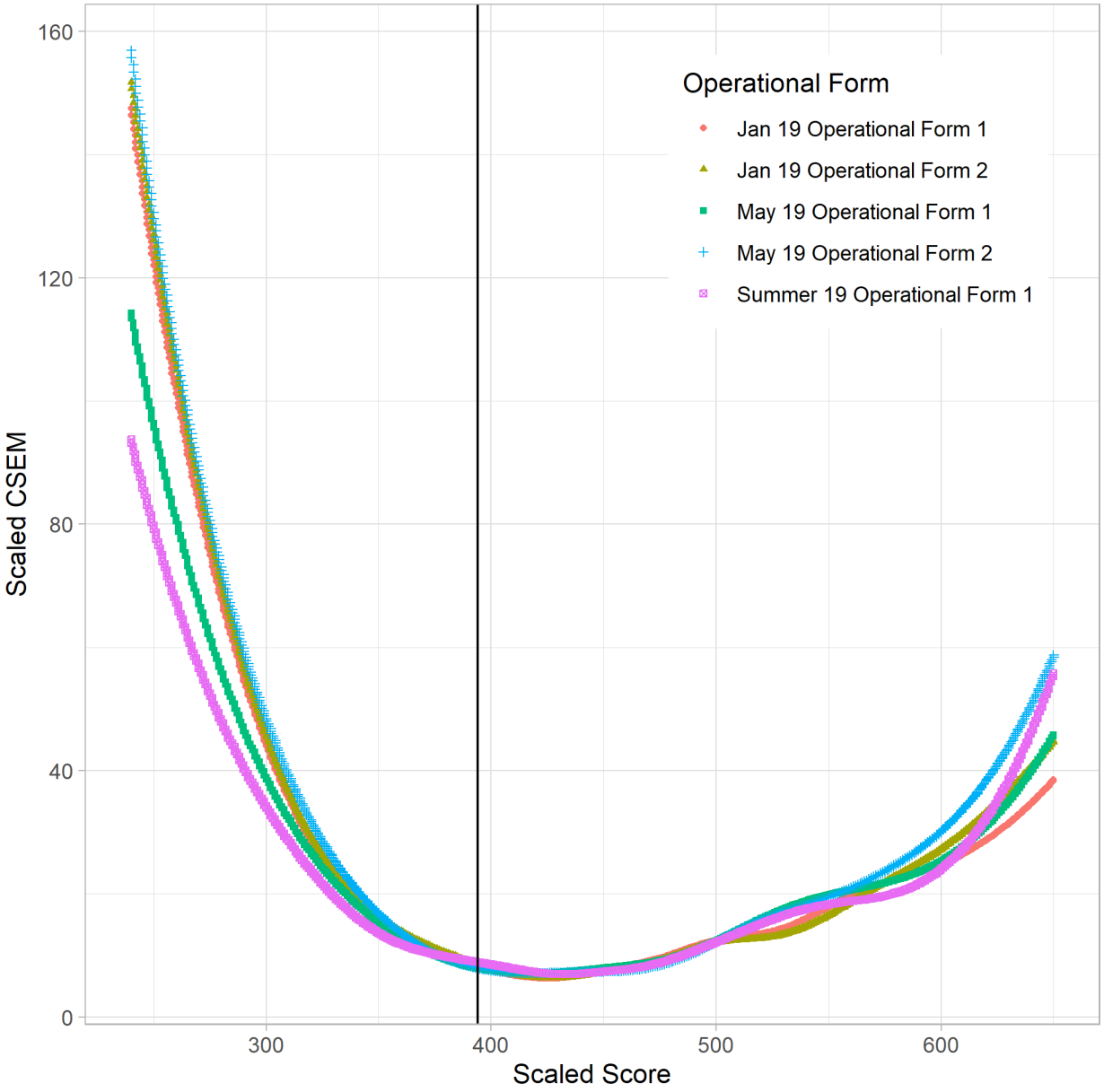

Figure 2-2. Conditional Standard Errors of Measurement and Proficiency Cutoffs for the 2019 Maryland HSA Government Forms

HS MISA

Per the HS MISA test design, when multiple forms were included in an administration, each test form consisted of a common set of operational clusters shared across forms within an administration, as well as a unique set of items. Per this test design, one-half of the operational clusters are shared across the forms for each administration. Across administrations (January to May) one-third of the operational clusters will be repeated from previous operational clusters. In 2019, this means two operational clusters were shared from January 2019 to May 2019. The 2019 tests were post-equated following the May 2019 administration for use with standard setting.

In addition to the operational items, embedded field test clusters were included with each version of the test form, resulting in multiple versions of a test form containing different sets of field test items. In 2019, six clusters were operational and four were field test clusters.

The guidelines used to construct the forms are provided in Tables 2-9 and 2-10. The exact composition of the forms varied slightly based on available items in the pool.

Table 2-9. Form Construction Specifications for the HS MISA January 2019 Administration

Form A, B, C	Form AA, AB, AC	Form X (Accom.)
Linking clusters – 50% Unique clusters – 50%	Linking clusters – 50% Unique clusters – 50%	Same as Form A
Field test selection – Unique clusters	Field test selection – Unique clusters	Field test selection – Same as Form A

Table 2-10. Form Construction Specifications for the HS MISA May 2019 Administration

Form D-M	Form N-P, S-W, AD	Form Y (Accom.)
Linking clusters – 50% Unique clusters – 50%	Linking clusters – 50% Unique clusters – 50%	Same as Form D
Field test selection – Unique clusters	Field test selection – Unique clusters	Field test selection – Same as Form D

The following general steps were completed during the test construction process for the HS MISA forms:

1. For each administration, all forms were constructed simultaneously in order to provide the best opportunity to construct parallel forms.
2. Test developers were careful to ensure that the item selections met all content specifications, including matching items to the test blueprint, distribution of keys, and avoidance of clueing or clanging.
3. After the operational items were selected for the test forms, the field test sets were constructed. Field test sets consisted of HS MISA clusters across all content areas. While the

field test sets were not constructed to meet any psychometric criteria, they were constructed to meet content criteria. The field test items were embedded in the test according to a variety of content and template criteria, including, but not limited to, coverage of the reporting categories and continued efforts to build the operational pool of NGSS-aligned HS MISA clusters.

Figures 2-3 and 2-4 show the plots of the TCCs and CSEMs of the forms used for HS MISA in 2019. The vertical lines in each figure represents the scaled cut scores. The CSEMs in Figure 2-4 are CSEM values on the scaled score metric (i.e., scaled CSEMs). HS MISA has three cuts that define four performance levels: Partially Met Expectations, Approach Expectations, Met Expectations, and Exceeded Expectations. For the HS MISA 2019 test forms, the TCCs and CSEMs shown in the plots are based on item parameter estimates obtained post-administration. This is because the first administrations of HS MISA were in 2019. In January 2019, HS MISA Operational Form 1 corresponded to Forms A, B, C, and X and Operational Form 2 corresponded to Forms AA, AB, and AC. In May 2019, HS MISA Operational Form 1 corresponded to Forms D, E, F, G, H, J, K, L, M, and Y and Operational Form 2 corresponded to Forms N, O, P, S, T, U, V, W, and AD.

The TCC plots indicate that all forms for HS MISA were within or very close to each other across the range of scale scores. When forms varied in difficulty, differences between forms were typically less than 5 percent of the total raw score across the score range, especially in the range of the cut scores. When forms had differences slightly greater than 5 percent, these larger differences were typically seen at the very low end of the scale score range and at the high end of the scale. As expected, the CSEM plots indicate that the scaled CSEMs were lowest at and above the scaled cut score, which represents the middle and upper ranges of scale scores. Typically, this is where most student scores are located.

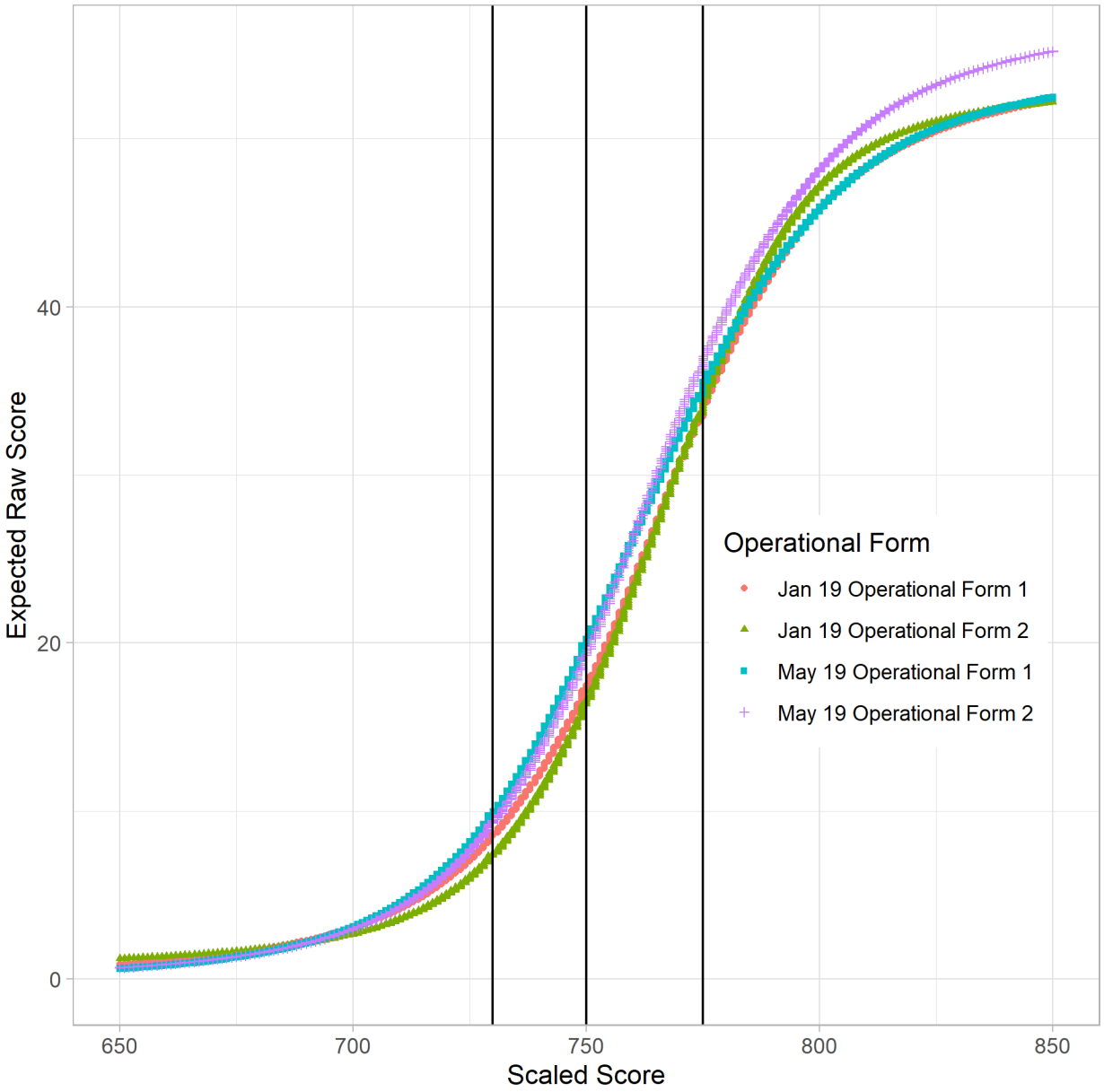

Figure 2-3. Test Characteristic Curves for the 2019 Maryland HS MISA Forms

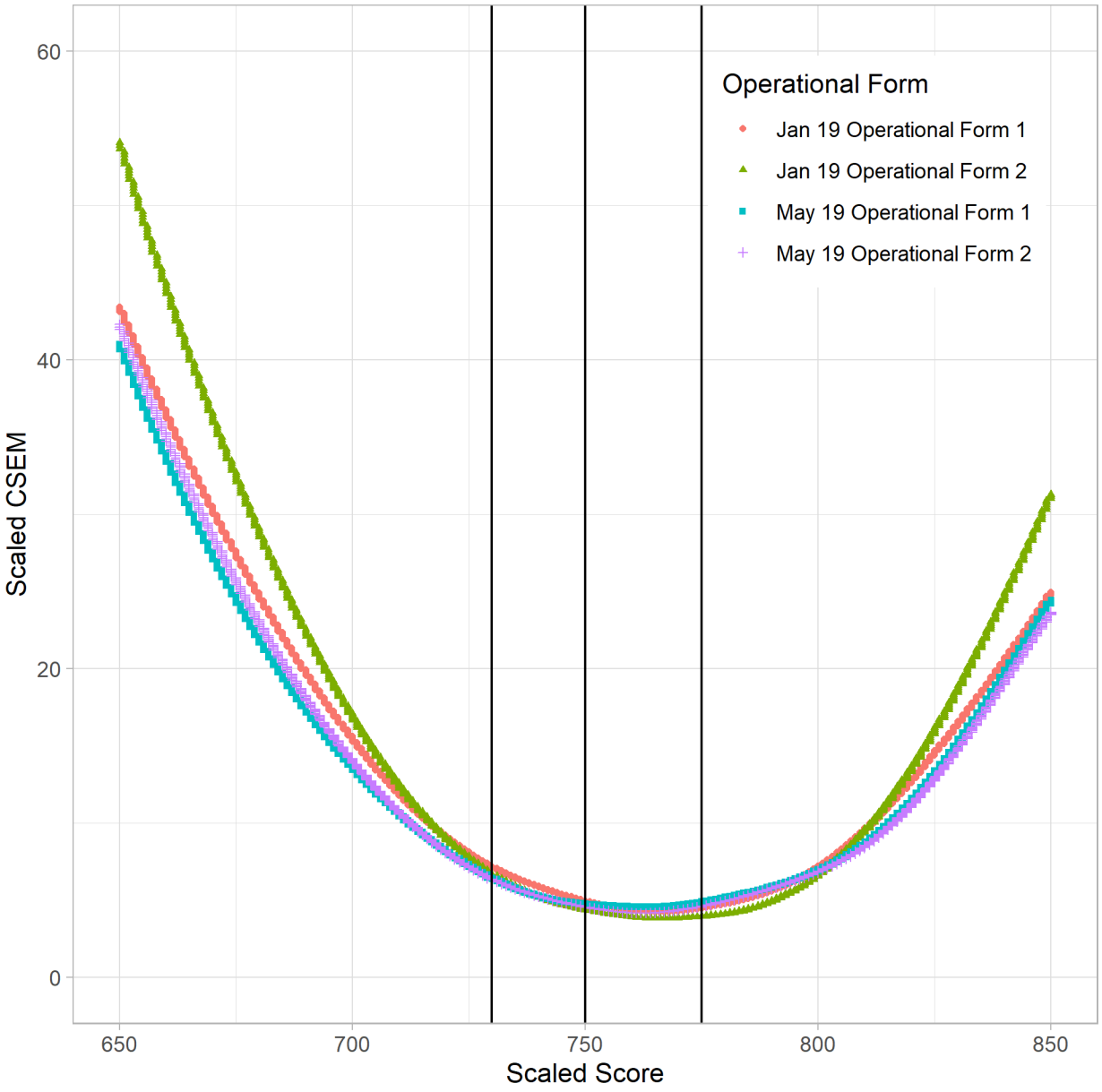

Figure 2-4. Conditional Standard Errors of Measurement and Performance Level Cutoffs for the 2019 Maryland HS MISA Forms

The TCC plots indicate that all forms for HS MISA were within or very close to each other across the range of scale scores. When forms varied in difficulty, differences between forms were typically less than 5 percent of the total raw score across the score range, especially in the range of the cut scores. When forms had differences slightly greater than 5 percent, these larger differences were typically seen at the very low end of the scale score range and at the high end of the scale. As expected, the CSEM plots indicate that the scaled CSEMs were lowest at and above the scaled cut score, which represents the middle and upper ranges of scale scores. Typically, this is where most student scores are located.

Test Administration

For all Maryland HSA tests administered in 2019, both paper-and-pencil and online versions were available. An online Practice Test was available from November 1, 2017 to August 3, 2019.

For all administrations, online forms were spiraled. There was one paper form provided for students and used for accommodations or special circumstances. For all administrations, the paper test window was scheduled for a duration of two weeks. The online testing windows for January and May were scheduled for a duration of five weeks, while the summer administration was two weeks—the same as for the paper testing.

All forms administered without extended time accommodations had timing limits indicated in Table 2-11.

Table 2-11. Test Timing Schedule in Minutes by HSA Government and HS MISA

Content Area	Session One	Break	Session Two	Break	Session Three	Break	Session Four	Break	Session Five
HS MISA	45 min.	5 min.	45 min.	5 min.	45 min.	5 min.	45 min.	5 min.	45 min.
Government	45 min.	5 min.	45 min.	5 min.	45 min.	5 min.	45 min.	5 min.	45 min.

Section 3. Validity

Validity is one of the most important attributes of assessment quality and is a fundamental consideration when tests are developed and evaluated (AERA, APA, & NCME, 2014; Messick, 1989). Validity refers to the degree to which logical, empirical, and judgmental evidence supports each proposed interpretation or use of a set of scores. Validity is not based on a single study or type of study but is an ongoing process of gathering evidence to support the interpretation or use of the resulting test scores. The process begins with the test design and continues throughout the entire assessment process, including content specifications, item development, psychometric quality analyses, and inferences made from the test results.

This section provides validity evidence for the High School Assessment Government (HSA Government) and High School Maryland Integrated Science Assessment (HS MISA). Students' scores on the HSA Government are assumed to reflect students' level of knowledge and skills in a content area, and likewise for HS MISA. The scaled scores on each of these assessments are used to classify students in terms of their level of proficiency based on cut scores established by the state.

Evidence Based on Analyses of Test Content

The HSA Government test is referred to as an end-of-course test because students take it as they complete the appropriate coursework. The HS MISA is the final assessment in a series of science assessments that students take to measure their understanding of the subset of the High School grade band of the Next Generation Science Standards (NGSS). Consequently, HSA Government items are developed to measure the knowledge and skills expected of students following completion of government coursework. The HS MISA items are developed to measure the knowledge and skills expected of students as they complete a variety of high school science courses, because the configuration of high school science courses and the timing of the assessment varies throughout the state. As discussed in Section 2, the development of test content for the HSA Government and the HS MISA is overseen by content experts who have depth of knowledge and teaching experience related to the course(s). Appropriate content leaders who have similar qualifications review the test development work of these individuals.

Evidence based on analyses of test content includes logical analyses that determine the degree to which the items in a test represent the content domain that the test is intended to measure (AERA, APA, & NCME, 2014, p. 14). The test development process for the Maryland HSAs provides numerous opportunities for the Maryland State Department of Education (MSDE) to review test content and make changes to ensure that the items measure the knowledge and skills of Maryland students according to course standards. Every item that is created is referenced to a particular instructional standard (goal, expectation, or indicator). During the internal Cognia development process, the specific reference is confirmed or changed to reflect changes to the item. When the item is sent to a committee of Maryland educators for a content review, the members of the committee make independent judgments about the match of the item content to the standard that it is intended to measure and evaluate the appropriateness for intended grade level. These judgments are tabulated and reviewed by the content experts who use the information to decide which items advance to the field test stage of development.

The evaluation of the test forms for validity across the content domains is outlined in the next section.

Evidence Based on Analyses of Internal Test Structure

Analyses of the internal structure of a test typically aim to study the relationship among test items and/or test components in order to establish the degree to which the items/components reflect the construct (AERA, APA & NCME, 2014, p. 16). The term "construct" refers to the characteristic that a test is intended to measure and a test score interpretation is based on; in the case of the HSA Government, the construct is the knowledge and skills defined by the test blueprint for each content area.

These test blueprints are derived from the Maryland State Standards for each course. The test blueprint is presented in Section 2 (see Table 2-2); the Maryland State Standards can be found on the MSDE Website at: http://www.marylandpublicschools.org/about/Pages/DAAIT/Assessment/HSA/index.aspx.

The test blueprints have been designed and reviewed by Maryland educators to ensure that the distribution of the standards in the test blueprints are representative of the knowledge, concepts, and skills designed to be measured by the test. By designing the test blueprints with consideration to curriculum documents and other expectations for student learning, the blueprints ensure that the content of the test adequately samples the content knowledge and context required for valid inferences about student performance.

High total group internal consistencies as well as similar reliabilities between subgroups with roughly the same sample size provide additional evidence of validity. Measurement error is inevitable. However, high reliability over items within a test implies that the measurement error is small. Cronbach's alpha IRT marginal reliability results for each administration for the overall population, as well as for subgroups can be found in Section 7 of this report in Tables 7-5 through 7-9.

Another way to assess the internal structure of the test is through the evaluation of Pearson correlation matrices between the individual subscores. If subscores are strongly related to each other, it implies a high internal consistency between subscores. Table 3-1 shows the Pearson correlations between subscores of the HSA Government test based on the data from the May administration, which had the largest sample size of the 2019 administrations. Results indicate that each subscore is positively correlated with the overall Scale Score. It is also noted that the Government subscore correlations are very similar compared to those observed in previous years.

Table 3-2 shows the Pearson correlations between subscores of the HS MISA test based on the data from the May administration, which had the largest sample size of the 2019 administrations. Results indicate that each subscore is positively correlated with the overall Scale Score. 2019 was the first year that HS MISA was administered operationally, and as such, there are no subscore correlations from prior years to which to compare for HS MISA.

Table 3-1. Correlations Between Subscores—HSA Government

May Administration (N = 65,078)						
	Overall	U.S. Government Structure Functions and Principles	Protecting Rights and Maintaining Order	Systems of Government and U.S. Foreign Policy	Impact of Geography on Governmental Policy	Economic Principles Institutions and Processes
Overall	1.00					
U.S. Government Structure Functions and Principles	0.91	1.00				
Protecting Rights and Maintaining Order	0.88	0.79	1.00			
Systems of Government and U.S. Foreign Policy	0.80	0.71	0.68	1.00		
Impact of Geography on Governmental Policy	0.84	0.76	0.73	0.67	1.00	
Economic Principles Institutions and Processes	0.84	0.75	0.76	0.67	0.71	1.00

Table 3-2. Correlations Between Subscores—HS MISA

May Administration (N = 54,233)								
	Overall	Physical Sciences	Life Sciences	Earth and Space Sciences	Investigating and Evaluation	Developing Explanations and Solutions	Patterns and Cause and Effect	Systems and Their Properties
Overall	1.00							
Physical Sciences	0.80	1.00						
Life Sciences	0.89	0.60	1.00					
Earth and Space Sciences	0.77	0.54	0.58	1.00				
Investigating and Evaluation	0.76	0.53	0.70	0.67	1.00			
Developing Explanations and Solutions	0.98	0.82	0.86	0.73	0.64	1.00		
Patterns and Cause and Effect	0.89	0.70	0.83	0.65	0.58	0.92	1.00	
Systems and Their Properties	0.90	0.77	0.77	0.74	0.73	0.87	0.70	1.00

Finally, the internal structures of the HSA Government and HS MISA tests are assessed by the degree to which the test meets the requirements of the statistical models used to estimate item parameters and student scores. Confirmatory factor analysis (CFA) was used to assess the degree to which one-factor models fit the HSA Government and the HS MISA tests. CFA is a useful statistical methodology for evaluating whether performance on items in each test reflects a single underlying characteristic (i.e., a unidimensional test) or a set of distinct characteristics defined by the reporting categories (i.e., a multidimensional test). The CFA results provide evidence as to the degree to which the unidimensional item response theory (IRT) model used to calibrate the HSA Government items is appropriate.

Confirmatory Factor Analyses of the May 2019 Administration Data

To assess the dimensionality of the HSA Government HS MISA tests, CFA was conducted using test data from the May 2019 administration. The May administration was chosen because it had the largest sample size and was the most representative administration of the HSA Government test. Among all the forms from the May 2019 HSA Government administration, Forms D–H and J shared the same set operational items. The data from the operational items on Forms D–H and J of the May 2019 administration of HSA Government were combined for use in the CFA analysis. Among all the forms from the May 2019 HS MISA administration, Forms D–H and K–M shared the same set operational items. The data from the operational items on Forms D–H and K–M of the May 2019 administration of HS MISA were combined for use in the CFA analysis.

Mplus (Muthén & Muthén, 2007) was used to calculate matrices of polychoric correlations between the items and was also used to fit specified factor models to the data. In the analysis, the input polychoric correlation matrix was used to estimate the factor loadings between the indicators (items).

Parameters for CFA were estimated using a weighted least-square method with mean and variance adjustment (Muthén, du Toit, & Spisic, 1997). This method leads to a consistent estimator of the model parameters and provides standard errors that are robust under model misspecification. For ordinal data, weighted least squares estimation offers an alternative to full-information maximum likelihood techniques. The latter becomes computationally too demanding for models with more than a few dimensions. Model fit is assessed through a scaled chi-square statistic. However, the degrees of freedom for the reference distribution of this statistic cannot be computed in the standard way. The correct degrees of freedom depend on the data, and hence degrees of freedom may vary when the same model is applied to different data (Muthén, 1998–2004, p. 19-20).

Overall model fit for the CFA model was examined using the scaled chi-square (χ^2) test of model fit in combination with supplemental fit indices. The Tucker-Lewis Index (TLI) compares the chi-square for the hypothesized model with that of the null or "independence" model, in which all correlations or covariances are zero. TLI values range from 0.0 to 1.0; values greater than 0.94 signify good fit (Hu & Bentler, 1999). The comparative fit index (CFI) and root mean square error of approximation (RMSEA) index both are based on non-centrality parameters. The CFI compares the covariance matrix predicted by the model with the observed covariance matrix, and the covariance matrix of the null model with the observed covariance matrix. A CFI value greater than 0.90 indicates acceptable model fit (Hu & Bentler, 1999). The RMSEA assesses the error in the hypothesized model predictions; values less than or equal to 0.06 indicate good fit (Hu & Bentler, 1999).

Table 3-3 shows the results of the analyses. Although the χ^2 statistic was statistically significant ($p <$ .0001), this was expected due to the very large sample size *(N)*. The TLI, CFI, and RMSEA fit statistics indicated that the one-factor solutions generally fit the data well. These fit statistics provide strong evidence in support of the item response theory (IRT) assumption of unidimensionality for both HSA Government and HS MISA.

Table 3-3. Confirmatory Factor Analyses Fit Statistics

Test	Admin.	Forms	# of Factors	# of Items	*N*	*df*	χ^2	*p*-value	TLI	CFI	RMSEA
HSA Govt.	May 2019	Forms D-H, J	1	67	30,918	2,144	42,752.14	<0.0001	**0.977**	**0.978**	**0.025**
HS MISA	May 2019	Forms D-H, K-M	1	36	25,915	594	11,263.40	<0.0001	**0.975**	**0.977**	**0.026**

Table entries that meet or exceed the criterion are in bold.

Evidence Based on Response Processes

One source of validity evidence related to response processes is speededness. In general, the percentage of students who respond to the last items in any test can also be used to assess the "speededness" of a test. Putting this another way, finding a notably higher omit rate on items at the end of a test compared to items observed elsewhere in the test indicates potential speededness.

When speededness occurs, a test measures not only students' knowledge and skills as defined by the construct of interest, but also the speed at which the knowledge and skills are demonstrated, which is a second construct. In achievement tests, it is desirable to find that speededness is not present, thereby providing evidence that student scores reflect only the intended construct.

As part of the validity evidence, speededness of the operational items on the HSA Government and HS MISA tests was evaluated. Table 3-4 shows omit rates for operational items from HSA Government and HS MISA by administration and item type.

For both tests, if more than 5 percent of students omits a selected-response (SR) item or more than 15 percent of students omits a non-SR item, that item earns a flag. The data in Table 3-4 show, no operational SR items were flagged in any of the administrations of HSA Government or HS MISA. No non-SR items were flagged in any of the administrations of HSA Government or HS MISA, except for 1 non-SR item in the summer administration of HSA Government. Caution should be taken when interpreting results from the summer administration, because the summer administration was taken by a small and non-representative sample of students, such as repeat test takers.

Appendices A and B include the percentages of students who omitted items on the HSA Government and the HS MISA test forms. Across all content areas and administrations, the percentages of students who did not respond to the last 10 SR items of a test were less than 3 percent per item. Omit rates for CR items on the HSA Government tests were fairly low, ranging from 5 percent to 12 percent for the January administration, and 2 percent to 6 percent for the May administration. The exception was the summer 2019 administration, with the omit rates ranging from 13 percent to 23 percent, again probably due to a small, non-representative sample. For all item types, the percentage of students who omitted items located within the last 10 positions on an HSA Government test form was not greater than omit rates throughout the test.

Table 3-4. Number of HSA Government and HS MISA Operational Items Flagged for High Omit Rate

Test	*Administration*	Item Types	
		SR	*All Other*
HSA Government	January	0	0
	May	0	0
	Summer	0	1
HS MISA	January	0	0
	May	0	0

In addition to the factor analyses and the information regarding speededness presented here and the validation documentation gathered and maintained by MSDE, other information in support of the uses and interpretations of the HSA Government scores appears in the following sections:

- Section 4 provides detailed information concerning the scores that were reported and the cut scores for the HSA Government and HS MISA.
- Section 5 provides detailed information regarding reporting of 2019 Maryland HSA Government and HS MISA results at the student level.
- Section 6 provides information concerning the test characteristics based on classical test theory for the administrations of the HSA Government and HS MISA.
- Section 7 presents information regarding student characteristics for the administrations of the HSA Government and HS MISA.
- Section 8 includes documentation regarding the test analyses. Descriptions of classical item analyses and differential item functioning are included. In addition, summary tables of item *p*-value and item-total correlation distributions are provided.

Section 4. Scoring Procedures

Scale Scores

The High School Assessment Government (HSA Government) reporting scale ranges from 240 to 650. For the HSA Government tests, the scale was established in 2003 and defined so that the scale scores had a mean of 400 and a standard deviation of 40.

$$\text{ScaledScore}_{\text{HSA Govt}} = 400 + 40\theta$$

where
θ is the ability level (or pattern score) of a student.

The High School Maryland Integrated Science Assessment (HS MISA) reporting scale ranges from 650 to 850. HS MISA scaled scores are computed via the following:

$$\text{ScaledScore}_{\text{HS MISA}} = 750 + 15.5(\theta - \theta_{Met})$$

where
θ_{Met} is the theta cut score for Met Expectations and is equal to 0.34570.

Students' total test scores and subscores are scale scores derived using item response theory (IRT; Yen & Fitzpatrick, 2006) and item-pattern scoring procedures. HSA Government uses the three-parameter logistic (3PL) model for selected-response (SR) items and the generalized partial credit model (GPCM) for constructed-response (CR) items. HS MISA uses the two-parameter (2PL) model for SR items and the GPCM for non-SR multi-point (polytomous) items.

IRT expresses the probability that a student achieves a certain score on an item (such as correct or incorrect) as a function of the item's statistical properties and the person's ability level (or proficiency level). The 3PL model describes the probability that a person with ability θ responds correctly to item *i* as follows:

$$P_i(\theta) = c_i + (1 - c_i)\frac{\exp[Da_i(\theta - b_i)]}{1 + \exp[Da_i(\theta - b_i)]}$$

where
a_i is the slope parameter of item *i*, characterizing its discrimination;
b_i is the location parameter of item *i*, characterizing its difficulty;
c_i is the lower asymptote parameter of item *i*, reflecting the chance that students with very low proficiency will select the correct answer, sometimes called the "pseudo-guessing" level; and
D is a normal approximation constant.

The 2PL is a special case of the 3PL in which the c-parameter (c_i) is fixed to 0.0.

The GPCM states that the probability that person with ability θ obtains a score category of *k* on item *i* that has *m* score categories assigned score values ranging from 0 to *m* – 1 can be expressed as:

$$P_{ik}(\theta) = \frac{\exp\left[\sum_{v=1}^{k} a_i(\theta - b_i + d_{iv})\right]}{\sum_{c=1}^{m} \exp[\sum_{v=1}^{c} a_i(\theta - b_i + d_{iv})]}$$

where

b_i is the location parameter for item *i*,

d_{iv} is the step parameter for score *v* on item *i*, and

m is the number of item score categories of item *i* (Muraki, 1992).

An indeterminacy exists in the item parameters of the GPCM. To resolve the indeterminacy, d_0 is fixed to 0 and the sum of the step parameters is fixed to 0.0.

There are essentially two ways of scoring a test: number-correct (NC) or item-pattern (IP) scoring. NC scoring considers how many test items a student answered correctly in determining that student's total raw score. In contrast, the IP scoring method is based on an IRT model. IP scoring considers not only a student's total raw responses, but also the psychometric characteristics of test items.

Test items are not equal in their characteristics. For example, some items are better at discriminating between students who know the tested content and those who do not; some items are more difficult; and low-ability students are more likely to guess correctly on some test items than on others.

Two students with exactly the same total raw scores will get the same test scores in NC scoring. It is highly likely, however, that even though they have the same total raw scores, the actual items they answered correctly were different, and their different sets of correctly answered items could have different item characteristics. In such a case, the students will very likely get different reported test scores in IP scoring. With IP scoring, a student who correctly answers a number of more difficult items will get a higher score than one who answers the same number of easier items. This would be applicable to both total test scores and subscore category scores reported using IP scoring.

Item-pattern scoring has been found to produce smaller standard errors of measurement (SEM) than number-correct scoring. The smaller the SEM, the more confidence we have about the precision of the test results. In addition, test reliability is higher with IP scoring than with NC scoring (Yen & Candell, 1991), which means that fewer questions are needed in IP scoring than in NC scoring for equivalent scoring accuracy. For these reasons, both total scores and subscores of the HSA Government tests are reported using IP scoring.

Conditional Standard Errors of Measurement

Conditional standard errors of measurement (CSEM) were produced and are equal to the reciprocal of the square root of the test information function (TIF; i.e., the sum of item information functions). CSEMs are standard errors at individual score points, defined as:

$$CSEM(\theta) = \frac{1}{\sqrt{I(\theta)}}$$

where

θ is the individual score point (location on the scale),

$CSEM(\theta)$ is the conditional standard error of measurement at the score point, and

$I(\theta)$ is the test information function value at that score point, θ.

Lowest and Highest Obtainable Test Scores

The maximum likelihood procedure under either the 2PL and 3PL model does not produce finite scales score estimates for students with perfect scores or zero raw scores. In order for all test takers to receive scale scores, scores need to be established for perfect or zero raw scores. Perfect raw scores are assigned the highest obtainable scaled score (HOSS). Zero raw scores are assigned the lowest obtainable scaled score (LOSS). For HSA Government, the LOSS and HOSS are 240 and 650, respectively. For HS MISA, the LOSS and HOSS are 650 and 850, respectively.

Cut Scores

MSDE established the cut scores associated with each of the performance levels in the HSA Government tests in 2003.[7] One cut score, 394, was established for the HSA Government tests in 2003.

MSDE established cut scores for HS MISA in 2019 (Maryland State Department of Education, 2019). HS MISA scaled scores less than 730 fall into the *Partially Met Expectations* performance level. HS MISA scaled scores ranging from 730 to 749 fall into the *Approached Expectations* performance level. HS MISA scaled scores ranging from 750 to 774 fall into the *Met Expectations* performance level. Lastly, HS MISA scaled scores greater than or equal to 750 fall into the *Exceeded Expectations* performance level. More information on HS MISA standard setting can be found in the High School Maryland Integrated Science Assessments (HS-MISA) Standard Setting Report.

Year-to-Year Scale Maintenance

The HSA Government has been pre-equated since 2004. In the pre-equating design, a bank of items with calibrated parameters on the reporting scale must exist before test form construction. The item parameter estimates for new forms are retrieved from the bank and are used to build test forms that are parallel across administrations. Student scores are produced with the existing item parameter estimates, thereby scores are linked from one administration to the other.

To expand both the HSA Government and HS MISA item banks, both tests embed field test items in the operational test forms. The field test data for the January and May administrations were calibrated with the operational items at that time. The parameters of field test items were linked to the reporting scale using a fixed item parameter calibration that fixes the items parameter of all operational items to their bank values. Having all operational items serve as linking items ensures that the linking set is large enough to provide stable and reliable results.

[7] Technical documentation on the standard-setting method used to establish the MD HSA cut scores is available on the Maryland State Department of Education Website at http://archives.marylandpublicschools.org/MsDE/divisions/planningresultstest/Maryland+Standard+Setting+Technical+Reports.htm.

Section 5. Reporting

Reporting of Results

The High School Assessment Government (HSA Government) and High School Maryland Integrated Science Assessment (HS MISA) tests are designed to measure student achievement in the Maryland content standards. Consistent with this purpose, results are reported in terms of scaled scores and performance levels. Performance levels are derived by comparing scaled scores to the scaled cut scores. For HSA Government, there is a single scaled cut score that categorizes student scaled scores into Basic or Proficient. Pass/Fail status on HSA Government is determined by whether a student's scaled score falls at or above the Proficient scaled cut score. For HS MISA, there are three scaled cut scores that categorize student scaled scores into the performance levels of Partially Met Expectations, Approached Expectations, Met Expectations, and Exceeded Expectations. Reports were generated at the student level. Student results labels were printed and mailed to districts for distribution to schools. The details of the labels are presented in the sections that follow.

Student Results Labels

A student results label is produced for each student. The following information appears on the label:

- student name
- birth date
- test date
- student ID (SASID)
- school code and Name
- LEA name, ID, and Number
- student's scale score
- Passing Score
- Pass/Fail Status
- Administration and Subject

Decision Rules

To ensure that HSA results are processed and reported accurately, a document delineating decision rules is prepared before each reporting cycle. The decision rules are observed in the analyses of the HSA test data and in reporting results. These rules also guide data analysts in identifying students to be excluded from school-, district-, and state-level summary computations.

Quality Assurance

The Software Quality Assurance (SQA) team works together with the data processing and data analysis teams to ensure quality data is captured and delivered accurately. Quality control checks are being performed by the data processors and data analysts as the data is handed off via multiple internal software tools. These quality checks initialize the accuracy of the data being ingested into the database and subsequent tables/columns. The SQA team develops a test plan that includes previously agreed upon report designs and decision rule documents. Test cases housed in an internal test cases repository software are then executed including but not limited to the following:

- Testing data counts of data imported.
- Testing data quality of individual fields for valid values, such as Gender, Ethnicity, etc.
- Validating scripts developed by the software developers to ensure they match business requirements and technical specifications.

Included in this testing effort to ensure the quality of the data, the SQA team uses a sample of schools and districts which is selected based on multiple criteria. A few are identified below:

- Unique student testing records
- Students completed testing
- Students partially completed testing
- Invalidated students

Working together with the data processing and data analysis teams allows for timely and precise turnaround if any data anomalies are found. Test cases are tied to tickets outlining required work to allow for full transparency and cohesive teamwork in validation of the data. Included in the final execution, the SQA team executes test cases validating student printed reports and student labels for accuracy in consistency with the report design specifications. Once all the test cases are passed, the SQA team notifies the Cognia Client Services department for final sign off.

Section 6. Reliability

This section provides the results of test reliability (classical and IRT-based) and decision consistency and accuracy analyses the 2019 High School Assessment Government (HSA Government) and High School Maryland Integrated Science Assessment (HS MISA) assessments.

Classical Reliability

The general concept of reliability concerns the precision of a test score. Of interest is quantifying the degree to which a score varies from an average result obtained over many testing occasions due to random factors (Haertel, 2006). A variety of theories and methods can be used to estimate reliability.

Classical test theory defines reliability as the proportion of true-score variance in total score variance. Several different ways of estimating this proportion exist. One commonly used estimate of reliability is Cronbach's alpha (Cronbach, 1951), an internal consistency measure. It is derived from analysis of the consistency of performance over items within a test and provides a lower-bound estimate of a test's reliability as follows:

$$\alpha \equiv \frac{n}{n-1}\left[1 - \frac{\sum_{i=1}^{n} \sigma_{(Y_i)}^2}{\sigma_x^2}\right]$$

where

n is the number of items,

$\sigma_{(Y_i)}^2$ is the variance of scores on item *i*, and

σ_x^2 is the variance of the total score (sum of scores on the individual items).

Sample estimates are substituted for the population variances in this formula to provide reliability estimates.

IRT Marginal Reliability

IRT marginal reliability estimation is based on applying the standard classical test theory (CTT) formula, relating variances of true score, observed score, and measurement error, in the IRT setting. In CTT, the relationship between these variances is given by:

$$\sigma_X^2 = \sigma_T^2 + \sigma_E^2$$

where

σ_X^2 is the observed-score variance,

σ_T^2 is the true-score variance, and

σ_E^2 is the error variance.

Starting from this basic equation, it can be shown that the formula for CTT reliability can be expressed as:

$$CTT\ Reliability = 1 - \frac{\sigma_E^2}{\sigma_X^2}.$$

IRT marginal reliability is based on extending the CTT model to an IRT framework (Samejima, 1994) and provides an IRT-based estimate of the overall test reliability. Error variance is estimated as the mean squared conditional standard error of measurement (CSEM) of the theta estimates across students within a grade. Observed score variance is estimated as the variance of the theta estimates across students within a grade. Equivalently, the mean squared CSEM of the scale scores and the variance of the scale scores can be used in place of the CSEM of the theta estimates and the variance of the theta estimates, respectively. IRT marginal reliability is then given by the following formula:

$$IRT\ Marginal\ Reliability = 1 - \frac{\overline{CSEM(\theta)^2}}{Var(\hat{\theta})} = 1 - \frac{\overline{CSEM(SS)^2}}{Var(SS)},$$

where

$\overline{CSEM(\theta)^2}$ is the mean squared CSEM,

$\overline{CSEM(SS)^2}$ is the mean squared scale CSEM,

$Var(\hat{\theta})$ is the variance of theta estimates, and

$Var(SS)$ is the scale score variance.

Using this formula, IRT marginal reliability estimates were calculated for each multistage test in ELA and mathematics, using the scale scores (and their standard errors) for all the students across all three paths. The reliability of a test can also be evaluated by simply examining directly the CSEMs themselves. CSEMs facilitate the interpretation of individual scale scores. With any given scale score estimate for a student, the reasonable limits of the true scale score for the student can be calculated by using the CSEM for the scale score.

Reliability Results

The total group and subgroup classical and IRT marginal reliabilities are presented in Tables 6-1 to 6-3 for HSA Government and Tables 6-4 and 6-5 for HS MISA. Note that lower reliability coefficients are sometimes observed for administrations with smaller sample sizes which were typically taken by repeat test takers (e.g., summer 2019) or with the accommodated forms.

Table 6-1. Test Reliabilities for HSA Government: January 2019 Forms

		Forms A–C			Forms AA–AC			Accommodated Form X		
		N	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*
Overall		7,694	0.92	0.92	7,760	0.92	0.92	1,769	0.80	0.85
Gender	Male	4,155	0.92	0.92	4,201	0.92	0.92	1,113	0.81	0.86
	Female	3,539	0.92	0.91	3,559	0.92	0.91	656	0.76	0.82
	Missing	0	--	--	0	--	--	0	--	--
Grade	8	0	--	--	1	--	--	1	--	--
	9	728	0.94	0.92	690	0.94	0.91	61	0.73	0.89
	10	2,020	0.92	0.92	2,055	0.92	0.91	546	0.83	0.86
	11	2,736	0.87	0.90	2,793	0.88	0.90	711	0.76	0.83
	12	2,210	0.90	0.92	2,220	0.91	0.92	450	0.79	0.84
	Missing	0	--	--	1	--	--	0	--	--
Special Education	Yes	1,474	0.81	0.90	1,469	0.83	0.90	1,044	0.79	0.85
	No	5,632	0.92	0.92	5,618	0.92	0.92	680	0.80	0.85
	Exited	209	0.92	0.92	221	0.92	0.91	8	--	--
	Exited & placed in 504[a]	35	--	--	54	0.93	0.86	5	--	--
	504	344	0.92	0.92	398	0.93	0.90	32	--	--
Ethnicity	American Indian	17	--	--	20	--	--	4	--	--
	Asian	211	0.94	0.93	214	0.94	0.93	50	0.68	0.82
	African American	3,831	0.86	0.90	3,838	0.87	0.90	608	0.76	0.86
	Hawaiian/ Pacific Islander	13	--	--	10	--	--	2	--	--
	White	1,850	0.94	0.91	1,894	0.94	0.91	393	0.85	0.83
	Hispanic	1,073	0.89	0.92	1,080	0.87	0.92	526	0.74	0.83
	Multi-Ethnic	699	0.90	0.90	704	0.89	0.89	186	0.83	0.84
	Missing	0	--	--	0	--	--	0	--	--
Limited English Proficient	Yes	1,130	0.77	0.90	1,127	0.78	0.91	707	0.76	0.84
	No	6,320	0.92	0.92	6,396	0.93	0.91	1,017	0.81	0.85
	Exited[b]	244	0.91	0.87	237	0.90	0.86	45	--	--

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 6-2. Test Reliabilities for HSA Government: May 2019 Forms

		Forms D–H, J			Forms K–P			Accommodated Form Y		
		N	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*
Overall		30,918	0.95	0.95	30,714	0.95	0.96	3,416	0.89	0.91
Gender	Male	15,564	0.95	0.96	15,312	0.95	0.96	2,148	0.90	0.92
	Female	15,350	0.94	0.94	15,396	0.95	0.95	1264	0.89	0.89
	Missing	4	--	--	6	--	--	4	--	--
Grade	8	0	--	--	0	--	--	0	--	--
	9	9965	0.95	0.95	9921	0.95	0.95	959	0.87	0.91
	10	16,768	0.95	0.95	16,571	0.95	0.95	1523	0.91	0.90
	11	3,661	0.95	0.96	3,653	0.95	0.97	824	0.86	0.90
	12	520	0.90	0.97	563	0.92	0.97	106	0.84	0.92
	Missing	4	--	--	6	--	--	4	--	--
Special Education	Yes	2,618	0.93	0.96	2,579	0.93	0.96	2,169	0.89	0.91
	No	25,798	0.95	0.95	25,574	0.95	0.95	1130	0.87	0.91
	Exited	789	0.94	0.93	850	0.94	0.94	25	--	--
	Exited & placed in 504[a]	179	0.95	0.95	192	0.94	0.92	10	--	--
	504	1530	0.95	0.95	1513	0.94	0.95	78	0.95	0.89
Ethnicity	American Indian	73	0.96	0.91	72	0.96	0.91	7	--	--
	Asian	2105	0.94	0.93	2133	0.94	0.93	100	0.91	0.90
	African American	11,579	0.94	0.95	11,358	0.94	0.96	1212	0.86	0.91
	Hawaiian/ Pacific Islander	36	--	--	38	--	--	2	--	--
	White	10,695	0.94	0.92	10,628	0.94	0.93	714	0.93	0.90
	Hispanic	3,112	0.95	0.97	3,117	0.95	0.97	888	0.87	0.91
	Multi-Ethnic	3314	0.94	0.94	3362	0.94	0.94	489	0.87	0.89
	Missing	4	--	--	6	--	--	4	--	--
Limited English Proficient	Yes	1,990	0.90	0.96	2,009	0.90	0.97	1254	0.85	0.90
	No	25,906	0.95	0.95	25,589	0.95	0.95	2,003	0.90	0.92
	Exited[b]	3018	0.93	0.91	3110	0.93	0.91	155	0.91	0.80

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 6-3. Test Reliabilities for HSA Government: Summer 2019 Forms

		Form Q			Accommodated Form Z		
		N	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*
Overall		755	0.88	0.92	140	0.75	0.87
Gender	Male	444	0.88	0.92	110	0.77	0.87
	Female	311	0.89	0.92	30	--	--
	Missing	0	--	--	0	--	--
Grade	8	0	--	--	0	--	--
	9	173	0.92	0.92	25	--	--
	10	212	0.86	0.92	33	--	--
	11	246	0.87	0.92	54	0.69	0.84
	12	124	0.86	0.92	28	--	--
	Missing	0	--	--	0	--	--
Special Education	Yes	163	0.84	0.93	82	0.76	0.88
	No	546	0.88	0.91	53	0.74	0.82
	Exited	10	--	--	2	--	--
	Exited & placed in 504[a]	0	--	--	0	--	--
	504	36	--	--	3	--	--
Ethnicity	American Indian	2	--	--	0	--	--
	Asian	23	--	--	5	--	--
	African American	388	0.87	0.92	79	0.77	0.88
	Hawaiian/ Pacific Islander	1	--	--	0	--	--
	White	137	0.90	0.91	22	--	--
	Hispanic	115	0.83	0.93	24	--	--
	Multi-Ethnic	89	0.89	0.91	10	--	--
	Missing	0	--	--	0	--	--
Limited English Proficient	Yes	96	0.73	0.92	31	--	--
	No	615	0.89	0.92	106	0.77	0.87
	Exited[b]	44	--	--	3	--	--

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 6-4. Test Reliabilities for HS MISA: January 2019 Forms

		Forms A–C			Forms AA–AC			Accommodated Form X		
		N	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*
Overall		6,727	0.85	0.87	6,788	0.87	0.86	663	0.59	0.64
Gender	Male	3,444	0.86	0.87	3,475	0.88	0.86	432	0.58	0.67
	Female	3,283	0.85	0.87	3,313	0.86	0.85	231	0.59	0.54
	Missing	0	--	--	0	--	--	0	--	--
Grade	8	1	--	--	0	--	--	0	--	--
	9	708	0.83	0.86	671	0.83	0.86	62	0.07	0.27
	10	2,100	0.88	0.89	2,204	0.88	0.87	153	0.64	0.64
	11	3,327	0.83	0.85	3,301	0.85	0.84	342	0.58	0.57
	12	591	0.76	0.79	612	0.82	0.81	106	0.56	0.78
	Missing	0	--	--	0	--	--	0	--	--
Special Education	Yes	533	0.78	0.79	557	0.76	0.79	511	0.56	0.64
	No	5,603	0.86	0.87	5,685	0.87	0.86	129	0.38	0.48
	Exited	185	0.86	0.88	166	0.85	0.84	4	--	--
	Exited & placed in 504[a]	41	--	--	39	--	--	5	--	--
	504	365	0.84	0.86	341	0.87	0.85	14	--	--
Ethnicity	American Indian	12	--	--	13	--	--	1	--	--
	Asian	413	0.87	0.88	426	0.88	0.86	30	--	--
	African American	2,200	0.75	0.80	2,207	0.77	0.82	242	0.52	0.69
	Hawaiian/ Pacific Islander	10	--	--	9	--	--	0	--	--
	White	2,688	0.85	0.85	2,644	0.87	0.83	158	0.66	0.65
	Hispanic	686	0.80	0.83	717	0.83	0.82	107	0.53	0.45
	Multi-Ethnic	718	0.81	0.84	772	0.83	0.83	125	0.47	0.53
	Missing	0	--	--	0	--	--	0	--	--
Limited English Proficient	Yes	612	0.52	0.64	591	0.52	0.69	178	0.28	0.32
	No	5,784	0.86	0.87	5,845	0.87	0.86	453	0.64	0.70
	Exited[b]	331	0.77	0.79	352	0.82	0.81	32	--	--

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 6-5. Test Reliabilities for HS MISA: May 2019 Forms

		Forms D–H, J			Forms K–P, S–W, AD			Accommodated Form Y		
		N	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*	*N*	*Alpha*	*IRT*
Overall		25,915	0.89	0.89	25,909	0.87	0.87	2,409	0.66	0.61
Gender	Male	12,788	0.90	0.89	12,857	0.87	0.88	1,470	0.66	0.61
	Female	13,127	0.89	0.89	13,052	0.86	0.87	934	0.66	0.60
	Missing	0	--	--	0	--	--	5	--	--
Grade	8	0	--	--	0	--	--	0	--	--
	9	7,637	0.87	0.88	7,553	0.85	0.87	923	0.59	0.59
	10	14,854	0.89	0.89	14,970	0.87	0.87	939	0.68	0.62
	11	3,244	0.90	0.90	3,198	0.88	0.87	462	0.74	0.64
	12	180	0.77	0.81	188	0.63	0.77	80	0.28	0.11
	Missing	0	--	--	0	--	--	5	--	--
Special Education	Yes	2,095	0.79	0.81	2,120	0.72	0.79	1,477	0.62	0.57
	No	21,631	0.89	0.89	21,603	0.87	0.88	818	0.59	0.59
	Exited	771	0.89	0.89	774	0.86	0.87	17	--	--
	Exited & placed in 504[a]	171	0.89	0.89	148	0.88	0.87	8	--	--
	504	1,247	0.88	0.88	1,264	0.85	0.85	84	0.89	0.82
Ethnicity	American Indian	70	0.90	0.90	60	0.84	0.87	11	--	--
	Asian	1,309	0.90	0.90	1,321	0.89	0.88	75	0.86	0.75
	African American	9,654	0.84	0.85	9,645	0.80	0.83	799	0.49	0.52
	Hawaiian/ Pacific Islander	34	--	--	27	--	--	2	--	--
	White	10,063	0.89	0.88	10,095	0.87	0.87	629	0.78	0.68
	Hispanic	2,472	0.86	0.88	2,415	0.84	0.87	558	0.53	0.50
	Multi-Ethnic	2,313	0.89	0.89	2,346	0.85	0.86	330	0.58	0.63
	Missing	0	--	--	0	--	--	5	--	--
Limited English Proficient	Yes	1,317	0.72	0.80	1,329	0.62	0.78	804	0.47	0.52
	No	22,555	0.89	0.89	22,474	0.87	0.87	1,529	0.69	0.62
	Exited[b]	2,043	0.89	0.88	2,106	0.86	0.86	71	0.83	0.76

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Decision Accuracy and Decision Consistency

For HSA Government tests, students are classified into one of two performance levels: Proficiency or Basic. For HS MISA tests, students are classified into one of four performance levels: Partially Met Expectations, Approached Expectations, Met Expectations, or Exceeded Expectations. The accuracy of decisions based on the specified cut score was assessed for reliability of classification using the computer program called *BB-CLASS* (Brennan, 2004). *BB-CLASS* provides two statistics that describe the reliability of classifications based on test scores (Livingston & Lewis, 1995). Specifically, information from an administration of one form is used to estimate the following:

> ***Decision accuracy***, or the extent to which test takers are classified, on the basis of their estimated ability, into the same performance level as they should be on the basis of their true ability. Decision accuracy addresses the question: How does the actual classification of test takers, based on their single-form scores, agree with the classification that would be made on the basis of their true scores, if their true scores were somehow known?
>
> ***Decision consistency***, or the extent to which test takers are classified into the same performance level if they take the same test one more time. Decision consistency addresses the question: What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test?

BB-CLASS estimates decision accuracy using an estimated joint distribution of reported performance-level classifications on the current form of the exam and the performance-level classifications based on an all-forms average (true score). *BB-CLASS* estimates decision consistency using an estimated joint distribution of reported performance-level classifications on the current form of the exam and performance-level classifications on the alternate (parallel) form. In each case, the proportion of performance-level classifications with exact agreement is the sum of the entries in the diagonal of the contingency table representing the joint distribution.

Along with the observed frequency distribution of scaled scores, *BB-CLASS* requires an estimate of score reliability for the total test. To that end, IRT marginal reliability was used.

For the January, May, and summer 2019 HSA Government forms, decision accuracy and consistency were calculated across performance levels. The results are provided in Tables 6-6 to 6-8. For the January and May 2019 HS MISA forms, decision accuracy and consistency were also calculated across performance levels. The results are provided in Tables 6-9 and 6-10.

Note that in all cases the decision accuracy indices tend to be somewhat larger than the decision consistency indices. This is due to the differences in the estimation procedures. The estimation procedure for decision accuracy includes a random component on one of the two variables, whereas in estimating decision consistency each variable includes a random component (Livingston & Lewis, 1995).

Table 6-6. Decision Accuracy and Consistency: HSA Government January 2019 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
	Forms A–C			
	394–650	0.65	0.03	0.68
Decision Accuracy	240–393	0.07	0.25	0.32
	Estimated Proportion Correctly Classified*: Total = 0.90			
	394–650	0.63	0.05	0.69
Decision Consistency	240–393	0.09	0.23	0.31
	Estimated Proportion Consistently Classified*: Total = 0.86			
	Form AA–AC			
	394–650	0.64	0.03	0.67
Decision Accuracy	240–393	0.07	0.26	0.33
	Estimated Proportion Correctly Classified*: Total = 0.90			
	394–650	0.62	0.05	0.68
Decision Consistency	240–393	0.09	0.24	0.32
	Estimated Proportion Consistently Classified*: Total = 0.86			
	Accommodated Form X			
	394–650	0.92	0.08	1.00
Decision Accuracy	240–393	0.00	0.00	0.00
	Estimated Proportion Correctly Classified*: Total = 0.92			
	394–650	0.85	0.07	0.93
Decision Consistency	240–393	0.06	0.01	0.07
	Estimated Proportion Consistently Classified*: Total = 0.87			

** Inconsistencies between cell entries and totals are due to rounding.*

Table 6-7. Decision Accuracy and Consistency: HSA Government May 2019 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
	Forms D–H, J			
Decision Accuracy	394–650	0.25	0.02	0.27
	240–393	0.02	0.71	0.73
	Estimated Proportion Correctly Classified*: Total = 0.96			
Decision Consistency	394–650	0.25	0.02	0.27
	240–393	0.03	0.70	0.73
	Estimated Proportion Consistently Classified*: Total = 0.95			
	Form K–P			
Decision Accuracy	394–650	0.26	0.02	0.27
	240–393	0.02	0.71	0.73
	Estimated Proportion Correctly Classified*: Total = 0.96			
Decision Consistency	394–650	0.25	0.02	0.28
	240–393	0.02	0.70	0.72
	Estimated Proportion Consistently Classified*: Total = 0.95			
	Accommodated Form Y			
Decision Accuracy	394–650	0.63	0.07	0.70
	240–393	0.15	0.15	0.30
	Estimated Proportion Correctly Classified*: Total = 0.77			
Decision Consistency	394–650	0.64	0.12	0.76
	240–393	0.14	0.11	0.24
	Estimated Proportion Consistently Classified*: Total = 0.75			

** Inconsistencies between cell entries and totals are due to rounding.*

Table 6-8. Decision Accuracy and Consistency: HSA Government Summer 2019 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
	Forms Q			
Decision Accuracy	394–650	0.56	0.03	0.59
	240–393	0.12	0.29	0.41
	Estimated Proportion Correctly Classified*: Total = 0.85			
Decision Consistency	394–650	0.55	0.08	0.63
	240–393	0.12	0.25	0.37
	Estimated Proportion Consistently Classified*: Total = 0.80			
	Accommodated Form Z			
Decision Accuracy	394–650	0.87	0.13	1.00
	240–393	0.00	0.00	0.00
	Estimated Proportion Correctly Classified*: Total = 0.87			
Decision Consistency	394–650	0.79	0.10	0.89
	240–393	0.08	0.03	0.11
	Estimated Proportion Consistently Classified*: Total = 0.81			

** Inconsistencies between cell entries and totals are due to rounding.*

Table 6-9. Decision Accuracy and Consistency: HS MISA January 2019 Forms

Index	Placement Scores	Partially Met Expectations	Approached Expectations	Met Expectations	Exceeded Expectations	Category Total*
			Forms A - C			
Decision Accuracy	650 - 729	0.18	0.03	0.00	0.00	0.22
	730 - 749	0.06	0.34	0.06	0.00	0.46
	750 - 774	0.00	0.04	0.25	0.01	0.31
	775 - 850	0.00	0.00	0.00	0.02	0.02
			Estimated Proportion Correctly Classified*: Total = 0.79			
Decision Consistency	650 - 729	0.17	0.06	0.00	0.00	0.23
	730 - 749	0.07	0.29	0.08	0.00	0.43
	750 - 774	0.00	0.07	0.22	0.01	0.31
	775 - 850	0.00	0.00	0.01	0.01	0.03
			Estimated Proportion Consistently Classified*: Total = 0.71			
			Forms AA – AC			
Decision Accuracy	650 - 729	0.18	0.04	0.00	0.00	0.22
	730 - 749	0.05	0.34	0.06	0.00	0.45
	750 - 774	0.00	0.05	0.25	0.02	0.32
	775 - 850	0.00	0.00	0.00	0.01	0.01
			Estimated Proportion Correctly Classified*: Total = 0.78			
Decision Consistency	650 - 729	0.17	0.06	0.00	0.00	0.24
	730 - 749	0.06	0.29	0.08	0.00	0.42
	750 - 774	0.00	0.08	0.22	0.02	0.32
	775 - 850	0.00	0.00	0.01	0.01	0.02
			Estimated Proportion Consistently Classified*: Total = 0.69			
			Accommodated Form X			
Decision Accuracy	650 - 729	0.32	0.05	0.00	0.00	0.37
	730 - 749	0.20	0.39	0.04	0.00	0.63
	750 - 774	0.00	0.00	0.00	0.00	0.00
	775 - 850	0.00	0.00	0.00	0.00	0.00
			Estimated Proportion Correctly Classified*: Total = 0.71			
Decision Consistency	650 - 729	0.33	0.13	0.01	0.00	0.47
	730 - 749	0.18	0.30	0.03	0.00	0.51
	750 - 774	0.00	0.01	0.00	0.00	0.02
	775 - 850	0.00	0.00	0.00	0.00	0.00
			Estimated Proportion Consistently Classified*: Total = 0.63			

** Inconsistencies between cell entries and totals are due to rounding.*

Table 6-10. Decision Accuracy and Consistency: HS MISA May 2019 Forms

Index	Placement Scores	Partially Met Expectations	Approached Expectations	Met Expectations	Exceeded Expectations	Category Total*
			Forms D – H, K – M			
Decision Accuracy	650 - 729	0.16	0.03	0.00	0.00	0.19
	730 - 749	0.05	0.36	0.05	0.00	0.46
	750 - 774	0.00	0.05	0.27	0.02	0.33
	775 - 850	0.00	0.00	0.01	0.02	0.03
			Estimated Proportion Correctly Classified*: Total = 0.81			
Decision Consistency	650 - 729	0.15	0.05	0.00	0.00	0.20
	730 - 749	0.05	0.31	0.07	0.00	0.44
	750 - 774	0.00	0.07	0.24	0.02	0.33
	775 - 850	0.00	0.00	0.01	0.02	0.04
			Estimated Proportion Consistently Classified*: Total = 0.73			
			Forms N – P, S – W, AD			
Decision Accuracy	650 - 729	0.16	0.03	0.00	0.00	0.19
	730 - 749	0.05	0.35	0.06	0.00	0.45
	750 - 774	0.00	0.05	0.27	0.02	0.33
	775 - 850	0.00	0.00	0.01	0.02	0.03
			Estimated Proportion Correctly Classified*: Total = 0.79			
Decision Consistency	650 - 729	0.15	0.06	0.00	0.00	0.20
	730 - 749	0.06	0.30	0.07	0.00	0.43
	750 - 774	0.00	0.07	0.24	0.02	0.33
	775 - 850	0.00	0.00	0.01	0.02	0.04
			Estimated Proportion Consistently Classified*: Total = 0.71			
			Accommodated Form Y			
Decision Accuracy	650 - 729	0.39	0.10	0.00	0.00	0.49
	730 - 749	0.11	0.36	0.03	0.00	0.51
	750 - 774	0.00	0.00	0.00	0.00	0.00
	775 - 850	0.00	0.00	0.00	0.00	0.00
			Estimated Proportion Correctly Classified*: Total = 0.76			
Decision Consistency	650 - 729	0.36	0.14	0.00	0.00	0.50
	730 - 749	0.15	0.30	0.02	0.00	0.47
	750 - 774	0.00	0.02	0.01	0.00	0.02
	775 - 850	0.00	0.00	0.00	0.00	0.00
			Estimated Proportion Consistently Classified*: Total = 0.67			

** Inconsistencies between cell entries and totals are due to rounding.*

Section 7. Student Characteristics

Summary Statistics

This section presents summary statistics for the High School Assessment Government (HSA Government) and High School Maryland Integrated Science Assessment (HS MISA). The results presented in Tables 7-1 and 7-2 are based on the combined results for students who took the HSA Government tests in January, May, or summer 2019 and the combined results for students who took the HS MISA tests in January or May 2019. Summary statistics (count, mean, and standard deviation) of scale scores in Table 7-1 are reported for all students and by grade for HSA Government and HS MISA. Table 7-2 reports the summary statistics of scores per administration of HSA Government and HS MISA.

Table 7-1. Means and Standard Deviations Overall and by Grade for HSA Government and HS MISA

	N	*Mean*	*SD*
HSA Government			
Overall	83,166	399.9	53.9
Grade			
Not Provided	15	*	*
8	2	*	*
9	22,522	409.3	50.5
10	39,728	410.7	49.8
11	14,678	374.6	53.3
12	6,221	356.9	52.0
HS MISA			
Overall	68,411	743.2	16.8
Grade			
Not Provided	5	*	*
8	1	*	*
9	17,554	739.8	16.2
10	35,220	746.0	16.8
11	13,874	742.0	16.2
12	1,757	732.6	13.7

Note. Statistics not reported for sample size less than 50 (N < 50). Grade not provided reflects the small number of students whose grade was not provided in the rostering data.

Table 7-2. 2019 Mean Scale Scores by Administration for HSA Government and HS MISA

	January			May			Summer[1]		
	N	*Mean*	*SD*	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
HSA Government	17,223	367.8	49.0	65,048	408.8	51.8	895	368.6	47.2
HS MISA	14,178	741.9	16.8	54,233	743.6	16.7	--	--	--

[1] *HSA Science was not administered in summer 2019.*

The HSA Government mean scale scores and percentage passing rates are presented for the years 2003 to 2019 in Table 7-3.

Table 7-3. HSA Government Percentage Passing Rates Over Test Years

Year	Mean Scaled Score	Percentage Passing	Percentage Passing – January[1]	Percentage Passing – May[1]	Percentage Passing – Summer[1]
2003	403.5	39.8	--	--	--
2004	406.5	54.6	--	--	--
2005	409.3	67.1	--	--	--
2006	418.5	74.1	--	--	--
2007	417.1	73.3	--	--	--
2008	417.1	71.5	--	--	--
2009	406.3	61.1	--	--	--
2010	408.6	61.7	--	--	--
2011	405.6	62.1	--	--	--
2012	--	*	--	--	--
2013	414.7	72.4	--	--	--
2014	417.6	76.5	--	--	--
2015	412.2	71.8	--	--	--
2016	405.4	62.7	--	--	--
2017	403.6	61.6	--	--	--
2018	403.2	62.5	--	--	--
2019	399.9	60.3	26.4	69.8	29.4

** The Government test was not administered after the May 2011 administration until January 2013, when it was introduced into the HSAs.*

[1] Prior to 2019, the percent of students passing was not disaggregated by testing window (i.e., January, May, and Summery).

The HS MISA mean scale score and performance level percentage distribution are presented for 2019 in Table 7-4.

Table 7-4. 2019 HS MISA Performance Level Distributions

Admin/Year	Partially Met Expectations	Approached Expectations	Met Expectations	Exceeded Expectation
January 2019	25.0	42.7	29.8	2.5
May 2019	21.8	43.2	31.3	3.7
2019 – Overall	22.4	43.1	31.0	3.4

Summary statistics on HSA Government for all students and for subgroups based on gender, special education programs, ethnicity, and English language proficiency are presented in Tables 7-5 to 7-7. Summary statistics on HS MISA for all students and for subgroups based on gender, special education programs, ethnicity, and English language proficiency are presented in Tables 7-8 to 7-9. These tables include the numbers of students tested for whom valid scores were available, mean scale scores, and standard deviations of scale scores. In addition, raw score reliabilities are provided for the overall group of test takers and for subgroups. Figure 7-1 shows the distribution of total scale scores for HSA Government for the May 2019 administration. Figure 7-2 shows the distribution of total scale scores for HS MISA for the May 2019 administration.

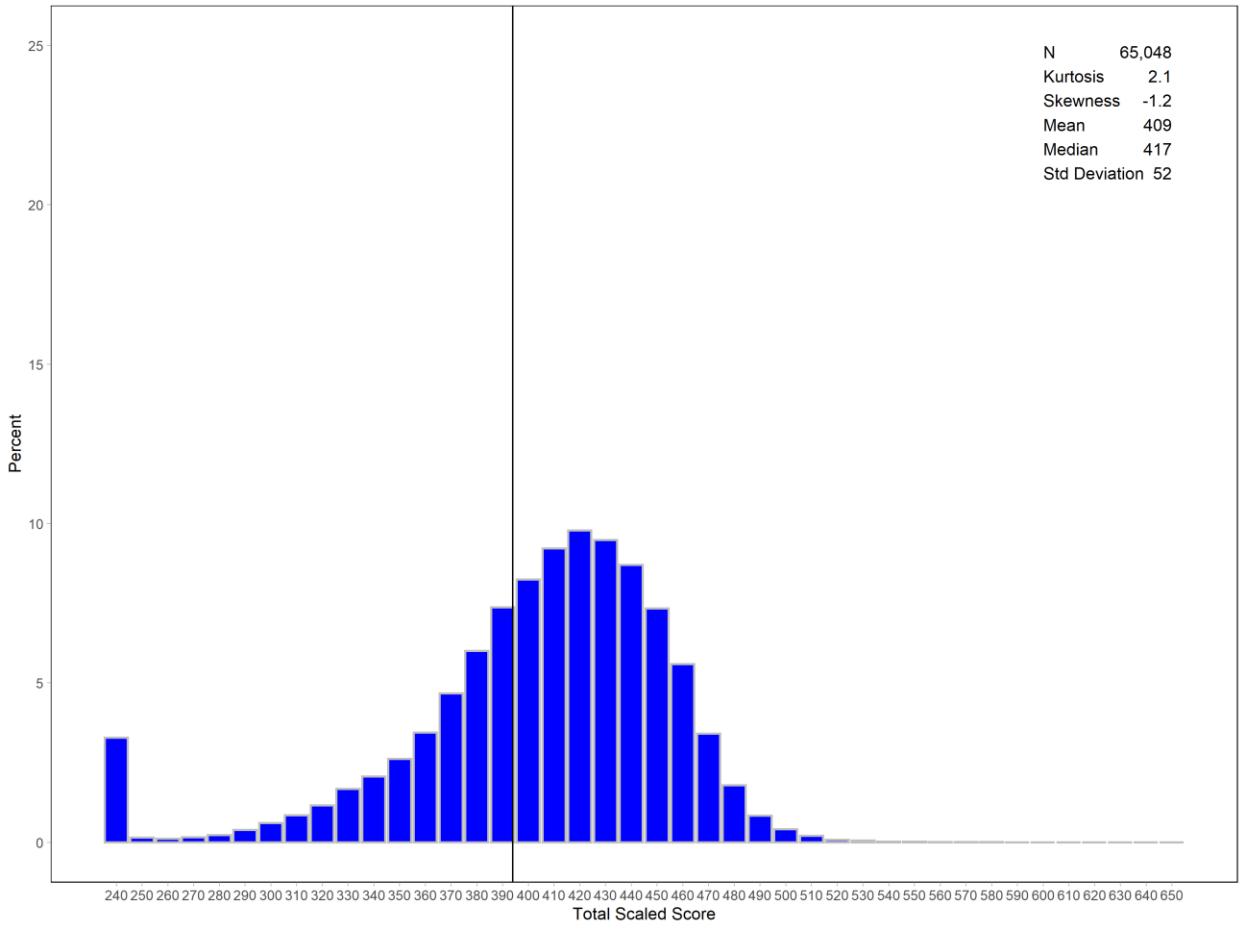

Figure 7-1. Total Scale Score Distribution for HSA Government May 2019 Administration

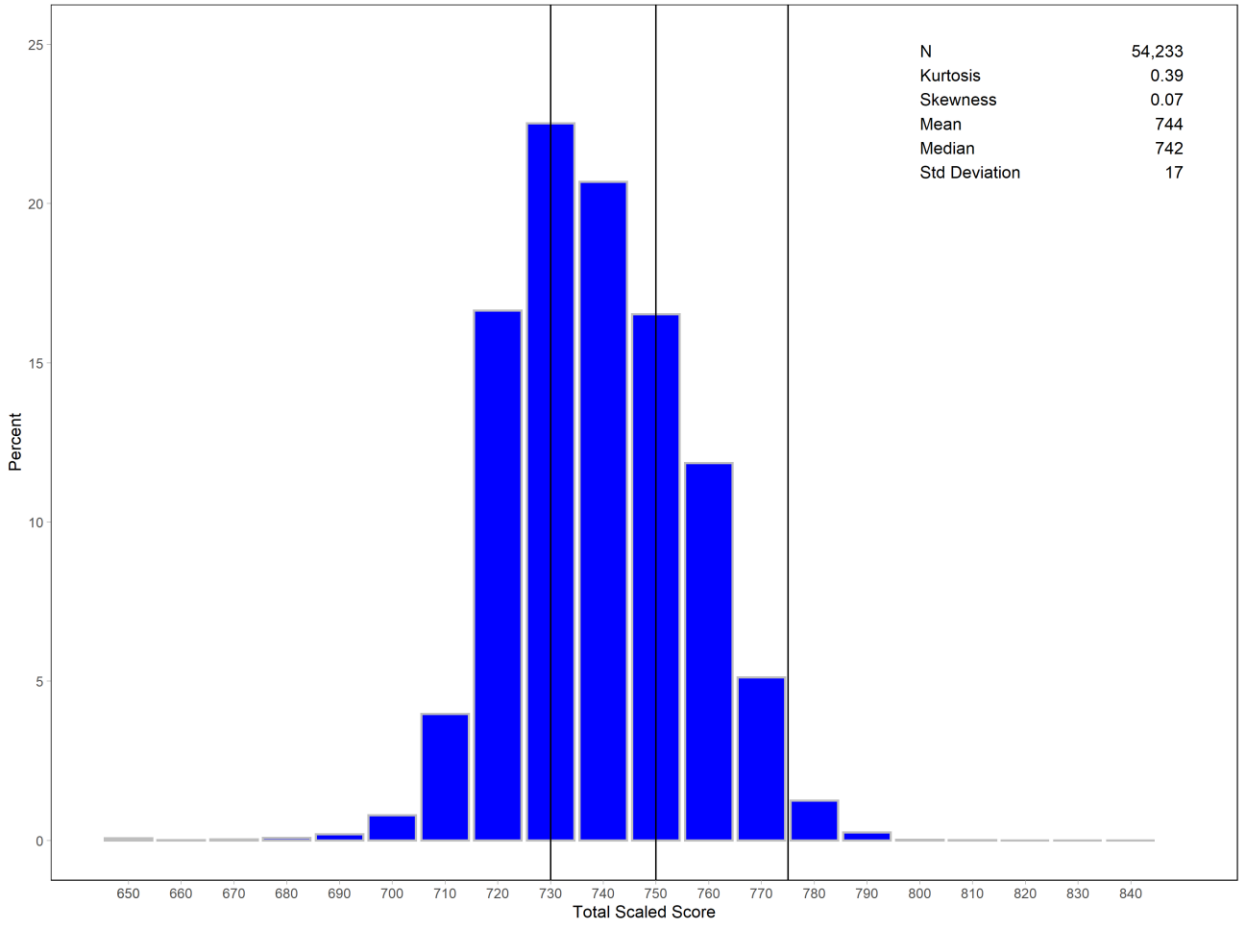

Figure 7-2. Total Scale Score Distribution for HS MISA May 2019 Administration

Table 7-5. Scaled Score Summary Statistics for HSA Government: January 2019 Forms

		Forms A–C				Forms AA–AC				Accommodated Form X			
		Mean	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*
Overall		370.2	48.7	7,694	100.0	370.6	49.4	7,760	100.0	345.6	42.9	1,769	100.0
Gender	Male	367.8	49.6	4,155	54.0	368.7	50.7	4,201	54.1	344.7	44.7	1,113	62.9
	Female	373.1	47.4	3,539	46.0	372.7	47.8	3,559	45.9	347.1	39.7	656	37.1
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
Grade	8	--	--	0	0.0	--	--	1	0.0	--	--	1	0.1
	9	410.3	48.1	728	9.5	413.2	47.3	690	8.9	331.7	50.0	61	3.4
	10	375.0	47.7	2,020	26.3	376.1	48.2	2,055	26.5	349.6	45.1	546	30.9
	11	362.3	44.0	2,736	35.6	363.0	44.2	2,793	36.0	344.8	41.0	711	40.2
	12	362.6	48.2	2,210	28.7	361.6	49.9	2,220	28.6	343.8	41.8	450	25.4
	Missing	--	--	0	0.0	--	--	1	0.0	--	--	0	0.0
Special Education	Yes	347.8	43.9	1,474	19.2	347.6	45.7	1,469	18.9	345.0	42.7	1,044	59.0
	No	375.6	48.3	5,632	73.2	375.7	49.1	5,618	72.4	344.7	42.9	680	38.4
	Exited	371.2	49.7	209	2.7	375.3	46.7	221	2.8	--	--	8	0.5
	Exited & placed in 504[a]	--	--	35	0.5	390.5	37.9	54	0.7	--	--	5	0.3
	504	375.8	47.9	344	4.5	378.0	45.7	398	5.1	--	--	32	1.8
Ethnicity	American Indian	--	--	17	0.2	--	--	20	0.3	--	--	4	0.2
	Asian	379.2	52.8	211	2.7	390.9	52.0	214	2.8	346.7	39.5	50	2.8
	African American	359.9	44.1	3,831	49.8	360.5	44.4	3,838	49.5	338.0	44.6	608	34.4
	Hawaiian/Pacific Islander	--	--	13	0.2	--	--	10	0.1	--	--	2	0.1
	White	399.2	46.1	1,850	24.0	400.1	47.0	1,894	24.4	359.8	40.1	393	22.2
	Hispanic	354.2	48.9	1,073	13.9	351.3	50.1	1,080	13.9	343.1	41.1	526	29.7
	Multi-Ethnic	372.0	44.6	699	9.1	369.6	43.6	704	9.1	347.3	41.8	186	10.5
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
Limited English Proficient	Yes	342.6	44.4	1,130	14.7	341.4	46.6	1,127	14.5	342.1	42.0	707	40.0
	No	374.6	48.1	6,320	82.1	375.1	48.5	6,396	82.4	347.3	43.8	1,017	57.5
	Exited[b]	385.8	38.5	244	3.2	385.8	37.8	237	3.1	--	--	45	2.5

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 7-6. Summary Statistics for HSA Government: May 2019 Forms

		Forms D–J				Forms K–P				Accommodated Form Y			
		Mean	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*
Overall		412.0	49.7	30,918	100.0	411.9	50.1	30,714	100.0	352.9	54.1	3,416	100.0
Gender	Male	408.1	53.7	15,564	50.3	408.8	53.7	15,312	49.9	350.4	56.3	2,148	62.9
	Female	415.8	45.0	15,350	49.6	414.9	46.1	15,396	50.1	357.0	49.6	1,264	37.0
	Missing	--	--	4	0.0	--	--	6	0.0	--	--	4	0.1
Grade	8	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
	9	413.0	47.5	9,965	32.2	413.2	47.9	9,921	32.3	339.7	55.1	959	28.1
	10	418.6	45.8	16,768	54.2	418.3	46.1	16,571	54.0	363.5	52.2	1,523	44.6
	11	389.0	56.5	3,661	11.8	390.0	56.5	3,653	11.9	350.4	51.6	824	24.1
	12	342.4	60.1	520	1.7	342.2	64.6	563	1.8	336.7	56.9	106	3.1
	Missing	--	--	4	0.0	--	--	6	0.0	--	--	4	0.1
Special Education	Yes	367.4	55.7	2,618	8.5	366.5	55.6	2,579	8.4	351.6	53.5	2,169	63.5
	No	416.2	47.2	25,798	83.4	416.0	47.7	25,574	83.3	350.7	53.6	1,130	33.1
	Exited	417.0	41.1	789	2.6	417.7	44.5	850	2.8	--	--	25	0.7
	Exited & placed in 504[a]	416.7	45.8	179	0.6	428.0	37.1	192	0.6	--	--	10	0.3
	504	414.3	47.8	1,530	4.9	414.3	46.3	1,513	4.9	407.2	47.8	78	2.3
Ethnicity	American Indian	414.9	35.4	73	0.2	408.7	35.1	72	0.2	--	--	7	0.2
	Asian	441.9	39.2	2,105	6.8	441.2	40.5	2,133	6.9	370.6	50.9	100	2.9
	African American	394.9	49.6	11,579	37.5	394.9	49.7	11,358	37.0	341.7	54.3	1,212	35.5
	Hawaiian/Pacific Islander	--	--	36	0.1	--	--	38	0.1	--	--	2	0.1
	White	432.0	37.9	10,695	34.6	431.6	39.5	10,628	34.6	371.7	51.9	714	20.9
	Hispanic	385.0	58.8	3,112	10.1	386.5	59.1	3,117	10.1	346.6	53.5	888	26.0
	Multi-Ethnic	412.9	44.6	3,314	10.7	412.3	44.5	3,362	10.9	360.8	48.1	489	14.3
	Missing	--	--	4	0.0	--	--	6	0.0	--	--	4	0.1
Limited English Proficient	Yes	353.3	55.6	1,990	6.4	353.9	56.7	2,009	6.5	349.2	51.4	1,254	36.7
	No	415.3	47.7	25,906	83.8	415.2	48.2	25,589	83.3	352.2	55.7	2,003	58.6
	Exited[b]	422.1	35.4	3,018	9.8	422.5	35.4	3,110	10.1	390.4	36.4	155	4.5

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 7-7. Summary Statistics for HSA Government: Summer 2019 Forms

		Form Q				Accommodated Form Z			
		Mean	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*
Overall		371.9	47.2	755	100.0	350.4	43.2	140	100.0
Gender	Male	369.8	47.2	444	58.8	352.8	43.5	110	78.6
	Female	375.0	47.1	311	41.2	--	--	30	21.4
	Missing	--	--	0	0.0	--	--	0	0.0
Grade	8	--	--	0	0.0	--	--	0	0.0
	9	381.5	47.3	173	22.9	--	--	25	17.9
	10	367.8	47.2	212	28.1	--	--	33	23.6
	11	372.0	46.3	246	32.6	351.4	39.5	54	38.6
	12	365.5	47.3	124	16.4	--	--	28	20.0
	Missing	--	--	0	0.0	--	--	0	0.0
Special Education	Yes	351.6	49.5	163	21.6	342.0	45.9	82	58.6
	No	376.6	45.1	546	72.3	361.9	37.5	53	37.9
	Exited	--	--	10	1.3	--	--	2	1.4
	Exited & placed in 504[a]	--	--	0	0.0	--	--	0	0.0
	504	--	--	36	4.8	--	--	3	2.1
Ethnicity	American Indian	--	--	2	0.3	--	--	0	0.0
	Asian	--	--	23	3.0	--	--	5	3.6
	African American	368.8	47.2	388	51.4	348.2	45.9	79	56.4
	Hawaiian/Pacific Islander	--	--	1	0.1	--	--	0	0.0
	White	384.7	43.9	137	18.1	--	--	22	15.7
	Hispanic	357.2	49.1	115	15.2	--	--	24	17.1
	Multi-Ethnic	378.9	43.7	89	11.8	--	--	10	7.1
	Missing	--	--	0	0.0	--	--	0	0.0
Limited English Proficient	Yes	353.3	46.9	96	12.7	--	--	31	22.1
	No	373.2	47.5	615	81.5	350.4	44.3	106	75.7
	Exited[b]	--	--	44	5.8	--	--	3	2.1

** Statistics not reported for sample size less than 50 (N < 50).*

[a] *A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.*

[b] *LEP Exited indicates students who have exited English language acquisition services.*

Table 7–8. Summary Statistics for HS MISA: January 2019 Forms

		Forms A–C				Forms AA–AC				Accommodated Form X			
		Mean	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*
Overall		742.8	16.5	6,727	100.0	742.3	17.1	6,788	100.0	729.5	12.2	663	100.0
Gender	Male	741.5	16.4	3,444	51.2	741.8	17.4	3,475	51.2	728.5	12.8	432	65.2
	Female	744.2	16.4	3,283	48.8	742.8	16.7	3,313	48.8	731.5	10.8	231	34.8
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
Grade	8	--	--	1	0.0	--	--	0	0.0	--	--	0	0.0
	9	738.6	16.0	708	10.5	737.7	17.4	671	9.9	726.8	8.6	62	9.4
	10	747.2	17.9	2,100	31.2	746.9	17.9	2,204	32.5	729.7	12.2	153	23.1
	11	742.5	15.3	3,327	49.5	741.7	15.9	3,301	48.6	731.4	11.2	342	51.6
	12	733.9	13.1	591	8.8	733.9	14.6	612	9.0	725.0	15.6	106	16.0
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
Special Education	Yes	733.8	13.2	533	7.9	732.5	13.9	557	8.2	729.5	12.3	511	77.1
	No	743.6	16.6	5,603	83.3	743.3	17.1	5,685	83.8	727.6	10.2	129	19.5
	Exited	743.7	17.1	185	2.8	742.5	15.9	166	2.4	--	--	4	0.6
	Exited & placed in 504[a]	--	--	41	0.6	--	--	39	0.6	--	--	5	0.8
	504	743.7	15.7	365	5.4	741.9	16.7	341	5.0	--	--	14	2.1
Ethnicity	American Indian	--	--	12	0.2	--	--	13	0.2	--	--	1	0.2
	Asian	750.3	17.0	413	6.1	750.5	17.0	426	6.3	--	--	30	4.5
	African American	734.6	13.4	2,200	32.7	733.9	14.9	2,207	32.5	726.8	13.2	242	36.5
	Hawaiian/Pacific Islander	--	--	10	0.1	--	--	9	0.1	--	--	0	0.0
	White	750.3	15.5	2,688	40.0	750.0	15.7	2,644	39.0	733.2	12.4	158	23.8
	Hispanic	736.6	14.5	686	10.2	736.7	15.1	717	10.6	729.0	9.9	107	16.1
	Multi-Ethnic	741.6	15.0	718	10.7	740.8	15.5	772	11.4	730.2	10.7	125	18.9
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
Limited English Proficient	Yes	730.3	9.9	612	9.1	729.5	11.5	591	8.7	728.9	8.9	178	26.8
	No	744.0	16.7	5,784	86.0	743.5	17.1	5,845	86.1	729.7	13.4	453	68.3
	Exited[b]	744.4	13.0	331	4.9	743.2	14.8	352	5.2	--	--	32	4.8

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Table 7-9. Summary Statistics for HS MISA: May 2019 Forms

		Forms D–M				Forms N–P, S–W, AD				Accommodated Form Y			
		Mean	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*	*Mean*	*SD*	*N*	*%*
Overall		744.3	16.5	25,915	100.0	744.1	16.8	25,909	100.0	729.9	10.5	2,409	100.0
Gender	Male	742.9	16.7	12,788	49.3	742.9	16.9	12,857	49.6	729.5	10.5	1,470	61.0
	Female	745.6	16.3	13,127	50.7	745.4	16.7	13,052	50.4	730.4	10.4	934	38.8
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	5	0.2
Grade	8	--	--	0	0.0	--	--	0	0.0	--	--	0	0.0
	9	740.6	15.8	7,637	29.5	740.7	16.6	7,553	29.2	728.4	10.2	923	38.3
	10	746.5	16.5	14,854	57.3	746.2	16.6	14,970	57.8	730.7	10.7	939	39.0
	11	743.2	16.8	3,244	12.5	743.2	16.8	3,198	12.3	730.9	11.0	462	19.2
	12	731.4	12.6	180	0.7	730.9	12.5	188	0.7	730.7	6.9	80	3.3
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	5	0.2
Special Education	Yes	732.6	12.6	2,095	8.1	732.8	12.9	2,120	8.2	729.3	10.0	1,477	61.3
	No	745.5	16.5	21,631	83.5	745.4	16.9	21,603	83.4	729.7	10.2	818	34.0
	Exited	744.0	16.2	771	3.0	742.8	16.5	774	3.0	--	--	17	0.7
	Exited & placed in 504[a]	744.6	16.3	171	0.7	743.5	16.4	148	0.6	--	--	8	0.3
	504	743.4	15.8	1,247	4.8	743.2	15.5	1,264	4.9	740.1	15.5	84	3.5
Ethnicity	American Indian	745.1	17.3	70	0.3	742.0	16.6	60	0.2	--	--	11	0.5
	Asian	757.7	17.2	1,309	5.1	757.0	17.5	1,321	5.1	733.8	13.1	75	3.1
	African American	738.3	14.2	9,654	37.3	738.2	14.6	9,645	37.2	728.0	9.4	799	33.2
	Hawaiian/Pacific Islander	--	--	34	0.1	--	--	27	0.1	--	--	2	0.1
	White	749.7	16.0	10,063	38.8	749.6	16.2	10,095	39.0	732.7	11.6	629	26.1
	Hispanic	738.5	15.6	2,472	9.5	738.0	16.5	2,415	9.3	729.5	9.3	558	23.2
	Multi-Ethnic	744.0	16.2	2,313	8.9	744.0	16.0	2,346	9.1	728.6	10.7	330	13.7
	Missing	--	--	0	0.0	--	--	0	0.0	--	--	5	0.2
Limited English Proficient	Yes	730.4	12.2	1,317	5.1	729.1	12.6	1,329	5.1	729.0	9.5	804	33.4
	No	744.8	16.4	22,555	87.0	744.7	16.7	22,474	86.7	729.9	10.7	1,529	63.5
	Exited[b]	747.0	16.0	2,043	7.9	747.3	15.9	2,106	8.1	738.8	13.4	71	2.9

** Statistics not reported for sample size less than 50 (N < 50).*

[a] A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.

[b] LEP Exited indicates students who have exited English language acquisition services.

Demographic Characteristics

Demographic characteristics of the students who took the January, May, and summer HSA Government tests and January and May HS MISA tests are presented in Tables 7-10 and 7-11.

Table 7-10. Demographic Information for 2019 HSA Government—Combined Forms

		January		May		Summer	
		N	*%*	*N*	*%*	*N*	*%*
Overall		17,223	100.0	65,078	100.0	895	100.0
Gender	Male	9,469	55.0	33,024	50.7	554	61.9
	Female	7,754	45.0	32,010	49.2	341	38.1
	Missing	0	0.0	0	0.0	0	0.0
Special Education	Yes	3,987	23.1	7,366	11.3	245	27.4
	No	11,930	69.3	52,502	80.7	599	66.9
	Exited	438	2.5	1,664	2.6	12	1.3
	Exited & placed in 504[a]	94	0.5	381	0.6	0	0.0
	504	774	4.5	3,121	4.8	39	4.4
Ethnicity	American Indian	41	0.2	152	0.2	2	0.2
	Asian	475	2.8	4,338	6.7	28	3.1
	African American	8,277	48.1	24,149	37.1	467	52.2
	Hawaiian/ Pacific Islander	25	0.1	76	0.1	1	0.1
	White	4,137	24.0	22,037	33.9	159	17.8
	Hispanic	2,679	15.6	7,117	10.9	139	15.5
	Multi-Ethnic	1,589	9.2	7,165	11.0	99	11.1
	Missing	0	0.0	44	0.1	0	0.0
Limited English Proficient	Yes	2,964	17.2	5,253	8.1	127	14.2
	No	13,733	79.7	53,498	82.2	721	80.6
	Exited[b]	526	3.1	6,283	9.7	47	5.3

[a] *A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.*

[b] *LEP Exited indicates students who have exited English language acquisition services.*

Table 7-11. Demographic Information for 2019 HS MISA—Combined Forms

		January		May	
		N	*%*	*N*	*%*
Overall		14,178	100.0	54,233	100.0
Gender	Male	7,351	51.8	27,115	50.0
	Female	6,827	48.2	27,113	50.0
	Missing	0	0.0	0	0.0
Special Education	Yes	1,601	11.3	5,692	10.5
	No	11,417	80.5	44,052	81.2
	Exited	355	2.5	1,562	2.9
	Exited & placed in 504[a]	85	0.6	327	0.6
	504	720	5.1	2,595	4.8
Ethnicity	American Indian	26	0.2	141	0.3
	Asian	869	6.1	2,705	5.0
	African American	4,649	32.8	20,098	37.1
	Hawaiian/ Pacific Islander	19	0.1	63	0.1
	White	5,490	38.7	20,787	38.3
	Hispanic	1,510	10.7	5,445	10.0
	Multi-Ethnic	1,615	11.4	4,989	9.2
	Missing	0	0.0	5	0.0
Limited English Proficient	Yes	1,381	9.7	3,450	6.4
	No	12,082	85.2	46,558	85.8
	Exited[b]	715	5.0	4,220	7.8

[a] *A 504 plan is a legal document falling under the provisions of the Rehabilitation Act of 1973 that provides a program of instructional services to assist students with special needs who are in a regular education setting.*

[b] *LEP Exited indicates students who have exited English language acquisition services*

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Section 8. Field Test Analyses

Following the receipt of the final score file from eMetric for each administration, analyses were implemented to obtain classical item analyses and differential item functioning (DIF) for High School Assessment Government (HSA Government) and High School Maryland Integrated Science Assessment (HS MISA). Once the classical item analyses were run, the field test items were evaluated psychometrically and submitted to item response theory (IRT) calibration and scaling analyses to obtain IRT item parameter estimates.

Classical Item Analyses

Classical item analyses involve computing a set of statistics based on classical test theory for every item in each form. The statistics provide key information about the quality of the items from an empirical perspective. The following outlines the statistics estimated for the field test items in the 2019 HS MISA and HSA Government tests. The criteria for flagging the items for content specialists' review are also described below.

Classical item difficulty (p-value): This statistic indicates the mean item score expressed as a proportion of the maximum obtainable item score. For selected-response (SR) items, it is equivalent to the proportion of test takers in the sample that answered the item correctly. For constructed-response (CR) items, the average item score is divided by the maximum score points to obtain the *p*-value. Desired *p*-values for SR items generally fall within the range of 0.25 to 0.90. Occasionally, items that fall outside this range can be justified for inclusion in an item bank based on the quality and educational importance of the item content or the ability to measure students with very high or low achievement, especially if the students have not yet received instruction in the content.

Classical item discrimination (item-total correlation): This statistic describes the relationship between performance on the specific item and performance on the total test, including the item under study. For dichotomously-scored items, the item-total correlation is the point-biserial correlation between the key and the total raw score. For polytomously-scored items, the item-total correlation is the point-polyserial correlation between the item score and the total raw score. Values less than 0.20 are generally considered to indicate a weaker than desired relationship; therefore, these items receive careful consideration by Cognia and Maryland State Department of Education (MSDE) staff before including them on future forms. Items with negative correlations may indicate serious problems with the item content (e.g., multiple correct answers, incorrect key, unusually complex content, or unfamiliarity with the test content).

Point-biserial correlation of incorrect response option (SR items) with the total raw score: These statistics describe the relationship between selecting an incorrect response option for a specific item and performance on the total test, including the item under study. Typically, the correlation between an incorrect answer and total test performance is weak or negative. Values are typically compared and contrasted with the discrimination index. When the magnitude of a point-biserial correlation for an incorrect answer is strong relative to the correct answer, the item is carefully reviewed for content-related problems. Alternatively, positive point-biserial correlations on incorrect options may indicate that students have not had sufficient opportunity to learn the material.

Percentage of students omitting an item: This statistic is useful for identifying problems with test features, such as testing time and item/test layout. Typically, it is assumed that if students have an adequate amount of testing time, at least 95 percent of them should attempt to answer each question. When a pattern of omit percentages exceeds 5 percent for a series of SR/technology-enhanced (TE) items or 15 percent for CR items at the end of a timed section, this may indicate insufficient time for students to complete all items. For individual items, if the omit percentage is greater than 5 percent for a single SR/TE item or 15 percent for a CR item, this could be an indication of an item/test layout problem. For example, students might accidentally skip an item that follows a lengthy stem.

Proportion of students choosing each response option (SR items): This statistic indicates the proportion of test takers selecting each answer choice, or option. Options not selected by any students or selected by a very low proportion of students may indicate problems with plausibility of the option. Items that do not have all answer options functioning may be discarded or revised and field tested again.

Frequency distribution of CR score points: Observation of the distribution of scores is useful to identify how well the item is functioning. If no students are assigned the top score point, this may indicate that the item is not functioning with respect to the scoring rubric, there are problems with the item content, or students have not been taught the content.

A series of flags was created to identify items with extreme values. Flagged items were subject to additional scrutiny prior to the inclusion of the items in the final calibrations. The following flagging criteria were applied to all items tested in 2019:

- *Difficulty flag*: *p*-value is less than 0.10 or greater than 0.90.
- *Discrimination flag:* Item-total correlation is less than 0.10.
- *Distractor flag:* SR point-biserial correlation is positive for an incorrect option, or the magnitude of a point-biserial correlation for an incorrect answer is strong relative to the correct answer.
- *Omit flag:*
    - Percentage omitted is greater than 5 percent for SR or TE items.
    - Percentage omitted is greater than 15 percent for CR items.

Distributions of *p*-values and item-total correlations for the HSA Government field test items administered in January and May 2019 are presented in Tables 8-1 and 8-2, respectively. Corresponding results for the HS MISA field test items administered in January and May are shown in Tables 8-3 and 8-4, respectively. The distribution of *p*-values and item-total correlations in Tables 8-1 to 8-4 are disaggregated between items that are selected-response items and items of all other (non-SR) item types. For both HSA Government and HS MISA, the non-SR item types were TE, MSR, and CR.

The corresponding item-level classical statistics are presented in Appendix C.

Table 8-1. Distribution of *p*-Values for HSA Government January and May 2019 Field Test Items

	January				May			
	SR Items		Non-SR Items		SR Items		Non-SR Items	
	N	%	N	%	N	%	N	%
$p < 0.10$	0	0.0	2	8.3	0	0.0	0	0.0
$0.10 \leq p < 0.20$	1	2.6	1	4.2	1	1.7	0	0.0
$0.20 < p < 0.30$	6	15.8	5	20.8	7	11.9	3	4.2
$0.30 \leq p < 0.40$	8	21.1	2	8.3	6	10.2	6	8.3
$0.40 \leq p < 0.50$	17	44.7	7	29.2	10	16.9	11	15.3
$0.50 \leq p < 0.60$	3	7.9	2	8.3	12	20.3	15	20.8
$0.60 \leq p < 0.70$	3	7.9	4	16.7	12	20.3	15	20.8
$0.70 \leq p < 0.80$	0	0.0	1	4.2	8	13.6	15	20.8
$0.80 \leq p < 0.90$	0	0.0	0	0.0	3	5.1	7	9.7
$p \geq 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
Descriptive Statistics								
Number of Items	38		24		59		72	
Mean	0.41		0.41		0.53		0.59	
SD	0.11		0.19		0.17		0.16	
Min	0.18		0.05		0.16		0.21	
Max	0.68		0.78		0.82		0.87	

Note. SR = Selected-Response Items, Non-SR items include all item types other than SR items

Table 8-2. Distribution of Item-Total Correlations for HSA Government January and May 2019 Field Test Items

	January				May			
	SR Items		Non-SR Items		SR Items		Non-SR Items	
	N	%	N	%	N	%	N	%
$r < 0.10$	4	10.5	0	0.0	6	10.2	0	0.0
$0.10 \leq r < 0.20$	2	5.3	0	0.0	2	3.4	0	0.0
$0.20 < r < 0.30$	11	28.9	0	0.0	8	13.6	0	0.0
$0.30 \leq r < 0.40$	6	15.8	8	33.3	6	10.2	7	9.7
$0.40 \leq r < 0.50$	14	36.8	8	33.3	22	37.3	14	19.4
$0.50 \leq r < 0.60$	1	2.6	2	8.3	14	23.7	19	26.4
$0.60 \leq r < 0.70$	0	0.0	6	25.0	1	1.7	24	33.3
$0.70 \leq r < 0.80$	0	0.0	0	0.0	0	0.0	8	11.1
$0.80 \leq r < 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
$r \geq 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
Descriptive Statistics								
Number of Items	38		24		59		72	
Mean	0.32		0.47		0.39		0.56	
SD	0.15		0.12		0.16		0.11	
Min	-0.04		0.31		-0.05		0.35	
Max	0.54		0.67		0.62		0.78	

Note. SR = Selected-Response Items, Non-SR items include all item types other than SR items

Table 8-3. Distribution of *p*-Values for HS MISA January and May 2019 Field Test Items

	January				May			
	SR Items		Non-SR Items		SR Items		Non-SR Items	
	N	%	N	%	N	%	N	%
$p < 0.10$	0	0.0	10	16.1	0	0.0	18	9.4
$0.10 \leq p < 0.20$	2	3.6	22	35.5	8	5.0	63	32.8
$0.20 < p < 0.30$	13	23.6	14	22.6	35	21.9	51	26.6
$0.30 \leq p < 0.40$	12	21.8	7	11.3	47	29.4	27	14.1
$0.40 \leq p < 0.50$	17	30.9	5	8.1	35	21.9	20	10.4
$0.50 \leq p < 0.60$	8	14.5	3	4.8	25	15.6	11	5.7
$0.60 \leq p < 0.70$	2	3.6	1	1.6	10	6.3	2	1.0
$0.70 \leq p < 0.80$	1	1.8	0	0.0	0	0.0	0	0.0
$0.80 \leq p < 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
$p \geq 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
Descriptive Statistics								
Number of Items	55		62		160		192	
Mean	0.39		0.22		0.39		0.25	
SD	0.12		0.14		0.13		0.14	
Min	0.14		0.03		0.10		0.00	
Max	0.71		0.66		0.66		0.70	

Note. SR = Selected-Response Items, Non-SR items include all item types other than SR items

Table 8-4. Distribution of Item-Total Correlations for HS MISA January and May 2019 Field Test Items

	January				May			
	SR Items		Non-SR Items		SR Items		Non-SR Items	
	N	%	N	%	N	%	N	%
$r < 0.10$	9	16.4	3	4.8	21	13.1	6	3.1
$0.10 \leq r < 0.20$	8	14.5	5	8.1	44	27.5	17	8.9
$0.20 < r < 0.30$	10	18.2	10	16.1	35	21.9	34	17.7
$0.30 \leq r < 0.40$	18	32.7	13	21.0	29	18.1	34	17.7
$0.40 \leq r < 0.50$	8	14.5	16	25.8	26	16.3	42	21.9
$0.50 \leq r < 0.60$	2	3.6	9	14.5	5	3.1	28	14.6
$0.60 \leq r < 0.70$	0	0.0	6	9.7	0	0.0	29	15.1
$0.70 \leq r < 0.80$	0	0.0	0	0.0	0	0.0	2	1.0
$0.80 \leq r < 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
$r \geq 0.90$	0	0.0	0	0.0	0	0.0	0	0.0
Descriptive Statistics								
Number of Items	55		62		160		192	
Mean	0.27		0.38		0.25		0.40	
SD	0.15		0.15		0.15		0.16	
Min	-0.07		0.07		-0.18		-0.03	
Max	0.53		0.66		0.53		0.71	

Note. SR = Selected-Response Items, Non-SR items include all item types other than SR items

Differential Item Functioning

Following the classical item analyses, differential item functioning (DIF) analyses were performed for HSA Government and HS MISA. One goal of test development is to assemble a set of items that provides an estimate of student ability that is as fair and accurate as possible for all groups within the population. DIF statistics are used to identify items in which focal groups of students (e.g., Females, African Americans, Hispanics) with the same underlying level of ability have different probabilities than reference groups (e.g., Males, Whites) of answering correctly. If the item is more difficult or easier for an identifiable focal subgroup, the item may be measuring something different than the intended construct. However, it is important to recognize that DIF-flagged items might be related to actual differences in relevant knowledge or skill (item impact) or statistical Type I error. A subsequent review by MSDE and Cognia content experts was conducted to investigate the source and meaning of evident differences.

The following groups were included in DIF comparison:

- Females (focal)—Males (reference)
- African Americans (focal)—Caucasians (reference)
- Hispanics (focal)—Caucasians (reference)
- Asian (focal)—Caucasians (reference)
- Hawaiian/Pacific Islander (focal)—Caucasians (reference)
- American Indian/Alaska Native (focal)—Caucasians (reference)
- English Language Learner (ELL) (focal)—Non-ELL (reference)
- Special Education (focal)—Non-Special Education (reference)

Cognia used the standardization method for dichotomous and polytomous items (Dorans & Kulick, 1986).

The standardization procedure (Dorans & Kulick, 1986; Dorans & Holland, 1993) is used in conjunction with the Mantel chi-square statistic (e.g., Holland & Thayer, 1988). In the standardization method, the matching variable is the total score on all items and the differences in the item score between the two comparison groups are calculated for each item. The standardized mean difference for the item is the weighted average of these differences, where the relative frequency of the focal group at each score point serves as the weighting function.

The flagging criteria for DIF are listed below. Positive values favor the focal group and negative values favor the reference group. The same DIF flagging criteria are used for HSA Government and HS MISA.

A) The item is classified as negligible DIF (A), if the Mantel Chi-square p-value ≤ 0.05; or the Mantel Chi-square p-value < 0.05 and the Standardized Mean Difference $|SMD/SD| \leq 0.17$.
B) The item is classified as moderate DIF (B), if the Mantel Chi-square p-value < 0.05 and $|SMD/SD|$ is between 0.17 and 0.25.
C) The item is classified as severe DIF (C), if the Mantel Chi-square p-value < 0.05 and $|SMD/SD| > 0.25$.

IRT Calibration and Scaling

The first administrations of HS MISA were in January and May of 2019. The IRT scale for HS MISA was established by performing a free calibration of the May 2019 operational items. The May 2019 administration was selected because the number of students testing is around three times greater than that of the January 2019 administration and students testing in the May administration are more representative of the full range in achievement.

In a free calibration, no item parameters are fixed for any items in the free calibration. The operational items from the January 2019 administration were placed onto the IRT scale via a fixed common-item parameter calibration. In the fixed common-item parameter calibration, the item parameters for the non-common operational items on the January 2019 forms were estimated conditional on the fixed values of the item parameters for the common operational items between the January and May 2019 test forms.

In terms of the field test items, following the classical item analyses, the field test items from the HSA Government January and May 2019 administrations were evaluated and then submitted to IRT calibration and scaling. Likewise, the field test items from the HS MISA January and May 2019 administrations were evaluated and then submitted to IRT calibration and scaling. One purpose of item calibration and scaling is to create a common scale for expressing the difficulty estimates of all the items across all versions of a test. The resulting scale has a mean score of 0 and a standard deviation of 1. This scale is often referred to as the "theta" metric and is not used for reporting purposes because the values typically range from –3 to +3, which may be difficult to interpret. Therefore, the scale is usually transformed to a reporting scale (also known as a scale score), which can be more meaningfully interpreted by students, teachers, and other stakeholders. As noted in Section 4, the IRT models used to calibrate the HSA Government field test items are the 3-parameter logistic (3PL) model for SR items and the generalized partial credit model (GPCM) for CR items. The IRT models used to calibrate the HS MISA field test items are the 2-parameter logistic (2PL) model for SR items and the GPCM for non-SR items.

Before calibration, the items with poor classical item statistics and the items that were not scored per MSDE's instructions were removed (see Figure 8-1). These items have been identified for revision and possible additional field testing. The items excluded from HSA Government and HS MISA calibrations are listed in Tables 8-5 and 8-6, respectively.

Table 8-5. Maryland HSA Government Field Test Items Excluded from Calibration

Admin.	ItemID	Form(s)	Position(s)	Response Type	Reason*
January	005UTC	AA19	53	MC	Item-total correlation was negative
	0061AO	AB19	53	MC	Item-total correlation was negative
	0061AQ	AC19	21	MC	Item-total correlation was negative
	006SH2	AA19	47	MS	1 or more score points with fewer than 30 students
	00504A	A19, X19	33	OR	1 or more score points with fewer than 30 students
May	005049	P19	78	MC	Item-total correlation was negative
	005TM0	J19	41	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	005VXC	K19	54	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	0065L7	G19	78	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	0067KT	M19	78	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	006U0O	L19	16	MS	Poor IRT model fit
	006VEU	N19	21	MS	Poor IRT model fit
	006WBT	L19	78	MS	Poor IRT model fit
	006X7R	M19	21	MS	Poor IRT model fit
	0061AY	K19	33	OR	1 or more score points with less than 30 students
	0061CA	G19	47	TE	1 or more score points with less than 30 students
	0064MN	N19	47	TE	Poor IRT model fit
	0064MR	F19	31	TE	1 or more score points with less than 30 students

* *Calibration requires a minimum of 30 students at every score point.*

Table 8-6. Maryland HS MISA Field Test Items Excluded from Calibration

Admin.	ItemID	Form(s)	Position(s)	Response Type	Reason*
January	005QVM	AC19	39	CM	Poor IRT model fit
	005QUS	AA19	39	MC	Negative item-total correlation
	0062V9	AB19	39	MC	Negative item-total correlation
	006EEU	C19	52	MC	Negative item-total correlation
May	0064UJ	M19	51	CM	1 or more score points with less than 30 students
	005OK3	H19, G19	37, 37	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	005XIL	Y19, F19, E19, D19	51, 51, 51, 51	MC	Negative item-total correlation
	0065UB	E19	31	MC	Negative item-total correlation
	006BJJ	W19	22	MC	Low item-total correlation
	006ECM	Y19, D19	37, 37	MC	Negative item-total correlation
	006KUQ	G19	31	MC	Negative item-total correlation
	006KUU	J19	35	MC	Low item-total correlation and at least 1 distractor with an item-total correlation greater than 0.05
	006KXB	J19	33	MC	Negative item-total correlation
	006L1S	L19	31	MC	Negative item-total correlation
	006L1U	M19	33	MC	Negative item-total correlation
	006LTO	T19, S19	19, 19	MC	Negative item-total correlation
	006LZC	AD19, V19	51, 50	MC	Negative item-total correlation
	0065UA	F19	32	MS	Low item-total correlation
	006BK1	U19	51	TE	Negative item-total correlation
	006L1P	L19	33	TE	Low item-total correlation
	005QJC	G19	40	TE	1 or more score points with less than 30 students
	006FMR	M19	22	TE	Poor IRT model fit
	006KUA	G19	35	TE	Poor IRT model fit

** Calibration requires a minimum of 30 students at every score point.*

Tables 8-7 and 8-8 present the number of items that were retained for further analyses and evaluation after being flagged for statistical reasons, including extreme *p*-values, low item-total correlations, and/or high omit rates, for HSA Government and HS MISA, respectively. Calibration results indicated that the items were estimated reasonably well, based on a) item parameter estimate reasonability, b) item fit plots [model-based versus observed item characteristic curves (ICCs)], and c) content review of the items. Therefore, they were not removed from scaling. Please note that the percentages in the tables may not sum up to 100 due to rounding.

Table 8-7. HSA Government Field Test Items with Statistical Flags Retained in Calibration

Admin.	*p*-Value <0.10	*p*-Value >0.90	Item-Total Corr <0.10	Distractor Item-Total Corr>0	Omit Rate[c]	C-level DIF	Missing Response[a]	Total Flagged	# of Items[b]
January 2019	0	0	1	3	0	4	0	7	57
May 2019	0	0	1	3	0	1	0	4	118

[a] Responded by 0 students; [b] Represents total number of unique items; [c]5% for MC items and 15% for non-MC items.

Table 8-8. HS MISA Field Test Items with Statistical Flags Retained in Calibration

Admin.	*p*-Value <0.10	*p*-Value >0.90	Item-Total Corr <0.10	Distractor Item-Total Corr>0	Omit Rate[c]	C-level DIF	Missing Response[a]	Total Flagged	# of Items[b]
January 2019	0	0	9	14	0	1	0	18	113
May 2019	0	0	11	42	0	1	0	48	286

[a] Responded by 0 students; [b] Represents total number of unique items; [c]5% for MC items and 15% for non-MC items.

The computer program PARSCALE 4.1 (Muraki & Bock, 2003) was used for all item calibration. PARSCALE is a well-recognized IRT calibration software in the industry, and it is capable of calibrating items with both dichotomous and polytomous data using a variety of dichotomous and polytomous IRT models. Because it is specifically designed for IRT calibration, it is fast and efficient. The calibration and equating process is outlined in the steps below.

1. For each test, a scored item response matrix with a sparse design is assembled. Essentially, this means that the data were set up using the format presented in Figure 8-1. In the figure, X's represent items, while spaces indicate missing data. For example, items included on version 2 but not on version 1, 3, 4, or 5 were treated as "not administered" for the purposes of the analyses and are denoted as "missing" in the figure.

Common	Unique 1	Unique 2	Unique 3	Unique 4	Unique 5
XXXXXXXX	XXXXXXXX				
XXXXXXXX		XXXXXXXX			
XXXXXXXX			XXXXXXXX		
XXXXXXXX				XXXXXXXX	
XXXXXXXX					XXXXXXXX
Common	Unique 1				
Common		Unique 2			
Common			Unique 3		
Common				Unique 4	
Common					Unique 5

Figure 8-1. Sparse Matrix Design for Field Test Item Calibration

2. All items are calibrated, and the results were reviewed to determine if any items failed to calibrate appropriately.

In the final calibration, the item parameters for the field test items are freely estimated, with the item parameters for all operational items fixed to their bank values. This means the operational items place the field test items onto the operational reporting scale. Once the items were calibrated and placed onto the operational scale, they were loaded into the item bank.

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Appendix A. Classical Item Statistics—Operational Items

For the data in tables A-1 through A-14:
Item Type = Type + Point Value, where Type is one of the following:

- BCR (brief constructed-response items worth 4 points)
- CR (constructed-response items worth 2, 3, or 4 points),
- MSR (multi-select items worth either 1 or 2 points),
- SR (selected-response items),
- TE (technology-enhanced items worth either 1 or 2 points);
- Common=whether the item appears on other forms in this administration
    - (L= item is common across all forms in this administration; O = item is in one or more but not all forms in this administration);
- Forms = the forms on which the item appears in this administration;
- P_Val = *p*-value,
- R_ITT = item-total correlation,
- P_BIS1 – P_BIS*n* = option-total correlations for *n* options,
- %Omits = percentage of omitted responses.

Table A-1. Classical Item Statistics, Operational Items: HSA Government—January 2019—Forms A–C (*N* = 7,694)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	A-C	5	O	005B76	0.15	0.69					0.0
BCR-4	A-C	14	O	005AZA	0.12	0.72					0.0
BCR-4	A-C	24	L	005B0H	0.23	0.72					0.0
BCR-4	A-C	51	L	005EQD	0.22	0.65					0.0
BCR-4	A-C	64	L	005BK9	0.19	0.74					0.0
MEAN(BCR-4)					0.18	0.70					0.0
SD(BCR-4)					0.05	0.04					0.0
SR	A-C	1	L	005BHJ	0.67	0.27	-0.15	-0.18	0.27	-0.10	0.4
SR	A-C	2	L	005BI4	0.58	0.40	-0.16	-0.26	0.40	-0.13	0.4
SR	A-C	3	L	005F8S	0.55	0.42	-0.17	-0.19	-0.21	0.42	0.5
SR	A-C	4	L	005ANU	0.55	0.38	-0.10	-0.17	0.38	-0.23	0.5
SR	A-C	6	L	005ANP	0.88	0.29	-0.19	-0.17	0.29	-0.08	0.6
SR	A-C	7	L	005AYZ	0.37	0.35	0.35	-0.29	0.02	-0.12	0.6
SR	A-C	8	L	005BBL	0.51	0.43	-0.16	0.43	-0.26	-0.13	0.6
SR	A-C	9	O	005F4A	0.23	0.27	-0.14	-0.11	0.27	0.01	0.7
SR	A-C	10	O	005AM1	0.56	0.43	-0.22	-0.20	-0.15	0.43	0.8
SR	A-C	11	L	005BEP	0.46	0.41	-0.15	0.41	-0.23	-0.13	0.9
SR	A-C	12	O	005AYL	0.43	0.43	0.43	-0.28	-0.11	-0.15	0.9
SR	A-C	13	O	005AV7	0.34	0.09	0.01	0.09	-0.14	0.00	0.9
SR	A-C	15	L	005FDE	0.50	0.25	-0.14	-0.23	0.25	0.03	1.2
SR	A-C	17	L	005EX1	0.28	0.32	-0.18	-0.23	0.02	0.32	1.5
SR	A-C	18	L	005FJ4	0.16	0.06	0.06	-0.02	-0.08	0.07	1.5
SR	A-C	19	O	005EQ3	0.63	0.27	-0.10	0.27	-0.19	-0.15	0.7
SR	A-C	20	O	005B8F	0.40	0.32	-0.11	0.32	-0.15	-0.11	0.7
SR	A-C	22	O	005B7S	0.34	0.19	0.02	-0.17	0.19	-0.11	0.9
SR	A-C	23	L	005B5G	0.54	0.34	-0.15	0.34	-0.28	0.03	0.8
SR	A-C	25	L	005FHW	0.39	0.35	-0.27	-0.26	0.35	0.17	0.9
SR	A-C	26	L	005AQT	0.34	0.36	-0.13	0.36	-0.10	-0.17	1.0

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-C	27	O	005EYE	0.26	0.28	-0.10	-0.13	-0.04	0.28	1.0
SR	A-C	28	O	005B63	0.49	0.35	-0.19	-0.06	-0.21	0.35	1.0
SR	A-C	29	L	005FAQ	0.39	0.20	-0.16	-0.17	0.20	0.08	1.0
SR	A-C	30	L	005EUI	0.38	0.48	-0.19	-0.25	-0.12	0.48	1.1
SR	A-C	32	L	005AZP	0.48	0.46	-0.14	0.46	-0.25	-0.18	1.2
SR	A-C	34	L	005ERY	0.41	0.31	-0.06	-0.17	0.31	-0.12	1.4
SR	A-C	35	O	005ARN	0.22	0.26	-0.08	-0.20	0.04	0.26	1.5
SR	A-C	36	O	005AMP	0.32	0.15	-0.04	0.15	0.02	-0.11	1.6
SR	A-C	37	L	005BDV	0.40	0.45	0.45	-0.17	-0.19	-0.17	1.5
SR	A-C	38	O	005ATO	0.41	0.41	-0.16	-0.21	0.41	-0.10	1.3
SR	A-C	39	L	005BJO	0.31	0.49	-0.05	-0.23	-0.20	0.49	1.4
SR	A-C	43	O	005AUL	0.44	0.34	-0.14	-0.17	0.34	-0.04	2.3
SR	A-C	44	O	005B8R	0.32	0.27	-0.14	0.27	-0.10	-0.01	2.4
SR	A-C	45	L	005FFX	0.52	0.43	-0.17	0.43	-0.17	-0.18	2.4
SR	A-C	46	L	005ASO	0.48	0.40	-0.18	-0.19	0.40	-0.10	2.4
SR	A-C	48	O	005BFO	0.32	0.22	-0.17	0.03	-0.06	0.22	2.4
SR	A-C	49	L	005F80	0.46	0.48	-0.15	-0.19	-0.21	0.48	2.4
SR	A-C	50	L	005B9U	0.28	0.17	-0.08	0.06	0.17	-0.13	2.4
SR	A-C	52	L	005EPF	0.27	0.13	-0.03	-0.09	0.05	0.13	2.5
SR	A-C	55	L	005B60	0.32	0.42	-0.11	0.42	-0.21	-0.07	2.6
SR	A-C	56	O	005ESF	0.60	0.45	0.45	-0.18	-0.21	-0.18	2.6
SR	A-C	57	O	005BKD	0.36	0.38	-0.11	-0.14	0.38	-0.14	2.7
SR	A-C	58	L	005FGZ	0.45	0.38	-0.11	-0.18	0.38	-0.13	2.8
SR	A-C	59	O	005AM2	0.22	0.34	-0.06	-0.04	-0.16	0.34	2.8
SR	A-C	60	L	005FAV	0.45	0.38	-0.11	0.38	-0.23	-0.11	2.8
SR	A-C	61	L	005F78	0.47	0.37	0.37	-0.15	-0.16	-0.12	2.8
SR	A-C	62	O	005AKI	0.31	0.35	-0.09	-0.22	0.35	-0.02	2.6
SR	A-C	63	O	005AL9	0.28	0.58	-0.15	-0.26	-0.15	0.58	2.7
SR	A-C	65	O	005BM2	0.32	0.51	0.51	-0.15	-0.18	-0.17	2.8

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-C	66	L	005AMK	0.37	0.44	-0.20	0.44	-0.22	-0.03	2.7
SR	A-C	67	L	005BID	0.49	0.49	0.49	-0.14	-0.22	-0.22	2.8
SR	A-C	68	L	005B94	0.59	0.54	-0.19	0.54	-0.27	-0.23	2.7
SR	A-C	70	L	005AZD	0.53	0.49	0.49	-0.20	-0.25	-0.15	2.8
SR	A-C	71	L	005EQR	0.61	0.49	-0.28	0.49	-0.22	-0.10	2.7
SR	A-C	72	L	005F6R	0.58	0.43	-0.14	-0.22	0.43	-0.16	2.8
SR	A-C	73	O	005BIM	0.33	0.28	-0.07	0.01	-0.19	0.28	2.8
SR	A-C	74	L	005FG1	0.40	0.56	-0.21	-0.21	-0.19	0.56	2.8
SR	A-C	75	L	005F17	0.59	0.49	0.49	-0.22	-0.24	-0.16	2.8
SR	A-C	76	L	005B1T	0.43	0.33	-0.15	-0.21	0.33	-0.01	2.9
SR	A-C	77	O	005ETM	0.20	0.16	-0.16	0.18	-0.21	0.16	2.9
SR	A-C	79	O	005F9I	0.33	0.41	-0.11	0.41	-0.13	-0.15	2.9
MEAN(SR)					0.42	0.36	-0.05	-0.02	-0.01	0.02	1.8
SD(SR)					0.13	0.12	0.22	0.26	0.24	0.23	0.9

Table A-2. Classical Item Statistics, Operational Items: HSA Government—January 2019—Forms AA–AC (N = 7,760)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	AA-AC	5	O	005J2R	0.07	0.70					0.0
BCR-4	AA-AC	14	O	005EOO	0.09	0.73					0.0
BCR-4	AA-AC	24	L	005B0H	0.22	0.71					0.0
BCR-4	AA-AC	51	L	005EQD	0.21	0.65					0.0
BCR-4	AA-AC	64	L	005BK9	0.19	0.73					0.0
MEAN(BCR-4)					0.16	0.70					0.0
SD(BCR-4)					0.07	0.03					0.0
SR	AA-AC	1	L	005BHJ	0.68	0.26	-0.14	-0.18	0.26	-0.10	0.4
SR	AA-AC	2	L	005BI4	0.59	0.38	-0.14	-0.26	0.38	-0.12	0.4
SR	AA-AC	3	L	005F8S	0.56	0.43	-0.17	-0.19	-0.23	0.43	0.5
SR	AA-AC	4	L	005ANU	0.56	0.37	-0.09	-0.18	0.37	-0.22	0.5
SR	AA-AC	6	L	005ANP	0.88	0.29	-0.19	-0.16	0.29	-0.08	0.6
SR	AA-AC	7	L	005AYZ	0.38	0.35	0.35	-0.29	0.02	-0.13	0.6
SR	AA-AC	8	L	005BBL	0.51	0.42	-0.15	0.42	-0.26	-0.12	0.6
SR	AA-AC	9	O	005AZF	0.36	0.48	0.48	-0.07	-0.20	-0.26	0.9
SR	AA-AC	10	O	005AZL	0.40	0.37	-0.19	0.37	-0.10	-0.15	0.7
SR	AA-AC	11	L	005BEP	0.47	0.42	-0.14	0.42	-0.25	-0.13	0.7
SR	AA-AC	12	O	005ERH	0.49	0.42	0.42	-0.20	-0.22	-0.12	0.8
SR	AA-AC	13	O	005EUS	0.30	0.15	-0.08	0.15	-0.04	-0.02	0.9
SR	AA-AC	15	L	005FDE	0.51	0.25	-0.15	-0.22	0.25	0.02	1.3
SR	AA-AC	17	L	005EX1	0.27	0.32	-0.17	-0.24	0.02	0.32	1.3
SR	AA-AC	18	L	005FJ4	0.15	0.06	0.06	-0.03	-0.06	0.06	1.3
SR	AA-AC	19	O	005BBI	0.30	0.04	-0.08	0.04	-0.06	0.10	0.8
SR	AA-AC	20	O	005EYK	0.56	0.28	-0.19	-0.02	0.28	-0.18	1.0
SR	AA-AC	22	O	005F22	0.37	0.17	0.17	-0.03	-0.07	-0.09	1.0
SR	AA-AC	23	L	005B5G	0.53	0.33	-0.13	0.33	-0.27	0.02	1.0
SR	AA-AC	25	L	005FHW	0.38	0.36	-0.26	-0.26	0.36	0.15	1.1
SR	AA-AC	26	L	005AQT	0.34	0.37	-0.14	0.37	-0.10	-0.17	1.1

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	AA-AC	27	O	005EX6	0.46	0.30	-0.22	-0.09	0.30	-0.04	1.2
SR	AA-AC	28	O	005BA6	0.29	0.27	-0.20	0.27	0.06	-0.19	1.1
SR	AA-AC	29	L	005FAQ	0.39	0.22	-0.17	-0.17	0.22	0.08	1.1
SR	AA-AC	30	L	005EUI	0.38	0.48	-0.21	-0.24	-0.10	0.48	1.2
SR	AA-AC	32	L	005AZP	0.48	0.45	-0.14	0.45	-0.24	-0.18	1.3
SR	AA-AC	34	L	005ERY	0.40	0.32	-0.06	-0.17	0.32	-0.12	1.5
SR	AA-AC	35	O	005BHR	0.52	0.49	-0.19	0.49	-0.24	-0.21	1.5
SR	AA-AC	36	O	005AOB	0.36	0.33	0.33	-0.20	-0.04	-0.11	1.6
SR	AA-AC	37	L	005BDV	0.40	0.44	0.44	-0.12	-0.19	-0.20	1.5
SR	AA-AC	38	O	005FG7	0.49	0.35	-0.12	-0.22	0.35	-0.09	1.5
SR	AA-AC	39	L	005BJO	0.31	0.50	-0.07	-0.23	-0.19	0.50	1.5
SR	AA-AC	43	O	005FCU	0.46	0.46	0.46	-0.18	-0.21	-0.13	2.3
SR	AA-AC	44	O	005B30	0.48	0.43	0.43	-0.22	-0.21	-0.05	2.4
SR	AA-AC	45	L	005FFX	0.50	0.44	-0.19	0.44	-0.16	-0.18	2.4
SR	AA-AC	46	L	005ASO	0.49	0.41	-0.15	-0.21	0.41	-0.11	2.5
SR	AA-AC	48	O	005BHC	0.42	0.41	-0.16	-0.11	0.41	-0.17	2.4
SR	AA-AC	49	L	005F80	0.47	0.50	-0.16	-0.20	-0.22	0.50	2.5
SR	AA-AC	50	L	005B9U	0.27	0.17	-0.10	0.09	0.17	-0.14	2.5
SR	AA-AC	52	L	005EPF	0.30	0.17	-0.05	-0.13	0.07	0.17	2.6
SR	AA-AC	55	L	005B60	0.30	0.42	-0.11	0.42	-0.19	-0.07	2.6
SR	AA-AC	56	O	005AYO	0.54	0.53	-0.21	-0.18	-0.27	0.53	2.7
SR	AA-AC	57	O	005AZV	0.28	0.34	-0.16	0.34	-0.07	-0.07	2.7
SR	AA-AC	58	L	005FGZ	0.44	0.37	-0.10	-0.19	0.37	-0.13	2.7
SR	AA-AC	59	O	005B99	0.26	0.31	0.31	-0.15	-0.03	-0.09	2.8
SR	AA-AC	60	L	005FAV	0.45	0.36	-0.11	0.36	-0.22	-0.09	2.7
SR	AA-AC	61	L	005F78	0.47	0.38	0.38	-0.16	-0.16	-0.13	2.7
SR	AA-AC	62	O	005AR5	0.43	0.38	-0.14	-0.21	0.38	-0.03	2.6
SR	AA-AC	63	O	005B9K	0.39	0.48	-0.17	-0.19	0.48	-0.16	2.6
SR	AA-AC	65	O	005ARP	0.31	0.37	0.37	-0.09	-0.13	-0.11	2.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	AA-AC	66	L	005AMK	0.38	0.43	-0.18	0.43	-0.23	-0.03	2.6
SR	AA-AC	67	L	005BID	0.48	0.47	0.47	-0.12	-0.21	-0.22	2.6
SR	AA-AC	68	L	005B94	0.59	0.54	-0.19	0.54	-0.28	-0.23	2.6
SR	AA-AC	70	L	005AZD	0.55	0.47	0.47	-0.20	-0.24	-0.14	2.6
SR	AA-AC	71	L	005EQR	0.63	0.50	-0.30	0.50	-0.23	-0.09	2.6
SR	AA-AC	72	L	005F6R	0.57	0.41	-0.14	-0.22	0.41	-0.13	2.7
SR	AA-AC	73	O	005FD1	0.28	0.17	-0.03	0.05	-0.14	0.17	2.7
SR	AA-AC	74	L	005FG1	0.42	0.53	-0.17	-0.21	-0.21	0.53	2.7
SR	AA-AC	75	L	005F17	0.59	0.51	0.51	-0.21	-0.26	-0.17	2.7
SR	AA-AC	76	L	005B1T	0.44	0.35	-0.14	-0.22	0.35	-0.03	2.7
SR	AA-AC	77	O	005AVN	0.18	0.25	-0.18	-0.16	0.14	0.25	2.7
SR	AA-AC	79	O	005F5O	0.37	0.37	0.02	-0.13	-0.26	0.37	2.8
MEAN(SR)					0.43	0.36	-0.02	-0.02	0.00	-0.02	1.8
SD(SR)					0.13	0.11	0.24	0.26	0.25	0.21	0.9

Table A-3. Classical Item Statistics, Operational Items: HSA Government—January 2019—Accommodated Form X (*N* = 1,769)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	X	5	O	005B76	0.07	0.49					0.0
BCR-4	X	14	O	005AZA	0.04	0.45					0.0
BCR-4	X	24	L	005B0H	0.14	0.57					0.0
BCR-4	X	51	L	005EQD	0.14	0.52					0.0
BCR-4	X	64	L	005BK9	0.09	0.54					0.0
MEAN(BCR-4)					0.10	0.51					0.0
SD(BCR-4)					0.04	0.05					0.0
SR	X	1	L	005BHJ	0.54	0.23	-0.08	-0.20	0.23	-0.05	0.2
SR	X	2	L	005BI4	0.45	0.28	-0.16	-0.14	0.28	-0.06	0.5
SR	X	3	L	005F8S	0.40	0.32	-0.09	-0.14	-0.15	0.32	0.4
SR	X	4	L	005ANU	0.40	0.27	-0.05	-0.10	0.27	-0.16	0.5
SR	X	6	L	005ANP	0.80	0.30	-0.20	-0.17	0.30	-0.08	0.3
SR	X	7	L	005AYZ	0.25	0.25	0.25	-0.16	0.00	-0.06	0.5
SR	X	8	L	005BBL	0.34	0.24	-0.06	0.24	-0.15	-0.05	0.5
SR	X	9	O	005F4A	0.20	0.11	-0.10	0.01	0.11	-0.01	0.5
SR	X	10	O	005AM1	0.42	0.38	-0.12	-0.21	-0.13	0.38	0.5
SR	X	11	L	005BEP	0.38	0.28	-0.10	0.28	-0.13	-0.09	0.5
SR	X	12	O	005AYL	0.29	0.29	0.29	-0.18	-0.04	-0.07	0.6
SR	X	13	O	005AV7	0.33	0.01	-0.08	0.01	-0.11	0.13	0.5
SR	X	15	L	005FDE	0.40	0.16	-0.14	-0.19	0.16	0.12	1.5
SR	X	17	L	005EX1	0.24	0.26	-0.17	-0.22	0.10	0.26	1.1
SR	X	18	L	005FJ4	0.15	-0.01	-0.01	0.02	-0.03	0.04	1.3
SR	X	19	O	005EQ3	0.55	0.27	-0.10	0.27	-0.16	-0.13	0.6
SR	X	20	O	005B8F	0.31	0.14	0.01	0.14	-0.07	-0.08	0.6
SR	X	22	O	005B7S	0.34	0.11	0.05	-0.17	0.11	-0.03	0.7
SR	X	23	L	005B5G	0.45	0.20	-0.08	0.20	-0.16	0.03	0.8
SR	X	25	L	005FHW	0.31	0.24	-0.20	-0.13	0.24	0.16	0.6
SR	X	26	L	005AQT	0.27	0.15	0.05	0.15	-0.06	-0.15	0.8

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	27	O	005EYE	0.23	0.18	-0.08	-0.13	0.04	0.18	0.7
SR	X	28	O	005B63	0.39	0.25	-0.13	-0.05	-0.10	0.25	0.8
SR	X	29	L	005FAQ	0.32	0.22	-0.11	-0.12	0.22	0.01	0.7
SR	X	30	L	005EUI	0.28	0.31	-0.11	-0.20	0.00	0.31	0.7
SR	X	32	L	005AZP	0.33	0.33	-0.10	0.33	-0.18	-0.05	0.8
SR	X	34	L	005ERY	0.36	0.14	-0.03	-0.10	0.14	0.00	1.0
SR	X	35	O	005ARN	0.18	0.06	-0.02	-0.10	0.09	0.06	1.0
SR	X	36	O	005AMP	0.31	0.05	0.05	0.05	-0.02	-0.06	1.0
SR	X	37	L	005BDV	0.30	0.31	0.31	-0.11	-0.11	-0.08	1.0
SR	X	38	O	005ATO	0.35	0.21	-0.05	-0.15	0.21	0.00	1.2
SR	X	39	L	005BJO	0.22	0.31	-0.02	-0.10	-0.12	0.31	1.4
SR	X	43	O	005AUL	0.42	0.18	-0.05	-0.09	0.18	0.01	2.4
SR	X	44	O	005B8R	0.29	0.07	-0.04	0.07	-0.05	0.09	2.5
SR	X	45	L	005FFX	0.39	0.36	-0.12	0.36	-0.12	-0.11	2.5
SR	X	46	L	005ASO	0.42	0.24	-0.11	-0.13	0.24	0.01	2.4
SR	X	48	O	005BFO	0.28	0.16	-0.11	-0.02	0.03	0.16	2.5
SR	X	49	L	005F80	0.35	0.32	-0.04	-0.13	-0.11	0.32	2.5
SR	X	50	L	005B9U	0.28	0.11	-0.05	0.07	0.11	-0.07	2.7
SR	X	52	L	005EPF	0.27	0.17	-0.02	-0.02	-0.05	0.17	2.7
SR	X	55	L	005B60	0.27	0.26	-0.09	0.26	-0.07	-0.02	2.8
SR	X	56	O	005ESF	0.45	0.33	0.33	-0.15	-0.07	-0.12	2.8
SR	X	57	O	005BKD	0.25	0.17	0.04	-0.08	0.17	-0.06	2.8
SR	X	58	L	005FGZ	0.35	0.23	-0.06	-0.05	0.23	-0.08	2.8
SR	X	59	O	005AM2	0.15	0.11	0.03	0.07	-0.12	0.11	3.1
SR	X	60	L	005FAV	0.34	0.22	0.02	0.22	-0.17	-0.04	3.1
SR	X	61	L	005F78	0.42	0.25	0.25	-0.12	-0.13	0.00	3.1
SR	X	62	O	005AKI	0.27	0.18	-0.06	-0.17	0.18	0.12	2.7
SR	X	63	O	005AL9	0.16	0.39	-0.08	-0.12	-0.05	0.39	2.8
SR	X	65	O	005BM2	0.20	0.34	0.34	-0.06	-0.10	-0.07	2.9

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	66	L	005AMK	0.29	0.26	-0.12	0.26	-0.11	0.04	2.8
SR	X	67	L	005BID	0.34	0.36	0.36	-0.09	-0.13	-0.11	2.8
SR	X	68	L	005B94	0.35	0.48	-0.19	0.48	-0.15	-0.13	2.9
SR	X	70	L	005AZD	0.44	0.42	0.42	-0.20	-0.19	-0.06	3.0
SR	X	71	L	005EQR	0.41	0.39	-0.21	0.39	-0.13	-0.03	2.8
SR	X	72	L	005F6R	0.50	0.32	-0.12	-0.18	0.32	-0.04	2.8
SR	X	73	O	005BIM	0.30	0.21	-0.04	0.03	-0.13	0.21	2.8
SR	X	74	L	005FG1	0.30	0.36	-0.07	-0.10	-0.13	0.36	3.0
SR	X	75	L	005F17	0.47	0.43	0.43	-0.17	-0.22	-0.08	2.9
SR	X	76	L	005B1T	0.35	0.23	-0.07	-0.19	0.23	0.08	3.0
SR	X	77	O	005ETM	0.21	0.14	-0.13	0.16	-0.15	0.14	2.9
SR	X	79	O	005F9I	0.26	0.13	-0.03	0.13	-0.01	-0.01	3.1
MEAN(SR)					0.34	0.24	-0.02	-0.02	0.00	0.04	1.7
SD(SR)					0.11	0.11	0.16	0.18	0.15	0.15	1.1

Table A-4. Classical Item Statistics, Operational Items: HSA Government—May 2019—Forms D–H, J (*N* = 30,918)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	D-H,J	5	O	005J39	0.33	0.75					0.0
BCR-4	D-H,J	13	L	0053HJ	0.34	0.74					0.0
BCR-4	D-H,J	24	L	005B39	0.31	0.71					0.0
BCR-4	D-H,J	51	L	005AML	0.33	0.75					0.0
BCR-4	D-H,J	68	O	005B48	0.37	0.72					0.0
MEAN(BCR-4)					0.34	0.73					0.0
SD(BCR-4)					0.02	0.02					0.0
SR	D-H,J	1	L	005BGG	0.46	0.29	-0.14	0.29	-0.29	0.04	0.4
SR	D-H,J	2	O	005ESG	0.18	0.37	0.05	-0.30	-0.02	0.37	0.4
SR	D-H,J	3	L	005EZB	0.84	0.44	-0.19	-0.32	0.44	-0.18	0.4
SR	D-H,J	4	O	005EYH	0.73	0.42	-0.18	-0.29	0.42	-0.18	0.4
SR	D-H,J	6	O	005BHT	0.23	0.22	0.22	-0.05	-0.09	-0.05	0.4
SR	D-H,J	7	O	005ESZ	0.76	0.50	-0.18	0.50	-0.36	-0.25	0.5
SR	D-H,J	8	L	005ALQ	0.41	0.44	-0.05	-0.23	-0.23	0.44	0.5
SR	D-H,J	9	L	005F4E	0.88	0.48	-0.27	0.48	-0.27	-0.24	0.5
SR	D-H,J	10	L	005EPG	0.68	0.52	-0.21	-0.19	-0.34	0.52	0.5
SR	D-H,J	11	L	005BF9	0.61	0.53	-0.28	-0.21	-0.26	0.53	0.5
SR	D-H,J	12	L	005F58	0.78	0.56	-0.27	-0.31	-0.29	0.56	0.6
SR	D-H,J	14	L	005AT9	0.80	0.58	-0.35	-0.28	-0.25	0.58	0.9
SR	D-H,J	15	O	005EWP	0.68	0.53	-0.32	-0.28	0.53	-0.16	0.9
SR	D-H,J	17	L	005AYG	0.62	0.54	-0.25	-0.26	-0.27	0.54	1.1
SR	D-H,J	18	L	005BBQ	0.72	0.59	-0.20	-0.30	0.59	-0.36	1.0
SR	D-H,J	19	O	005BFQ	0.79	0.43	-0.31	-0.18	0.43	-0.12	0.6
SR	D-H,J	20	O	005EP2	0.74	0.53	-0.27	-0.23	-0.30	0.53	0.6
SR	D-H,J	22	O	005B7J	0.34	0.34	0.34	-0.16	-0.10	-0.11	0.6
SR	D-H,J	23	L	005BDA	0.60	0.51	-0.21	-0.27	-0.24	0.51	0.7
SR	D-H,J	25	O	005AKS	0.49	0.49	0.49	-0.17	-0.25	-0.20	0.7
SR	D-H,J	26	L	005F40	0.85	0.47	-0.23	0.47	-0.30	-0.21	0.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	D-H,J	27	L	005FEW	0.67	0.59	-0.26	-0.30	-0.32	0.59	0.7
SR	D-H,J	28	L	005ERS	0.59	0.34	-0.07	-0.23	0.34	-0.20	0.8
SR	D-H,J	29	O	005AW3	0.71	0.51	-0.25	-0.30	0.51	-0.22	0.8
SR	D-H,J	30	L	005AKW	0.42	0.30	-0.02	0.30	-0.27	-0.20	0.8
SR	D-H,J	32	L	005EXS	0.52	0.49	-0.26	-0.23	0.49	-0.18	0.8
SR	D-H,J	34	O	005BGF	0.55	0.44	-0.23	0.44	-0.14	-0.23	1.0
SR	D-H,J	35	O	005F8X	0.61	0.22	0.22	-0.02	-0.20	-0.12	1.0
SR	D-H,J	36	L	005AWR	0.65	0.54	0.54	-0.20	-0.31	-0.31	1.0
SR	D-H,J	37	L	005B7E	0.72	0.35	-0.08	0.35	-0.21	-0.23	1.0
SR	D-H,J	38	L	005B5I	0.42	0.38	-0.06	-0.28	0.38	-0.13	0.8
SR	D-H,J	39	L	005BEH	0.77	0.46	-0.21	-0.22	-0.32	0.46	0.8
SR	D-H,J	43	O	005APH	0.38	0.12	0.12	-0.04	-0.10	0.03	1.3
SR	D-H,J	44	L	005B9O	0.76	0.53	-0.26	-0.28	0.53	-0.23	1.3
SR	D-H,J	45	L	005F2X	0.62	0.53	0.53	-0.31	-0.33	-0.07	1.3
SR	D-H,J	46	O	005F7E	0.73	0.56	0.56	-0.21	-0.28	-0.29	1.4
SR	D-H,J	48	L	005ALF	0.40	0.21	0.01	-0.18	0.21	-0.05	1.4
SR	D-H,J	49	O	005FCF	0.55	0.60	-0.33	-0.25	0.60	-0.19	1.4
SR	D-H,J	50	O	005ETO	0.58	0.57	-0.21	-0.26	-0.28	0.57	1.4
SR	D-H,J	52	L	005EXZ	0.15	0.12	-0.15	-0.37	0.12	0.33	1.4
SR	D-H,J	55	O	005B8B	0.53	0.29	-0.08	-0.06	0.29	-0.24	1.5
SR	D-H,J	56	L	005FE8	0.79	0.57	-0.31	0.57	-0.30	-0.20	1.5
SR	D-H,J	57	L	005AKH	0.85	0.53	0.53	-0.20	-0.33	-0.24	1.5
SR	D-H,J	58	L	005FHU	0.85	0.53	0.53	-0.25	-0.29	-0.25	1.5
SR	D-H,J	59	O	005EYP	0.71	0.58	-0.25	0.58	-0.33	-0.24	1.5
SR	D-H,J	60	O	005BHG	0.61	0.52	-0.22	-0.25	0.52	-0.21	1.5
SR	D-H,J	61	L	005EW2	0.71	0.54	0.54	-0.30	-0.27	-0.24	1.5
SR	D-H,J	62	O	005BCR	0.32	0.40	-0.17	-0.07	-0.17	0.40	1.5
SR	D-H,J	63	L	005BFM	0.84	0.40	-0.23	0.40	-0.17	-0.21	1.5
SR	D-H,J	64	L	005BE6	0.40	0.38	-0.13	0.38	-0.14	-0.12	1.5

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	D-H,J	65	L	005EX3	0.71	0.37	-0.18	-0.20	0.37	-0.15	1.5
SR	D-H,J	66	L	005F2S	0.65	0.62	-0.26	-0.32	-0.28	0.62	1.6
SR	D-H,J	67	L	005F9F	0.44	0.30	-0.08	-0.10	0.30	-0.18	1.6
SR	D-H,J	70	L	005ERW	0.73	0.63	0.63	-0.31	-0.39	-0.16	1.6
SR	D-H,J	71	L	005ERQ	0.83	0.51	-0.24	-0.28	0.51	-0.22	1.6
SR	D-H,J	72	L	005BA9	0.82	0.61	-0.28	-0.26	-0.36	0.61	1.6
SR	D-H,J	73	O	005AS7	0.35	0.22	-0.21	-0.23	0.22	0.14	1.6
SR	D-H,J	74	L	005B7Y	0.51	0.36	-0.17	-0.27	0.36	-0.05	1.6
SR	D-H,J	75	L	005B9S	0.73	0.51	-0.29	-0.23	0.51	-0.22	1.6
SR	D-H,J	76	O	005AXY	0.76	0.55	-0.19	0.55	-0.34	-0.24	1.6
SR	D-H,J	77	L	005EO3	0.76	0.55	0.55	-0.30	-0.29	-0.18	1.6
SR	D-H,J	79	O	005BG1	0.57	0.60	-0.30	-0.23	-0.24	0.60	1.6
MEAN(SR)					0.62	0.45	-0.07	-0.10	-0.03	0.01	1.1
SD(SR)					0.18	0.13	0.29	0.28	0.34	0.32	0.4

Table A-5. Classical Item Statistics, Operational Items: HSA Government—May 2019—Form K–P (*N* = 30,714)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	K-P	5	O	005J2L	0.29	0.67					0.0
BCR-4	K-P	13	L	0053HJ	0.34	0.74					0.0
BCR-4	K-P	24	L	005B39	0.31	0.71					0.0
BCR-4	K-P	51	L	005AML	0.33	0.74					0.0
BCR-4	K-P	68	O	005FFA	0.33	0.81					0.0
MEAN(BCR-4)					0.32	0.74					0.0
SD(BCR-4)					0.02	0.05					0.0
SR	K-P	1	L	005BGG	0.46	0.28	-0.14	0.28	-0.28	0.04	0.4
SR	K-P	2	O	005BCV	0.48	0.50	0.50	-0.32	-0.27	-0.09	0.4
SR	K-P	3	L	005EZB	0.85	0.44	-0.20	-0.31	0.44	-0.19	0.4
SR	K-P	4	O	005EPP	0.58	0.49	-0.18	-0.24	-0.25	0.49	0.5
SR	K-P	6	O	005B7Q	0.70	0.39	-0.24	-0.16	0.39	-0.17	0.5
SR	K-P	7	O	005F8T	0.80	0.47	-0.27	0.47	-0.25	-0.22	0.6
SR	K-P	8	L	005ALQ	0.40	0.45	-0.05	-0.24	-0.22	0.45	0.6
SR	K-P	9	L	005F4E	0.88	0.49	-0.28	0.49	-0.27	-0.24	0.6
SR	K-P	10	L	005EPG	0.67	0.53	-0.21	-0.20	-0.34	0.53	0.6
SR	K-P	11	L	005BF9	0.60	0.54	-0.27	-0.22	-0.25	0.54	0.6
SR	K-P	12	L	005F58	0.79	0.57	-0.27	-0.31	-0.30	0.57	0.7
SR	K-P	14	L	005AT9	0.80	0.58	-0.36	-0.29	-0.24	0.58	0.9
SR	K-P	15	O	005EZN	0.63	0.50	-0.26	-0.23	0.50	-0.22	1.1
SR	K-P	17	L	005AYG	0.63	0.54	-0.25	-0.25	-0.27	0.54	1.2
SR	K-P	18	L	005BBQ	0.71	0.58	-0.22	-0.28	0.58	-0.36	1.2
SR	K-P	19	O	005FI5	0.68	0.45	-0.29	0.45	-0.09	-0.25	0.6
SR	K-P	20	O	005BJU	0.22	0.17	-0.13	-0.09	0.17	0.02	0.6
SR	K-P	22	O	0053EJ	0.30	0.26	0.05	0.26	-0.26	-0.07	0.7
SR	K-P	23	L	005BDA	0.51	0.47	-0.18	-0.23	-0.21	0.47	0.7
SR	K-P	25	O	005BL2	0.51	0.47	-0.08	-0.24	0.47	-0.30	0.7
SR	K-P	26	L	005F40	0.83	0.51	-0.24	0.51	-0.33	-0.23	0.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	K-P	27	L	005FEW	0.67	0.58	-0.26	-0.30	-0.31	0.58	0.7
SR	K-P	28	L	005ERS	0.59	0.34	-0.07	-0.21	0.34	-0.21	0.7
SR	K-P	29	O	005ES5	0.76	0.49	0.49	-0.31	-0.30	-0.16	0.7
SR	K-P	30	L	005AKW	0.41	0.30	0.00	0.30	-0.28	-0.23	0.8
SR	K-P	32	L	005EXS	0.51	0.51	-0.27	-0.22	0.51	-0.19	0.8
SR	K-P	34	O	005FJZ	0.48	0.47	-0.14	0.47	-0.26	-0.21	1.0
SR	K-P	35	O	005FHD	0.67	0.45	-0.19	0.45	-0.29	-0.13	1.0
SR	K-P	36	L	005AWR	0.65	0.54	0.54	-0.21	-0.31	-0.30	1.0
SR	K-P	37	L	005B7E	0.73	0.35	-0.09	0.35	-0.21	-0.22	1.0
SR	K-P	38	L	005B5I	0.42	0.38	-0.06	-0.28	0.38	-0.14	0.8
SR	K-P	39	L	005BEH	0.78	0.47	-0.21	-0.22	-0.32	0.47	0.8
SR	K-P	43	O	005F81	0.74	0.56	-0.24	-0.37	-0.17	0.56	1.2
SR	K-P	44	L	005B9O	0.76	0.53	-0.26	-0.28	0.53	-0.24	1.2
SR	K-P	45	L	005F2X	0.64	0.55	0.55	-0.30	-0.33	-0.11	1.2
SR	K-P	46	O	005BK3	0.42	0.23	0.02	0.23	-0.22	-0.13	1.2
SR	K-P	48	L	005ALF	0.39	0.21	0.01	-0.19	0.21	-0.06	1.2
SR	K-P	49	O	005EV3	0.38	0.44	0.44	-0.28	-0.20	-0.03	1.2
SR	K-P	50	O	005FGD	0.83	0.46	-0.24	-0.22	0.46	-0.22	1.2
SR	K-P	52	L	005EXZ	0.15	0.13	-0.16	-0.37	0.13	0.32	1.2
SR	K-P	55	O	005B3R	0.70	0.57	-0.30	0.57	-0.29	-0.24	1.3
SR	K-P	56	L	005FE8	0.79	0.56	-0.30	0.56	-0.31	-0.20	1.3
SR	K-P	57	L	005AKH	0.84	0.53	0.53	-0.21	-0.33	-0.24	1.3
SR	K-P	58	L	005FHU	0.86	0.52	0.52	-0.24	-0.30	-0.24	1.3
SR	K-P	59	O	005AUL	0.61	0.48	-0.14	-0.29	0.48	-0.18	1.3
SR	K-P	60	O	005FI0	0.68	0.60	-0.30	-0.23	-0.32	0.60	1.3
SR	K-P	61	L	005EW2	0.71	0.55	0.55	-0.29	-0.29	-0.25	1.3
SR	K-P	62	O	005BDH	0.27	0.31	0.31	-0.15	-0.13	0.03	1.4
SR	K-P	63	L	005BFM	0.83	0.39	-0.23	0.39	-0.17	-0.20	1.4
SR	K-P	64	L	005BE6	0.40	0.38	-0.13	0.38	-0.14	-0.14	1.4

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	K-P	65	L	005EX3	0.70	0.39	-0.18	-0.23	0.39	-0.16	1.4
SR	K-P	66	L	005F2S	0.65	0.61	-0.27	-0.32	-0.27	0.61	1.4
SR	K-P	67	L	005F9F	0.44	0.30	-0.08	-0.10	0.30	-0.18	1.4
SR	K-P	70	L	005ERW	0.73	0.62	0.62	-0.31	-0.38	-0.18	1.4
SR	K-P	71	L	005ERQ	0.83	0.51	-0.25	-0.28	0.51	-0.22	1.4
SR	K-P	72	L	005BA9	0.81	0.61	-0.28	-0.25	-0.37	0.61	1.4
SR	K-P	73	L	005B7Y	0.50	0.35	-0.16	-0.28	0.35	-0.04	1.4
SR	K-P	74	O	005BHO	0.34	0.37	-0.07	-0.17	-0.16	0.37	1.4
SR	K-P	75	L	005B9S	0.73	0.51	-0.29	-0.23	0.51	-0.22	1.4
SR	K-P	76	O	005BIS	0.73	0.40	-0.17	-0.15	-0.22	0.40	1.5
SR	K-P	77	L	005EO3	0.75	0.55	0.55	-0.31	-0.29	-0.17	1.5
SR	K-P	79	O	005B57	0.69	0.54	0.54	-0.30	-0.27	-0.20	1.5
MEAN(SR)					0.62	0.46	-0.05	-0.09	-0.06	0.01	1.0
SD(SR)					0.18	0.11	0.29	0.30	0.32	0.32	0.3

Table A-6. Classical Item Statistics, Operational Items: HSA Government—May 2019—Accommodated Form Y (*N* = 3,416)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	Y	5	O	005J39	0.12	0.64					0.0
BCR-4	Y	13	L	0053HJ	0.15	0.66					0.0
BCR-4	Y	24	L	005B39	0.13	0.60					0.0
BCR-4	Y	51	L	005AML	0.13	0.63					0.0
BCR-4	Y	68	O	005B48	0.17	0.62					0.0
MEAN(BCR-4)					0.14	0.63					0.0
SD(BCR-4)					0.02	0.02					0.0
SR	Y	1	L	005BGG	0.30	0.16	0.00	0.16	-0.17	0.02	0.6
SR	Y	2	O	005ESG	0.09	0.02	0.08	-0.06	0.02	0.02	0.6
SR	Y	3	L	005EZB	0.59	0.37	-0.17	-0.20	0.37	-0.17	0.6
SR	Y	4	O	005EYH	0.46	0.37	-0.05	-0.28	0.37	-0.13	0.7
SR	Y	6	O	005BHT	0.14	0.08	0.08	-0.01	-0.02	0.00	0.9
SR	Y	7	O	005ESZ	0.41	0.40	-0.06	0.40	-0.26	-0.15	1.0
SR	Y	8	L	005ALQ	0.24	0.22	-0.09	-0.11	0.00	0.22	0.9
SR	Y	9	L	005F4E	0.61	0.38	-0.19	0.38	-0.22	-0.11	1.0
SR	Y	10	L	005EPG	0.36	0.41	-0.14	-0.15	-0.17	0.41	1.0
SR	Y	11	L	005BF9	0.33	0.38	-0.15	-0.13	-0.11	0.38	1.1
SR	Y	12	L	005F58	0.44	0.50	-0.14	-0.23	-0.23	0.50	1.2
SR	Y	14	L	005AT9	0.44	0.52	-0.20	-0.26	-0.18	0.52	1.7
SR	Y	15	O	005EWP	0.36	0.36	-0.14	-0.17	0.36	-0.07	1.8
SR	Y	17	L	005AYG	0.31	0.43	-0.17	-0.15	-0.13	0.43	1.9
SR	Y	18	L	005BBQ	0.37	0.44	-0.16	-0.18	0.44	-0.17	2.0
SR	Y	19	O	005BFQ	0.60	0.30	-0.15	-0.19	0.30	-0.06	1.1
SR	Y	20	O	005EP2	0.43	0.44	-0.11	-0.19	-0.22	0.44	1.1
SR	Y	22	O	005B7J	0.19	0.14	0.14	-0.01	-0.05	-0.03	1.3
SR	Y	23	L	005BDA	0.34	0.27	-0.03	-0.16	-0.09	0.27	1.3
SR	Y	25	O	005AKS	0.21	0.32	0.32	-0.11	-0.12	-0.05	1.3
SR	Y	26	L	005F40	0.62	0.41	-0.22	0.41	-0.18	-0.15	1.3

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Y	27	L	005FEW	0.39	0.44	-0.07	-0.21	-0.21	0.44	1.3
SR	Y	28	L	005ERS	0.38	0.30	0.03	-0.21	0.30	-0.13	1.3
SR	Y	29	O	005AW3	0.44	0.33	-0.07	-0.15	0.33	-0.17	1.4
SR	Y	30	L	005AKW	0.30	0.06	0.21	0.06	-0.15	-0.15	1.4
SR	Y	32	L	005EXS	0.29	0.23	-0.08	-0.02	0.23	-0.12	1.4
SR	Y	34	O	005BGF	0.35	0.19	-0.03	0.19	-0.07	-0.08	1.5
SR	Y	35	O	005F8X	0.50	0.19	0.19	-0.02	-0.17	-0.04	1.6
SR	Y	36	L	005AWR	0.36	0.44	0.44	-0.08	-0.22	-0.18	1.6
SR	Y	37	L	005B7E	0.56	0.28	-0.05	0.28	-0.13	-0.14	1.7
SR	Y	38	L	005B5I	0.23	0.14	0.06	-0.10	0.14	-0.04	1.6
SR	Y	39	L	005BEH	0.54	0.42	-0.10	-0.17	-0.27	0.42	1.6
SR	Y	43	O	005APH	0.33	0.16	0.16	-0.13	-0.11	0.10	2.1
SR	Y	44	L	005B9O	0.53	0.35	-0.16	-0.15	0.35	-0.09	2.2
SR	Y	45	L	005F2X	0.35	0.41	0.41	-0.16	-0.20	-0.02	2.2
SR	Y	46	O	005F7E	0.45	0.45	0.45	-0.17	-0.16	-0.17	2.3
SR	Y	48	L	005ALF	0.30	0.15	-0.03	-0.05	0.15	-0.01	2.2
SR	Y	49	O	005FCF	0.28	0.28	-0.04	-0.09	0.28	-0.10	2.2
SR	Y	50	O	005ETO	0.28	0.41	-0.08	-0.13	-0.16	0.41	2.1
SR	Y	52	L	005EXZ	0.15	-0.06	0.02	-0.21	-0.06	0.30	2.3
SR	Y	55	O	005B8B	0.36	0.23	-0.09	-0.03	0.23	-0.08	2.5
SR	Y	56	L	005FE8	0.46	0.43	-0.20	0.43	-0.17	-0.11	2.4
SR	Y	57	L	005AKH	0.60	0.49	0.49	-0.17	-0.26	-0.19	2.4
SR	Y	58	L	005FHU	0.59	0.48	0.48	-0.22	-0.24	-0.14	2.5
SR	Y	59	O	005EYP	0.43	0.36	-0.08	0.36	-0.12	-0.18	2.5
SR	Y	60	O	005BHG	0.35	0.27	-0.04	-0.11	0.27	-0.07	2.4
SR	Y	61	L	005EW2	0.45	0.31	0.31	-0.19	-0.19	0.04	2.5
SR	Y	62	O	005BCR	0.16	0.22	-0.08	0.08	-0.12	0.22	2.5
SR	Y	63	L	005BFM	0.66	0.36	-0.22	0.36	-0.12	-0.13	2.6
SR	Y	64	L	005BE6	0.22	0.21	0.01	0.21	-0.04	-0.08	2.5

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Y	65	L	005EX3	0.54	0.22	-0.14	-0.05	0.22	-0.08	2.6
SR	Y	66	L	005F2S	0.31	0.36	-0.05	-0.14	-0.14	0.36	2.6
SR	Y	67	L	005F9F	0.30	0.16	-0.05	0.01	0.16	-0.07	2.5
SR	Y	70	L	005ERW	0.38	0.49	0.49	-0.19	-0.19	-0.13	2.5
SR	Y	71	L	005ERQ	0.57	0.41	-0.13	-0.24	0.41	-0.12	2.6
SR	Y	72	L	005BA9	0.44	0.54	-0.20	-0.22	-0.21	0.54	2.6
SR	Y	73	O	005AS7	0.32	0.13	-0.18	-0.04	0.13	0.12	2.6
SR	Y	74	L	005B7Y	0.37	0.18	-0.07	-0.15	0.18	0.08	2.6
SR	Y	75	L	005B9S	0.40	0.38	-0.07	-0.18	0.38	-0.18	2.6
SR	Y	76	O	005AXY	0.44	0.43	-0.11	0.43	-0.27	-0.08	2.7
SR	Y	77	L	005EO3	0.48	0.41	0.41	-0.22	-0.16	-0.07	2.6
SR	Y	79	O	005BG1	0.24	0.40	-0.13	-0.05	-0.14	0.40	2.6
MEAN(SR)					0.39	0.32	0.00	-0.05	-0.01	0.04	1.9
SD(SR)					0.13	0.13	0.20	0.20	0.22	0.23	0.7

Table A-7. Classical Item Statistics, Operational Items: HSA Government—Summer 2019—Form Q (*N* = 755)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	Q	6	L	005AZB	0.28	0.65					0.0
BCR-4	Q	11	L	005J2I	0.25	0.62					0.0
BCR-4	Q	24	L	005J4V	0.12	0.65					0.0
BCR-4	Q	56	L	005BH9	0.12	0.61					0.0
BCR-4	Q	68	L	005BBU	0.23	0.64					0.0
MEAN(BCR-4)					0.20	0.63					0.0
SD(BCR-4)					0.07	0.02					0.0
SR	Q	1	L	005ANA	0.47	0.30	-0.15	-0.13	0.30	-0.11	0.4
SR	Q	2	L	005B2Y	0.34	0.24	0.24	-0.12	-0.01	-0.12	0.5
SR	Q	3	L	005ENB	0.27	0.29	-0.25	0.01	0.29	-0.10	0.5
SR	Q	4	L	005AYQ	0.17	0.25	0.25	-0.09	-0.13	0.03	0.8
SR	Q	5	L	005B3A	0.44	0.25	-0.26	-0.07	0.25	0.04	0.8
SR	Q	7	L	005B1H	0.35	0.18	0.18	0.06	-0.18	-0.04	0.7
SR	Q	8	L	005BG8	0.59	0.46	0.46	-0.27	-0.22	-0.14	0.9
SR	Q	9	L	005AQ0	0.57	0.32	-0.12	-0.06	-0.24	0.32	0.8
SR	Q	10	L	005AYR	0.35	0.41	-0.18	-0.17	0.41	-0.12	0.8
SR	Q	12	L	005FGB	0.84	0.40	-0.18	-0.27	0.40	-0.16	1.1
SR	Q	13	L	005EZG	0.67	0.42	0.42	-0.21	-0.24	-0.14	1.1
SR	Q	14	L	005BK3	0.36	0.12	0.16	0.12	-0.22	-0.13	1.1
SR	Q	15	L	005EUX	0.40	0.14	-0.15	0.07	-0.10	0.14	1.3
SR	Q	17	L	005F9X	0.66	0.36	-0.23	-0.14	0.36	-0.12	1.6
SR	Q	18	L	005BCP	0.21	0.09	-0.06	0.09	-0.13	0.10	1.6
SR	Q	19	L	005EQU	0.58	0.11	-0.08	0.11	-0.19	0.10	0.4
SR	Q	20	L	005FE7	0.34	0.31	-0.25	-0.01	0.31	-0.10	0.5
SR	Q	22	L	005ATT	0.34	0.36	-0.13	-0.17	-0.11	0.36	0.8
SR	Q	23	L	005ER5	0.54	0.37	0.37	-0.23	-0.28	-0.03	0.8
SR	Q	25	L	005BI5	0.26	0.22	0.04	-0.09	-0.22	0.22	0.8
SR	Q	26	L	005B68	0.20	0.07	0.04	0.07	-0.23	0.08	1.3

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Q	27	L	005FBH	0.29	0.27	0.27	-0.18	-0.02	-0.10	0.8
SR	Q	28	L	005EX9	0.55	0.34	-0.21	0.34	-0.14	-0.11	0.8
SR	Q	29	L	005AX5	0.40	0.27	-0.17	-0.20	0.27	0.03	0.8
SR	Q	30	L	005ALY	0.66	0.48	-0.17	0.48	-0.30	-0.21	0.8
SR	Q	32	L	005FBM	0.46	0.29	0.29	-0.18	-0.14	-0.02	1.1
SR	Q	34	L	005AYK	0.30	0.41	0.00	-0.24	-0.16	0.41	1.2
SR	Q	35	L	005EVU	0.50	0.42	-0.20	0.42	-0.29	-0.08	1.1
SR	Q	36	L	005AW5	0.68	0.50	0.50	-0.27	-0.26	-0.20	1.2
SR	Q	37	L	005AMN	0.32	0.25	-0.08	0.25	-0.13	-0.07	1.3
SR	Q	38	L	005AP2	0.37	0.15	0.08	-0.21	0.15	-0.07	0.4
SR	Q	39	L	005AMU	0.48	0.45	-0.17	-0.15	-0.25	0.45	0.4
SR	Q	43	L	005BLK	0.61	0.24	-0.17	0.24	-0.16	0.07	1.7
SR	Q	44	L	005B1K	0.45	0.23	-0.07	-0.08	0.23	-0.09	1.7
SR	Q	45	L	005F8Y	0.32	0.31	-0.20	0.31	0.04	-0.14	1.7
SR	Q	46	L	005F9E	0.62	0.46	-0.12	-0.23	-0.25	0.46	2.1
SR	Q	48	L	005BLZ	0.42	0.19	-0.03	0.19	-0.13	0.00	1.7
SR	Q	49	L	005BC6	0.34	0.05	-0.09	0.18	0.05	-0.16	1.9
SR	Q	50	L	005B6Q	0.28	0.01	-0.19	0.01	0.09	0.17	1.9
SR	Q	51	L	005BL9	0.33	0.36	-0.08	-0.12	0.36	-0.17	1.9
SR	Q	52	L	005BC7	0.48	0.44	0.44	-0.19	-0.17	-0.17	1.9
SR	Q	55	L	005FBI	0.49	0.36	-0.11	-0.18	0.36	-0.15	2.0
SR	Q	57	L	005ATL	0.33	0.34	-0.05	0.34	-0.25	-0.04	1.9
SR	Q	58	L	005FBL	0.50	0.46	-0.15	-0.26	0.46	-0.15	1.9
SR	Q	59	L	005BA4	0.26	0.13	-0.07	0.13	-0.12	0.13	2.0
SR	Q	60	L	005F1M	0.57	0.47	0.47	-0.27	-0.24	-0.08	1.9
SR	Q	61	L	005BBB	0.49	0.42	-0.16	0.42	-0.21	-0.12	1.9
SR	Q	62	L	005AXG	0.54	0.42	-0.09	0.42	-0.26	-0.18	1.7
SR	Q	63	L	005AOW	0.32	0.26	0.26	-0.22	-0.08	0.09	1.7
SR	Q	64	L	005FD3	0.44	0.34	-0.14	0.34	-0.14	-0.09	2.0

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Q	65	L	005FHN	0.44	0.25	-0.17	0.03	-0.18	0.25	1.7
SR	Q	66	L	005B3Q	0.34	0.28	-0.06	0.28	-0.12	-0.09	1.7
SR	Q	67	L	005FAA	0.37	0.37	0.03	-0.22	-0.20	0.37	1.7
SR	Q	70	L	005F2C	0.43	0.29	-0.14	-0.13	0.29	-0.03	1.9
SR	Q	71	L	005F0S	0.29	0.16	-0.12	0.16	-0.04	0.07	1.9
SR	Q	72	L	0053C9	0.27	0.36	0.36	-0.02	-0.18	-0.19	2.1
SR	Q	73	L	005BEN	0.56	0.35	-0.05	-0.22	-0.17	0.35	2.0
SR	Q	74	L	005FFK	0.38	0.30	0.30	-0.12	-0.13	-0.05	1.9
SR	Q	75	L	005F9U	0.27	0.31	-0.05	0.31	-0.15	-0.09	1.7
SR	Q	76	L	005B67	0.57	0.41	-0.14	-0.14	0.41	-0.24	1.9
SR	Q	77	L	005B16	0.43	0.40	-0.06	0.40	-0.19	-0.20	1.7
SR	Q	79	L	005FET	0.23	0.32	0.32	-0.06	-0.13	-0.06	1.7
MEAN(SR)					0.42	0.30	0.00	0.00	-0.04	-0.01	1.3
SD(SR)					0.14	0.12	0.22	0.22	0.23	0.18	0.5

Table A-8. Classical Item Statistics, Operational Items: HSA Government—Summer 2019—Accommodated Form Z (*N* = 140)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
BCR-4	Z	6	L	005AZB	0.18	0.54					0.0
BCR-4	Z	11	L	005J2I	0.16	0.50					0.0
BCR-4	Z	24	L	005J4V	0.06	0.50					0.0
BCR-4	Z	56	L	005BH9	0.06	0.26					0.0
BCR-4	Z	68	L	005BBU	0.16	0.38					0.0
MEAN(BCR-4)					0.12	0.44					0.0
SD(BCR-4)					0.06	0.12					0.0
SR	Z	1	L	005ANA	0.32	0.21	-0.06	-0.06	0.21	-0.13	0.0
SR	Z	2	L	005B2Y	0.19	0.11	0.11	-0.01	0.03	-0.13	0.0
SR	Z	3	L	005ENB	0.25	-0.09	-0.21	0.31	-0.09	-0.07	0.7
SR	Z	4	L	005AYQ	0.15	0.21	0.21	-0.05	-0.09	-0.03	0.0
SR	Z	5	L	005B3A	0.40	0.32	-0.28	-0.01	0.32	-0.08	0.0
SR	Z	7	L	005B1H	0.36	0.21	0.21	-0.11	-0.12	0.02	0.7
SR	Z	8	L	005BG8	0.41	0.40	0.40	-0.12	-0.30	-0.03	0.7
SR	Z	9	L	005AQ0	0.56	0.31	-0.01	-0.13	-0.28	0.31	0.0
SR	Z	10	L	005AYR	0.22	0.29	-0.03	-0.18	0.29	-0.06	0.7
SR	Z	12	L	005FGB	0.77	0.39	-0.17	-0.27	0.39	-0.20	1.4
SR	Z	13	L	005EZG	0.49	0.47	0.47	-0.18	-0.26	-0.20	2.1
SR	Z	14	L	005BK3	0.30	-0.02	0.23	-0.02	-0.30	0.04	2.9
SR	Z	15	L	005EUX	0.32	0.12	-0.07	-0.15	0.06	0.12	2.9
SR	Z	17	L	005F9X	0.54	0.20	-0.01	-0.18	0.20	-0.18	2.9
SR	Z	18	L	005BCP	0.28	0.03	-0.21	0.03	-0.10	0.17	2.9
SR	Z	19	L	005EQU	0.49	0.03	0.03	0.03	-0.27	0.20	0.0
SR	Z	20	L	005FE7	0.29	0.24	-0.15	-0.02	0.24	-0.09	0.0
SR	Z	22	L	005ATT	0.29	0.20	-0.02	-0.24	0.04	0.20	0.0
SR	Z	23	L	005ER5	0.48	0.44	0.44	-0.26	-0.12	-0.19	0.0
SR	Z	25	L	005BI5	0.27	0.28	0.24	-0.32	-0.29	0.28	0.7
SR	Z	26	L	005B68	0.20	-0.06	0.01	-0.06	-0.24	0.19	0.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Z	27	L	005FBH	0.19	0.28	0.28	-0.13	-0.04	-0.10	0.0
SR	Z	28	L	005EX9	0.40	0.21	-0.20	0.21	-0.02	-0.04	0.7
SR	Z	29	L	005AX5	0.41	0.35	-0.12	-0.23	0.35	-0.08	0.0
SR	Z	30	L	005ALY	0.55	0.39	-0.18	0.39	-0.16	-0.22	0.0
SR	Z	32	L	005FBM	0.41	0.14	0.14	-0.16	-0.06	0.09	0.7
SR	Z	34	L	005AYK	0.21	0.34	0.05	-0.11	-0.21	0.34	1.4
SR	Z	35	L	005EVU	0.33	0.29	-0.10	0.29	-0.18	-0.05	1.4
SR	Z	36	L	005AW5	0.54	0.50	0.50	-0.31	-0.18	-0.21	2.1
SR	Z	37	L	005AMN	0.26	0.07	0.00	0.07	0.05	-0.12	2.9
SR	Z	38	L	005AP2	0.29	0.03	0.17	-0.14	0.03	-0.04	0.7
SR	Z	39	L	005AMU	0.34	0.36	-0.15	-0.08	-0.19	0.36	0.7
SR	Z	43	L	005BLK	0.45	0.44	-0.25	0.44	-0.22	-0.05	1.4
SR	Z	44	L	005B1K	0.39	0.20	-0.03	-0.20	0.20	0.01	1.4
SR	Z	45	L	005F8Y	0.28	0.15	0.06	0.15	0.00	-0.18	1.4
SR	Z	46	L	005F9E	0.46	0.49	-0.17	-0.29	-0.16	0.49	1.4
SR	Z	48	L	005BLZ	0.43	-0.02	0.03	-0.02	0.04	-0.05	1.4
SR	Z	49	L	005BC6	0.29	-0.06	-0.05	0.21	-0.06	-0.16	1.4
SR	Z	50	L	005B6Q	0.34	-0.13	-0.04	-0.13	0.05	0.13	2.1
SR	Z	51	L	005BL9	0.31	0.10	0.02	-0.04	0.10	-0.07	1.4
SR	Z	52	L	005BC7	0.36	0.29	0.29	-0.13	-0.08	-0.12	1.4
SR	Z	55	L	005FBI	0.39	0.45	-0.12	-0.23	0.45	-0.19	2.1
SR	Z	57	L	005ATL	0.30	0.28	0.06	0.28	-0.27	-0.05	2.9
SR	Z	58	L	005FBL	0.35	0.50	-0.17	-0.26	0.50	-0.13	2.9
SR	Z	59	L	005BA4	0.27	0.11	0.10	0.11	-0.10	-0.09	2.9
SR	Z	60	L	005F1M	0.39	0.42	0.42	-0.18	-0.22	-0.07	2.9
SR	Z	61	L	005BBB	0.37	0.38	-0.24	0.38	-0.08	-0.10	2.9
SR	Z	62	L	005AXG	0.45	0.26	-0.05	0.26	-0.22	-0.06	1.4
SR	Z	63	L	005AOW	0.26	0.15	0.15	-0.08	-0.10	0.06	1.4
SR	Z	64	L	005FD3	0.49	0.15	-0.02	0.15	-0.14	-0.04	1.4

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Z	65	L	005FHN	0.44	0.07	0.05	0.04	-0.16	0.07	1.4
SR	Z	66	L	005B3Q	0.25	0.14	-0.11	0.14	-0.07	0.09	1.4
SR	Z	67	L	005FAA	0.36	0.09	0.07	-0.13	-0.01	0.09	1.4
SR	Z	70	L	005F2C	0.31	0.13	-0.04	-0.11	0.13	0.03	1.4
SR	Z	71	L	005F0S	0.29	0.04	0.09	0.04	-0.08	-0.04	1.4
SR	Z	72	L	0053C9	0.22	0.17	0.17	0.10	-0.22	-0.11	2.1
SR	Z	73	L	005BEN	0.54	0.33	-0.03	-0.14	-0.26	0.33	1.4
SR	Z	74	L	005FFK	0.30	0.19	0.19	-0.10	0.03	-0.13	1.4
SR	Z	75	L	005F9U	0.21	0.08	0.12	0.08	-0.11	-0.10	2.1
SR	Z	76	L	005B67	0.46	0.41	-0.19	-0.11	0.41	-0.21	1.4
SR	Z	77	L	005B16	0.31	0.30	0.03	0.30	-0.22	-0.12	2.1
SR	Z	79	L	005FET	0.18	0.07	0.07	-0.05	-0.07	0.08	2.1
MEAN(SR)					0.35	0.22	0.03	-0.03	-0.04	-0.01	1.4
SD(SR)					0.12	0.16	0.19	0.19	0.20	0.16	0.9

Table A-9. Classical Item Statistics, Operational Items: HS MISA—January 2019—Forms A–C (*N* = 6,727)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	A-C	12	L	00532Y	0.28	0.70						0.0
CR-2	A-C	60	O	005LA3	0.13	0.61						0.0
Mean (CR-2)					0.21	0.65						0.0
SD (CR-2)					0.11	0.07						0.0
CR-3	A-C	18	L	005HGO	0.14	0.60						0.0
CR-3	A-C	30	O	0053YT	0.21	0.65						0.0
Mean (CR-3)					0.17	0.62						0.0
SD (CR-3)					0.05	0.03						0.0
CR-4	A-C	6	L	005898	0.10	0.66						0.0
CR-4	A-C	48	O	0058LI	0.17	0.72						0.0
Mean (CR-4)					0.14	0.69						0.0
SD (CR-4)					0.05	0.05						0.0
MSR-1	A-C	44	O	0058LA	0.16	0.45						0.0
MSR-2	A-C	9	L	0052YO	0.34	0.38						0.0
MSR-2	A-C	11	L	0052JE	0.44	0.58						0.0
Mean (MSR-2)					0.39	0.48						0.0
SD (MSR-2)					0.07	0.14						0.0
SR	A-C	1	L	00587W	0.49	0.50	0.50	-0.25	-0.24	-0.16		0.4
SR	A-C	2	L	00588V	0.29	0.36	-0.01	0.36	-0.25	-0.07		0.5
SR	A-C	4	L	005893	0.59	0.47	0.47	-0.20	-0.20	-0.22	-0.13	0.5
SR	A-C	5	L	00588X	0.29	0.32	-0.01	0.32	-0.21	-0.17		0.4
SR	A-C	7	L	0052DW	0.45	0.27	-0.17	-0.09	0.27	-0.08		0.9
SR	A-C	8	L	0052IC	0.59	0.42	-0.12	-0.25	0.42	-0.20		1.0
SR	A-C	10	L	0052YD	0.63	0.53	-0.23	0.53	-0.30	-0.21		1.3
SR	A-C	13	L	005K55	0.43	0.22	-0.01	-0.24	0.22	-0.04		0.7
SR	A-C	14	L	005H2S	0.35	0.20	-0.10	-0.16	0.20	0.05		0.7
SR	A-C	15	L	005H6O	0.36	0.42	-0.23	-0.07	-0.20	0.42		0.6
SR	A-C	16	L	005H6H	0.31	0.00	0.00	0.18	-0.18	-0.10		0.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	A-C	25	O	00547Q	0.21	-0.04	0.23	-0.28	-0.04	0.12		1.3
SR	A-C	26	O	00547L	0.24	0.19	-0.01	0.01	-0.14	0.19		1.4
SR	A-C	27	O	005428	0.28	0.13	-0.16	0.13	-0.20	0.19		1.4
SR	A-C	29	O	0054BB	0.27	0.04	0.15	0.04	-0.07	-0.07		1.5
SR	A-C	43	O	0052UB	0.20	0.14	0.14	-0.23	0.01	0.14		2.6
SR	A-C	45	O	0058LE	0.64	0.51	0.51	-0.24	-0.23	-0.17	-0.15	2.8
SR	A-C	46	O	0058LD	0.47	0.47	-0.16	0.47	-0.27	-0.14		2.8
SR	A-C	47	O	0058LF	0.34	0.25	-0.05	-0.13	0.25	-0.04		2.8
SR	A-C	55	O	005L5H	0.43	0.47	0.47	-0.19	-0.24	-0.08		3.3
SR	A-C	58	O	005L8Q	0.30	0.20	0.20	-0.10	-0.04	0.01		3.4
SR	A-C	59	O	005L9T	0.38	0.38	-0.04	0.38	-0.17	-0.15		3.5
Mean (SR)					0.39	0.29	0.06	0.00	-0.07	-0.04	-0.14	1.6
SD (SR)					0.13	0.17	0.24	0.26	0.21	0.16	0.01	1.1
TE-1	A-C	3	L	00588U	0.23	0.53						0.0
TE-2	A-C	17	L	005H2Z	0.22	0.46						0.0
TE-2	A-C	28	O	00549H	0.34	0.38						0.0
TE-2	A-C	56	O	005L7S	0.26	0.39						0.0
TE-2	A-C	57	O	005L8D	0.31	0.41						0.0
Mean (TE-2)					0.28	0.41						0.0
SD (TE-2)					0.05	0.04						0.0

Table A-10. Classical Item Statistics, Operational Items: HS MISA—January 2019—Forms AA–AC (*N* = 6,788)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	AA-AC	12	L	00532Y	0.28	0.71						0.0
CR-2	AA-AC	30	O	0056I8	0.03	0.38						0.0
CR-2	Mean (CR-2)				0.15	0.54		0.15	0.54			0.0
CR-2	SD (CR-2)				0.18	0.23		0.18	0.23			0.0
CR-3	AA-AC	18	L	005HGO	0.14	0.6						0.0
CR-3	AA-AC	48	O	5488	0.1	0.66						0.0
CR-3	Mean (CR-3)				0.12	0.63		0.12	0.63			0.0
CR-3	SD (CR-3)				0.03	0.04		0.03	0.04			0.0
CR-4	AA-AC	6	L	5898	0.1	0.66						0.0
CR-4	AA-AC	60	O	0055GG	0.12	0.69						0.0
CR-4	Mean (CR-4)				0.11	0.68		0.11	0.68			0.0
CR-4	SD (CR-4)				0.02	0.02		0.02	0.02			0.0
MSR-1	AA-AC	26	O	0056GR	0.04	0.24						0.0
MSR-2	AA-AC	11	L	0052JE	0.43	0.56						0.0
MSR-2	AA-AC	9	L	0052YO	0.35	0.36						0.0
MSR-2	AA-AC	46	O	0052M1	0.13	0.39						0.0
MSR-2	Mean (MSR-2)				0.30	0.44		0.3	0.44			0.0
MSR-2	SD (MSR-2)				0.15	0.11		0.15	0.11			0.0
SR	AA-AC	1	L	00587W	0.48	0.53	0.53	-0.25	-0.24	-0.19		0.6
SR	AA-AC	10	L	0052YD	0.62	0.52	-0.21	0.52	-0.3	-0.21		1.8
SR	AA-AC	2	L	00588V	0.28	0.34	0.04	0.34	-0.25	-0.08		0.6
SR	AA-AC	4	L	5893	0.59	0.49	0.49	-0.2	-0.21	-0.21	-0.15	0.8
SR	AA-AC	5	L	00588X	0.3	0.32	-0.03	0.32	-0.2	-0.15		0.8
SR	AA-AC	7	L	0052DW	0.45	0.26	-0.16	-0.06	0.26	-0.1		1.1
SR	AA-AC	8	L	0052IC	0.59	0.44	-0.13	-0.25	0.44	-0.2		1.3
SR	AA-AC	13	L	005K55	0.44	0.24	-0.03	-0.24	0.24	-0.05		0.7
SR	AA-AC	14	L	005H2S	0.35	0.25	-0.11	-0.17	0.25	0.01		0.8
SR	AA-AC	15	L	005H6O	0.35	0.42	-0.21	-0.08	-0.21	0.42		0.8

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	AA-AC	16	L	005H6H	0.32	-0.01	-0.01	0.18	-0.16	-0.09		0.9
SR	AA-AC	25	O	0056GJ	0.44	0.45	0.45	-0.14	-0.25	-0.16		1.1
SR	AA-AC	28	O	0056HS	0.34	0.35	0.35	-0.11	-0.16	-0.10		1.5
SR	AA-AC	43	O	5484	0.37	0.29	-0.06	0.29	-0.11	-0.12		2.4
SR	AA-AC	47	O	5487	0.36	0.36	0.36	-0.14	-0.21	-0.02		2.7
SR	AA-AC	55	O	0055AK	0.39	0.26	0.01	-0.15	0.26	-0.15		3.0
SR	AA-AC	56	O	0063VJ	0.36	0.29	-0.03	-0.11	-0.13	0.29		3.0
SR	AA-AC	58	O	0063VN	0.54	0.42	-0.19	-0.23	0.42	-0.12		3.1
SR	Mean (SR)				0.42	0.35	0.06	-0.03	-0.03	-0.07	-0.15	1.5
SR	SD (SR)				0.10	0.13	0.25	0.24	0.26	0.17		0.9
TE-1	AA-AC	3	L	00588U	0.21	0.52						0.0
TE-1	AA-AC	44	O	00543A	0.40	0.34						0.0
TE-1	AA-AC	45	O	00548H	0.14	0.44						0.0
TE-1	AA-AC	57	O	00559S	0.15	0.51						0.0
TE-1	AA-AC	59	O	0055EU	0.28	0.43						0.0
TE-1	Mean (TE-1)				0.24	0.45						0.0
TE-1	SD (TE-1)				0.11	0.07						0.0
TE-2	AA-AC	17	L	005H2Z	0.22	0.48						0.0
TE-2	AA-AC	27	O	0056GS	0.31	0.48						0.0
TE-2	AA-AC	29	O	0056GV	0.21	0.37						0.0
TE-2	Mean (TE-2)				0.25	0.44						0.0
TE-2	SD (TE-2)				0.05	0.06						0.0

Table A-11. Classical Item Statistics, Operational Items: HS MISA—January 2019—Accommodated Form X (*N* = 663)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	X19	12	L	00532Y	0.06	0.49						0.0
CR-2	X19	60	O	005LA3	0.04	0.39						0.0
CR-2	Mean (CR-2)				0.05	0.44						0.0
CR-2	SD (CR-2)				0.02	0.07						0.0
CR-3	X19	18	L	005HGO	0.04	0.41						0.0
CR-3	X19	30	O	0053YT	0.12	0.43						0.0
CR-3	Mean (CR-3)				0.08	0.42						0.0
CR-3	SD (CR-3)				0.06	0.02						0.0
CR-4	X19	6	L	005898	0.01	0.33						0.0
CR-4	X19	48	O	0058LI	0.04	0.53						0.0
CR-4	Mean (CR-4)				0.03	0.43						0.0
CR-4	SD (CR-4)				0.02	0.14						0.0
MSR-1	X19	44	O	0058LA	0.05	0.32						0.0
MSR-2	X19	11	L	0052JE	0.25	0.37						0.0
MSR-2	X19	9	L	0052YO	0.22	0.24						0.0
MSR-2	Mean (MSR-2)				0.23	0.31						0.0
MSR-2	SD (MSR-2)				0.02	0.09						0.0
SR	X19	1	L	00587W	0.27	0.33	0.33	-0.16	-0.08	-0.09		0.5
SR	X19	10	L	0052YD	0.39	0.33	-0.06	0.33	-0.15	-0.16		2.0
SR	X19	2	L	00588V	0.18	0.12	-0.09	0.12	-0.02	0.00		0.6
SR	X19	4	L	5893	0.36	0.37	0.37	-0.09	-0.15	-0.11	-0.10	0.8
SR	X19	5	L	00588X	0.21	0.13	0.05	0.13	-0.09	-0.07		0.9
SR	X19	7	L	0052DW	0.38	0.13	-0.11	-0.04	0.13	0.01		1.2
SR	X19	8	L	0052IC	0.39	0.32	-0.18	-0.10	0.32	-0.08		1.7
SR	X19	13	L	005K55	0.37	0.19	-0.02	-0.13	0.19	-0.04		0.8
SR	X19	14	L	005H2S	0.31	0.12	-0.01	-0.11	0.12	0.03		0.6
SR	X19	15	L	005H6O	0.20	0.27	-0.12	-0.05	-0.06	0.27		0.8
SR	X19	16	L	005H6H	0.34	0.18	0.18	0.03	-0.13	-0.13		0.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	X19	25	O	00547Q	0.23	0.11	0.07	-0.11	0.11	0.03		2.4
SR	X19	26	O	00547L	0.19	0.06	0.02	0.06	-0.05	0.06		2.3
SR	X19	27	O	5428	0.26	0.07	-0.02	0.07	-0.15	0.18		2.6
SR	X19	29	O	0054BB	0.27	0.09	0.15	0.09	-0.07	-0.07		2.7
SR	X19	43	O	0052UB	0.17	0.12	0.07	-0.06	-0.02	0.12		3.2
SR	X19	45	O	0058LE	0.38	0.43	0.43	-0.11	-0.17	-0.08	-0.12	3.8
SR	X19	46	O	0058LD	0.30	0.28	-0.06	0.28	-0.10	-0.06		3.3
SR	X19	47	O	0058LF	0.27	0.14	-0.02	-0.05	0.14	0.02		3.2
SR	X19	55	O	005L5H	0.31	0.25	0.25	-0.07	-0.08	-0.05		3.2
SR	X19	58	O	005L8Q	0.24	0.11	0.11	-0.13	0.03	0.09		3.3
SR	X19	59	O	005L9T	0.29	0.25	-0.05	0.25	-0.04	-0.10		3.3
SR	Mean (SR)				0.29	0.20	0.06	0.01	-0.01	-0.01	-0.11	2.0
SR	SD (SR)				0.07	0.11	0.17	0.14	0.13	0.10	0.01	1.2
TE-1	X19	3	L	00588U	0.05	0.25						0.0
TE-2	X19	17	L	005H2Z	0.11	0.24						0.0
TE-2	X19	28	O	00549H	0.23	0.30						0.0
TE-2	X19	56	O	005L7S	0.21	0.30						0.0
TE-2	X19	57	O	005L8D	0.24	0.31						0.0
TE-2	Mean (TE-2)				0.20	0.29						0.0
TE-2	SD (TE-2)				0.06	0.03						0.0

Table A-12. Classical Item Statistics, Operational Items: HS MISA—May 2019—Forms D–H, K–M (*N* = 25,915)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	X19	12	L	00532Y	0.06	0.49						0.0
CR-2	D19	12	L	00532Y	0.30	0.73						0.0
CR-2	D19	48	O	00598R	0.26	0.71						0.0
CR-2	Mean (CR-2)				0.28	0.72						0.0
CR-2	SD (CR-2)				0.03	0.02						0.0
CR-3	D19	18	L	005CKY	0.10	0.62						0.0
CR-3	D19	60	O	0058GA	0.07	0.47						0.0
CR-3	Mean (CR-3)				0.08	0.54						0.0
CR-3	SD (CR-3)				0.03	0.10						0.0
CR-4	D19	6	L	005898	0.11	0.68						0.0
CR-4	D19	30	O	004YBP	0.26	0.76						0.0
CR-4	Mean (CR-4)				0.18	0.72						0.0
CR-4	SD (CR-4)				0.10	0.06						0.0
MSR-1	D19	14	L	005CK0	0.15	0.19						0.0
MSR-1	D19	17	L	005HUA	0.13	0.47						0.0
MSR-1	Mean (MSR-1)				0.14	0.33						0.0
MSR-1	SD (MSR-1)				0.02	0.20						0.0
MSR-2	D19	11	L	0052JE	0.46	0.56						0.0
MSR-2	D19	9	L	0052YO	0.36	0.36						0.0
MSR-2	D19	45	O	00596I	0.37	0.51						0.0
MSR-2	Mean (MSR-2)				0.39	0.48						0.0
MSR-2	SD (MSR-2)				0.06	0.11						0.0
SR	D19	1	L	00587W	0.49	0.51	0.51	-0.26	-0.25	-0.17		0.6
SR	D19	10	L	0052YD	0.65	0.53	-0.23	0.53	-0.31	-0.21		1.2
SR	D19	2	L	00588V	0.31	0.36	0.00	0.36	-0.25	-0.09		0.6
SR	D19	4	L	005893	0.60	0.49	0.49	-0.20	-0.21	-0.22	-0.15	0.7
SR	D19	5	L	00588X	0.31	0.33	-0.03	0.33	-0.22	-0.15		0.7
SR	D19	7	L	0052DW	0.45	0.22	-0.14	-0.08	0.22	-0.06		0.9

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	D19	8	L	0052IC	0.60	0.45	-0.14	-0.26	0.45	-0.21		0.9
SR	D19	13	L	005CJL	0.60	0.30	0.30	-0.18	-0.17	-0.07		0.7
SR	D19	15	L	005CJH	0.20	0.19	0.19	0.00	-0.21	0.07		0.8
SR	D19	25	O	004YB5	0.47	0.39	-0.07	0.39	-0.32	-0.08		1.0
SR	D19	26	O	004YBB	0.49	0.38	-0.13	-0.10	0.38	-0.26		1.0
SR	D19	27	O	004YBF	0.43	0.38	-0.15	-0.13	-0.16	0.38		1.1
SR	D19	28	O	004YBE	0.45	0.44	-0.12	0.44	-0.24	-0.16		1.1
SR	D19	29	O	004YBH	0.46	0.43	0.43	-0.15	-0.17	-0.21		1.0
SR	D19	44	O	00596Q	0.45	0.50	-0.15	-0.19	-0.26	0.50		1.8
SR	D19	46	O	00596R	0.59	0.52	-0.15	0.52	-0.32	-0.22		1.8
SR	D19	47	O	00598O	0.35	0.18	-0.04	0.18	-0.08	-0.04		1.9
SR	D19	55	O	0057JN	0.37	0.37	0.37	-0.22	-0.09	-0.10		1.8
SR	D19	57	O	0058BK	0.34	0.39	0.39	-0.17	-0.19	-0.04		1.9
SR	D19	58	O	0058E6	0.42	0.32	0.32	0.05	-0.16	-0.26		1.9
SR	D19	59	O	00582E	0.52	0.47	-0.19	-0.20	0.47	-0.21		1.9
SR	Mean (SR)				0.45	0.39	0.07	0.03	-0.10	-0.09	-0.15	1.2
SR	SD (SR)				0.12	0.10	0.26	0.28	0.25	0.20	--	0.5
TE-1	D19	3	L	00588U	0.23	0.51						0.0
TE-2	D19	16	L	005HUT	0.28	0.40						0.0
TE-2	D19	43	O	00596J	0.34	0.45						0.0
TE-2	D19	56	O	5872	0.41	0.55						0.0
TE-2	Mean (TE-2)				0.34	0.47						0.0
TE-2	SD (TE-2)				0.07	0.08						0.0

Table A-13. Classical Item Statistics, Operational Items: HS MISA—May 2019—Forms N–P, S–W, AD (*N* = 25,909)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	N-P, S-W, AD	12	L	00532Y	0.30	0.72						0.0
CR-2	N-P, S-W, AD	48	O	0054GF	0.16	0.58						0.0
CR-2	Mean (CR-2)				0.23	0.65						0.0
CR-2	SD (CR-2)				0.10	0.10						0.0
CR-3	N-P, S-W, AD	18	L	005CKY	0.10	0.61						0.0
CR-3	N-P, S-W, AD	30	O	005BV5	0.13	0.65						0.0
CR-3	Mean (CR-3)				0.12	0.63						0.0
CR-3	SD (CR-3)				0.02	0.03						0.0
CR-4	N-P, S-W, AD	6	L	005898	0.11	0.69						0.0
CR-4	N-P, S-W, AD	60	O	005KUR	0.17	0.73						0.0
CR-4	Mean (CR-4)				0.14	0.71						0.0
CR-4	SD (CR-4)				0.04	0.03						0.0
MSR-1	N-P, S-W, AD	14	L	005CK0	0.15	0.20						0.0
MSR-1	N-P, S-W, AD	17	L	005HUA	0.13	0.46						0.0
MSR-1	N-P, S-W, AD	57	O	005KUM	0.10	0.16						0.0
MSR-1	Mean (MSR-1)				0.13	0.28						0.0
MSR-1	SD (MSR-1)				0.03	0.16						0.0
MSR-2	N-P, S-W, AD	11	L	0052JE	0.46	0.56						0.0
MSR-2	N-P, S-W, AD	9	L	0052YO	0.36	0.37						0.0
MSR-2	N-P, S-W, AD	46	O	0054FU	0.46	0.51						0.0
MSR-2	Mean (MSR-2)				0.42	0.48						0.0
MSR-2	SD (MSR-2)				0.06	0.10						0.0
SR	N-P, S-W, AD	1	L	00587W	0.49	0.50	0.50	-0.25	-0.24	-0.16		0.6
SR	N-P, S-W, AD	10	L	0052YD	0.65	0.50	-0.21	0.50	-0.29	-0.21		1.2
SR	N-P, S-W, AD	2	L	00588V	0.31	0.36	-0.01	0.36	-0.23	-0.10		0.6
SR	N-P, S-W, AD	4	L	005893	0.60	0.48	0.48	-0.20	-0.20	-0.22	-0.16	0.7
SR	N-P, S-W, AD	5	L	00588X	0.32	0.34	-0.03	0.34	-0.22	-0.15		0.7
SR	N-P, S-W, AD	7	L	0052DW	0.45	0.22	-0.15	-0.06	0.22	-0.06		1.0

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	N-P, S-W, AD	8	L	0052IC	0.60	0.44	-0.13	-0.26	0.44	-0.20		1.0
SR	N-P, S-W, AD	13	L	005CJL	0.59	0.30	0.30	-0.19	-0.14	-0.07		0.8
SR	N-P, S-W, AD	15	L	005CJH	0.20	0.18	0.18	-0.01	-0.19	0.07		0.9
SR	N-P, S-W, AD	25	O	005BUJ	0.41	0.29	0.01	-0.27	0.29	-0.15		0.9
SR	N-P, S-W, AD	27	O	005BUK	0.42	0.22	-0.07	-0.08	0.22	-0.09		1.1
SR	N-P, S-W, AD	28	O	005BUN	0.45	0.46	-0.17	-0.22	-0.18	0.46		1.1
SR	N-P, S-W, AD	43	O	0054FW	0.39	0.28	0.02	-0.22	0.28	-0.11		1.6
SR	N-P, S-W, AD	45	O	0054G3	0.50	0.34	-0.14	0.34	-0.19	-0.07		1.7
SR	N-P, S-W, AD	47	O	0054G9	0.54	0.37	-0.09	-0.20	0.37	-0.20		1.8
SR	N-P, S-W, AD	55	O	005KUN	0.25	0.37	0.37	-0.20	-0.13	0.01		1.8
SR	N-P, S-W, AD	58	O	005KUQ	0.18	0.15	0.15	0.21	-0.20	-0.18		1.9
SR	Mean (SR)				0.43	0.34	0.06	-0.02	-0.02	-0.08	-0.16	1.1
SR	SD (SR)				0.14	0.11	0.23	0.26	0.26	0.16	--	0.5
TE-1	N-P, S-W, AD	3	L	00588U	0.24	0.52						0.0
TE-1	N-P, S-W, AD	29	O	005BUQ	0.34	0.41						0.0
TE-1	N-P, S-W, AD	56	O	005KUD	0.57	0.50						0.0
TE-1	N-P, S-W, AD	59	O	005KUO	0.18	0.34						0.0
TE-1	Mean (TE-1)				0.33	0.44						0.0
TE-1	SD (TE-1)				0.17	0.08						0.0
TE-2	N-P, S-W, AD	16	L	005HUT	0.28	0.39						0.0
TE-2	N-P, S-W, AD	26	O	005BUL	0.20	0.23						0.0
TE-2	N-P, S-W, AD	44	O	0054FT	0.53	0.45						0.0
TE-2	Mean (TE-2)				0.34	0.36						0.0
TE-2	SD (TE-2)				0.17	0.12						0.0

Table A-14. Classical Item Statistics, Operational Items: HS MISA—May 2019—Accommodated Form Y (*N* = 2,409)

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
CR-2	Y19	12	L	00532Y	0.06	0.57						0.0
CR-2	Y19	48	O	00598R	0.06	0.47						0.0
CR-2				Mean (CR-2)	0.06	0.52						0.0
CR-2				SD (CR-2)	0.00	0.07						0.0
CR-3	Y19	18	L	005CKY	0.02	0.37						0.0
CR-3	Y19	60	O	0058GA	0.01	0.29						0.0
CR-3				Mean (CR-3)	0.02	0.33						0.0
CR-3				SD (CR-3)	0.00	0.06						0.0
CR-4	Y19	6	L	005898	0.01	0.51						0.0
CR-4	Y19	30	O	004YBP	0.07	0.56						0.0
CR-4				Mean (CR-4)	0.04	0.53						0.0
CR-4				SD (CR-4)	0.04	0.04						0.0
MSR-1	Y19	14	L	005CK0	0.11	0.12						0.0
MSR-1	Y19	17	L	005HUA	0.03	0.20						0.0
MSR-1				Mean (MSR-1)	0.07	0.16						0.0
MSR-1				SD (MSR-1)	0.06	0.06						0.0
MSR-2	Y19	11	L	0052JE	0.26	0.33						0.0
MSR-2	Y19	9	L	0052YO	0.24	0.24						0.0
MSR-2	Y19	45	O	00596I	0.24	0.30						0.0
MSR-2				Mean (MSR-2)	0.25	0.29						0.0
MSR-2				SD (MSR-2)	0.01	0.05						0.0
SR	Y19	1	L	00587W	0.29	0.33	0.33	-0.18	-0.11	-0.03		0.7
SR	Y19	10	L	0052YD	0.37	0.34	-0.07	0.34	-0.18	-0.12		2.1
SR	Y19	2	L	00588V	0.21	0.15	-0.06	0.15	-0.07	0.00		0.8
SR	Y19	4	L	005893	0.37	0.37	0.37	-0.10	-0.15	-0.12	-0.08	1.0
SR	Y19	5	L	00588X	0.25	0.15	0.05	0.15	-0.12	-0.07		1.0
SR	Y19	7	L	0052DW	0.36	0.14	-0.03	-0.07	0.14	-0.03		1.4
SR	Y19	8	L	0052IC	0.37	0.31	-0.11	-0.12	0.31	-0.10		1.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS5	%Omits
SR	Y19	13	L	005CJL	0.49	0.22	0.22	-0.12	-0.11	-0.04		1.0
SR	Y19	15	L	005CJH	0.18	0.13	0.13	-0.01	-0.10	0.04		1.1
SR	Y19	25	O	004YB5	0.32	0.22	0.00	0.22	-0.16	-0.02		1.4
SR	Y19	26	O	004YBB	0.34	0.26	-0.08	-0.02	0.26	-0.16		1.5
SR	Y19	27	O	004YBF	0.26	0.26	-0.07	-0.09	-0.07	0.26		1.4
SR	Y19	28	O	004YBE	0.30	0.25	-0.04	0.25	-0.14	-0.05		1.5
SR	Y19	29	O	004YBH	0.26	0.28	0.28	-0.05	-0.10	-0.10		1.6
SR	Y19	44	O	00596Q	0.26	0.24	-0.03	-0.05	-0.10	0.24		2.0
SR	Y19	46	O	00596R	0.36	0.31	-0.07	0.31	-0.14	-0.11		2.2
SR	Y19	47	O	00598O	0.32	0.13	-0.01	0.13	-0.05	-0.04		2.3
SR	Y19	55	O	0057JN	0.27	0.30	0.30	-0.10	-0.09	-0.09		2.0
SR	Y19	57	O	0058BK	0.23	0.24	0.24	-0.11	-0.03	-0.05		2.2
SR	Y19	58	O	0058E6	0.28	0.30	0.30	-0.05	-0.10	-0.13		2.2
SR	Y19	59	O	00582E	0.32	0.24	-0.07	-0.09	0.24	-0.07		2.2
SR				Mean (SR)	0.31	0.25	0.08	0.02	-0.04	-0.04	-0.08	1.6
SR				SD (SR)	0.07	0.07	0.17	0.16	0.15	0.11		0.5
TE-1	Y19	3	L	00588U	0.06	0.25						0.0
TE-2	Y19	16	L	005HUT	0.18	0.28						0.0
TE-2	Y19	43	O	00596J	0.19	0.32						0.0
TE-2	Y19	56	O	005872	0.20	0.33						0.0
TE-2				Mean (TE-2)	0.19	0.31						0.0
TE-2				SD (TE-2)	0.01	0.03						0.0

Appendix B. Classical Item Statistics—Field Test Items

For the data in tables B-1 through B-4:
Item Type = Type + Point Value, where Type is one of the following:

- CR (constructed-response items worth 2, 3, or 4 points),
- MSR (multi-select items worth either 1 or 2 points),
- SR (selected-response items),
- TE (technology-enhanced items worth either 1 or 2 points);
- P_Val = *p*-value,
- R_ITT = item-total correlation,
- P_BIS1 – P_BIS*n* = option-total correlations for *n* options,
- %Omits = percentage of omitted responses.

Table B-1. Classical Item Statistics, Field Test Items: HSA Government—January 2019

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	004WDD	1,768	0.21	0.62					0.0
CR-4	5041	1,786	0.29	0.57					0.0
CR-4	00504A	986	0.05	0.47					0.0
CR-4	5070	1,738	0.17	0.67					0.0
CR-4	0060ZA	1,724	0.10	0.66					0.0
CR-4	0061DV	1,706	0.21	0.66					0.0
CR-4	Mean (CR-4)		0.17	0.61					0.0
CR-4	SD (CR-4)		0.09	0.08					0.0
CR-5	005STO	1,504	0.25	0.67					0.0
CR-5	005SUN	1,841	0.28	0.67					0.0
CR-5	Mean (CR-5)		0.27	0.67					0.0
CR-5	SD (CR-5)		0.02	0.00					0.0
MSR-1	006SGS	2,541	0.54	0.41					0.0
MSR-2	006SGT	2,575	0.78	0.38					0.0
MSR-2	006SH2	2,601	0.52	0.41					0.0
MSR-2	006UH1	2,541	0.67	0.39					0.0
MSR-2	006UHO	2,584	0.43	0.31					0.0
MSR-2	006UYE	2,594	0.63	0.39					0.0
MSR-2	Mean (MSR-2)		0.60	0.38					0.0
MSR-2	SD (MSR-2)		0.13	0.04					0.0
SR	004ZV0	2,594	0.42	0.32	-0.09	-0.16	0.32	-0.03	0.0
SR	005072	2,594	0.60	0.48	-0.22	-0.24	-0.20	0.48	0.0
SR	005078	2,559	0.53	0.48	-0.19	-0.26	0.48	-0.15	0.0
SR	0050OD	2,584	0.44	0.39	-0.21	0.39	-0.13	-0.11	0.0
SR	0050Y0	2,541	0.51	0.38	-0.21	-0.09	-0.21	0.38	0.0
SR	005STK	2,594	0.39	0.25	-0.11	-0.14	0.25	0.00	0.0
SR	005STL	5,100	0.53	0.40	-0.15	0.40	-0.23	-0.14	0.0
SR	005STM	5,100	0.24	0.39	-0.10	-0.09	-0.15	0.39	0.0
SR	005STN	2,594	0.40	0.44	-0.17	-0.12	-0.20	0.44	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	005SUJ	2,575	0.46	0.24	-0.12	0.24	-0.23	0.03	0.0
SR	005SUK	5,185	0.34	0.29	-0.02	0.29	-0.19	-0.07	0.0
SR	005SUL	5,185	0.40	0.47	0.47	-0.18	-0.20	-0.15	0.0
SR	005SUM	2,575	0.49	0.54	-0.20	-0.19	-0.29	0.54	0.0
SR	005SXQ	2,541	0.29	0.27	0.00	0.27	-0.11	-0.13	0.0
SR	005TZQ	2,559	0.41	0.36	-0.16	-0.12	0.36	-0.09	0.0
SR	005UTC	2,601	0.32	-0.04	0.27	-0.04	-0.17	-0.10	0.0
SR	005UTR	2,541	0.44	0.29	-0.04	0.29	-0.13	-0.12	0.0
SR	005VWU	2,575	0.30	0.24	0.24	-0.19	-0.16	0.10	0.0
SR	005VWY	2,559	0.60	0.45	-0.18	0.45	-0.21	-0.18	0.0
SR	0061AO	2,575	0.22	-0.02	-0.03	0.02	-0.02	0.08	0.0
SR	0061AQ	2,584	0.35	-0.01	-0.03	-0.01	-0.09	0.15	0.0
SR	0061AR	2,541	0.36	0.42	0.42	-0.17	-0.15	-0.17	0.0
SR	0061BD	2,584	0.49	0.40	-0.15	-0.13	-0.17	0.40	0.0
SR	0061C4	2,559	0.18	0.13	-0.03	0.01	-0.07	0.13	0.0
SR	0061CG	2,594	0.45	0.22	-0.02	-0.16	0.22	-0.08	0.0
SR	0061DA	2,575	0.49	0.42	-0.19	0.42	-0.17	-0.13	0.0
SR	0061DG	2,559	0.31	0.23	0.23	-0.18	-0.15	0.04	0.0
SR	00627L	2,575	0.41	0.46	-0.21	-0.25	0.46	-0.07	0.0
SR	00628M	2,601	0.68	0.40	0.40	-0.20	-0.22	-0.15	0.0
SR	0062DC	2,541	0.47	0.43	-0.05	-0.23	-0.22	0.43	0.0
SR	0062G1	2,584	0.42	0.30	0.06	0.30	-0.22	-0.17	0.0
SR	0062IX	2,601	0.46	0.26	0.26	-0.14	-0.19	0.00	0.0
SR	0062JM	2,594	0.35	0.44	0.44	-0.14	-0.21	-0.06	0.0
SR	0062LW	2,594	0.29	0.38	-0.11	0.38	-0.12	-0.07	0.0
SR	0062OG	2,601	0.44	0.13	-0.05	0.13	0.00	-0.04	0.0
SR	006541	2,584	0.42	0.49	-0.16	-0.24	0.49	-0.12	0.0
SR	0065JU	2,575	0.25	0.29	0.29	-0.06	-0.09	-0.12	0.0
SR	0065KU	2,601	0.34	0.08	0.04	0.06	-0.11	0.08	0.0
SR	Mean (SR)		0.41	0.32	0.00	0.00	-0.06	0.03	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	SD (SR)		0.11	0.15	0.21	0.23	0.22	0.21	0.0
TE-2	005SYW	2,601	0.63	0.44					0.0
TE-2	005Y3F	2,594	0.44	0.33					0.0
TE-2	0060Y3	5,159	0.37	0.40					0.0
TE-2	0061BZ	2,559	0.49	0.50					0.0
TE-2	006289	2,559	0.44	0.37					0.0
TE-2	0062F1	2,601	0.44	0.34					0.0
TE-2	00646N	2,594	0.39	0.44					0.0
TE-2	006498	5,159	0.62	0.45					0.0
TE-2	006SHB	2,559	0.44	0.42					0.0
TE-2	006UY7	2,541	0.48	0.37					0.0
TE-2	Mean (TE-2)		0.47	0.41					0.0
TE-2	SD (TE-2)		0.09	0.05					0.0

Table B-2. Classical Item Statistics, Field Test Items: HSA Government—May 2019

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	0050Y4	1,891	0.31	0.74					0.0
CR-4	005YW9	1,921	0.48	0.72					0.0
CR-4	0061AS	1,921	0.40	0.70					0.0
CR-4	0061AY	1,916	0.24	0.69					0.0
CR-4	0061C3	1,923	0.34	0.69					0.0
CR-4	0061EF	1,905	0.43	0.78					0.0
CR-4	0061ES	1,218	0.21	0.47					0.0
CR-4	0064N3	1,865	0.29	0.69					0.0
CR-4	0067KU	1,917	0.43	0.65					0.0
CR-4	0067KV	1,915	0.32	0.67					0.0
CR-4	Mean (CR-4)		0.34	0.68					0.0
CR-4	SD (CR-4)		0.09	0.08					0.0
CR-5	005STZ	1,928	0.41	0.73					0.0
CR-5	005SU4	1,915	0.39	0.73					0.0
CR-5	005SUS	1,925	0.40	0.71					0.0
CR-5	005TLU	1,541	0.38	0.75					0.0
CR-5	005TLW	1,922	0.37	0.73					0.0
CR-5	Mean (CR-5)		0.39	0.73					0.0
CR-5	SD (CR-5)		0.02	0.01					0.0
MSR-2	006SGW	5,130	0.47	0.45					0.0
MSR-2	006U0O	5,121	0.73	0.56					0.0
MSR-2	006U1B	5,178	0.62	0.57					0.0
MSR-2	006UG2	5,178	0.50	0.41					0.0
MSR-2	006UHA	5,178	0.56	0.41					0.0
MSR-2	006UHI	5,178	0.72	0.65					0.0
MSR-2	006UY1	5,130	0.48	0.53					0.0
MSR-2	006UY6	5,130	0.57	0.51					0.0
MSR-2	006UYD	5,164	0.71	0.58					0.0
MSR-2	006V3I	5,152	0.63	0.61					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
MSR-2	006V3M	5,152	0.52	0.58					0.0
MSR-2	006V3Y	5,110	0.49	0.37					0.0
MSR-2	006VDI	5,110	0.62	0.41					0.0
MSR-2	006VDK	5,122	0.64	0.64					0.0
MSR-2	006VDP	5,097	0.70	0.65					0.0
MSR-2	006VED	5,097	0.73	0.61					0.0
MSR-2	006VEU	5,110	0.81	0.47					0.0
MSR-2	006WBT	5,121	0.82	0.63					0.0
MSR-2	006WNG	5,152	0.74	0.48					0.0
MSR-2	006WNL	5,116	0.80	0.62					0.0
MSR-2	006X7R	5,122	0.73	0.53					0.0
MSR-2	006X7T	5,116	0.64	0.60					0.0
MSR-2	Mean (MSR-2)		0.64	0.54					0.0
MSR-2	SD (MSR-2)		0.11	0.09					0.0
SR	00503X	5,152	0.67	0.48	-0.23	-0.29	0.48	-0.16	0.0
SR	005045	5,122	0.73	0.56	0.56	-0.40	-0.30	-0.10	0.0
SR	005049	5,116	0.28	-0.05	0.08	-0.03	-0.05	0.07	0.0
SR	005077	5,116	0.63	0.47	-0.21	0.47	-0.28	-0.17	0.0
SR	005079	5,178	0.71	0.54	-0.34	0.54	-0.23	-0.15	0.0
SR	00507A	5,152	0.81	0.40	-0.21	-0.24	0.40	-0.15	0.0
SR	00507C	5,102	0.49	0.51	0.51	-0.22	-0.28	-0.11	0.0
SR	00507E	5,097	0.62	0.51	-0.23	0.51	-0.20	-0.27	0.0
SR	00507F	5,116	0.75	0.47	-0.30	-0.17	0.47	-0.18	0.0
SR	00507I	5,121	0.57	0.24	-0.07	0.24	-0.18	-0.06	0.0
SR	0050Y2	5,121	0.82	0.50	0.50	-0.28	-0.30	-0.19	0.0
SR	0050Y8	5,152	0.77	0.51	0.51	-0.19	-0.35	-0.18	0.0
SR	0050YB	5,122	0.61	0.62	-0.28	-0.33	-0.22	0.62	0.0
SR	0052HJ	5,110	0.64	0.31	0.31	-0.22	-0.12	-0.06	0.0
SR	005STU	5,164	0.37	0.29	-0.08	-0.10	-0.12	0.29	0.0
SR	005STV	5,164	0.46	0.18	0.09	-0.14	0.18	-0.22	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	005STW	5,162	0.33	0.25	0.25	-0.04	-0.16	-0.09	0.0
SR	005STY	5,162	0.41	0.35	-0.05	0.35	-0.19	-0.19	0.0
SR	005SU0	10,226	0.41	0.40	-0.08	-0.19	0.40	-0.19	0.0
SR	005SU1	10,274	0.59	0.47	-0.22	-0.18	-0.27	0.47	0.0
SR	005SU2	10,274	0.46	0.45	-0.15	-0.26	-0.10	0.45	0.0
SR	005SU3	10,226	0.53	0.49	-0.21	-0.19	0.49	-0.23	0.0
SR	005SUO	5,097	0.62	0.53	0.53	-0.29	-0.24	-0.20	0.0
SR	005SUP	5,121	0.64	0.41	-0.16	0.41	-0.25	-0.18	0.0
SR	005SUQ	5,121	0.45	0.54	-0.22	-0.21	-0.27	0.54	0.0
SR	005SUR	5,097	0.39	0.27	-0.07	-0.24	0.27	0.04	0.0
SR	005SXL	5,130	0.59	0.45	0.45	-0.24	-0.24	-0.11	0.0
SR	005TLQ	5,102	0.43	0.39	0.39	-0.33	-0.02	-0.21	0.0
SR	005TLR	5,130	0.53	0.33	-0.21	-0.04	0.33	-0.15	0.0
SR	005TLS	5,130	0.50	0.47	-0.14	-0.27	-0.27	0.47	0.0
SR	005TLT	5,102	0.25	0.22	-0.09	-0.31	0.22	0.14	0.0
SR	005TLV	5,178	0.38	0.18	-0.08	-0.03	0.18	-0.17	0.0
SR	005TLX	5,178	0.55	0.43	-0.13	-0.19	-0.26	0.43	0.0
SR	005TLY	5,178	0.72	0.46	-0.13	0.46	-0.30	-0.25	0.0
SR	005TM0	5,178	0.16	0.08	-0.03	0.08	-0.14	0.12	0.0
SR	005VXC	5,097	0.28	0.04	0.00	-0.17	0.04	0.12	0.0
SR	005YW8	5,110	0.31	0.09	-0.13	-0.04	0.11	0.09	0.0
SR	0061C8	5,130	0.45	0.39	0.39	-0.18	-0.07	-0.22	0.0
SR	0061DF	5,164	0.53	0.47	-0.17	-0.27	-0.17	0.47	0.0
SR	00629P	5,162	0.59	0.42	-0.16	0.42	-0.21	-0.21	0.0
SR	0062HV	5,121	0.69	0.57	-0.25	-0.33	0.57	-0.22	0.0
SR	0064N4	5,164	0.45	0.29	0.29	0.02	-0.27	-0.08	0.0
SR	0065K0	5,164	0.58	0.49	-0.14	0.49	-0.28	-0.19	0.0
SR	0065KC	5,178	0.60	0.44	-0.12	0.44	-0.24	-0.30	0.0
SR	0065KG	5,162	0.51	0.52	-0.22	-0.27	-0.17	0.52	0.0
SR	0065KQ	5,102	0.61	0.39	-0.35	-0.07	0.39	-0.02	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0065KZ	5,178	0.82	0.52	0.52	-0.31	-0.28	-0.18	0.0
SR	0065L3	5,178	0.74	0.47	-0.21	-0.21	0.47	-0.23	0.0
SR	0065L7	5,162	0.25	0.07	-0.07	0.07	-0.01	0.10	0.0
SR	0065LB	5,097	0.44	0.48	-0.16	-0.11	-0.32	0.48	0.0
SR	0065LC	5,178	0.62	0.58	0.58	-0.31	-0.25	-0.24	0.0
SR	0065LD	5,178	0.61	0.43	-0.23	0.43	-0.19	-0.17	0.0
SR	0067KT	5,122	0.23	0.07	-0.05	0.06	0.07	-0.01	0.0
SR	0067KW	5,130	0.55	0.45	-0.18	0.45	-0.32	-0.10	0.0
SR	006J42	5,130	0.33	0.25	-0.21	0.01	0.25	-0.07	0.0
SR	006J4P	5,130	0.75	0.50	-0.29	0.50	-0.25	-0.20	0.0
SR	006J50	5,110	0.25	0.22	-0.05	-0.03	-0.09	0.22	0.0
SR	006U0J	5,164	0.71	0.46	-0.23	-0.27	0.46	-0.22	0.0
SR	00625T	5,102	0.30	0.58	-0.30	-0.28	-0.26	0.58	0.0
SR	Mean (SR)		0.53	0.39	-0.03	-0.04	-0.05	-0.01	0.0
SR	SD (SR)		0.17	0.16	0.27	0.28	0.27	0.26	0.0
TE-2	005SYR	5,162	0.75	0.62					0.0
TE-2	005UO3	5,178	0.53	0.39					0.0
TE-2	005Y15	5,102	0.51	0.45					0.0
TE-2	005Y2A	5,178	0.57	0.42					0.0
TE-2	0060YA	5,102	0.57	0.48					0.0
TE-2	0060YG	5,097	0.77	0.56					0.0
TE-2	0060YX	5,122	0.65	0.40					0.0
TE-2	0060Z3	5,121	0.73	0.58					0.0
TE-2	0060ZF	5,097	0.87	0.57					0.0
TE-2	00616S	5,116	0.57	0.63					0.0
TE-2	0061CA	5,162	0.64	0.49					0.0
TE-2	0061CN	5,164	0.55	0.39					0.0
TE-2	0061WS	5,121	0.75	0.62					0.0
TE-2	0061XD	5,116	0.61	0.62					0.0
TE-2	0061XN	5,097	0.78	0.62					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-2	0061Y5	5,102	0.46	0.55					0.0
TE-2	0061Z9	5,178	0.67	0.56					0.0
TE-2	00623W	5,178	0.82	0.51					0.0
TE-2	0062C1	5,178	0.55	0.39					0.0
TE-2	0062S1	5,178	0.81	0.58					0.0
TE-2	0062S8	5,164	0.50	0.54					0.0
TE-2	0063TE	5,152	0.73	0.53					0.0
TE-2	0063VU	5,162	0.74	0.63					0.0
TE-2	0064L4	5,121	0.68	0.62					0.0
TE-2	0064MN	5,110	0.76	0.48					0.0
TE-2	0064MR	5,164	0.61	0.48					0.0
TE-2	0065M0	5,110	0.82	0.62					0.0
TE-2	00675D	5,122	0.53	0.36					0.0
TE-2	00675H	5,152	0.68	0.57					0.0
TE-2	006U0X	5,102	0.46	0.61					0.0
TE-2	006UFC	5,116	0.62	0.55					0.0
TE-2	006UFG	5,122	0.81	0.61					0.0
TE-2	006UY2	5,162	0.59	0.38					0.0
TE-2	006UYF	5,162	0.55	0.35					0.0
TE-2	006WNO	5,102	0.70	0.51					0.0
TE-2	Mean (TE-2)		0.65	0.52					0.0
TE-2	SD (TE-2)		0.11	0.09					0.0

Table B-3. Classical Item Statistics, Field Test Items: HS MISA—January 2019

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-2	004Z61	1,647	0.13	0.49					0.0
CR-2	004Z63	1,426	0.14	0.55					0.0
CR-2	00673R	1,665	0.03	0.34					0.0
CR-2	00673S	1,483	0.10	0.42					0.0
CR-2	006J2H	1,629	0.15	0.44					0.0
CR-2	006J2I	1,654	0.20	0.47					0.0
CR-2	Mean (CR-2)		0.12	0.45					0.0
CR-2	SD (CR-2)		0.06	0.07					0.0
CR-3	005QUY	1,627	0.10	0.44					0.0
CR-3	005QV1	1,639	0.17	0.66					0.0
CR-3	0064JI	1,488	0.16	0.65					0.0
CR-3	0064KQ	1,686	0.19	0.61					0.0
CR-3	Mean (CR-3)		0.15	0.59					0.0
CR-3	SD (CR-3)		0.04	0.10					0.0
CR-4	005WON	1,694	0.16	0.63					0.0
CR-4	005WOQ	1,683	0.11	0.63					0.0
CR-4	006EG3	1,617	0.06	0.50					0.0
CR-4	006EGK	1,398	0.04	0.44					0.0
CR-4	006K4R	1,622	0.09	0.57					0.0
CR-4	006K4S	1,611	0.09	0.52					0.0
CR-4	Mean (CR-4)		0.09	0.55					0.0
CR-4	SD (CR-4)		0.04	0.08					0.0
MSR-1	005QVH	2,251	0.09	0.14					0.0
MSR-1	005WMR	2,273	0.21	0.28					0.0
MSR-1	006RG2	2,256	0.24	0.38					0.0
MSR-1	006RGM	2,256	0.07	0.26					0.0
MSR-1	005315	2,256	0.38	0.34					0.0
MSR-1	Mean (MSR-1)		0.20	0.28					0.00
MSR-1	SD (MSR-1)		0.12	0.09					0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
MSR-2	006RO8	2,264	0.13	0.42					0.0
MSR-2	0064K0	2,246	0.43	0.46					0.0
MSR-2	00672K	4,481	0.21	0.40					0.0
MSR-2	00673L	2,225	0.24	0.48					0.0
MSR-2	006J27	2,264	0.31	0.08					0.0
MSR-2	006J29	2,251	0.23	0.41					0.0
MSR-2	006J2F	2,273	0.16	0.50					0.0
MSR-2	006RQF	2,256	0.60	0.54					0.0
MSR-2	Mean (MSR-2)		0.29	0.41					0.0
MSR-2	SD (MSR-2)		0.16	0.14					0.0
SR	004VEU	4,481	0.27	0.23	-0.05	-0.03	-0.12	0.23	0.0
SR	004Z56	4,481	0.27	0.06	-0.05	0.06	-0.22	0.23	0.0
SR	004Z5I	4,471	0.32	0.23	0.09	0.23	-0.19	-0.09	0.0
SR	004Z5M	2,246	0.43	0.35	-0.03	-0.10	-0.26	0.35	0.0
SR	004Z5Y	4,502	0.33	0.33	-0.04	-0.08	-0.21	0.33	0.0
SR	005QUO	4,515	0.28	0.27	-0.05	-0.03	-0.18	0.27	0.0
SR	005QUR	2,273	0.46	0.40	-0.13	0.40	-0.18	-0.16	0.0
SR	005QUS	2,264	0.17	-0.07	0.01	-0.07	0.02	0.07	0.0
SR	005QUV	2,264	0.51	0.38	-0.18	-0.15	0.38	-0.15	0.0
SR	005WHO	2,273	0.43	0.32	-0.12	-0.06	0.32	-0.18	0.0
SR	005WHU	4,515	0.40	0.31	-0.05	0.31	-0.26	-0.07	0.0
SR	005WNB	4,515	0.63	0.39	-0.15	-0.19	0.39	-0.21	0.0
SR	005WNE	2,273	0.44	0.49	0.49	-0.18	-0.23	-0.18	0.0
SR	005WNZ	2,273	0.26	0.14	0.13	-0.21	-0.05	0.14	0.0
SR	005WO1	4,515	0.42	0.34	-0.19	-0.19	-0.07	0.34	0.0
SR	005WOH	2,251	0.39	0.05	-0.12	0.17	-0.23	0.05	0.0
SR	00618P	2,264	0.42	0.20	-0.09	0.20	-0.15	0.02	0.0
SR	0062UN	4,524	0.20	0.24	0.25	-0.19	-0.11	0.13	0.0
SR	0062V9	2,273	0.30	-0.04	-0.04	0.01	-0.04	0.11	0.0
SR	0064JG	2,246	0.48	0.39	-0.11	-0.20	0.39	-0.14	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0064JH	4,502	0.47	0.52	-0.20	-0.23	-0.20	0.52	0.0
SR	0064JR	2,225	0.52	0.53	-0.15	-0.25	-0.25	0.53	0.0
SR	0064JX	2,246	0.55	0.40	-0.20	0.40	-0.17	-0.13	0.0
SR	0064JZ	4,481	0.38	0.34	-0.08	-0.11	-0.14	0.33	0.0
SR	0064K1	2,225	0.59	0.37	-0.12	0.37	-0.20	-0.14	0.0
SR	00671Z	2,246	0.44	0.34	0.34	-0.23	-0.10	-0.12	0.0
SR	00673M	2,225	0.62	0.34	-0.04	-0.23	-0.21	0.34	0.0
SR	00673O	4,502	0.23	0.06	-0.04	0.06	0.08	-0.10	0.0
SR	00673P	2,246	0.42	0.24	0.01	-0.15	0.24	-0.15	0.0
SR	00673Q	2,225	0.35	0.34	0.34	-0.21	-0.24	0.01	0.0
SR	006EE1	2,246	0.51	0.35	0.35	-0.10	-0.14	-0.16	0.0
SR	006EE6	2,225	0.25	0.13	0.13	-0.13	0.01	0.10	0.0
SR	006EEU	2,225	0.24	-0.01	-0.12	0.04	-0.01	0.17	0.0
SR	006EF8	2,246	0.59	0.44	-0.18	-0.17	-0.21	0.44	0.0
SR	006EFY	2,225	0.44	0.24	0.10	-0.13	-0.21	0.24	0.0
SR	006J1R	4,515	0.43	0.30	-0.11	0.30	-0.16	-0.06	0.0
SR	006J1U	2,273	0.25	0.43	0.43	-0.08	-0.22	-0.06	0.0
SR	006J21	2,273	0.34	0.10	-0.04	0.10	-0.10	0.07	0.0
SR	006J28	2,251	0.56	0.39	-0.05	0.39	-0.25	-0.21	0.0
SR	006J2G	2,264	0.14	0.04	0.04	0.06	-0.03	-0.02	0.0
SR	006JWW	2,273	0.29	0.08	0.21	-0.16	-0.10	0.08	0.0
SR	006K3F	4,537	0.38	0.23	-0.08	0.00	-0.15	0.23	0.0
SR	006K3Z	2,251	0.39	0.18	0.07	0.18	-0.12	-0.13	0.0
SR	006K4M	2,251	0.38	0.48	-0.12	-0.17	-0.24	0.48	0.0
SR	006K4O	2,264	0.26	0.15	-0.16	0.04	-0.04	0.15	0.0
SR	006K4P	2,273	0.24	0.07	0.07	0.05	-0.21	0.12	0.0
SR	006K4Q	2,251	0.41	0.13	0.08	0.13	-0.12	-0.09	0.0
SR	006R08	2,256	0.33	0.27	0.27	-0.10	-0.17	0.03	0.0
SR	006R0D	2,256	0.57	0.47	-0.17	0.47	-0.25	-0.18	0.0
SR	006R0F	2,264	0.47	0.41	0.41	-0.21	-0.20	-0.10	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	006R0G	2,264	0.39	0.37	0.37	-0.14	-0.13	-0.16	0.0
SR	006RGB	2,256	0.41	0.11	0.03	0.11	-0.05	-0.04	0.0
SR	006RGT	2,256	0.32	0.18	-0.06	0.18	-0.03	-0.05	0.0
SR	006RN7	2,264	0.41	0.35	0.35	-0.06	-0.18	-0.17	0.0
SR	006ROY	2,256	0.71	0.39	-0.20	-0.20	0.39	-0.17	0.0
SR	Mean (SR)		0.39	0.27	0.02	-0.01	-0.09	0.05	0.0
SR	SD (SR)		0.12	0.15	0.19	0.20	0.18	0.21	0.0
TE-1	005QTE	2,273	0.20	0.17					0.0
TE-1	005WNF	2,251	0.40	0.37					0.0
TE-1	005WNN	2,273	0.40	0.21					0.0
TE-1	0064JS	2,246	0.50	0.55					0.0
TE-1	0064K2	2,225	0.30	0.31					0.0
TE-1	00672E	2,225	0.66	0.39					0.0
TE-1	006EEH	2,225	0.20	0.39					0.0
TE-1	006EEI	2,246	0.04	0.19					0.0
TE-1	006EEJ	2,225	0.03	0.21					0.0
TE-1	006EET	2,246	0.16	0.31					0.0
TE-1	006EFD	2,246	0.34	0.27					0.0
TE-1	006J1V	4,515	0.20	0.07					0.0
TE-1	006K2U	2,273	0.26	0.45					0.0
TE-1	006K4A	2,251	0.33	0.45					0.0
TE-1	006K4N	4,524	0.18	0.28					0.0
TE-1	006RFX	2,256	0.10	0.08					0.0
TE-1	004Z5C	4,471	0.14	0.27					0.0
TE-1	00530S	4,481	0.20	0.31					0.0
TE-1	Mean (TE-1)		0.26	0.29					0.0
TE-1	SD (TE-1)		0.16	0.13					0.0
TE-2	006RO6	2,264	0.12	0.36					0.0
TE-2	005QTO	2,264	0.09	0.29					0.0
TE-2	005QU0	2,273	0.31	0.43					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-2	005QVM	2,251	0.21	0.17					0.0
TE-2	005QW7	2,251	0.27	0.37					0.0
TE-2	0064JJ	2,225	0.32	0.52					0.0
TE-2	00672W	2,246	0.59	0.46					0.0
TE-2	00673E	2,246	0.12	0.21					0.0
TE-2	006J25	2,273	0.42	0.38					0.0
TE-2	006J2A	2,273	0.27	0.34					0.0
TE-2	006J2B	2,264	0.16	0.54					0.0
TE-2	006J9S	2,246	0.25	0.16					0.0
TE-2	006MRF	2,251	0.14	0.43					0.0
TE-2	006R0B	2,256	0.45	0.63					0.0
TE-2	006SE7	2,256	0.32	0.23					0.0
TE-2	Mean (TE-2)		0.27	0.37					0.0
TE-2	SD (TE-2)		0.14	0.14					0.0

Table B-4. Classical Item Statistics, Field Test Items: HS MISA—May 2019

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-2	005XLH	1,784	0.05	0.40					0.0
CR-2	005XLL	1,263	0.06	0.41					0.0
CR-2	00670E	1,806	0.08	0.45					0.0
CR-2	00670H	1,779	0.10	0.56					0.0
CR-2	006GZT	1,851	0.29	0.58					0.0
CR-2	006GZX	1,848	0.20	0.59					0.0
CR-2	006IGR	1,780	0.16	0.63					0.0
CR-2	006IGU	1,825	0.24	0.63					0.0
CR-2	006JVC	1,857	0.12	0.46					0.0
CR-2	006JVD	1,814	0.12	0.57					0.0
CR-2	006LZR	1,840	0.23	0.59					0.0
CR-2	006LZS	1,869	0.26	0.58					0.0
CR-2	Mean (CR-2)		0.16	0.54					0.0
CR-2	SD (CR-2)		0.08	0.08					0.0
CR-3	005ORU	1,879	0.16	0.61					0.0
CR-3	005PQU	1,843	0.19	0.62					0.0
CR-3	005RL6	1,829	0.11	0.53					0.0
CR-3	005RL7	1,836	0.14	0.46					0.0
CR-3	005WSG	1,861	0.15	0.68					0.0
CR-3	005WSI	1,867	0.25	0.66					0.0
CR-3	0065UT	1,859	0.21	0.63					0.0
CR-3	0065V2	1,475	0.27	0.66					0.0
CR-3	006BJU	1,825	0.19	0.60					0.0
CR-3	006BJV	1,843	0.14	0.60					0.0
CR-3	006BKB	1,855	0.28	0.61					0.0
CR-3	006BKC	1,835	0.12	0.55					0.0
CR-3	006ED1	1,372	0.08	0.55					0.0
CR-3	006HRT	1,840	0.11	0.56					0.0
CR-3	006HRU	1,841	0.15	0.62					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-3	006KUV	1,838	0.24	0.66					0.0
CR-3	006KUX	1,839	0.20	0.60					0.0
CR-3	006L3Y	1,784	0.01	0.27					0.0
CR-3	006L3Z	1,853	0.15	0.51					0.0
CR-3	006LFE	1,869	0.17	0.63					0.0
CR-3	006LFF	1,853	0.13	0.64					0.0
CR-3	006LUU	1,791	0.18	0.49					0.0
CR-3	006LUX	1,821	0.20	0.61					0.0
CR-3	Mean (CR-3)		0.17	0.58					0.0
CR-3	SD (CR-3)		0.06	0.09					0.0
CR-4	005Q65	1,841	0.10	0.62					0.0
CR-4	005Q69	1,855	0.18	0.66					0.0
CR-4	005WT7	1,823	0.09	0.60					0.0
CR-4	005WTS	1,800	0.09	0.56					0.0
CR-4	0063OU	1,873	0.19	0.71					0.0
CR-4	0063OV	1,825	0.09	0.61					0.0
CR-4	0064ZL	1,856	0.16	0.68					0.0
CR-4	0064ZM	1,854	0.24	0.71					0.0
CR-4	006BDT	1,495	0.24	0.69					0.0
CR-4	006BDX	1,836	0.11	0.60					0.0
CR-4	006DIK	1,867	0.16	0.67					0.0
CR-4	006DIM	1,856	0.17	0.66					0.0
CR-4	Mean (CR-4)		0.15	0.65					0.0
CR-4	SD (CR-4)		0.06	0.05					0.0
MSR-1	005Q5I	5,760	0.42	0.58					0.0
MSR-1	005WOM	2,876	0.15	0.30					0.0
MSR-1	005WOS	5,749	0.20	0.42					0.0
MSR-1	0062S0	2,876	0.07	0.25					0.0
MSR-1	0063NZ	2,894	0.07	0.25					0.0
MSR-1	0064TV	2,899	0.12	0.36					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
MSR-1	0064ZH	5,791	0.24	0.49					0.0
MSR-1	006BJK	2,873	0.12	0.39					0.0
MSR-1	006HRS	2,876	0.20	0.46					0.0
MSR-1	006JV9	2,866	0.12	0.30					0.0
MSR-1	006KUT	2,887	0.06	0.29					0.0
MSR-1	006LDO	2,892	0.20	0.35					0.0
MSR-1	006RFA	2,891	0.11	0.20					0.0
MSR-1	006RH5	2,887	0.28	0.57					0.0
MSR-1	006SC4	2,891	0.29	0.40					0.0
MSR-1	006SE1	2,876	0.22	0.41					0.0
MSR-1	006SE5	2,876	0.24	0.22					0.0
MSR-1	006SLP	2,887	0.19	0.22					0.0
MSR-1	006SVI	2,887	0.15	0.30					0.0
MSR-1	Mean (MSR-1)		0.18	0.36					0.0
MSR-1	SD (MSR-1)		0.09	0.11					0.0
MSR-2	0065U9	2,891	0.31	0.36					0.0
MSR-2	0065UA	2,877	0.30	0.07					0.0
MSR-2	006709	2,876	0.38	0.26					0.0
MSR-2	006BJF	2,873	0.51	0.32					0.0
MSR-2	006BJI	2,873	0.35	0.38					0.0
MSR-2	006BJX	2,894	0.19	0.45					0.0
MSR-2	006GZ9	2,892	0.24	0.43					0.0
MSR-2	006JV2	2,866	0.29	0.61					0.0
MSR-2	006JVA	5,760	0.42	0.36					0.0
MSR-2	006LY5	2,873	0.31	0.38					0.0
MSR-2	006R82	2,899	0.39	0.32					0.0
MSR-2	006R8B	2,899	0.47	0.37					0.0
MSR-2	006S08	2,894	0.47	0.39					0.0
MSR-2	006TJ1	2,866	0.41	0.32					0.0
MSR-2	006UZ3	2,891	0.37	0.45					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
MSR-2	Mean (MSR-2)		0.36	0.36					0.0
MSR-2	SD (MSR-2)		0.09	0.11					0.0
SR	005OJZ	2,848	0.43	0.28	-0.16	0.28	-0.24	0.04	0.0
SR	005OK3	5,726	0.25	0.01	-0.05	0.01	0.06	-0.01	0.0
SR	005OK6	2,848	0.58	0.53	-0.20	-0.22	-0.28	0.53	0.0
SR	005ORR	5,726	0.60	0.49	-0.19	0.49	-0.24	-0.22	0.0
SR	005PMD	2,894	0.59	0.48	-0.12	-0.27	-0.25	0.48	0.0
SR	005PPY	8,574	0.51	0.34	-0.06	-0.17	0.33	-0.19	0.0
SR	005PQB	2,866	0.61	0.47	-0.14	-0.22	-0.27	0.47	0.0
SR	005PR5	5,726	0.45	0.31	-0.19	-0.19	0.30	0.03	0.0
SR	005PYD	2,894	0.40	0.29	-0.07	-0.23	0.29	0.01	0.0
SR	005Q0H	2,894	0.44	0.28	0.28	-0.01	-0.23	-0.18	0.0
SR	005Q0I	2,866	0.23	0.07	0.07	-0.12	0.14	-0.11	0.0
SR	005Q4X	2,866	0.39	0.17	-0.09	0.06	0.17	-0.19	0.0
SR	005Q4Y	2,866	0.36	0.31	-0.10	0.31	-0.22	-0.02	0.0
SR	005Q56	2,894	0.40	0.19	0.15	-0.21	0.19	-0.19	0.0
SR	005Q64	2,866	0.14	0.14	0.14	-0.20	-0.02	0.07	0.0
SR	005Q6E	2,866	0.30	0.37	-0.08	-0.09	-0.19	0.37	0.0
SR	005RBV	5,760	0.53	0.18	0.02	0.19	-0.21	-0.07	0.0
SR	005RCF	2,866	0.22	0.45	0.04	-0.23	-0.22	0.45	0.0
SR	005RCI	2,866	0.52	0.27	0.27	-0.23	0.00	-0.14	0.0
SR	005RHN	2,894	0.24	0.16	0.16	-0.07	-0.14	0.13	0.0
SR	005RHT	5,760	0.22	0.18	0.18	-0.03	-0.13	0.02	0.0
SR	005RHX	2,866	0.35	0.10	0.13	-0.13	-0.14	0.10	0.0
SR	005RHY	2,866	0.31	0.27	-0.13	0.01	-0.15	0.27	0.0
SR	005RHZ	5,760	0.58	0.26	-0.12	-0.18	0.26	-0.07	0.0
SR	005WOW	2,866	0.53	0.29	0.03	0.29	-0.21	-0.21	0.0
SR	005WOX	2,873	0.19	0.11	0.17	-0.15	-0.11	0.11	0.0
SR	005WPS	2,894	0.39	0.34	0.34	-0.08	-0.23	-0.11	0.0
SR	005WQ5	2,876	0.23	0.23	0.23	0.00	-0.08	-0.11	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	005WQC	2,866	0.51	0.40	-0.16	0.40	-0.21	-0.13	0.0
SR	005WQD	2,894	0.43	0.34	0.02	-0.16	-0.24	0.34	0.0
SR	005WQG	2,866	0.60	0.33	0.33	-0.17	-0.14	-0.14	0.0
SR	005WQW	2,866	0.62	0.47	0.47	-0.24	-0.26	-0.16	0.0
SR	005WR4	2,866	0.49	0.28	-0.09	-0.09	0.28	-0.17	0.0
SR	005WR9	2,894	0.49	0.37	-0.07	-0.22	-0.19	0.37	0.0
SR	005WSC	2,873	0.20	0.10	0.10	0.19	-0.16	-0.12	0.0
SR	005WSZ	2,873	0.10	0.22	0.10	-0.10	-0.15	0.22	0.0
SR	005WT0	5,746	0.26	0.10	-0.08	0.10	0.03	-0.03	0.0
SR	005XGZ	2,866	0.35	0.10	-0.02	0.10	-0.13	0.12	0.0
SR	005XI7	2,891	0.14	0.18	-0.04	-0.21	0.12	0.18	0.0
SR	005XIC	2,877	0.18	0.15	0.15	-0.05	-0.21	0.15	0.0
SR	005XIL	8,634	0.31	-0.04	0.10	0.02	-0.04	-0.04	0.0
SR	0063J1	2,873	0.29	0.51	-0.18	-0.20	-0.13	0.51	0.0
SR	0063L4	2,891	0.46	0.38	-0.10	0.38	-0.30	-0.04	0.0
SR	0063L6	5,770	0.25	0.23	-0.02	-0.26	0.06	0.23	0.0
SR	0063LJ	5,770	0.41	0.13	-0.19	0.13	0.12	-0.14	0.0
SR	0063MX	2,891	0.56	0.49	0.49	-0.24	-0.22	-0.18	0.0
SR	0063O6	2,891	0.53	0.37	-0.12	0.37	-0.22	-0.11	0.0
SR	0063OP	2,876	0.34	0.31	-0.11	-0.05	-0.17	0.31	0.0
SR	0064TU	5,808	0.27	0.27	-0.04	-0.10	-0.09	0.26	0.0
SR	0064WY	2,892	0.56	0.53	-0.18	-0.25	-0.27	0.53	0.0
SR	0064Y4	5,815	0.64	0.45	-0.18	-0.29	0.45	-0.13	0.0
SR	0064ZF	2,916	0.40	0.42	-0.16	-0.04	-0.27	0.42	0.0
SR	0064ZI	2,899	0.32	0.17	0.11	0.17	-0.24	-0.05	0.0
SR	0064ZK	2,892	0.42	0.23	0.17	0.23	-0.27	-0.22	0.0
SR	0065UB	2,866	0.27	-0.08	0.14	-0.06	-0.08	0.03	0.0
SR	0065UC	5,768	0.38	0.36	-0.16	-0.17	-0.12	0.36	0.0
SR	0065UD	5,743	0.31	0.19	-0.10	0.18	0.09	-0.25	0.0
SR	0065UF	2,891	0.66	0.50	-0.21	0.50	-0.30	-0.21	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0065UO	2,877	0.38	0.11	-0.21	-0.33	0.11	0.31	0.0
SR	0065UP	5,757	0.59	0.44	-0.14	-0.25	0.44	-0.24	0.0
SR	0065UR	5,757	0.41	0.42	-0.12	-0.15	-0.23	0.42	0.0
SR	0066ZR	2,876	0.43	0.20	0.09	0.20	-0.26	-0.07	0.0
SR	006704	2,891	0.35	0.06	0.12	-0.02	0.06	-0.19	0.0
SR	006707	2,876	0.26	0.31	0.02	-0.12	-0.17	0.31	0.0
SR	006708	5,785	0.46	0.28	-0.09	-0.20	-0.06	0.28	0.0
SR	00670A	2,876	0.36	0.06	-0.07	-0.05	0.06	0.11	0.0
SR	00670C	5,785	0.39	0.10	-0.08	-0.16	0.10	0.16	0.0
SR	006BCS	2,877	0.52	0.30	-0.09	0.30	-0.17	-0.14	0.0
SR	006BD0	2,866	0.32	0.28	-0.11	-0.27	0.02	0.28	0.0
SR	006BD6	2,877	0.44	0.28	0.28	-0.10	-0.17	-0.07	0.0
SR	006BDG	5,743	0.38	0.36	0.36	-0.16	-0.22	-0.03	0.0
SR	006BDJ	5,757	0.51	0.40	-0.15	-0.23	0.41	-0.14	0.0
SR	006BJA	2,876	0.44	0.17	0.15	0.17	-0.21	-0.20	0.0
SR	006BJB	2,873	0.24	0.18	0.05	-0.12	-0.07	0.18	0.0
SR	006BJC	2,873	0.31	0.15	0.09	-0.13	0.15	-0.12	0.0
SR	006BJD	2,873	0.23	0.16	0.16	0.07	-0.17	-0.04	0.0
SR	006BJJ	2,873	0.34	0.00	0.00	-0.02	0.02	0.03	0.0
SR	006BJL	2,876	0.21	0.14	0.14	-0.01	-0.07	-0.01	0.0
SR	006BJW	2,876	0.31	0.05	-0.10	-0.04	0.05	0.11	0.0
SR	006BJY	2,894	0.44	0.34	-0.06	-0.17	-0.16	0.34	0.0
SR	006BK0	2,891	0.37	0.22	0.22	0.04	-0.16	-0.16	0.0
SR	006BK2	2,876	0.57	0.47	-0.20	-0.25	0.47	-0.17	0.0
SR	006BK9	5,770	0.39	0.15	-0.19	0.15	-0.02	0.04	0.0
SR	006BKA	2,891	0.39	0.27	-0.07	-0.05	-0.16	0.27	0.0
SR	006DJ3	2,848	0.36	0.36	-0.10	-0.18	-0.11	0.36	0.0
SR	006DJ7	2,839	0.54	0.52	-0.17	-0.21	-0.30	0.52	0.0
SR	006EBN	2,839	0.53	0.44	0.44	-0.14	-0.22	-0.23	0.0
SR	006EBQ	5,735	0.31	0.20	0.20	0.06	-0.16	-0.13	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	006EBU	2,839	0.34	0.15	0.13	-0.18	0.15	-0.16	0.0
SR	006EBV	2,887	0.38	0.24	0.00	-0.08	-0.18	0.24	0.0
SR	006EC8	2,848	0.37	0.16	-0.13	0.00	0.16	-0.05	0.0
SR	006ECG	2,877	0.37	0.14	-0.13	-0.17	0.14	0.11	0.0
SR	006ECM	2,891	0.25	-0.12	-0.07	-0.05	-0.12	0.25	0.0
SR	006ECN	2,866	0.28	0.11	0.13	-0.05	0.11	-0.20	0.0
SR	006ECR	5,743	0.25	0.31	0.10	-0.20	-0.19	0.31	0.0
SR	006ECV	5,743	0.23	0.16	0.16	0.05	-0.16	-0.02	0.0
SR	006ECW	2,891	0.37	0.09	-0.01	0.09	0.04	-0.12	0.0
SR	006ECZ	2,877	0.42	0.45	0.45	-0.14	-0.19	-0.20	0.0
SR	006GXP	2,899	0.36	0.16	0.07	0.16	-0.19	-0.04	0.0
SR	006GZ7	2,916	0.42	0.33	-0.05	-0.24	0.33	-0.08	0.0
SR	006GZ8	2,892	0.42	0.19	0.06	-0.22	0.19	-0.07	0.0
SR	006GZB	2,892	0.28	0.14	0.14	-0.13	-0.06	0.08	0.0
SR	006GZI	5,791	0.36	0.10	-0.01	-0.12	0.10	0.05	0.0
SR	006GZN	5,815	0.42	0.39	0.38	-0.21	-0.10	-0.15	0.0
SR	006HE7	2,876	0.33	0.13	0.04	-0.10	0.13	-0.05	0.0
SR	006HXH	2,876	0.32	0.15	0.00	-0.14	0.15	0.03	0.0
SR	006HXI	2,873	0.33	0.31	0.01	-0.15	-0.16	0.31	0.0
SR	006IF2	5,687	0.58	0.37	-0.08	-0.27	0.37	-0.12	0.0
SR	006IFC	2,848	0.65	0.45	-0.15	-0.29	0.45	-0.17	0.0
SR	006IG2	2,839	0.33	0.26	0.01	-0.13	0.26	-0.10	0.0
SR	006J43	2,873	0.35	0.26	-0.01	-0.09	-0.24	0.26	0.0
SR	006J44	2,873	0.49	0.21	0.00	-0.23	0.21	-0.06	0.0
SR	006J46	5,749	0.45	0.29	-0.05	0.29	-0.19	-0.08	0.0
SR	006J47	2,873	0.45	0.31	-0.12	-0.13	0.31	-0.10	0.0
SR	006JV3	5,732	0.54	0.37	-0.10	-0.22	0.36	-0.14	0.0
SR	006JV4	5,760	0.42	0.47	0.47	-0.17	-0.22	-0.16	0.0
SR	006JV5	2,866	0.46	0.29	0.00	-0.17	0.29	-0.15	0.0
SR	006JV6	2,894	0.24	0.10	0.10	0.04	-0.18	0.10	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	006JVB	2,894	0.33	0.32	0.32	-0.08	-0.18	-0.06	0.0
SR	006KUI	2,848	0.37	0.03	-0.01	-0.04	0.03	0.05	0.0
SR	006KUQ	2,887	0.29	-0.18	0.26	-0.14	-0.18	0.06	0.0
SR	006KUR	2,839	0.28	0.25	-0.05	-0.17	-0.01	0.25	0.0
SR	006KUU	2,848	0.60	0.02	0.14	0.02	-0.07	-0.09	0.0
SR	006KUY	5,726	0.32	0.03	-0.09	0.15	-0.09	0.04	0.0
SR	006KXB	2,848	0.32	-0.02	-0.15	0.23	-0.02	-0.11	0.0
SR	006L0Y	2,892	0.51	0.45	0.45	-0.21	-0.21	-0.18	0.0
SR	006L12	2,916	0.30	0.26	-0.09	-0.11	-0.06	0.26	0.0
SR	006L1Q	2,916	0.52	0.39	-0.11	0.39	-0.25	-0.14	0.0
SR	006L1S	2,899	0.18	-0.17	0.05	0.16	-0.17	-0.05	0.0
SR	006L1U	2,892	0.12	-0.02	-0.04	-0.09	0.16	-0.02	0.0
SR	006L3L	5,815	0.28	0.28	0.28	-0.16	-0.04	-0.07	0.0
SR	006L3M	2,899	0.29	0.12	0.12	0.12	-0.11	-0.15	0.0
SR	006L3X	2,916	0.40	0.31	-0.09	0.31	-0.13	-0.14	0.0
SR	006LDC	2,892	0.31	0.28	0.28	-0.27	0.02	-0.01	0.0
SR	006LDF	2,892	0.43	0.40	-0.05	-0.23	-0.19	0.40	0.0
SR	006LDN	2,916	0.43	0.42	-0.02	-0.15	-0.28	0.42	0.0
SR	006LF0	5,815	0.43	0.28	-0.09	0.27	-0.16	-0.05	0.0
SR	006LF3	2,916	0.26	0.25	-0.08	-0.08	-0.07	0.25	0.0
SR	006LF9	5,791	0.33	0.17	-0.15	0.16	-0.25	0.17	0.0
SR	006LTO	5,767	0.29	-0.05	0.19	-0.17	-0.05	0.09	0.0
SR	006LUN	2,876	0.40	0.07	0.17	-0.08	-0.13	0.07	0.0
SR	006LUP	2,876	0.48	0.23	-0.14	-0.05	0.23	-0.11	0.0
SR	006LUQ	2,894	0.51	0.36	-0.07	-0.25	0.36	-0.14	0.0
SR	006LUR	2,894	0.37	0.37	0.37	-0.11	-0.24	-0.05	0.0
SR	006LXP	2,873	0.14	0.11	0.03	-0.12	0.04	0.11	0.0
SR	006LXQ	2,873	0.29	0.16	0.01	0.16	0.06	-0.21	0.0
SR	006LZC	5,749	0.28	-0.07	-0.14	0.30	-0.07	-0.18	0.0
SR	006LZP	5,749	0.41	0.38	0.38	-0.24	-0.08	-0.08	0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	006LZQ	8,622	0.32	0.41	-0.15	-0.10	-0.17	0.41	0.0
SR	006QKH	2,891	0.24	0.18	0.18	-0.08	-0.17	0.12	0.0
SR	006RFC	2,891	0.49	0.47	0.47	-0.22	-0.25	-0.14	0.0
SR	006RFD	2,891	0.59	0.48	-0.19	0.48	-0.25	-0.22	0.0
SR	006RH9	2,887	0.51	0.25	-0.12	0.25	-0.07	-0.12	0.0
SR	006RRN	2,891	0.22	0.03	-0.08	-0.21	0.24	0.03	0.0
SR	006RRO	2,891	0.66	0.49	-0.23	-0.28	0.49	-0.17	0.0
SR	006SGP	2,899	0.34	0.19	-0.06	0.03	0.19	-0.17	0.0
SR	006SU2	2,887	0.60	0.45	-0.22	-0.30	0.45	-0.11	0.0
SR	006TI7	2,839	0.59	0.44	-0.18	0.44	-0.26	-0.16	0.0
SR	006TI8	2,873	0.32	0.16	-0.04	0.16	-0.02	-0.10	0.0
SR	006UZ4	2,891	0.28	0.12	0.12	-0.24	0.02	0.12	0.0
SR	Mean (SR)		0.39	0.25	0.02	-0.05	-0.04	0.03	0.0
SR	SD (SR)		0.13	0.15	0.17	0.19	0.20	0.20	0.0
TE-1	005PQR	2,866	0.32	0.41					0.0
TE-1	005PYU	2,866	0.41	0.42					0.0
TE-1	005Q4Z	2,866	0.35	0.31					0.0
TE-1	005WOI	2,873	0.17	0.33					0.0
TE-1	005WPC	2,876	0.25	0.47					0.0
TE-1	005WR0	5,760	0.25	0.44					0.0
TE-1	005XH1	2,866	0.12	0.17					0.0
TE-1	005XIF	2,877	0.22	0.08					0.0
TE-1	006383	2,873	0.25	0.44					0.0
TE-1	0063L7	5,785	0.30	0.50					0.0
TE-1	0063LC	5,785	0.31	0.28					0.0
TE-1	0064U9	2,916	0.15	0.38					0.0
TE-1	0064UJ	2,892	0.00	0.00					0.0
TE-1	0064V0	2,899	0.50	0.57					0.0
TE-1	0064ZJ	2,916	0.33	0.30					0.0
TE-1	0065UE	2,877	0.29	0.48					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-1	0068LD	2,873	0.19	0.32					0.0
TE-1	006BCR	2,866	0.15	0.46					0.0
TE-1	006BCT	2,866	0.12	0.22					0.0
TE-1	006BD1	2,877	0.42	0.46					0.0
TE-1	006BD2	2,877	0.53	0.32					0.0
TE-1	006BJM	5,749	0.05	0.28					0.0
TE-1	006BJT	2,873	0.07	0.30					0.0
TE-1	006BK1	2,894	0.20	-0.03					0.0
TE-1	006BK3	5,770	0.39	0.43					0.0
TE-1	006DIU	5,687	0.39	0.16					0.0
TE-1	006DJ2	2,839	0.14	0.43					0.0
TE-1	006DJ8	2,848	0.07	0.18					0.0
TE-1	006DS7	2,866	0.30	0.21					0.0
TE-1	006HQV	5,749	0.14	0.36					0.0
TE-1	006IFI	2,848	0.45	0.54					0.0
TE-1	006IFN	2,839	0.21	0.38					0.0
TE-1	006JV7	2,866	0.10	0.29					0.0
TE-1	006KUS	5,735	0.50	0.43					0.0
TE-1	006L0Z	2,892	0.21	0.29					0.0
TE-1	006L1P	2,899	0.09	0.05					0.0
TE-1	006L3P	2,892	0.40	0.35					0.0
TE-1	006LFB	2,916	0.20	0.15					0.0
TE-1	006LTT	2,876	0.46	0.35					0.0
TE-1	006LTZ	2,894	0.17	0.43					0.0
TE-1	006LUL	2,894	0.37	0.61					0.0
TE-1	006RF6	2,891	0.17	0.48					0.0
TE-1	006S9T	2,891	0.24	0.50					0.0
TE-1	006S9Y	2,891	0.24	0.47					0.0
TE-1	006THE	2,866	0.15	0.40					0.0
TE-1	Mean (TE-1)		0.25	0.34					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-1	SD (TE-1)		0.13	0.15					0.0
TE-2	005ORM	2,839	0.21	0.34					0.0
TE-2	005QJC	2,887	0.41	0.62					0.0
TE-2	005RCG	2,894	0.21	0.25					0.0
TE-2	005RCH	2,866	0.32	0.26					0.0
TE-2	005RCK	2,866	0.27	0.31					0.0
TE-2	005RCL	2,866	0.35	0.22					0.0
TE-2	005WPY	2,894	0.19	0.46					0.0
TE-2	005WQL	2,866	0.39	0.44					0.0
TE-2	005XIV	2,866	0.22	0.16					0.0
TE-2	005XJB	2,891	0.16	0.30					0.0
TE-2	005XJI	5,757	0.24	0.11					0.0
TE-2	005XJS	2,877	0.33	0.17					0.0
TE-2	005XJV	2,877	0.24	0.15					0.0
TE-2	0065U0	2,866	0.24	0.49					0.0
TE-2	0066ZL	2,876	0.56	0.22					0.0
TE-2	0066ZS	2,891	0.39	0.16					0.0
TE-2	006706	2,891	0.19	0.37					0.0
TE-2	006BJE	2,873	0.18	0.48					0.0
TE-2	006BJH	2,876	0.15	0.18					0.0
TE-2	006BJZ	2,876	0.56	0.54					0.0
TE-2	006DRA	2,877	0.70	0.39					0.0
TE-2	006DRL	2,866	0.63	0.34					0.0
TE-2	006FM5	2,899	0.04	0.18					0.0
TE-2	006FMN	2,899	0.37	0.49					0.0
TE-2	006FMR	2,892	0.12	0.10					0.0
TE-2	006HRM	2,873	0.28	0.33					0.0
TE-2	006IG5	2,848	0.46	0.19					0.0
TE-2	006IGE	2,839	0.28	0.39					0.0
TE-2	006IGF	2,848	0.21	0.55					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-2	006IGL	2,839	0.10	0.21					0.0
TE-2	006IYO	2,876	0.32	0.43					0.0
TE-2	006JU7	2,866	0.37	0.43					0.0
TE-2	006JUP	2,866	0.43	0.44					0.0
TE-2	006JV1	2,894	0.40	0.56					0.0
TE-2	006KUA	2,887	0.14	0.17					0.0
TE-2	006KUJ	2,848	0.41	0.35					0.0
TE-2	006L0N	2,899	0.15	0.16					0.0
TE-2	006L0V	2,916	0.29	0.31					0.0
TE-2	006L23	2,892	0.35	0.27					0.0
TE-2	006LDH	2,916	0.46	0.18					0.0
TE-2	006LEA	2,892	0.42	0.24					0.0
TE-2	006LU0	2,876	0.11	0.09					0.0
TE-2	006LUK	2,894	0.33	0.11					0.0
TE-2	006LXS	2,876	0.13	0.29					0.0
TE-2	006LY9	2,873	0.53	0.29					0.0
TE-2	006LZ8	2,876	0.12	0.48					0.0
TE-2	006LZD	2,873	0.27	0.58					0.0
TE-2	006LZF	2,873	0.53	0.53					0.0
TE-2	006RFO	2,887	0.42	0.25					0.0
TE-2	006RFS	2,887	0.38	0.38					0.0
TE-2	006RGN	2,887	0.12	0.33					0.0
TE-2	006RRM	2,891	0.51	0.58					0.0
TE-2	006S0Q	2,894	0.13	0.30					0.0
TE-2	006S0R	2,894	0.16	0.40					0.0
TE-2	006SBX	2,891	0.21	0.56					0.0
TE-2	006TGJ	2,839	0.30	0.21					0.0
TE-2	006TGM	2,839	0.20	0.53					0.0
TE-2	006TI9	2,873	0.37	0.38					0.0
TE-2	006TIR	2,873	0.41	0.42					0.0

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
TE-2	006TJ2	2,866	0.42	0.41					0.0
TE-2	006UQD	2,916	0.52	0.52					0.0
TE-2	006UQE	2,916	0.42	0.26					0.0
TE-2	006UQF	2,916	0.16	0.42					0.0
TE-2	006UZ2	2,891	0.14	0.28					0.0
TE-2	006VHX	2,848	0.58	0.53					0.0
TE-2	006VHY	2,848	0.37	0.33					0.0
TE-2	Mean (TE-2)		0.31	0.34					0.0
TE-2	SD (TE-2)		0.15	0.14					0.0