



Maryland High School Assessment
2018 Technical Report

Government
High School Maryland Integrated Science Assessment

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 (MD HSAs) consist of an end-of-course exam in government and a cumulative exam in science, High School Maryland Integrated Science Assessment (HS-MISA). The MD 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 MD HSA government 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 2018 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 MD HSAs. Starting in January 2013, the Government test was re-introduced into the MD HSAs. The Government HSA 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, 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 Plan¹. Students entering 9th grade in school year 2013-14 and beyond must pass the HSA Government assessment, 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 2018 were not required to pass the HS-MISA but were required to participate in the HS-MISA to meet the graduation requirement² of a Science assessment.

Since May 2009, the MD 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 MD HSAs were conducted in 2009 and 2010. The 2009 report is provided in the 2009 HSA Technical Report in Appendix

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://mdk12.msde.maryland.gov/share/pdf/bridge_final.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>.

1C. The 2010 results were provided to the MSDE (Educational Testing Service, October 29, 2010). Further mode comparability studies have not been conducted.

For the 2018 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 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 scored by two human scorers. 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. For the CR items in the May 2018 HSA Government administration, artificial intelligence (AI) scoring was used in place of the second human score. That is, all responses to the CR items in May 2018 Government administration received a human score and then an AI score. Additional detailed information about Government and HS-MISA is provided below.

HSA Government

The HSA Government exam was administered in January, May, and summer 2018. The January 2018 administration had three forms: Forms A, B, and C, with Form B (renamed Form X) used as the accommodated and paper-based test form. The May 2018 administration had seven forms: Forms D, E, F, G, H, J, and K, with Form D (renamed Form Y) used as the accommodated and paper-based test form. The summer 2018 administration had two forms: Forms R and Z, with Form Z being used as the accommodated and paper-based test form.

The HSA Government test contains SR items, which require students to choose between four short response options. Since January 2014, the Government assessment has included 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

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 Measured Progress 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

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>.

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 calibration of the field test items was conducted for the January 2018 administration only. Field test item calibration was not applied to the May and summer 2018 administrations, due to the intact forms reuse from the 2015 administration in the May 2018 administration, and the small sample size and sample unrepresentativeness of the summer 2018 administration.

The item response models were used to generate both total test scores and subscores using item-pattern (IP) scoring. They are based on the three-parameter logistic (3PL) model for the selected response items (see Section 2 for an introduction to item types) and the generalized partial credit model (GPCM) for the brief constructed response items. Refer to *Scale Scores* of Section 4 for the details of the IRT Models used and the IP scoring procedure. Students' total test scores and subscores are scale scores derived using the 3PL and GPCM and item-pattern scoring procedures. Total test results in 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 Next Generation Science Standards. The HS-MISA was field tested during the 2018 administration, as it replaces the HSA Biology assessment at the high school level. The HS-MISA is given in January and May of each school year, and in the 2019-2020 school year, it will also be given in the summer.

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 selected-response, technology-enhanced, and constructed-response items.

The HS-MISA was administered in January and May 2018 as a stand-alone field test. The field test forms in both January and May consisted of two sessions of two item sets each, for a total of four item sets per field test form. The January HS-MISA administration contained three forms: Forms A, B, and X, with X being the accommodated and paper-based form. The May HS-MISA administration contained a total of 24 forms, with Y being the accommodated and paper-based form. The field test items were analyzed to construct the first operational HS-MISA test forms. No student scores on the HS-MISA were produced or reported in 2018.

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 MD HSA technical report consists of eight sections and two appendices.

- Section 1 introduces the MD HSA program.
- Section 2 describes the procedures used for test construction and administration.
- Section 3 discusses the validity of the MD HSAs.
- Section 4 delineates the scoring procedures and score types.
- Section 5 describes the reporting of 2018 MD HSA Government 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 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 HSA Government, Measured Progress content leaders collaborated with their content counterparts at MSDE and decided to utilize a combination of previously selected (but not administered) forms and reprint forms from 2015. The January and summer administrations of the HSA Government utilized forms that had been selected in 2017. The May administration was a reprint of the May 2015 form. For these reasons, the 2018 administration of the HSA Government consisted of both operational and field test items that were developed prior to the 2018 development cycle.

For the HS-MISA, Measured Progress content leaders collaborated with their content counterparts at MSDE to create a field test design that would best 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 alignment⁴ to the Next Generation Science Standards (NGSS), incorporating at least 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, two item types were included on the 2018 HSA Government tests. These item types included the following:

- Selected response (SR)—questions in multiple-choice format with four answer options and one correct answer;
- Brief constructed response (BCR)—an item type used in Government only, for which the students need to write a short response.

As also noted in Section 1, four item types were included on the 2018 HS-MISA field tests. These item type included the following:

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 Cross Cutting 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.

- Selected response (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 items (TEIs)— include matching, drag and drop, ordering, graphing, hot spot, fill-in-the-blank (numerical entry only) and inline choice. (1-point and 2-point TEIs are included on the HS-MISA test).

Table 2-1 shows how the operational item types were distributed on each HSA Government form for the 2018 administrations. Each SR item is worth one point, and each BCR is worth 4 points. Because all items were field test items in HS-MISA, this type of information was not reported for HS-MISA.

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

Test Specifications and Design

Government

For the HSA Government test, MSDE predetermined the preliminary test design and provided it to Measured Progress as content-specific form planners. The final forms were selected by MSDE using the “Test Specifications—Test Form Matrix” document. This 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. Specific items were placed throughout the forms by MSDE content specialists. Construction of the forms was based on test blueprints approved by MSDE. The Government Operational Blueprint is presented in Table 2-2.

Table 2-2. 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>.

Science

For the HS-MISA test, MSDE and Measured Progress worked collaboratively to design a stand-alone field test that would begin to build an item bank of operational items. Each field test form administered in 2018 consisted of four NGSS aligned clusters, each containing one shared stimulus and six items. Each cluster included various item types as outlined above, always including one constructed response item.

The HS-MISA field test items and clusters were designed to align to a subset of the high school grade band standards, which may be found here:

http://mdk12.msde.maryland.gov/assessments/k_8/Files/HS-MIS-PEs.pdf.

Item development and field test form construction were designed to support future operational test blueprints.

Item Writing

Since the decision was made to use already selected forms for 2018, no new item development occurred for Government. New item development did occur for the HS-MISA field test.

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 Next Generation Science Standards. For the HSA Government test, the items were developed by Maryland educators in the years prior to the 2018 administration. For HS-MISA, item writers

were Maryland educators, select New England science teachers, and Measured Progress scoring specialists who are experienced in the Next Generation Science Standards. It is anticipated that as the implementation of the Next Generation Science Standards 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 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 Measured Progress. Items and clusters that were accepted by the Measured Progress 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, Science 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 Measured Progress 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 Measured Progress 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 Measured Progress 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 Measured Progress content specialists conducted side-by-side meetings to evaluate and reconcile the reviews. Measured Progress then applied the requested edits to the items and/or revisions to the accompanying graphics.

For the HS-MISA assessment, 33 science clusters were presented for review by the Content, Bias/Sensitivity, and Accommodations Review Committees. These clusters included 33 multi-part stimuli and 488 items. Because of the integrated nature of the clusters, acceptance rates depended on the entire cluster, not individual items. Of the 33 clusters, no clusters were rejected. Four clusters were put on hold due to questions about the assessment of a particular Performance Expectation, additional data needed, and/or sensitivity concerns.

Testing Accommodations

Several alternate test formats were available to MD HSA/HS-MISA test takers, including large-print, braille, and online audio versions of the MD HSA/HS-MISA tests. For 2018, reprints of all three alternate test formats were available at each administration.

Test Specifications

Government

The Government forms administered in May of 2018 were reprints of forms used in May of 2015. The Government forms administered in January and summer were selected for use in 2017, but never administered, since it was decided that the 2017 January and summer forms would utilize reprints of the 2016 forms. These forms 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 2018 forms included all items that had been administered, calibrated, and linked to the operational scale. For Government, the MD 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 7 for a more detailed account of these analyses and flagging criteria.)

Each 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.

Science

Each HS-MISA field test form was designed to build an item bank that will facilitate an operational test blueprint beginning in 2019. Each form was designed with two sessions consisting of two integrated clusters each. Each session was designed to be completed in approximately 40 minutes. (The operational assessment, which will first be administered in 2019, will consist of five sessions.)

As previously stated, each cluster included one shared stimulus and six items. Each cluster contained one constructed response item worth 2, 3, or 4 points. The remaining five items in the cluster were a variety of selected response and technology-enhanced item types.

Item Selection and Form Design

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 guidelines used to construct the forms are provided in Tables 2-3 through 2-5. The exact composition of the forms varied slightly based on available items in the pool. The January and summer 2018 forms were selected by MSDE in 2016 but not administered in 2017. The May 2018 forms were reuses of May 2015 test forms; form construction specifications for May 2018 were repeated from the May 2015 Technical Report.

Table 2-3. Form Construction Specifications for the HSA Government January 2018 Administration

Form A	Form B	Form C	Form X (Accom.)
Common set – 60% Unique items – 40%	Same as Form A	Common set – 60% Unique items – 40%	Same as Form B
Field Test Selection – Unique items	Field Test Selection – Unique items	Field Test Selection – Same as Form A	Field Test Selection – Same as Form B

Table 2-4. Form Construction Specifications for the HSA Government May 2018 Administration

Form D—H	Form J	Form K	Form Y (Accom.)
Common set – 60% Unique items – 40%	Common set – 60% Half of items from Forms D–H unique items – 20% Unique items – 20%	Common set – 60% Half of items from Forms D–H unique items – 20% Unique items – 20%	Same as Form D
Field Test Selection – Unique items	Field Test Selection – Unique items	Field Test Selection – Unique items	Same as Form D

Table 2-5. Form Construction Specifications for the HSA Government Summer 2018 Administration

Form R	Form Z (Accom.)
Common set – 60%	Same as Form R
Unique items – 40%	
Field Test Section—Reuse of a prior administration field test set	Field Test Section—Reuse of a prior administration field test set (unique from Form R)

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 17% of the total items on each form (14 field test items out of the total of 81 items).

Since the May 2018 Government forms consisted of reprint tests from 2015, there were no new government field test items used in May of 2018. The government items that were field tested in January of 2018 were primarily newly written items, with a small number of previously administered items that had been revised due to content concerns or problematic item statistics. Items with problematic statistics were ones that were judged to be acceptable from a content perspective but had one or more of the following statistical characteristics: p -values⁵ less than 0.10 or greater than 0.90; item-total correlations of less than 0.15 for both the dichotomous and polytomous items; very high omit rates (greater than 5 percent for SR items and greater than 15 percent for CR items); or SR items with a positive point-biserial correlation for one or more distractors.

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 packaged in order (e.g., D, E, F) and distributed to students according to this order. Spiraling at the student level helps ensure that all forms are randomly distributed throughout the state.

The 2018 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 brief constructed response (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.

⁵ For CR items, divide the average item score by maximum score points to obtain the p -value.

However, starting in January 2014, BCR items were re-introduced 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 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 clueing⁶ or clanging.⁷
4. After the operational items were selected for the test forms, the field test sets were constructed. Field test sets consisted of SR items in all content areas as well as BCR items for Government. While the field test sets were not constructed to meet any psychometric criteria, they were constructed to meet content criteria. For 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.

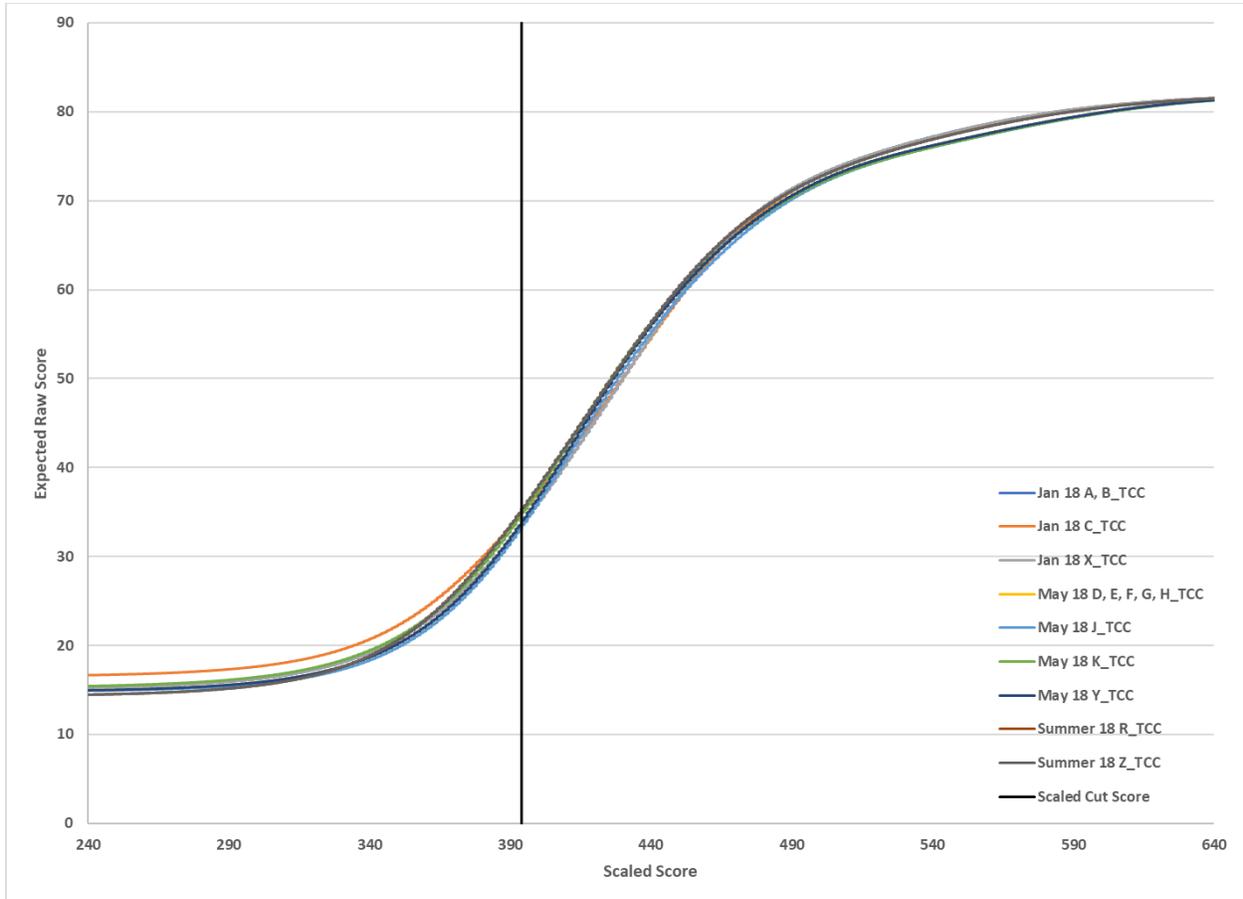
Figures 2-1 and 2-2 show the plots of the TCCs and CSEMs targeted and for the forms used for Government in 2018. The vertical lines in the figures are the proficiency cuts. The CSEMs in Figure 2-2 are CSEM values on the scaled score metric (i.e., scaled CSEMs). Government has only one cut: Proficient. 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 general, the TCCs and CSEMs were similar to the target curves.

The TCC plots indicate that all forms for Government were within or very close to the acceptable range of the target curve for the full range of scale score values. 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

⁶ **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.

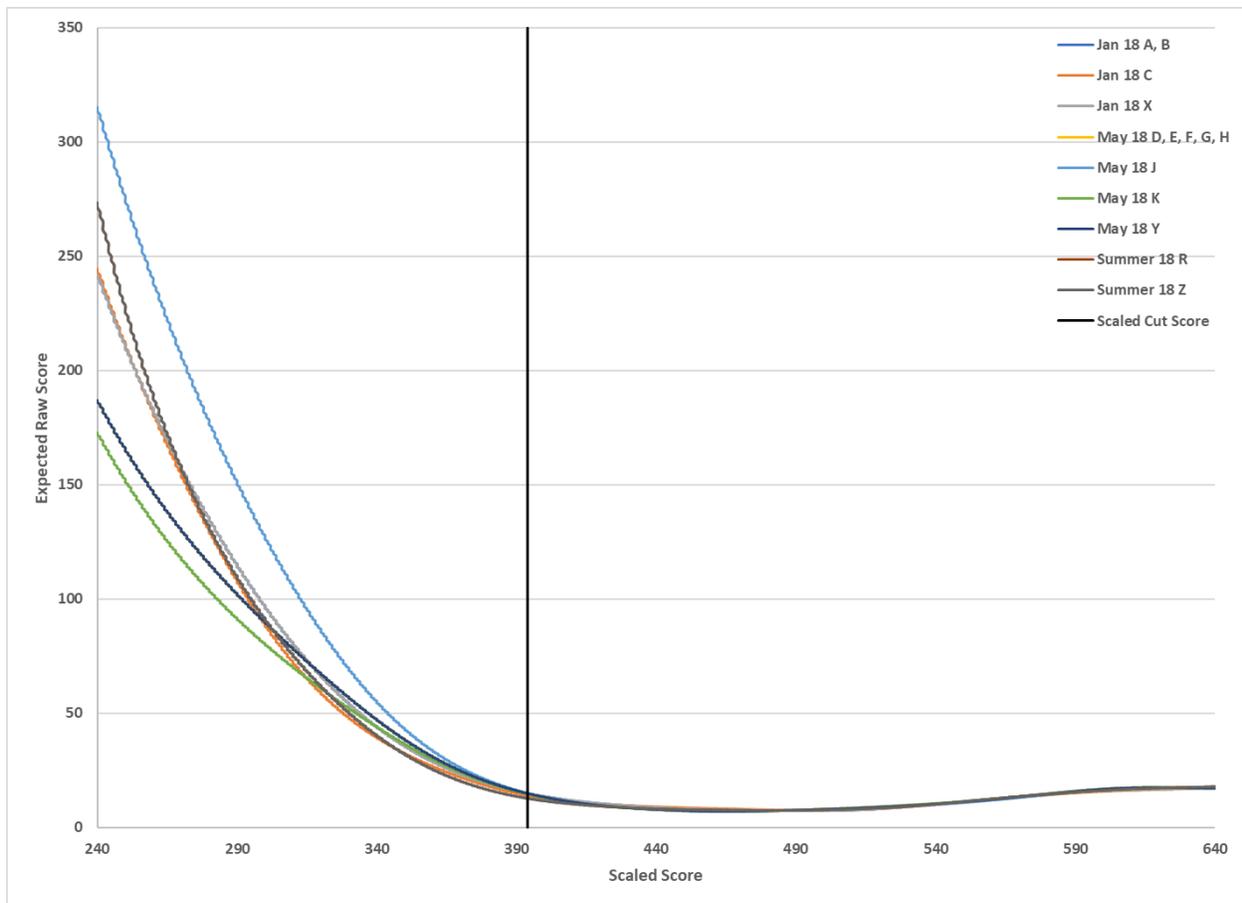
⁷ **Clanging** occurs when an identical or similar word(s) appears in both the item stem and one or more item distractors. Also, if two or more items that are near each other share common key words, even if the item content does not clue, the items are said to clang because the interpretation of the word in one item can affect the interpretation of another item.

CSEMs were lowest at and above the scaled cut score, which represents the middle and upper ranges of scale scores. Typically, this is where the majority of student scores are located.



Note. Maximum possible raw score is 82. The straight vertical line represents the cut score on the scaled score metric.

Figure 2-1. Test Characteristic Curves for MD HSA 2018 Government Forms



Note. The vertical blank line represents the cut score on the scaled score metric.

Figure 2-2. Conditional Standard Error of Measurement and Proficiency Cutoffs for MD HSA 2018 Government Forms

HS-MISA

As previously stated, the HS-MISA was administered as a stand-alone field test in the 2017–2018 school year. All items on the HS-MISA forms were field test items. The January 2018 HS-MISA administration had three test forms (Form A, Form B, and the accommodated and paper-based Form X), with each form containing 24 field test items organized in four item sets. The May administration had a total of 24 test forms (Form Y was the accommodated and paper-based form). Again, each form contained 24 field test items organized in four item sets.

Test Administration

For all MD HSA tests administered in 2018, both paper-and-pencil and online versions were available. An online Practice Test was available from November 1, 2017 to August 3, 2018.

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 2-6.

Table 2-6. Test Timing Schedule in Minutes by HSA Government & HS-MISA

Content Area	Session One	Break	Session Two	Break	Session Three	Break	Session Four
HS-MISA	45 min.	5 min.	45 min.	N/A	N/A	N/A	N/A
Government	5–10 min.	N/A	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.

Implementation of HS-MISA began with stand-alone field testing in 2018. Because difficulty levels of different test forms are unknown and performance standards are absent, no HS-MISA scores were calculated or reported. This section mainly provides the validity evidence for the HSA Government. Students' scores on the HSA Government are assumed to reflect students' level of knowledge and skills in a content area. The scores 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. Consequently, the government HSA 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 MD HSA 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 MD HSAs provides numerous opportunities for the 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 Measured Progress 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.

Evidence Based on Analyses of Internal Test Structure

Because HS-MISA scores were not calculated or reported for the field-test forms implemented in 2018, this section focuses on the validity evidence for HSA Government only. 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>.

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 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 7-7.

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 tests, based on the data from the May administration which had the largest sample sizes of all the 2018 administrations. Results indicate that each subscore is positively correlated with the total Scale Score. It is also noted that the Government subscore correlations are very similar compared to those observed in May 2017.

Table 3-1. Correlations Between Subscores—HSA Government

May Administration (N = 45,875)						
	Overall SS	Subscore 1	Subscore 2	Subscore 3	Subscore 4	Subscore 5
Overall SS	1.00					
Subscore 1	0.75	1.00				
Subscore 2	0.73	0.72	1.00			
Subscore 3	0.90	0.86	0.85	1.00		
Subscore 4	0.78	0.74	0.72	0.88	1.00	
Subscore 5	0.72	0.70	0.67	0.81	0.71	1.00

Finally, the internal structure of the HSA Government test is 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 analyses (CFAs) for each test were conducted to examine the underlying domain structure of the HSA Government 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 whether the unidimensional IRT model used to calibrate the HSA Government items is appropriate.

Confirmatory Factor Analyses of the May 2018 Administration Data

To assess the dimensionality of the HSA Government tests, CFA was conducted using test data from the May 2018 administration. The May administration was chosen because it had the largest sample size and was the most representative administration of the HSA Government tests. Among the test forms from the May Government administration (i.e., Forms D–H, J, K, and the Accommodation Form Y), Forms D–H shared the same set operational items. Accordingly, the data on the operational items from Forms D–H of the May 2018 Government administration were combined for use with 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 3-2 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 evidence in support of the IRT assumption of unidimensionality.

Table 3-2. HSA Government Confirmatory Factor Analyses Fit Statistics

Admin.	Forms	# of Factors	# of Items	N	df	χ^2	p -value	TLI	CFI	RMSEA
May	D–H	1	67	45,875	2,144	64,235.63	<0.0001	0.977	0.977	0.025

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

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 tests was evaluated. Table 3-3 shows omit rates for operational items from HSA Government by administration and item type. (Table 3-3 does not include results for HS-MISA since it was a stand-alone field test in both January and May 2018 and was not administered in Summer 2018. However, omit rates were calculated for HM-MISA as part of the evaluation process for item quality.)

For these Government tests, if more than 5 percent of students omits an SR item or more than 15 percent of students omits a CR item, that item earns a flag. The data in Table 3-3 show, no operational SR items were flagged in the January, May, or Summer administrations. For the January administration, one operational CR item on Forms A–B and one operational CR item on Form C were flagged for having high omit rates. For the Summer administration, four operational CR items on Form R and five operational CR items on Form Z were flagged for having high omit rates. 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 and test forms. Across all content areas and administrations, the

percentages of students who did not respond to the last ten SR items of a test were less than 3 percent per item. Omit rates for CR items on the 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 2018 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 ten positions on an HSA Government test form was not greater than omit rates throughout the test.

Table 3-3. Number of HSA Government Operational Items Flagged for High Omit Rate

<i>Administration</i>	<i>Forms</i>	<i>Item Types</i>	
		<i>SR</i>	<i>CR</i>
January	Forms A–B	0	1
	Form C	0	1
	Accommodated Form X	0	0
May	Forms D–H	0	0
	Form J	0	0
	Form K	0	0
	Accommodated Form Y	0	0
Summer	Form R	0	4
	Accommodated Form Z	0	5

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.
- Section 5 provides detailed information regarding reporting of 2018 MD HSA Government 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 Procedures⁸

Scale Scores

The MD HSA 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.

Students' total test scores and subscores are scale scores derived using Item Response Theory (IRT; Yen & Fitzpatrick, 2006) and item-pattern scoring procedures. Specifically, the three-parameter logistic (3PL) model for SR items and the generalized partial credit model (GPCM) for CR items are used for the HSA Government tests.

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 person j with ability θ responds correctly to item i as follows:

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

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 normalizing constant.

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

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

where d_{ik} is the parameter characterizing the relative difficulty of obtaining score k on item i , and m_i is the number of item score categories of item i (Muraki, 1992).

⁸ This section contains scoring procedures for HSA Government only. Implementation of HS-MISA began with stand-alone field testing in 2018. Given the different and unknown difficulty levels of different test forms and the lack of performance standards, no individual scores were reported for HS-MISA in 2018.

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 takes into account 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

Corresponding conditional standard errors of measurement (CSEM) were produced and are equal to the reciprocal of the square root of the test information function. CSEMs are standard errors at individual score points, defined as:

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

where θ refers to the individual score point (location on the scale), $CSEM(\theta)$ refers to the conditional standard error of measurement at the score point, and $I(\hat{\theta})$ refers to the test information function value at that score point, θ . The test information function is the sum of corresponding information functions of the test items. Item information functions depend on the item difficulty, discrimination, and guessing parameters.

Lowest and Highest Obtainable Test Scores

The maximum likelihood procedure under the 3PL model does not produce reasonable scale score estimates for students with perfect scores or zero scores. In order for all test takers to receive scale scores, scores need to be established for extreme values by following a procedure as described in Appendix 3.C of the 2004 Technical Report. This procedure is not maximum likelihood estimation but produces rational values called the lowest obtainable scale score (LOSS) and the highest obtainable scale score (HOSS).

Cut Scores

MSDE established the cut scores associated with each of the performance levels in the HSA Government tests in 2003.⁹ One cut score, 394, was established for the HSA Government tests in 2003.

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 the item bank, the HSA Government embeds field-test items in the operational test forms. The field test data for the January, May, and Summer administrations were calibrated with the operational items at that time. The parameters of field-test items were linked to the reporting scale using the Stocking-Lord procedure (Stocking & Lord, 1983) while treating all operational items as anchors. Having all operational items serve as linking items ensures that the linking set is large enough to provide stable and reliable results. (Parameter estimates of operational items will not be updated following each administration.)

⁹ 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 HSAs are designed to measure student achievement in the Maryland content standards. Consistent with this purpose, HSA results were reported in terms of student score vs. passing score and Pass/Fail status. 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. Software Quality Assurance 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 Measured Progress Client Services department for final sign off.

Section 6. Test Characteristics

This section provides a discussion of the results of test reliability and decision consistency and accuracy analyses for all administered HSA Government test forms. Because difficulty levels of different test forms were unknown and performance standards and score reporting were not available for 2018 HS-MISA (field tests only), reliability and decision consistency and accuracy analyses were not applied to the HS-MISA tests in 2018.

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.

The results of Cronbach's alpha of the total test score are presented with the summary statistics in Tables 7-4 to 7-6. 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 2018) or with the accommodated forms. All forms were constructed to meet the same target specifications, one of which was to only include items that have point-biserials of at least 0.10. However, when items were administered to non-representative samples of students, such as repeat test takers, the point-biserials of some items may be lower in those samples, which leads to lower reliability coefficients for those administrations.

Decision Accuracy and Decision Consistency

For HSA Government tests, students are classified into one of two performance levels: Proficiency or Basic. 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.

For the January, May, and Summer 2018 Government forms, decision accuracy and consistency were calculated across performance levels. The results are provided in Tables 6-1 to 6-3.

Note that in all cases the decision accuracy indices are 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 6-1. Decision Accuracy and Consistency: HSA Government January 2018 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
Forms A–B				
Decision Accuracy	394–650	0.34	0.03	0.37
	240–393	0.07	0.56	0.63
	Estimated Proportion Correctly Classified*: Total = 0.90			
Decision Consistency	394–650	0.32	0.06	0.37
	240–393	0.08	0.54	0.63
	Estimated Proportion Consistently Classified*: Total = 0.86			
Form C				
Decision Accuracy	394–650	0.33	0.03	0.36
	240–393	0.07	0.56	0.64
	Estimated Proportion Correctly Classified*: Total = 0.89			
Decision Consistency	394–650	0.30	0.06	0.36
	240–393	0.09	0.55	0.64
	Estimated Proportion Consistently Classified*: Total = 0.85			
Accommodated Form X				
Decision Accuracy	394–650	0.00	0.12	0.12
	240–393	0.00	0.88	0.88
	Estimated Proportion Correctly Classified*: Total = 0.88			
Decision Consistency	394–650	0.02	0.09	0.12
	240–393	0.10	0.79	0.88
	Estimated Proportion Consistently Classified*: Total = 0.81			

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

Table 6-2. Decision Accuracy and Consistency: HSA Government May 2018 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
Forms D–H				
Decision Accuracy	394–650	0.72	0.02	0.73
	240–393	0.02	0.24	0.27
	Estimated Proportion Correctly Classified*: Total = 0.96			
Decision Consistency	394–650	0.70	0.03	0.73
	240–393	0.03	0.24	0.27
	Estimated Proportion Consistently Classified*: Total = 0.94			
Form J				
Decision Accuracy	394–650	0.71	0.02	0.72
	240–393	0.02	0.25	0.28
	Estimated Proportion Correctly Classified*: Total = 0.96			
Decision Consistency	394–650	0.70	0.03	0.72
	240–393	0.03	0.25	0.28
	Estimated Proportion Consistently Classified*: Total = 0.95			
Form K				
Decision Accuracy	394–650	0.72	0.02	0.74
	240–393	0.02	0.24	0.26
	Estimated Proportion Correctly Classified*: Total = 0.96			
Decision Consistency	394–650	0.71	0.03	0.74
	240–393	0.03	0.24	0.26
	Estimated Proportion Consistently Classified*: Total = 0.94			
Accommodated Form Y				
Decision Accuracy	394–650	0.26	0.03	0.29
	240–393	0.12	0.59	0.71
	Estimated Proportion Correctly Classified*: Total = 0.85			
Decision Consistency	394–650	0.21	0.08	0.29
	240–393	0.12	0.59	0.71
	Estimated Proportion Consistently Classified*: Total = 0.80			

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

Table 6-3. Decision Accuracy and Consistency: HSA Government Summer 2018 Forms

Index	Placement Scores	Proficient	Basic	Category Total*
Forms R				
Decision Accuracy	394–650	0.20	0.04	0.24
	240–393	0.11	0.66	0.76
	Estimated Proportion Correctly Classified*: Total = 0.86			
Decision Consistency	394–650	0.16	0.08	0.24
	240–393	0.12	0.65	0.76
	Estimated Proportion Consistently Classified*: Total = 0.81			
Accommodated Form Z				
Decision Accuracy	394–650	0.00	0.00	0.09
	240–393	0.00	0.91	0.91
	Estimated Proportion Correctly Classified*: Total = 0.91			
Decision Consistency	394–650	0.02	0.08	0.09
	240–393	0.07	0.84	0.91
	Estimated Proportion Consistently Classified*: Total = 0.86			

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

Section 7. Student Characteristics

Summary Statistics

This section presents summary statistics for the HSA Government only. 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 2018. Summary statistics (count, mean and standard deviation) of scale scores in Table 7-1 are reported for all students and by grade. Table 7-2 reports the summary statistics of scores by the January, May, and Summer 2018 administrations. (Implementation of HS-MISA began with stand-alone field testing in 2018; no individual HS-MISA scores were reported in 2018.)

**Table 7-1. 2018 HSA Government
Means and Standard Deviations Overall and by Grade**

	<i>N</i>	Mean	<i>SD</i>
Overall	88,680	403.2	51.4
By Grade			
4	0	*	*
8	5	*	*
9	25,123	414.0	48.3
10	40,912	412.4	47.7
11	15,599	378.6	50.7
12	7,041	365.7	48.0

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

**Table 7-2. 2018 HSA Government
Mean Scale Scores by Administration**

January			May			Summer		
<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>
19,824	377.8	46.7	68,017	411.2	50.0	839	360.1	48.3

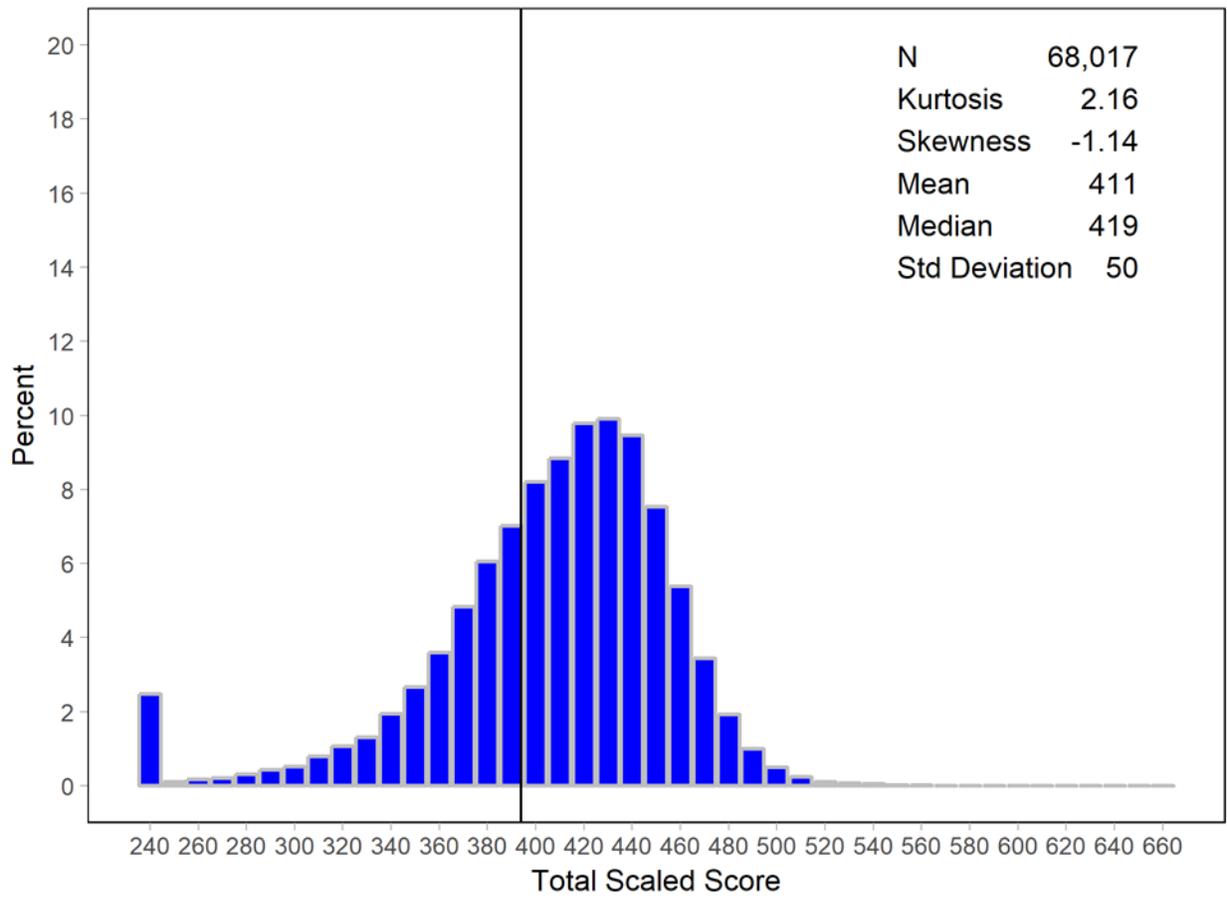
The HSA Government mean scale scores percentage passing rates are presented for the years 2003 to 2018 in Table 7-3.

Table 7-3. HSA Government Mean Scaled Scores and Percentage Passing Rates Over Test Years

Year	Mean Scaled Score	Percentage Passing
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

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

Summary statistics for all students and for subgroups based on gender, special education programs, ethnicity, and English language proficiency are presented in Tables 7-4 to 7-6. The 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 2018 administration.



**Figure 7-1. Total Scale Score Distribution for HSA Government
May 2018 Administration**

Table 7–4. Summary Statistics for HSA Government: January 2018 Forms

		Forms A–B					Forms C					Accommodated Form X				
		Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha
Overall		379.5	46.0	12,646	100.0	0.91	378.5	47.1	6,274	100.0	0.91	348.9	45.6	904	100.0	0.80
Gender	Male	376.5	48.1	6,786	53.7	0.92	374.8	50.6	3,353	53.4	0.91	344.9	47.4	611	67.6	0.79
	Female	383.0	43.2	5,860	46.3	0.91	382.7	42.3	2,921	46.6	0.90	357.1	40.5	293	32.4	0.81
	Missing	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
Grade	6	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	7	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	8	*	*	3	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	9	419.0	41.6	1,875	14.8	0.93	417.5	44.9	923	14.7	0.92	354.3	50.8	56	6.2	0.91
	10	380.9	44.2	2,935	23.2	0.91	380.3	45.8	1,492	23.8	0.90	349.9	43.6	302	33.4	0.77
	11	368.3	40.9	4,227	33.4	0.83	367.7	41.2	2,107	33.6	0.83	347.7	43.3	330	36.5	0.71
	12	370.9	43.9	3,606	28.5	0.89	369.3	44.9	1,752	27.9	0.88	347.9	50.3	216	23.9	0.84
	Missing	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
Special Education	Yes	354.1	43.9	2,329	18.4	0.80	352.8	44.1	1,173	18.7	0.80	347.5	44.1	833	92.1	0.75
	No	385.3	44.9	9,490	75.0	0.92	384.5	46.1	4,623	73.7	0.91	354.5	51.5	52	5.8	0.85
	Exited	383.4	36.6	230	1.8	0.90	379.4	40.4	136	2.2	0.90	*	*	1	0.1	*
	Exited & placed in 504 ^a	387.3	39.4	50	0.4	0.89	*	*	29	0.5	*	*	*	5	0.6	*
	504	384.2	41.4	547	4.3	0.91	383.7	41.3	313	5.0	0.89	*	*	13	1.4	*
Ethnicity	American Indian	*	*	24	0.2	*	*	*	15	0.2	*	*	*	1	0.1	*
	Asian	393.0	47.9	370	2.9	0.94	396.2	46.2	194	3.1	0.93	*	*	0	*	*
	African American	368.3	40.2	5,992	47.4	0.85	366.2	41.7	3,000	47.8	0.84	*	*	0	*	*
	Hawaiian/ Pacific Islander	*	*	15	0.1	*	*	*	4	0.1	*	*	*	0	*	*
	White	406.0	42.2	3,408	26.9	0.93	403.5	45.4	1,697	27.0	0.93	*	*	0	*	*
	Hispanic	366.6	48.1	2,499	19.8	0.88	368.0	46.9	1,195	19.0	0.86	*	*	0	*	*
	Multi-Ethnic	390.9	42.5	336	2.7	0.93	396.9	45.8	169	2.7	0.92	*	*	0	*	*
	Missing	*	*	2	0.0	*	*	*	0.0	0.0	*	*	*	0	*	*
Limited English Proficient	Yes	350.0	45.6	1,787	14.1	0.76	352.2	46.6	848	13.5	0.79	*	*	0	0.0	*
	No	384.2	44.5	10,577	83.6	0.92	382.4	46.1	5,295	84.4	0.91	*	*	0	0.0	*
	Exited ^b	390.1	31.7	282	2.2	0.85	387.9	28.7	131	2.1	0.82	*	*	0	0.0	*

* 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.

^bEP Exited indicates students who have exited English language acquisition services.

Table 7-5. Summary Statistics for HSA Government: May 2018 Forms

		Forms D --H					Form J					Form K					Accommodated Form Y				
		Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha
Overall		414.3	48.3	45,875	100.0	0.94	411.9	48.4	9,235	100.0	0.94	413.8	48.8	9,191	100.0	0.94	364.7	53.7	3,716	100.0	0.92
Gender	Male	410.1	51.7	23,202	50.6	0.95	408.8	51.0	4,706	51.0	0.94	410.1	52.1	4,562	49.6	0.95	360.2	55.4	2,221	59.8	0.91
	Female	418.6	44.2	22,673	49.4	0.94	415.2	45.4	4,529	49.0	0.94	417.5	45.0	4,629	50.4	0.94	371.5	50.5	1,495	40.2	0.92
	Missing	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
Grade	6	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	7	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	8	*	*	2	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
	9	417.6	45.5	15,058	32.8	0.94	415.8	45.8	3,059	33.1	0.94	417.2	47.2	2,980	32.4	0.94	345.2	53.9	1,006	27.1	0.88
	10	419.6	44.9	24,633	53.7	0.94	417.0	44.6	4,906	53.1	0.94	419.2	44.9	4,952	53.9	0.94	369.7	48.8	1,432	38.5	0.90
	11	389.7	54.5	5,413	11.8	0.94	388.3	56.5	1,111	12.0	0.94	389.7	54.2	1,085	11.8	0.94	378.6	54.9	1,117	30.1	0.94
	12	349.7	60.7	769	1.7	0.92	348.0	55.3	159	1.7	0.89	352.9	59.8	174	1.9	0.92	347.0	46.6	161	4.3	0.75
	Missing	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
Special Education	Yes	367.7	52.0	4,300	9.4	0.91	367.2	52.0	886	9.6	0.91	361.7	55.5	848	9.2	0.91	357.5	50.0	1,859	50.0	0.88
	No	419.5	45.2	38,081	83.0	0.94	417.3	45.3	7,656	82.9	0.94	419.4	44.9	7,666	83.4	0.94	370.1	56.1	1,752	47.1	0.93
	Exited	416.5	43.3	1,049	2.3	0.94	412.6	48.1	208	2.3	0.95	417.0	41.2	214	2.3	0.93	*	*	13	0.3	*
	Exited & placed in 504 ^a	420.4	38.8	221	0.5	0.93	421.1	39.3	56	0.6	0.94	*	*	41	0.4	*	*	*	12	0.3	*
	504	412.5	47.6	2,224	4.8	0.94	407.1	47.1	429	4.6	0.93	415.9	45.4	422	4.6	0.94	404.4	50.9	80	2.2	0.95
Ethnicity	American Indian	412.7	45.4	126	0.3	0.93	*	*	31	0.3	*	*	*	18	0.2	*	*	*	5	0.1	*
	Asian	444.1	37.8	3,193	7.0	0.93	440.1	35.8	608	6.6	0.93	443.0	38.2	610	6.6	0.93	385.8	44.3	127	3.4	0.91
	African American	395.9	48.4	17,258	37.6	0.93	392.9	49.1	3,474	37.6	0.93	395.5	48.7	3,518	38.3	0.93	350.8	52.8	1,011	27.2	0.88
	Hawaiian/Pacific Islander	422.7	34.4	61	0.1	0.92	*	*	13	0.1	*	*	*	22	0.2	*	*	*	2	0.1	*
	White	433.1	38.3	16,266	35.5	0.93	431.5	37.4	3,368	36.5	0.93	433.1	38.6	3,254	35.4	0.93	386.5	55.3	891	24.0	0.95
	Hispanic	399.3	51.2	7,114	15.5	0.94	396.9	51.8	1,378	14.9	0.93	399.8	51.3	1,418	15.4	0.94	359.5	49.3	1,585	42.7	0.87
	Multi-Ethnic	425.7	39.8	1,857	4.0	0.94	423.4	42.4	363	3.9	0.94	424.2	46.1	351	3.8	0.94	367.8	59.0	95	2.6	0.92
	Missing	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*	*	*	0	0.0	*
Limited English Proficient	Yes	359.8	52.4	2,891	6.3	0.89	360.9	54.3	578	6.3	0.89	363.2	50.4	568	6.2	0.89	357.9	49.1	1,596	42.9	0.86
	No	417.2	46.7	39,018	85.1	0.94	414.7	47.0	7,897	85.5	0.94	416.5	47.7	7,831	85.2	0.94	368.2	57.1	1,976	53.2	0.94
	Exited ^b	425.4	34.1	3,966	8.6	0.92	422.1	34.2	760	8.2	0.92	423.7	36.4	792	8.6	0.92	392.3	41.4	144	3.9	0.91

Table 7-6. Summary Statistics for HSA Government: Summer 2018 Forms

		Form R					Accommodated Form Z				
		Mean	SD	N	%	Alpha	Mean	SD	N	%	Alpha
Overall		363.2	48.4	720	100.0	0.90	341.3	43.7	119	100.0	0.81
Gender	Male	361.7	49.4	432	60.0	0.90	340.4	44.6	103	86.6	0.81
	Female	365.3	46.8	288	40.0	0.90	*	*	16	13.4	*
	Missing	*	*	0	0.0	*	*	*	0	0.0	*
Grade	6	*	*	0	0.0	*	*	*	0	0.0	*
	7	*	*	0	0.0	*	*	*	0	0.0	*
	8	*	*	0	0.0	*	*	*	0	0.0	*
	9	360.3	46.5	145	20.1	0.88	*	*	21	17.6	*
	10	369.2	45.9	234	32.5	0.90	*	*	26	21.8	*
	11	357.3	56.3	162	22.5	0.92	*	*	47	39.5	*
	12	362.9	44.6	179	24.9	0.90	*	*	25	21.0	*
	Missing	*	*	0	0.0	*	*	*	0	0.0	*
Special Education	Yes	348.8	47.7	188	26.1	0.85	341.8	43.1	77	64.7	0.83
	No	368.3	48.1	486	67.5	0.91	*	*	41	34.5	*
	Exited	*	*	9	1.3	*	*	*	0	0.0	*
	Exited & placed in 504 ^a	*	*	2	0.3	*	*	*	0	0.0	*
	504	*	*	35	4.9	*	*	*	1	0.8	*
Ethnicity	American Indian	*	*	2	0.3	*	*	*	0	0.0	*
	Asian	*	*	21	2.9	*	*	*	1	0.8	*
	African American	357.8	47.1	354	49.2	0.88	340.0	42.3	66	55.5	0.76
	Hawaiian/ Pacific Islander	*	*	2	0.3	*	*	*	0	0.0	*
	White	374.4	43.9	178	24.7	0.91	*	*	27	22.7	*
	Hispanic	359.2	48.4	143	19.9	0.89	*	*	23	19.3	*
	Multi-Ethnic	*	*	20	2.8	*	*	*	2	1.7	*
	Missing	*	*	0	0.0	*	*	*	0	0.0	*
Limited English Proficient	Yes	347.7	45.1	70	9.7	0.82	*	*	17	14.3	*
No	363.5	48.6	623	86.5	0.90	343.7	41.3	100	84.0	0.80	
Exited ^b	*	*	27	3.8	*	*	*	2	1.7	*	

* 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 and May HS-MISA, and January, May, and Summer HSA Government tests are described in Tables 7-7 and 7-8.

Table 7-7. Demographic Information for 2018 HS-MISA—Combined Forms

		January		May	
		N	%	N	%
Overall		8,819	100.0	35,239	100.0
Gender	Male	4,631	52.5	18,205	51.7
	Female	4,188	47.5	17,034	48.3
	Missing	0	0.0	0	0.0
Special Education	Yes	1,269	14.4	3,938	11.2
	No	6,930	78.6	28,714	81.5
	Exited	167	1.9	708	2.0
	Exited & placed in 504 ^a	35	0.4	186	0.5
	504	418	4.7	1,693	4.8
Ethnicity	American Indian	14	0.2	109	0.3
	Asian	298	3.4	1,588	4.5
	African American	3,391	38.5	13,605	38.6
	Hawaiian/ Pacific Islander	12	0.1	52	0.1
	White	3,226	36.6	12,794	36.3
	Hispanic	1,602	18.2	5,798	16.5
	Multi-Ethnic	276	3.1	1,292	3.7
	Missing	0	0.0	0	0.0
Limited English Proficient	Yes	1,012	11.5	3,504	9.9
	No	7,658	86.8	29,611	84.0
	Exited ^b	149	1.7	2,124	6.0

^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. Demographic Information for 2018 HSA Government—Combined Forms

		January		May		Summer	
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Overall		19,824	100.0	68,017	100.0	839	100.0
Gender	Male	10,750	54.2	34,691	51.0	535	63.8
	Female	9,074	45.8	33,326	49.0	304	36.2
	Missing	0	0.0	0	0.0	0	0.0
Special Education	Yes	4,335	21.9	7,893	11.6	265	31.6
	No	14,165	71.5	55,155	81.1	527	62.8
	Exited	367	1.9	1,484	2.2	9	1.1
	Exited & placed in 504 ^a	84	0.4	330	0.5	2	0.2
	504	873	4.4	3,155	4.6	36	4.3
Ethnicity	American Indian	40	0.2	180	0.3	2	0.2
	Asian	586	3.0	4,538	6.7	22	2.6
	African American	9,428	47.6	25,261	37.1	420	50.1
	Hawaiian/ Pacific Islander	20	0.1	98	0.1	2	0.2
	White	5,401	27.2	23,779	35.0	205	24.4
	Hispanic	3,812	19.2	11,495	16.9	166	19.8
	Multi-Ethnic	535	2.7	2,666	3.9	22	2.6
	Missing	0	0.0	0	0.0	0	0.0
Limited English Proficient	Yes	2,701	13.6	5,633	8.3	87	10.4
	No	16,704	84.3	56,722	83.4	723	86.2
	Exited ^b	419	2.1	5,662	8.3	29	3.5

^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

Section 8. Field Test Analyses

Following the receipt of the final score file from eMetric for each administration, the analyses were implemented to obtain classical item analyses and differential item functioning (DIF) for HS-MISA and HSA Government. Following the classical item analyses, the field test items from January 2018 HSA Government administration were evaluated and then submitted to IRT calibration and scaling analyses to obtain the item parameters.

As the intact form from the 2015 administration was reused for May 2018 HSA Government administration, there were no new field test items involved in IRT calibration and scaling. Further, due to the small sample size and sample unrepresentativeness of the summer administration, IRT calibration and scaling analyses were also not applied to Summer 2018 HSA Government field test items. No IRT analyses were applied to HS-MISA this year, given that HS-MISA was implemented in 2018 with stand-alone field testing.

All valid records available were used as samples for the analyses, including English language learners, students with IEP or 504 plans, and students receiving accommodations. To ensure that the analysis results were obtained from a motivated sample, records invalidated by the test administrator and records with no item responses to the first five items were excluded from the analysis sample. The analysis procedures for each component are described in detail below.

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 2018 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 SR items, it is equivalent to the proportion of test takers in the sample that answered the item correctly. For 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: 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 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 Measured Progress and 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/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 2018:

- *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 HS-MISA field test items administered in January and May 2018 are presented in Tables 8-1 and 8-2, respectively. Corresponding results for the HSA Government field test items administered in January, May and summer 2018 are shown in Tables 8-3 and 8-4, respectively. The corresponding item-level classical statistics are presented in Appendix B.

**Table 8-1. Distribution of *p*-Values for HS-MISA
January and May 2018 Field Test Items ***

Admin. <i>p</i> - Value	Percentage and Number of Items			
	January		May	
	N	%	N	%
$p < 0.25$	22	41.5	118	33.3
$0.25 \leq p < 0.35$	10	18.9	76	21.5
$0.35 < p < 0.45$	11	20.8	78	22.0
$0.45 \leq p < 0.55$	7	13.2	54	15.3
$0.55 \leq p < 0.65$	3	5.7	23	6.5
$0.65 \leq p < 0.75$	0	0.0	4	1.1
$0.75 \leq p < 0.85$	0	0.0	1	0.3
$p \geq 0.85$	0	0.0	0	0.0
Descriptive Statistics				
Number of Items	53		354	
Mean	0.29		0.32	
SD	0.17		0.15	
Min	0.00		0.04	
Max	0.60		0.75	

* Items of all types are included.

**Table 8-2. Distribution of Item-Total Correlations for HS-MISA
January and May 2018 Field Test Items ***

	Percentage and Number of Items			
	January		May	
	N	%	N	%
$r < 0.15$	4	7.5	20	5.6
$0.15 \leq r < 0.25$	8	15.1	32	9.0
$0.25 \leq r < 0.35$	15	28.3	87	24.6
$0.35 < r < 0.45$	13	24.5	135	38.1
$0.45 \leq r < 0.55$	9	17.0	67	18.9
$0.55 \leq r < 0.65$	4	7.5	13	3.7
$0.65 \leq r < 0.75$	0	0.0	0	0.0
$r \geq 0.75$	0	0.0	0	0.0
Descriptive Statistics				
Number of Items	53		354	
Mean	0.34		0.36	
SD	0.13		0.11	
Min	0.05		0.06	
Max	0.60		0.59	

* Items of all types are included.

**Table 8-3. Distribution of p-Values for HSA Government
January 2018 Field Test Items ***

Admin p-Value	Percentage and Number of Items	
	January Field Test	
	N	%
$p < 0.25$	7	25.9
$0.25 \leq p < 0.35$	4	14.8
$0.35 < p < 0.45$	8	29.6
$0.45 \leq p < 0.55$	4	14.8
$0.55 \leq p < 0.65$	3	11.1
$0.65 \leq p < 0.75$	0	0.0
$0.75 \leq p < 0.85$	1	3.7
$p \geq 0.85$	0	0.0
Descriptive Statistics		
Number of Items	27	
Mean	0.37	
SD	0.16	
Min	0.10	
Max	0.76	

* Items of all types are included.

**Table 8-4. Distribution of Item-Total Correlations for HSA Government
January 2018 Field Test Items ***

Admin Correlation	Percentage and Number of Items	
	January Field Test	
	N	%
$r < 0.15$	0	0.0
$0.15 \leq r < 0.25$	5	18.5
$0.25 \leq r < 0.35$	7	25.9
$0.35 < r < 0.45$	10	37.0
$0.45 \leq r < 0.55$	1	3.7
$0.55 \leq r < 0.65$	2	7.4
$0.65 \leq r < 0.75$	2	7.4
$r \geq 0.75$	0	0.0
Descriptive Statistics		
Number of Items	27	
Mean	0.37	
SD	0.14	
Min	0.15	
Max	0.70	

*Items of all types are included.

Differential Item Functioning

Following the classical item analyses, differential item functioning (DIF) analyses were performed. 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 Measured Progress 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)

- Non-English Language Learner (ELL) (focal)—Non-ELL (reference)
- Special Education (focal)—Non-Special Education (reference)

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

The standardization procedure (Dorans & Kulick, 1986) is used in conjunction with the Mantel chi-square statistic. 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.

- 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

Following the classical item analyses, the field test items from HSA Government January 2018 administration 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.

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.

Table 8-5. MD HSA Field Test Items Excluded from Calibration—January Administration

Admin.	Content	ItemID	Form	Position	Response Type	Reason *
January	Government	0053HX	A, C	13	CR	6 students received the maximum score of 4.
January	Government	0053I4	A, C	74	CR	14 students received a score of 3 and 0 students received the maximum score of 4.
January	Government	0053I9	B, X	13	CR	1 student received the maximum score of 4.
January	Government	0053J3	B, X	74	CR	7 students received a score of 3 and 0 students received the maximum score of 4.

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

Table 8-6 presents 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. Calibration results indicated that the items were estimated reasonably well. 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 8-6. HSA Government Field Test Items with Statistical Flags Retained in Calibration

Admin.	<i>p</i> -Value <0.10	<i>p</i> -Value >0.90	R_ITT <0.10	Distractor rbis >0	Omit Rate >5% ^c	C-level DIF	Missing Response ^a	Total Flags	# of Items ^b
Jan Government	0	0	0	0	0	0	0	0	0

^a Responded by 0 students; ^b Represents total number of unique items; ^c15% for CR items on Government.

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 IRT models, such as the 3PL model for dichotomous data and the Graded Response Model (GRM) and the Generalized Partial Credit Model (GPCM) for polytomous data. Because it is specifically designed for IRT calibration, it is fast and efficient. The resulting calibrations were then scaled to the bank estimates using Stocking and Lord’s (1983) test characteristic curve (TCC) method and the operational items as the anchor set. The calibration and equating process is outlined in the steps below.

1. For each test, all items were calibrated using a sparse matrix design that places all items onto a common scale. 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
XXXXXXXXX	XXXXXXXXX				
XXXXXXXXX		XXXXXXXXX			
XXXXXXXXX			XXXXXXXXX		
XXXXXXXXX				XXXXXXXXX	
XXXXXXXXX					XXXXXXXXX

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. Once the items were calibrated, the results were reviewed to determine if any items failed to calibrate appropriately.
3. After the final calibration, parameter estimates were obtained. The items were then linked to the bank scale using the TCC method. Specifically, the banked parameter estimates of the operational items were used to 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. Items that were not calibrated were listed as unavailable (see Table 8-5).

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Appendix A. Classical Item Statistics—Operational Items

Table A-1. Classical Item Statistics, Operational Items: HSA Government—January 2018—Forms A–B

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	A-B	6	L	0053B6	0.26	0.56					4.2
CR-4	A-B	17	L	0053BZ	0.27	0.71					10.0
CR-4	A-B	31	L	0053CZ	0.04	0.51					19.5
CR-4	A-B	48	L	0053IG	0.15	0.70					13.6
CR-4	A-B	59	L	0053C8	0.27	0.70					13.3
MEAN(CR-4)					0.20	0.64					12.1
SD(CR-4)					0.10	0.10					5.6
SR	A-B	1	L	0053F4	0.60	0.37	-0.13	-0.21	-0.18	0.37	0.1
SR	A-B	2	L	0053D2	0.41	0.28	0.28	-0.15	-0.09	-0.12	0.1
SR	A-B	4	L	0053H7	0.56	0.31	-0.17	0.31	-0.14	-0.11	0.2
SR	A-B	5	L	0053C5	0.69	0.32	-0.19	-0.15	-0.16	0.32	0.1
SR	A-B	7	L	0053EI	0.74	0.27	-0.19	-0.14	-0.10	0.27	0.2
SR	A-B	8	O	0053DU	0.29	0.34	0.05	-0.09	0.34	-0.26	0.3
SR	A-B	9	L	0053CY	0.40	0.26	-0.15	0.03	-0.17	0.26	0.3
SR	A-B	10	L	0053D7	0.56	0.39	0.39	-0.13	-0.10	-0.29	0.3
SR	A-B	11	O	0053DZ	0.50	0.53	-0.33	-0.23	-0.17	0.53	0.3
SR	A-B	12	O	0053BV	0.57	0.34	-0.23	-0.13	0.34	-0.11	0.3
SR	A-B	14	O	0053JF	0.29	0.39	-0.13	0.01	-0.29	0.39	0.5
SR	A-B	15	L	0053HB	0.58	0.40	-0.22	0.40	-0.16	-0.18	0.6
SR	A-B	16	L	0053IR	0.55	0.51	0.51	-0.25	-0.25	-0.20	0.7
SR	A-B	19	L	0053EV	0.37	0.19	0.19	-0.14	-0.13	-0.03	1.3
SR	A-B	20	O	0053HW	0.77	0.43	-0.23	0.43	-0.22	-0.20	1.5
SR	A-B	21	L	0053AZ	0.40	0.34	-0.17	0.34	-0.22	-0.01	1.6
SR	A-B	22	L	0053F5	0.53	0.29	0.29	-0.19	-0.19	0.00	1.8
SR	A-B	23	O	0053E7	0.50	0.36	-0.19	-0.21	-0.09	0.36	2.0
SR	A-B	24	O	0053BH	0.31	0.35	-0.05	-0.09	-0.26	0.35	2.1
SR	A-B	25	L	0053F3	0.32	0.21	-0.07	-0.13	0.21	-0.01	2.4
SR	A-B	26	L	0053H9	0.47	0.19	0.08	0.19	-0.19	-0.11	2.5

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-B	27	O	0053B9	0.26	0.33	-0.08	-0.12	-0.11	0.33	2.7
SR	A-B	28	O	0053BO	0.37	0.30	-0.13	0.30	-0.04	-0.19	2.7
SR	A-B	29	L	0053D3	0.38	0.26	0.26	-0.10	-0.21	-0.03	0.4
SR	A-B	30	L	0053JB	0.48	0.41	-0.17	-0.15	-0.22	0.41	0.4
SR	A-B	32	L	0053HY	0.39	0.34	-0.12	-0.12	0.34	-0.16	0.5
SR	A-B	33	L	0053HR	0.67	0.50	0.50	-0.25	-0.28	-0.19	0.4
SR	A-B	36	L	0053AC	0.41	0.30	-0.11	0.30	-0.08	-0.19	0.5
SR	A-B	37	L	0053B7	0.48	0.35	-0.14	-0.20	0.35	-0.10	0.6
SR	A-B	38	O	0053F2	0.60	0.33	-0.10	-0.25	0.33	-0.10	0.4
SR	A-B	39	L	0053BM	0.71	0.46	-0.18	0.46	-0.24	-0.26	0.5
SR	A-B	41	L	0053DX	0.77	0.39	-0.21	0.39	-0.20	-0.20	0.5
SR	A-B	42	L	0053BK	0.59	0.38	-0.16	0.38	-0.23	-0.15	0.5
SR	A-B	43	O	0053JM	0.42	0.29	-0.17	-0.24	0.29	0.00	0.5
SR	A-B	44	O	0053DM	0.27	0.23	0.23	-0.07	-0.13	0.00	0.5
SR	A-B	47	L	0053CK	0.27	0.33	-0.16	0.02	0.33	-0.19	0.6
SR	A-B	49	L	0053B2	0.38	0.25	-0.09	0.25	-0.16	-0.02	0.7
SR	A-B	50	L	0053AH	0.29	0.31	0.31	0.05	-0.25	-0.16	0.8
SR	A-B	51	O	0053J6	0.39	0.37	0.37	-0.10	-0.17	-0.19	0.7
SR	A-B	52	O	0053IC	0.41	0.48	-0.24	-0.31	0.48	-0.05	0.7
SR	A-B	53	O	0053AA	0.46	0.42	-0.16	-0.25	0.42	-0.12	0.7
SR	A-B	54	O	0053CW	0.33	0.41	-0.15	-0.09	-0.23	0.41	0.6
SR	A-B	55	L	0053IJ	0.52	0.32	-0.09	0.32	-0.24	-0.09	0.7
SR	A-B	57	L	0053IH	0.48	0.46	-0.18	-0.20	-0.22	0.46	0.7
SR	A-B	58	L	0053JD	0.71	0.42	-0.22	-0.21	0.42	-0.20	0.7
SR	A-B	60	O	0053AO	0.39	0.30	0.02	-0.15	-0.26	0.30	0.7
SR	A-B	63	O	0053B5	0.30	0.17	-0.15	0.17	-0.14	0.10	0.8
SR	A-B	64	O	0053BC	0.47	0.45	-0.16	-0.16	-0.24	0.45	0.8
SR	A-B	65	L	0053IN	0.41	0.44	0.44	-0.09	-0.28	-0.14	0.9
SR	A-B	66	L	0053HU	0.36	0.38	-0.20	-0.08	0.38	-0.20	0.9
SR	A-B	67	O	0053CX	0.21	0.37	-0.08	0.37	-0.14	-0.12	0.8

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-B	68	L	0053AB	0.21	0.18	0.18	0.12	-0.25	-0.14	0.8
SR	A-B	69	L	0053D6	0.52	0.38	-0.15	-0.19	0.38	-0.16	0.8
SR	A-B	70	O	0053F6	0.42	0.42	-0.17	-0.21	0.42	-0.14	0.8
SR	A-B	71	O	0053AV	0.51	0.58	-0.26	-0.25	-0.25	0.58	0.9
SR	A-B	72	O	0053DY	0.39	0.46	0.46	-0.16	-0.20	-0.16	0.9
SR	A-B	73	L	0053JC	0.59	0.37	-0.14	0.37	-0.20	-0.17	0.9
SR	A-B	75	L	0053AT	0.30	0.22	0.22	-0.02	-0.12	-0.07	1.0
SR	A-B	76	O	0053CB	0.51	0.42	-0.17	-0.20	0.42	-0.18	1.0
SR	A-B	79	O	0053HQ	0.49	0.44	0.44	-0.14	-0.22	-0.22	1.0
SR	A-B	80	O	0053AR	0.48	0.48	-0.27	-0.17	-0.21	0.48	1.0
SR	A-B	81	L	0053CI	0.36	0.23	-0.17	0.23	-0.17	0.12	1.0
MEAN(SR)					0.46	0.35	-0.03	-0.02	-0.05	0.01	0.8
SD(SR)					0.14	0.09	0.23	0.22	0.25	0.24	0.6

Item Type =Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL=A,B,X), P_Val = p-value, R_ITT = item-total correlation, P_BIS1-P_BIS7 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-2. Classical Item Statistics, Operational Items: HSA Government—January 2018—Form C

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	C	6	L	0053B6	0.26	0.57					4.4
CR-4	C	17	L	0053BZ	0.27	0.71					10.7
CR-4	C	31	L	0053CZ	0.04	0.51					20.5
CR-4	C	48	L	0053IG	0.15	0.71					13.3
CR-4	C	59	L	0053C8	0.27	0.70					13.5
MEAN(CR-4)					0.20	0.64					12.5
SD(CR-4)					0.10	0.09					5.8
SR	C	1	L	0053F4	0.59	0.37	-0.11	-0.22	-0.19	0.37	0.0
SR	C	2	L	0053D2	0.41	0.28	0.28	-0.17	-0.10	-0.10	0.1
SR	C	4	L	0053H7	0.55	0.27	-0.17	0.27	-0.13	-0.07	0.2
SR	C	5	L	0053C5	0.69	0.32	-0.18	-0.16	-0.16	0.32	0.2
SR	C	7	L	0053EI	0.74	0.27	-0.19	-0.14	-0.10	0.27	0.2
SR	C	8	O	0053IE	0.52	0.38	-0.15	-0.20	0.38	-0.17	0.2
SR	C	9	L	0053CY	0.40	0.26	-0.14	0.00	-0.16	0.26	0.3
SR	C	10	L	0053D7	0.57	0.39	0.39	-0.15	-0.12	-0.28	0.2
SR	C	11	O	0053AU	0.55	0.50	-0.27	-0.27	0.50	-0.17	0.3
SR	C	12	O	0053DL	0.54	0.10	-0.10	0.10	0.06	-0.08	0.3
SR	C	14	O	0053JK	0.38	0.46	-0.17	-0.18	-0.19	0.46	0.4
SR	C	15	L	0053HB	0.61	0.43	-0.24	0.43	-0.18	-0.19	0.6
SR	C	16	L	0053IR	0.55	0.51	0.51	-0.24	-0.25	-0.21	0.6
SR	C	19	L	0053EV	0.39	0.21	0.21	-0.15	-0.15	-0.04	1.3
SR	C	20	O	0053C0	0.28	0.29	-0.10	-0.17	0.29	-0.01	1.5
SR	C	21	L	0053AZ	0.39	0.32	-0.15	0.32	-0.22	-0.01	1.6
SR	C	22	L	0053F5	0.54	0.27	0.27	-0.18	-0.19	0.01	1.8
SR	C	23	O	0053DW	0.80	0.42	0.42	-0.22	-0.22	-0.21	1.9
SR	C	24	O	0053B3	0.52	0.43	-0.16	-0.23	0.43	-0.19	2.1
SR	C	25	L	0053F3	0.33	0.21	-0.06	-0.16	0.21	0.01	2.2
SR	C	26	L	0053H9	0.45	0.21	0.07	0.21	-0.20	-0.11	2.4
SR	C	27	O	0053AE	0.66	0.46	-0.24	-0.23	0.46	-0.21	2.5
SR	C	28	O	0053J1	0.34	0.28	-0.12	-0.19	-0.04	0.28	2.5
SR	C	29	L	0053D3	0.38	0.26	0.26	-0.10	-0.23	-0.02	0.3
SR	C	30	L	0053JB	0.45	0.40	-0.13	-0.17	-0.21	0.40	0.4

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	C	32	L	0053HY	0.39	0.34	-0.11	-0.13	0.34	-0.19	0.4
SR	C	33	L	0053HR	0.66	0.51	0.51	-0.28	-0.30	-0.17	0.4
SR	C	36	L	0053AC	0.42	0.30	-0.11	0.30	-0.07	-0.20	0.4
SR	C	37	L	0053B7	0.49	0.35	-0.13	-0.20	0.35	-0.12	0.4
SR	C	38	O	0053E8	0.72	0.46	-0.27	-0.22	0.46	-0.20	0.5
SR	C	39	L	0053BM	0.70	0.47	-0.17	0.47	-0.26	-0.25	0.6
SR	C	41	L	0053DX	0.77	0.40	-0.21	0.40	-0.20	-0.20	0.5
SR	C	42	L	0053BK	0.58	0.39	-0.15	0.39	-0.25	-0.14	0.5
SR	C	43	O	0053DC	0.44	0.39	-0.19	-0.19	0.39	-0.14	0.6
SR	C	44	O	0053DG	0.47	0.39	-0.20	-0.14	-0.15	0.39	0.7
SR	C	47	L	0053CK	0.22	0.32	-0.17	0.02	0.32	-0.16	0.6
SR	C	49	L	0053B2	0.36	0.23	-0.06	0.23	-0.17	0.00	0.7
SR	C	50	L	0053AH	0.29	0.35	0.35	0.03	-0.26	-0.17	0.7
SR	C	51	O	0053JG	0.48	0.53	-0.20	-0.24	-0.23	0.53	0.7
SR	C	52	O	0053J4	0.26	0.31	0.31	-0.15	-0.04	-0.13	0.7
SR	C	53	O	0053DT	0.27	0.33	-0.12	-0.10	-0.11	0.33	0.8
SR	C	54	O	0053DD	0.44	0.21	0.03	0.21	-0.19	-0.10	0.7
SR	C	55	L	0053IJ	0.53	0.31	-0.08	0.31	-0.25	-0.08	0.7
SR	C	57	L	0053IH	0.50	0.47	-0.20	-0.18	-0.24	0.47	0.7
SR	C	58	L	0053JD	0.73	0.44	-0.22	-0.24	0.44	-0.21	0.7
SR	C	60	O	0053CV	0.35	0.49	-0.17	-0.27	-0.15	0.49	0.7
SR	C	63	O	0053HF	0.46	0.06	0.11	0.06	-0.05	-0.14	0.8
SR	C	64	O	0053ES	0.53	0.47	-0.16	-0.23	-0.23	0.47	0.8
SR	C	65	L	0053IN	0.42	0.42	0.42	-0.08	-0.27	-0.16	0.9
SR	C	66	L	0053HU	0.37	0.37	-0.18	-0.09	0.37	-0.18	1.0
SR	C	67	O	0053BL	0.39	0.29	-0.11	-0.05	-0.16	0.29	0.8
SR	C	68	L	0053AB	0.22	0.20	0.20	0.11	-0.25	-0.15	0.8
SR	C	69	L	0053D6	0.54	0.40	-0.17	-0.19	0.40	-0.16	0.8
SR	C	70	O	0053EQ	0.53	0.45	-0.16	-0.23	-0.21	0.45	0.9
SR	C	71	O	0053AM	0.50	0.44	-0.10	0.44	-0.30	-0.15	0.9
SR	C	72	O	0053DH	0.45	0.42	0.42	-0.13	-0.26	-0.16	0.9
SR	C	73	L	0053JC	0.59	0.36	-0.14	0.36	-0.19	-0.16	0.9
SR	C	75	L	0053AT	0.34	0.20	0.20	-0.03	-0.11	-0.06	1.1
SR	C	76	O	0053C2	0.29	0.21	0.21	-0.24	-0.23	0.16	1.0
SR	C	79	O	0053CN	0.38	0.34	-0.16	-0.13	0.34	-0.10	1.1

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	C	80	O	0053CH	0.35	0.20	0.20	-0.15	-0.09	0.05	1.1
SR	C	81	L	0053CI	0.37	0.22	-0.17	0.22	-0.18	0.14	1.0
MEAN(SR)					0.47	0.34	-0.02	-0.04	-0.04	0.00	0.8
SD(SR)					0.14	0.11	0.22	0.22	0.25	0.24	0.6

Item Type=Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL=AA,AB,AC,AD,AE,AF,AG,AH,D,G,H,J,K,L,M,N,O,P,S,T,U,V,W,Y), P_Val = p -value, R_ITT = item-total correlation, P_BIS1-P_BIS7 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-3. Classical Item Statistics, Operational Items: HSA Government—January 2018—Accommodated Form X

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	X	6	L	0053B6	0.16	0.45					4.9
CR-4	X	17	L	0053BZ	0.15	0.58					9.4
CR-4	X	31	L	0053CZ	0.01	0.34					14.4
CR-4	X	48	L	0053IG	0.07	0.56					11.1
CR-4	X	59	L	0053C8	0.16	0.51					11.1
MEAN(CR-4)					0.11	0.49					10.2
SD(CR-4)					0.07	0.09					3.5
SR	X	1	L	0053F4	0.45	0.33	-0.12	-0.22	-0.09	0.33	0.0
SR	X	2	L	0053D2	0.35	0.11	0.11	-0.14	-0.16	0.09	0.3
SR	X	4	L	0053H7	0.46	0.21	-0.11	0.21	-0.07	-0.08	0.3
SR	X	5	L	0053C5	0.58	0.32	-0.13	-0.17	-0.15	0.32	0.1
SR	X	7	L	0053EI	0.63	0.30	-0.20	-0.12	-0.12	0.30	0.4
SR	X	8	O	0053DU	0.22	0.11	-0.04	-0.12	0.11	0.04	0.4
SR	X	9	L	0053CY	0.30	0.29	-0.09	-0.07	-0.15	0.29	0.7
SR	X	10	L	0053D7	0.43	0.28	0.28	-0.12	-0.07	-0.16	0.4
SR	X	11	O	0053DZ	0.36	0.42	-0.12	-0.21	-0.21	0.42	0.6
SR	X	12	O	0053BV	0.50	0.12	-0.01	-0.14	0.12	-0.03	0.7
SR	X	14	O	0053JF	0.21	0.27	-0.11	-0.02	-0.13	0.27	0.6
SR	X	15	L	0053HB	0.45	0.35	-0.19	0.35	-0.13	-0.11	0.7
SR	X	16	L	0053IR	0.37	0.35	0.35	-0.04	-0.18	-0.18	0.7
SR	X	19	L	0053EV	0.30	0.16	0.16	-0.13	-0.13	0.03	1.9
SR	X	20	O	0053HW	0.61	0.39	-0.17	0.39	-0.20	-0.16	2.2
SR	X	21	L	0053AZ	0.32	0.12	0.01	0.12	-0.17	0.05	2.3
SR	X	22	L	0053F5	0.49	0.20	0.20	-0.13	-0.12	0.03	2.4
SR	X	23	O	0053E7	0.43	0.30	-0.15	-0.14	-0.08	0.30	2.8
SR	X	24	O	0053BH	0.21	0.24	0.08	-0.08	-0.21	0.24	3.0
SR	X	25	L	0053F3	0.26	0.12	-0.02	-0.06	0.12	-0.02	3.3
SR	X	26	L	0053H9	0.41	0.19	0.00	0.19	-0.15	-0.07	3.5
SR	X	27	O	0053B9	0.23	0.22	-0.04	-0.02	-0.13	0.22	3.9
SR	X	28	O	0053BO	0.27	0.15	-0.04	0.15	0.03	-0.14	4.3
SR	X	29	L	0053D3	0.32	0.17	0.17	-0.01	-0.13	-0.07	0.3
SR	X	30	L	0053JB	0.30	0.36	-0.11	-0.12	-0.15	0.36	0.4
SR	X	32	L	0053HY	0.33	0.26	-0.04	-0.08	0.26	-0.15	0.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	33	L	0053HR	0.46	0.47	0.47	-0.21	-0.22	-0.15	0.6
SR	X	36	L	0053AC	0.32	0.17	0.05	0.17	-0.06	-0.16	0.7
SR	X	37	L	0053B7	0.39	0.21	0.01	-0.11	0.21	-0.12	0.6
SR	X	38	O	0053F2	0.50	0.26	-0.07	-0.17	0.26	-0.07	0.8
SR	X	39	L	0053BM	0.54	0.44	-0.16	0.44	-0.21	-0.21	0.8
SR	X	41	L	0053DX	0.61	0.41	-0.19	0.41	-0.19	-0.19	0.7
SR	X	42	L	0053BK	0.43	0.34	-0.12	0.34	-0.21	-0.08	1.0
SR	X	43	O	0053JM	0.33	0.12	-0.12	-0.18	0.12	0.14	0.6
SR	X	44	O	0053DM	0.22	0.12	0.12	0.01	-0.04	-0.07	0.9
SR	X	47	L	0053CK	0.22	0.13	-0.09	-0.01	0.13	0.00	1.2
SR	X	49	L	0053B2	0.35	0.00	0.03	0.00	-0.09	0.11	1.0
SR	X	50	L	0053AH	0.20	0.14	0.14	0.13	-0.14	-0.11	0.9
SR	X	51	O	0053J6	0.28	0.24	0.24	0.05	-0.12	-0.17	0.9
SR	X	52	O	0053IC	0.29	0.25	-0.13	-0.20	0.25	0.11	1.0
SR	X	53	O	0053AA	0.33	0.18	-0.05	-0.14	0.18	0.02	1.1
SR	X	54	O	0053CW	0.24	0.30	-0.03	-0.08	-0.17	0.30	0.3
SR	X	55	L	0053IJ	0.44	0.24	-0.02	0.24	-0.23	-0.05	0.3
SR	X	57	L	0053IH	0.34	0.32	-0.11	-0.10	-0.13	0.32	0.4
SR	X	58	L	0053JD	0.51	0.38	-0.16	-0.11	0.38	-0.22	0.6
SR	X	60	O	0053AO	0.29	0.16	0.11	-0.10	-0.17	0.16	0.6
SR	X	63	O	0053B5	0.27	0.12	-0.12	0.12	-0.04	0.06	0.6
SR	X	64	O	0053BC	0.34	0.25	-0.08	-0.04	-0.13	0.25	0.7
SR	X	65	L	0053IN	0.28	0.25	0.25	-0.02	-0.12	-0.09	0.6
SR	X	66	L	0053HU	0.29	0.14	-0.09	0.03	0.14	-0.07	0.8
SR	X	67	O	0053CX	0.16	0.08	-0.02	0.08	-0.14	0.10	0.8
SR	X	68	L	0053AB	0.20	0.09	0.09	0.16	-0.16	-0.11	0.9
SR	X	69	L	0053D6	0.40	0.31	-0.07	-0.15	0.31	-0.12	0.8
SR	X	70	O	0053F6	0.30	0.26	-0.06	-0.14	0.26	-0.05	1.0
SR	X	71	O	0053AV	0.35	0.44	-0.16	-0.15	-0.17	0.44	0.8
SR	X	72	O	0053DY	0.27	0.28	0.28	-0.07	-0.08	-0.11	0.8
SR	X	73	L	0053JC	0.43	0.27	-0.03	0.27	-0.16	-0.11	1.0
SR	X	75	L	0053AT	0.23	0.15	0.15	-0.04	-0.12	0.05	1.0
SR	X	76	O	0053CB	0.36	0.24	-0.03	-0.16	0.24	-0.06	1.2
SR	X	79	O	0053HQ	0.39	0.33	0.33	-0.08	-0.10	-0.21	1.1
SR	X	80	O	0053AR	0.33	0.37	-0.20	-0.06	-0.16	0.37	1.3

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	81	L	0053CI	0.32	0.07	-0.02	0.07	-0.05	0.05	1.2
MEAN(SR)					0.36	0.24	0.00	-0.01	-0.05	0.03	1.1
SD(SR)					0.11	0.11	0.15	0.17	0.16	0.19	0.9

Item Type =Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL= A,B,C,X), P_Val = *p*-value, R_ITT = item-total correlation, P_BIS1-P_BIS4 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-4. Classical Item Statistics, Operational Items: HSA Government—May 2018—Forms D–H

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	D-H	18	L	0053I1	0.38	0.77					4.7
CR-4	D-H	35	L	0053HJ	0.36	0.74					5.1
CR-4	D-H	44	L	0053EE	0.42	0.70					4.9
CR-4	D-H	56	L	0053C8	0.41	0.73					5.8
CR-4	D-H	72	L	0053AL	0.34	0.82					8.8
MEAN(CR-4)					0.38	0.75					5.9
SD(CR-4)					0.03	0.04					1.7
SR	D-H	1	O	0053HK	0.73	0.46	-0.22	0.46	-0.31	-0.16	0.1
SR	D-H	2	O	0053AG	0.51	0.37	-0.07	0.37	-0.24	-0.31	0.1
SR	D-H	3	L	0053HM	0.60	0.27	-0.08	-0.20	0.27	-0.12	0.1
SR	D-H	4	O	0053DF	0.64	0.59	-0.22	-0.29	0.59	-0.34	0.2
SR	D-H	5	L	0053AY	0.83	0.36	-0.25	0.36	-0.15	-0.20	0.1
SR	D-H	7	L	0053AI	0.60	0.61	-0.28	-0.23	-0.37	0.61	0.2
SR	D-H	8	L	0053C3	0.66	0.50	-0.18	-0.30	-0.27	0.50	0.2
SR	D-H	10	O	0053EX	0.53	0.36	-0.20	0.36	-0.13	-0.18	0.2
SR	D-H	11	L	0053IT	0.76	0.51	-0.23	-0.28	0.51	-0.27	0.2
SR	D-H	12	L	0053HC	0.62	0.54	-0.23	-0.38	0.54	-0.19	0.3
SR	D-H	14	L	0053EG	0.85	0.43	-0.19	0.43	-0.26	-0.23	0.3
SR	D-H	15	O	0053H6	0.61	0.57	0.57	-0.34	-0.25	-0.22	0.3
SR	D-H	16	L	0053CM	0.56	0.35	0.35	-0.17	-0.23	-0.11	0.3
SR	D-H	17	O	0053CE	0.86	0.44	-0.23	-0.21	-0.26	0.44	0.3
SR	D-H	20	O	0053HR	0.83	0.55	0.55	-0.31	-0.34	-0.22	0.7
SR	D-H	21	O	0053EF	0.72	0.48	0.48	-0.28	-0.24	-0.21	0.8
SR	D-H	22	O	0053DV	0.49	0.38	-0.21	-0.15	0.38	-0.15	0.8
SR	D-H	23	L	0053F5	0.66	0.38	0.38	-0.24	-0.28	-0.07	0.9
SR	D-H	25	O	0053IZ	0.42	0.41	0.41	-0.04	-0.30	-0.26	1.1
SR	D-H	27	O	0053DQ	0.47	0.27	0.27	-0.25	-0.29	-0.03	1.2
SR	D-H	28	O	0053C7	0.62	0.58	-0.24	-0.26	-0.32	0.58	1.2
SR	D-H	29	L	0053AS	0.74	0.37	-0.17	0.37	-0.26	-0.18	0.2
SR	D-H	31	L	0053DO	0.74	0.62	-0.23	-0.37	-0.34	0.62	0.3
SR	D-H	32	L	0053II	0.38	0.17	0.17	-0.16	0.02	-0.19	0.3
SR	D-H	33	L	0053JH	0.80	0.55	0.55	-0.32	-0.29	-0.27	0.3

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	D-H	34	L	0053AK	0.79	0.55	-0.29	0.55	-0.28	-0.31	0.3
SR	D-H	36	L	0053BA	0.58	0.49	-0.20	-0.32	0.49	-0.16	0.3
SR	D-H	37	O	0053BW	0.75	0.36	0.36	-0.09	-0.30	-0.22	0.3
SR	D-H	38	O	0053DK	0.48	0.40	-0.19	-0.14	0.40	-0.19	0.4
SR	D-H	40	L	0053HG	0.49	0.15	-0.16	0.15	-0.15	0.09	0.4
SR	D-H	41	L	0053IM	0.39	0.31	0.31	-0.27	-0.18	0.14	0.4
SR	D-H	42	O	0053DI	0.54	0.27	-0.19	0.27	-0.24	-0.05	0.4
SR	D-H	43	O	0053BS	0.66	0.51	-0.24	0.51	-0.29	-0.23	0.4
SR	D-H	45	O	530000	0.58	0.54	0.54	-0.33	-0.25	-0.17	0.5
SR	D-H	46	L	0053EW	0.71	0.38	-0.19	-0.21	0.38	-0.18	0.5
SR	D-H	47	O	0053BB	0.46	0.35	-0.18	-0.15	0.35	-0.14	0.5
SR	D-H	49	L	0053CD	0.39	0.35	-0.17	-0.29	0.35	0.03	0.7
SR	D-H	50	L	0053EN	0.37	0.36	0.04	0.36	-0.28	-0.19	0.8
SR	D-H	51	L	0053I2	0.56	0.53	0.53	-0.31	-0.26	-0.13	0.9
SR	D-H	52	L	0053J7	0.60	0.52	-0.32	-0.25	0.52	-0.18	0.8
SR	D-H	53	L	0053DG	0.65	0.44	-0.20	-0.23	-0.23	0.44	0.8
SR	D-H	54	L	0053BF	0.76	0.55	-0.29	-0.30	0.55	-0.25	0.5
SR	D-H	55	L	0053CA	0.22	0.22	0.08	-0.07	-0.20	0.22	0.5
SR	D-H	58	O	0053CK	0.49	0.48	-0.21	-0.09	0.48	-0.34	0.5
SR	D-H	60	L	0053I8	0.48	0.28	-0.27	-0.14	0.00	0.28	0.5
SR	D-H	61	L	0053IA	0.40	0.43	-0.23	-0.15	-0.14	0.43	0.5
SR	D-H	62	L	0053HV	0.70	0.47	-0.18	-0.32	-0.20	0.47	0.5
SR	D-H	63	O	0053EB	0.61	0.41	0.41	-0.31	-0.16	-0.16	0.5
SR	D-H	64	O	0053C1	0.80	0.61	-0.38	-0.32	0.61	-0.23	0.5
SR	D-H	65	L	0053EY	0.78	0.52	-0.27	-0.29	0.52	-0.23	0.5
SR	D-H	68	O	0053DJ	0.70	0.48	-0.24	-0.27	0.48	-0.21	0.6
SR	D-H	69	L	0053JN	0.53	0.34	-0.19	-0.23	0.34	-0.05	0.6
SR	D-H	70	L	0053IU	0.63	0.54	0.54	-0.26	-0.37	-0.20	0.6
SR	D-H	71	L	0053JI	0.83	0.54	-0.30	0.54	-0.29	-0.25	0.6
SR	D-H	73	O	0053CR	0.79	0.52	-0.26	-0.24	-0.30	0.52	0.6
SR	D-H	74	O	0053AQ	0.75	0.58	-0.27	-0.27	-0.33	0.58	0.6
SR	D-H	75	L	0053AT	0.41	0.36	0.36	-0.05	-0.22	-0.16	0.6
SR	D-H	76	O	0053BH	0.45	0.42	-0.16	-0.14	-0.30	0.42	0.6
SR	D-H	77	L	0053DN	0.36	0.38	-0.28	-0.02	-0.23	0.38	0.6
SR	D-H	78	L	0053EJ	0.29	0.21	0.13	0.21	-0.27	-0.12	0.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	D-H	80	L	0053C9	0.54	0.57	0.57	-0.34	-0.27	-0.17	0.7
SR	D-H	81	O	0053I3	0.58	0.45	-0.28	-0.26	-0.11	0.45	0.7
MEAN(SR)					0.60	0.44	-0.03	-0.10	-0.05	-0.02	0.5
SD(SR)					0.15	0.11	0.30	0.27	0.33	0.29	0.3

Item Type =Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL= D,E,F,G,H,J,K,Y), P_Val = *p*-value, R_ITT = item-total correlation, P_BIS1-P_BIS4 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-5. Classical Item Statistics, Operational Items: HSA Government—May 2018—Form J

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	J	18	L	0053I1	0.37	0.77					4.8
CR-4	J	35	L	0053HJ	0.36	0.74					5.3
CR-4	J	44	L	0053EE	0.42	0.71					5.0
CR-4	J	56	L	0053C8	0.41	0.73					6.1
CR-4	J	72	L	0053AL	0.34	0.82					9.1
MEAN(CR-4)					0.38	0.75					6.0
SD(CR-4)					0.03	0.04					1.8
SR	J	1	O	0053HK	0.74	0.44	-0.22	0.44	-0.31	-0.15	0.1
SR	J	2	O	0053BN	0.30	0.27	0.01	-0.23	0.27	-0.25	0.1
SR	J	3	L	0053HM	0.59	0.28	-0.08	-0.21	0.28	-0.11	0.1
SR	J	4	O	0053CG	0.50	0.46	0.46	-0.34	-0.09	-0.16	0.2
SR	J	5	L	0053AY	0.83	0.36	-0.24	0.36	-0.15	-0.21	0.2
SR	J	7	L	0053AI	0.60	0.61	-0.27	-0.21	-0.37	0.61	0.2
SR	J	8	L	0053C3	0.67	0.50	-0.18	-0.31	-0.26	0.50	0.2
SR	J	10	O	0053EX	0.53	0.36	-0.19	0.36	-0.15	-0.18	0.3
SR	J	11	L	0053IT	0.76	0.51	-0.26	-0.28	0.51	-0.26	0.3
SR	J	12	L	0053HC	0.62	0.55	-0.25	-0.36	0.55	-0.20	0.2
SR	J	14	L	0053EG	0.86	0.43	-0.18	0.43	-0.27	-0.23	0.3
SR	J	15	O	0053JK	0.61	0.51	-0.23	-0.25	-0.25	0.51	0.3
SR	J	16	L	0053CM	0.57	0.36	0.36	-0.18	-0.22	-0.09	0.4
SR	J	17	O	0053CE	0.86	0.44	-0.23	-0.20	-0.27	0.44	0.4
SR	J	20	O	0053HR	0.82	0.55	0.55	-0.32	-0.33	-0.20	0.7
SR	J	21	O	0053EF	0.77	0.47	0.47	-0.24	-0.25	-0.23	0.8
SR	J	22	O	0053EH	0.64	0.52	-0.22	-0.30	0.52	-0.21	0.9
SR	J	23	L	0053F5	0.64	0.38	0.38	-0.24	-0.28	-0.07	0.9
SR	J	25	O	0053JE	0.64	0.41	-0.26	-0.23	0.41	-0.14	1.1
SR	J	27	O	0053E9	0.50	0.40	0.40	-0.14	-0.23	-0.14	1.3
SR	J	28	O	0053C7	0.61	0.59	-0.26	-0.24	-0.32	0.59	1.2
SR	J	29	L	0053AS	0.73	0.32	-0.17	0.32	-0.25	-0.10	0.3

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	J	31	L	0053DO	0.73	0.62	-0.23	-0.35	-0.35	0.62	0.3
SR	J	32	L	0053II	0.38	0.19	0.19	-0.16	0.02	-0.20	0.3
SR	J	33	L	0053JH	0.80	0.55	0.55	-0.32	-0.28	-0.27	0.3
SR	J	34	L	0053AK	0.78	0.56	-0.30	0.56	-0.28	-0.31	0.3
SR	J	36	L	0053BA	0.54	0.45	-0.17	-0.30	0.45	-0.14	0.4
SR	J	37	O	0053AW	0.81	0.56	-0.25	-0.34	-0.28	0.56	0.4
SR	J	38	O	0053DK	0.46	0.39	-0.20	-0.11	0.39	-0.20	0.4
SR	J	40	L	0053HG	0.49	0.19	-0.18	0.19	-0.17	0.08	0.4
SR	J	41	L	0053IM	0.39	0.31	0.31	-0.27	-0.19	0.14	0.4
SR	J	42	O	0053DI	0.53	0.30	-0.20	0.30	-0.25	-0.06	0.4
SR	J	43	O	0053BS	0.68	0.54	-0.25	0.54	-0.32	-0.23	0.4
SR	J	45	O	0053E4	0.57	0.54	0.54	-0.31	-0.24	-0.18	0.5
SR	J	46	L	0053EW	0.70	0.39	-0.19	-0.21	0.39	-0.20	0.5
SR	J	47	O	0053AN	0.27	0.30	0.30	-0.17	-0.21	0.10	0.5
SR	J	49	L	0053CD	0.39	0.33	-0.14	-0.26	0.33	0.01	0.6
SR	J	50	L	0053EN	0.36	0.37	0.02	0.37	-0.28	-0.19	0.7
SR	J	51	L	0053I2	0.56	0.54	0.54	-0.32	-0.27	-0.14	0.8
SR	J	52	L	0053J7	0.61	0.53	-0.33	-0.24	0.53	-0.19	0.8
SR	J	53	L	0053DG	0.61	0.47	-0.26	-0.20	-0.20	0.47	0.7
SR	J	54	L	0053BF	0.76	0.56	-0.29	-0.31	0.56	-0.26	0.5
SR	J	55	L	0053CA	0.22	0.20	0.12	-0.10	-0.21	0.20	0.6
SR	J	58	O	0053CK	0.51	0.48	-0.21	-0.10	0.48	-0.33	0.6
SR	J	60	L	0053I8	0.50	0.29	-0.27	-0.16	0.01	0.29	0.5
SR	J	61	L	0053IA	0.40	0.42	-0.23	-0.14	-0.14	0.42	0.5
SR	J	62	L	0053HV	0.70	0.47	-0.18	-0.31	-0.19	0.47	0.6
SR	J	63	O	0053EB	0.62	0.42	0.42	-0.29	-0.20	-0.16	0.5
SR	J	64	O	0053AA	0.66	0.58	-0.29	-0.34	0.58	-0.22	0.6
SR	J	65	L	0053EY	0.78	0.51	-0.26	-0.29	0.51	-0.23	0.6
SR	J	68	O	0053CJ	0.72	0.55	0.55	-0.34	-0.37	-0.12	0.6
SR	J	69	L	0053JN	0.52	0.33	-0.17	-0.22	0.33	-0.04	0.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	J	70	L	0053IU	0.63	0.54	0.54	-0.24	-0.37	-0.21	0.6
SR	J	71	L	0053JI	0.82	0.54	-0.31	0.54	-0.28	-0.25	0.6
SR	J	73	O	0053AR	0.71	0.53	-0.30	-0.30	-0.25	0.53	0.6
SR	J	74	O	0053EM	0.38	0.20	-0.34	0.20	-0.26	0.20	0.6
SR	J	75	L	0053AT	0.43	0.36	0.36	-0.03	-0.16	-0.24	0.6
SR	J	76	O	0053BH	0.44	0.40	-0.14	-0.12	-0.31	0.40	0.6
SR	J	77	L	0053DN	0.35	0.37	-0.29	0.01	-0.23	0.37	0.6
SR	J	78	L	0053EJ	0.29	0.20	0.12	0.20	-0.27	-0.10	0.7
SR	J	80	L	0053C9	0.54	0.59	0.59	-0.36	-0.27	-0.19	0.7
SR	J	81	O	0053JO	0.17	-0.01	0.23	-0.15	-0.09	-0.01	0.8
MEAN(SR)					0.58	0.43	-0.02	-0.11	-0.06	0.00	0.5
SD(SR)					0.17	0.13	0.31	0.27	0.31	0.29	0.3

Table A-6. Classical Item Statistics, Operational Items: HSA Government—May 2018—Form K

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	K	18	L	0053I1	0.37	0.78					5.0
CR-4	K	35	L	0053HJ	0.36	0.74					5.1
CR-4	K	44	L	0053EE	0.42	0.71					5.0
CR-4	K	56	L	0053C8	0.41	0.74					6.0
CR-4	K	72	L	0053AL	0.34	0.82					8.8
MEAN(CR-4)					0.38	0.76					6.0
SD(CR-4)					0.03	0.04					1.6
SR	K	1	O	0053H7	0.68	0.35	-0.26	0.35	-0.16	-0.09	0.0
SR	K	2	O	0053AG	0.50	0.36	-0.06	0.36	-0.24	-0.30	0.1
SR	K	3	L	0053HM	0.61	0.26	-0.07	-0.19	0.26	-0.14	0.1
SR	K	4	O	0053DF	0.63	0.58	-0.22	-0.29	0.58	-0.33	0.1
SR	K	5	L	0053AY	0.82	0.35	-0.27	0.35	-0.13	-0.19	0.1
SR	K	7	L	0053AI	0.60	0.62	-0.29	-0.25	-0.35	0.62	0.2
SR	K	8	L	0053C3	0.66	0.50	-0.16	-0.29	-0.28	0.50	0.2
SR	K	10	O	0053E1	0.82	0.45	-0.26	0.45	-0.25	-0.22	0.2
SR	K	11	L	0053IT	0.75	0.52	-0.25	-0.28	0.52	-0.28	0.2
SR	K	12	L	0053HC	0.62	0.55	-0.23	-0.38	0.55	-0.21	0.2
SR	K	14	L	0053EG	0.86	0.43	-0.19	0.43	-0.28	-0.21	0.2
SR	K	15	O	0053H6	0.62	0.58	0.58	-0.36	-0.25	-0.22	0.3
SR	K	16	L	0053CM	0.56	0.37	0.37	-0.19	-0.23	-0.10	0.3
SR	K	17	O	0053DE	0.58	0.48	-0.29	-0.26	0.48	-0.11	0.4
SR	K	20	O	0053CC	0.51	0.25	-0.18	-0.07	0.25	-0.11	0.6
SR	K	21	O	0053IV	0.77	0.56	0.56	-0.36	-0.28	-0.24	0.7
SR	K	22	O	0053DV	0.49	0.39	-0.22	-0.15	0.39	-0.14	0.8
SR	K	23	L	0053F5	0.65	0.33	0.33	-0.22	-0.27	-0.04	0.8
SR	K	25	O	0053IZ	0.40	0.40	0.40	-0.03	-0.29	-0.26	1.0
SR	K	27	O	0053DQ	0.45	0.28	0.28	-0.26	-0.29	-0.03	1.3
SR	K	28	O	0053F1	0.85	0.49	-0.25	0.49	-0.31	-0.23	1.2

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	K	29	L	0053AS	0.75	0.37	-0.17	0.37	-0.25	-0.18	0.2
SR	K	31	L	0053DO	0.72	0.62	-0.23	-0.36	-0.34	0.62	0.3
SR	K	32	L	0053II	0.39	0.18	0.18	-0.15	0.01	-0.20	0.2
SR	K	33	L	0053JH	0.80	0.55	0.55	-0.32	-0.30	-0.26	0.3
SR	K	34	L	0053AK	0.79	0.55	-0.28	0.55	-0.29	-0.31	0.2
SR	K	36	L	0053BA	0.58	0.49	-0.20	-0.32	0.49	-0.17	0.2
SR	K	37	O	0053BW	0.76	0.39	0.39	-0.11	-0.33	-0.22	0.3
SR	K	38	O	0053CQ	0.79	0.56	-0.21	-0.34	-0.33	0.56	0.3
SR	K	40	L	0053HG	0.50	0.16	-0.17	0.16	-0.15	0.08	0.3
SR	K	41	L	0053IM	0.39	0.31	0.31	-0.27	-0.18	0.13	0.3
SR	K	42	O	0053E0	0.45	0.26	-0.17	-0.15	-0.01	0.26	0.3
SR	K	43	O	0053DB	0.56	0.36	0.36	-0.26	-0.26	-0.06	0.3
SR	K	45	O	0053EC	0.75	0.34	-0.25	-0.24	-0.17	0.34	0.3
SR	K	46	L	0053EW	0.70	0.39	-0.20	-0.21	0.39	-0.19	0.3
SR	K	47	O	0053BB	0.46	0.36	-0.19	-0.16	0.36	-0.14	0.3
SR	K	49	L	0053CD	0.37	0.33	-0.16	-0.29	0.33	0.04	0.5
SR	K	50	L	0053EN	0.37	0.36	0.04	0.36	-0.29	-0.18	0.6
SR	K	51	L	0053I2	0.56	0.53	0.53	-0.32	-0.26	-0.13	0.7
SR	K	52	L	0053J7	0.61	0.52	-0.34	-0.23	0.52	-0.17	0.6
SR	K	53	L	0053DG	0.64	0.46	-0.21	-0.23	-0.23	0.46	0.6
SR	K	54	L	0053BF	0.77	0.54	-0.31	-0.29	0.54	-0.23	0.4
SR	K	55	L	0053CA	0.22	0.19	0.13	-0.08	-0.22	0.19	0.5
SR	K	58	O	0053E2	0.71	0.45	-0.23	0.45	-0.31	-0.16	0.5
SR	K	60	L	0053I8	0.48	0.30	-0.26	-0.18	0.01	0.30	0.5
SR	K	61	L	0053IA	0.39	0.45	-0.23	-0.16	-0.16	0.45	0.5
SR	K	62	L	0053HV	0.69	0.47	-0.17	-0.32	-0.20	0.47	0.5
SR	K	63	O	0053B0	0.63	0.32	-0.14	0.32	-0.22	-0.09	0.5
SR	K	64	O	0053C1	0.80	0.62	-0.41	-0.32	0.62	-0.23	0.5
SR	K	65	L	0053EY	0.78	0.53	-0.27	-0.30	0.53	-0.23	0.5
SR	K	68	O	0053DJ	0.70	0.49	-0.26	-0.26	0.49	-0.22	0.6

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	K	69	L	0053JN	0.51	0.35	-0.18	-0.22	0.35	-0.06	0.6
SR	K	70	L	0053IU	0.62	0.55	0.55	-0.26	-0.38	-0.21	0.6
SR	K	71	L	0053JI	0.83	0.54	-0.30	0.54	-0.29	-0.25	0.6
SR	K	73	O	0053CR	0.79	0.53	-0.26	-0.26	-0.29	0.53	0.6
SR	K	74	O	0053AQ	0.75	0.58	-0.26	-0.30	-0.32	0.58	0.7
SR	K	75	L	0053AT	0.42	0.33	0.33	-0.02	-0.24	-0.14	0.7
SR	K	76	O	0053A9	0.50	0.52	-0.19	-0.30	0.52	-0.19	0.7
SR	K	77	L	0053DN	0.35	0.37	-0.28	-0.01	-0.23	0.37	0.7
SR	K	78	L	0053EJ	0.28	0.19	0.13	0.19	-0.26	-0.09	0.7
SR	K	80	L	0053C9	0.56	0.58	0.58	-0.35	-0.27	-0.18	0.7
SR	K	81	O	0053I3	0.58	0.45	-0.31	-0.25	-0.08	0.45	0.8
MEAN(SR)					0.61	0.43	-0.06	-0.10	-0.04	-0.02	0.5
SD(SR)					0.16	0.12	0.29	0.28	0.33	0.28	0.3

Item Type =Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL= A,B,C,X), P_Val = *p*-value, R_ITT = item-total correlation, P_BIS1-P_BIS4 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-7. Classical Item Statistics, Operational Items: HSA Government—May 2018—Accommodated Form Y

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	Y	18	L	0053I1	0.19	0.69					8.1
CR-4	Y	35	L	0053HJ	0.18	0.69					9.4
CR-4	Y	44	L	0053EE	0.26	0.66					9.4
CR-4	Y	56	L	0053C8	0.23	0.67					11.4
CR-4	Y	72	L	0053AL	0.13	0.73					13.9
MEAN(CR-4)					0.20	0.69					10.4
SD(CR-4)					0.05	0.03					2.3
SR	Y	1	O	0053HK	0.54	0.35	-0.17	0.35	-0.22	-0.09	0.2
SR	Y	2	O	0053AG	0.37	0.32	0.02	0.32	-0.19	-0.25	0.1
SR	Y	3	L	0053HM	0.46	0.32	-0.07	-0.17	0.32	-0.21	0.1
SR	Y	4	O	0053DF	0.38	0.40	-0.16	-0.20	0.40	-0.13	0.1
SR	Y	5	L	0053AY	0.67	0.34	-0.25	0.34	-0.10	-0.16	0.1
SR	Y	7	L	0053AI	0.32	0.49	-0.12	-0.19	-0.25	0.49	0.1
SR	Y	8	L	0053C3	0.41	0.42	-0.12	-0.22	-0.17	0.42	0.2
SR	Y	10	O	0053EX	0.38	0.22	-0.15	0.22	-0.06	-0.07	0.3
SR	Y	11	L	0053IT	0.53	0.39	-0.13	-0.20	0.39	-0.20	0.2
SR	Y	12	L	0053HC	0.36	0.38	-0.06	-0.24	0.38	-0.15	0.3
SR	Y	14	L	0053EG	0.67	0.41	-0.21	0.41	-0.23	-0.17	0.2
SR	Y	15	O	0053H6	0.32	0.39	0.39	-0.14	-0.12	-0.18	0.5
SR	Y	16	L	0053CM	0.44	0.31	0.31	-0.16	-0.17	-0.05	0.5
SR	Y	17	O	0053CE	0.66	0.40	-0.23	-0.19	-0.18	0.40	0.5
SR	Y	20	O	0053HR	0.59	0.52	0.52	-0.27	-0.27	-0.18	0.9
SR	Y	21	O	0053EF	0.49	0.43	0.43	-0.19	-0.19	-0.19	0.9
SR	Y	22	O	0053DV	0.36	0.21	-0.15	-0.04	0.21	-0.05	1.1
SR	Y	23	L	0053F5	0.53	0.27	0.27	-0.15	-0.19	-0.01	1.2
SR	Y	25	O	0053IZ	0.27	0.24	0.24	0.11	-0.17	-0.20	1.4
SR	Y	27	O	0053DQ	0.34	0.21	0.21	-0.23	-0.27	0.16	1.6
SR	Y	28	O	0053C7	0.35	0.42	-0.16	-0.12	-0.20	0.42	1.7
SR	Y	29	L	0053AS	0.56	0.33	-0.20	0.33	-0.20	-0.07	1.0
SR	Y	31	L	0053DO	0.46	0.50	-0.13	-0.23	-0.24	0.50	1.1

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Y	32	L	0053II	0.34	0.12	0.12	-0.08	0.07	-0.17	1.0
SR	Y	33	L	0053JH	0.52	0.48	0.48	-0.26	-0.22	-0.14	1.1
SR	Y	34	L	0053AK	0.51	0.51	-0.18	0.51	-0.26	-0.22	1.2
SR	Y	36	L	0053BA	0.34	0.46	-0.11	-0.27	0.46	-0.10	1.3
SR	Y	37	O	0053BW	0.54	0.44	0.44	-0.07	-0.29	-0.20	1.3
SR	Y	38	O	0053DK	0.28	0.27	-0.08	-0.08	0.27	-0.08	1.3
SR	Y	40	L	0053HG	0.42	0.11	-0.14	0.11	-0.10	0.15	1.5
SR	Y	41	L	0053IM	0.29	0.26	0.26	-0.18	-0.06	0.03	1.5
SR	Y	42	O	0053DI	0.43	0.22	-0.15	0.22	-0.19	0.05	1.4
SR	Y	43	O	0053BS	0.46	0.43	-0.16	0.43	-0.20	-0.16	1.5
SR	Y	45	O	0053E4	0.33	0.40	0.40	-0.17	-0.15	-0.08	1.4
SR	Y	46	L	0053EW	0.52	0.39	-0.10	-0.21	0.39	-0.19	1.4
SR	Y	47	O	0053BB	0.28	0.20	-0.04	-0.01	0.20	-0.18	1.4
SR	Y	49	L	0053CD	0.27	0.24	-0.08	-0.23	0.24	0.10	1.6
SR	Y	50	L	0053EN	0.23	0.18	0.08	0.18	-0.16	-0.04	1.6
SR	Y	51	L	0053I2	0.33	0.46	0.46	-0.24	-0.15	-0.07	1.8
SR	Y	52	L	0053J7	0.33	0.38	-0.19	-0.15	0.38	-0.04	1.7
SR	Y	53	L	0053DG	0.45	0.37	-0.14	-0.14	-0.16	0.37	1.9
SR	Y	54	L	0053BF	0.49	0.49	-0.22	-0.21	0.49	-0.16	1.7
SR	Y	55	L	0053CA	0.16	0.16	0.03	0.02	-0.12	0.16	1.8
SR	Y	58	O	0053CK	0.29	0.38	-0.17	-0.07	0.38	-0.14	1.9
SR	Y	60	L	0053I8	0.34	0.32	-0.18	-0.12	-0.02	0.32	1.9
SR	Y	61	L	0053IA	0.23	0.29	-0.12	-0.05	-0.07	0.29	1.8
SR	Y	62	L	0053HV	0.48	0.42	-0.11	-0.21	-0.18	0.42	1.9
SR	Y	63	O	0053EB	0.38	0.42	0.42	-0.24	-0.12	-0.11	1.8
SR	Y	64	O	0053C1	0.47	0.57	-0.26	-0.26	0.57	-0.17	1.8
SR	Y	65	L	0053EY	0.52	0.44	-0.14	-0.23	0.44	-0.16	1.9
SR	Y	68	O	0053DJ	0.52	0.36	-0.17	-0.15	0.36	-0.12	1.8
SR	Y	69	L	0053JN	0.41	0.28	-0.15	-0.11	0.28	-0.03	1.8
SR	Y	70	L	0053IU	0.35	0.48	0.48	-0.20	-0.18	-0.20	1.8
SR	Y	71	L	0053JI	0.55	0.47	-0.22	0.47	-0.22	-0.15	1.8
SR	Y	73	O	0053CR	0.51	0.51	-0.22	-0.19	-0.23	0.51	1.9

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	Y	74	O	0053AQ	0.45	0.51	-0.15	-0.19	-0.25	0.51	1.9
SR	Y	75	L	0053AT	0.27	0.24	0.24	-0.04	-0.15	-0.01	1.9
SR	Y	76	O	0053BH	0.25	0.43	-0.06	-0.12	-0.22	0.43	1.9
SR	Y	77	L	0053DN	0.22	0.23	-0.17	0.09	-0.14	0.23	1.9
SR	Y	78	L	0053EJ	0.24	0.09	0.18	0.09	-0.14	-0.10	1.9
SR	Y	80	L	0053C9	0.30	0.36	0.36	-0.04	-0.22	-0.12	1.9
SR	Y	81	O	0053I3	0.35	0.37	-0.18	-0.17	-0.02	0.37	2.0
MEAN(SR)					0.41	0.36	0.00	-0.05	-0.02	0.01	1.3
SD(SR)					0.12	0.11	0.24	0.21	0.25	0.23	0.6

Item Type =Item Type + Point Value, 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 = all of the forms on which the item appears in this administration (ALL= D,E,F,G,H,J,K,Y), P_Val = p -value, R_ITT = item-total correlation, P_BIS1-P_BIS4 = option-total correlation, Omit_Rate = percentage of omitted responses.

Table A-8. Classical Item Statistics, Operational Items: HSA Government—Summer 2018—Form R

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	A-B	6	L	005B2M	0.20	0.58					14.3
CR-4	A-B	17	L	005BKS	0.14	0.60					21.7
CR-4	A-B	5	L	0053EE	0.19	0.62					15.6
CR-4	A-B	20	L	005BI9	0.13	0.65					20.3
CR-4	A-B	10	L	005J2V	0.08	0.65					23.8
MEAN(CR-4)					0.15	0.62					19.1
SD(CR-4)					0.05	0.03					4.0
SR	A-B	1	L	005B4I	0.83	0.27	-0.16	0.27	-0.13	-0.15	0.0
SR	A-B	2	L	005AZ0	0.42	0.34	-0.10	0.34	-0.25	-0.07	0.0
SR	A-B	4	L	005B4K	0.30	0.29	0.29	-0.19	-0.07	-0.05	0.4
SR	A-B	5	L	005B2I	0.52	0.38	-0.20	-0.20	0.38	-0.13	0.3
SR	A-B	7	L	005B3T	0.30	0.43	-0.06	-0.14	-0.25	0.43	0.3
SR	A-B	8	L	005FJJ	0.37	0.36	0.36	-0.11	-0.19	-0.12	0.4
SR	A-B	9	L	005ASZ	0.42	0.29	-0.09	-0.16	0.29	-0.09	0.4
SR	A-B	10	L	0053CE	0.75	0.35	-0.19	-0.16	-0.18	0.35	0.3
SR	A-B	11	L	005EQT	0.36	0.19	0.19	0.05	-0.16	-0.17	0.3
SR	A-B	12	L	005ALT	0.44	0.43	-0.17	-0.18	-0.19	0.43	0.6
SR	A-B	14	L	005ATR	0.22	0.12	0.04	0.12	-0.18	-0.03	1.0
SR	A-B	15	L	005FEV	0.56	0.31	-0.15	-0.22	0.31	-0.02	0.8
SR	A-B	16	L	005FD6	0.62	0.43	-0.21	0.43	-0.21	-0.20	1.0
SR	A-B	19	L	005F4P	0.31	0.32	0.32	-0.06	-0.13	-0.13	1.9
SR	A-B	20	L	005AX9	0.46	0.29	-0.05	-0.23	0.29	-0.10	2.4
SR	A-B	21	L	005BJJ	0.36	0.22	0.03	-0.14	0.22	-0.13	2.5
SR	A-B	22	L	005BLT	0.25	0.31	-0.15	-0.05	-0.08	0.31	2.2
SR	A-B	23	L	005B3O	0.43	0.35	-0.11	0.35	-0.15	-0.18	2.2
SR	A-B	24	L	005BCE	0.55	0.53	-0.18	-0.21	-0.31	0.53	2.5
SR	A-B	25	L	005FCW	0.53	0.35	-0.09	0.35	-0.26	-0.18	2.4
SR	A-B	26	L	005F9J	0.44	0.34	0.34	-0.17	-0.09	-0.14	2.6
SR	A-B	27	L	005BB5	0.31	0.30	0.30	-0.11	-0.14	-0.05	2.4
SR	A-B	28	L	005BDU	0.17	0.23	-0.14	-0.12	0.05	0.23	2.5
SR	A-B	1	L	005B6K	0.35	0.24	-0.17	-0.09	0.24	0.02	0.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-B	2	L	005AVF	0.44	0.33	-0.13	0.33	-0.16	-0.13	0.7
SR	A-B	3	L	005F7W	0.41	0.31	0.00	0.31	-0.29	-0.06	0.8
SR	A-B	4	L	005BDK	0.54	0.51	-0.21	-0.31	0.51	-0.16	0.8
SR	A-B	8	L	005AVJ	0.37	0.40	-0.10	-0.15	-0.24	0.40	1.0
SR	A-B	9	L	005EXM	0.53	0.49	0.49	-0.15	-0.31	-0.17	1.0
SR	A-B	10	L	005F4M	0.31	0.20	-0.13	-0.15	0.20	0.07	1.1
SR	A-B	11	L	005AK6	0.49	0.37	0.37	-0.16	-0.18	-0.12	1.0
SR	A-B	13	L	0053DO	0.37	0.42	-0.20	-0.13	-0.17	0.42	1.4
SR	A-B	14	L	005FEF	0.38	0.36	-0.13	-0.09	-0.18	0.36	1.1
SR	A-B	15	L	005AMG	0.35	0.30	0.30	-0.22	-0.17	0.05	1.3
SR	A-B	16	L	005FDB	0.37	0.25	0.00	0.25	-0.18	-0.09	1.1
SR	A-B	19	L	005B0K	0.56	0.46	-0.21	-0.25	0.46	-0.13	1.1
SR	A-B	21	L	005B2E	0.39	0.49	0.49	-0.14	-0.26	-0.16	1.3
SR	A-B	22	L	005EWE	0.39	0.49	-0.11	-0.19	-0.26	0.49	1.1
SR	A-B	23	L	005AYT	0.29	0.23	0.23	-0.05	-0.19	0.02	1.3
SR	A-B	24	L	005ARF	0.51	0.46	0.46	-0.23	-0.17	-0.20	1.5
SR	A-B	25	L	005F6D	0.43	0.44	-0.18	-0.17	-0.17	0.44	1.3
SR	A-B	1	L	005BD3	0.31	0.28	-0.02	-0.23	-0.02	0.28	0.8
SR	A-B	2	L	0053A9	0.31	0.33	-0.12	-0.12	0.33	-0.12	1.0
SR	A-B	4	L	005F8U	0.26	0.33	0.33	-0.22	-0.23	0.04	0.8
SR	A-B	5	L	005F2D	0.14	0.28	0.10	-0.23	-0.13	0.28	0.8
SR	A-B	6	L	005ASF	0.53	0.42	0.42	-0.28	-0.17	-0.07	1.1
SR	A-B	7	L	005BB1	0.51	0.45	-0.17	0.45	-0.25	-0.16	1.0
SR	A-B	11	L	005AOT	0.29	0.35	0.09	-0.21	-0.20	0.35	1.4
SR	A-B	12	L	005FB8	0.43	0.31	-0.18	-0.18	0.31	-0.01	1.4
SR	A-B	13	L	005FAC	0.23	0.00	0.16	0.00	-0.01	-0.15	1.1
SR	A-B	14	L	005ASC	0.53	0.49	0.49	-0.22	-0.27	-0.14	1.4
SR	A-B	15	L	005AUH	0.48	0.45	-0.18	0.45	-0.19	-0.19	1.5
SR	A-B	16	L	005ESW	0.43	0.43	-0.05	-0.23	-0.21	0.43	1.7
SR	A-B	17	L	005BF3	0.34	0.23	-0.11	-0.12	0.23	0.01	1.5
SR	A-B	18	L	005FJ1	0.38	0.19	0.00	0.19	0.03	-0.23	1.4
SR	A-B	19	L	005B7K	0.30	0.27	-0.06	-0.03	0.27	-0.16	1.7

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	A-B	20	L	005AXH	0.30	0.15	-0.05	-0.09	0.03	0.15	1.9
SR	A-B	22	L	0053EM	0.31	0.14	-0.22	0.14	-0.12	0.23	2.1
SR	A-B	23	L	005BFK	0.47	0.25	-0.14	0.01	0.25	-0.19	1.5
SR	A-B	26	L	005AP0	0.58	0.52	-0.19	-0.27	0.52	-0.22	1.4
SR	A-B	27	L	005AK8	0.68	0.47	-0.19	0.47	-0.27	-0.19	1.7
SR	A-B	28	L	005B2R	0.35	0.25	-0.06	-0.05	0.25	-0.14	1.9
MEAN(SR)					0.41	0.33	0.01	-0.05	-0.04	0.02	1.3
SD(SR)					0.13	0.11	0.22	0.22	0.23	0.23	0.7

Table A-9. Classical Item Statistics, Operational Items: HSA Government—Summer 2018—Accommodated Form Z

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	X	6	L	005B2M	0.12	0.51					17.6
CR-4	X	17	L	005BKS	0.10	0.51					26.9
CR-4	X	5	L	0053EE	0.10	0.62					21.8
CR-4	X	20	L	005BI9	0.07	0.56					22.7
CR-4	X	10	L	005J2V	0.03	0.60					27.7
MEAN(CR-4)					0.08	0.56					23.4
SD(CR-4)					0.03	0.05					4.1
SR	X	1	L	005B4I	0.77	0.34	-0.22	0.34	-0.07	-0.22	0.0
SR	X	2	L	005AZ0	0.23	0.25	0.04	0.25	-0.15	-0.14	0.0
SR	X	4	L	005B4K	0.20	0.11	0.11	-0.06	-0.03	-0.01	0.0
SR	X	5	L	005B2I	0.35	0.13	-0.22	0.04	0.13	-0.01	0.0
SR	X	7	L	005B3T	0.23	0.30	0.11	-0.20	-0.16	0.30	0.0
SR	X	8	L	005FJJ	0.34	0.22	0.22	-0.20	-0.01	-0.04	0.0
SR	X	9	L	005ASZ	0.34	0.06	0.13	-0.29	0.06	0.18	0.0
SR	X	10	L	0053CE	0.63	0.34	-0.12	-0.17	-0.21	0.34	0.8
SR	X	11	L	005EQT	0.28	0.03	0.03	0.10	-0.08	-0.11	0.0
SR	X	12	L	005ALT	0.29	0.31	-0.01	-0.18	-0.15	0.31	0.0
SR	X	14	L	005ATR	0.23	-0.04	0.15	-0.04	-0.16	0.00	0.0
SR	X	15	L	005FEV	0.53	0.32	-0.17	-0.14	0.32	-0.15	0.0
SR	X	16	L	005FD6	0.50	0.47	-0.26	0.47	-0.20	-0.15	0.8
SR	X	19	L	005F4P	0.15	0.28	0.28	-0.07	-0.24	0.05	2.5
SR	X	20	L	005AX9	0.39	0.19	0.00	-0.23	0.19	-0.03	2.5
SR	X	21	L	005BJJ	0.32	0.05	0.01	0.03	0.05	-0.12	2.5
SR	X	22	L	005BLT	0.25	0.16	-0.13	-0.09	0.03	0.16	2.5
SR	X	23	L	005B3O	0.31	0.22	-0.03	0.22	-0.07	-0.20	2.5
SR	X	24	L	005BCE	0.51	0.34	-0.21	-0.13	-0.17	0.34	2.5
SR	X	25	L	005FCW	0.41	0.45	-0.19	0.45	-0.26	-0.15	2.5
SR	X	26	L	005F9J	0.37	0.31	0.31	-0.05	-0.15	-0.21	3.4
SR	X	27	L	005BB5	0.23	0.20	0.20	-0.13	-0.06	0.01	4.2
SR	X	28	L	005BDU	0.14	-0.03	-0.06	-0.12	0.17	-0.03	4.2
SR	X	1	L	005B6K	0.26	0.12	-0.16	0.05	0.12	-0.01	0.0

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	2	L	005AVF	0.48	0.35	-0.17	0.35	-0.19	-0.11	0.0
SR	X	3	L	005F7W	0.36	0.26	-0.06	0.26	-0.13	-0.11	0.0
SR	X	4	L	005BDK	0.47	0.49	-0.25	-0.26	0.49	-0.13	0.0
SR	X	8	L	005AVJ	0.31	0.22	0.03	-0.11	-0.17	0.22	0.0
SR	X	9	L	005EXM	0.41	0.58	0.58	-0.23	-0.33	-0.15	0.0
SR	X	10	L	005F4M	0.23	0.06	-0.07	-0.10	0.06	0.11	0.0
SR	X	11	L	005AK6	0.41	0.33	0.33	-0.17	-0.07	-0.14	1.7
SR	X	13	L	0053DO	0.29	0.33	-0.16	-0.11	-0.10	0.33	0.8
SR	X	14	L	005FEF	0.34	0.23	-0.08	-0.09	-0.08	0.23	0.8
SR	X	15	L	005AMG	0.29	0.33	0.33	-0.26	-0.02	-0.07	0.0
SR	X	16	L	005FDB	0.31	0.07	0.07	0.07	0.01	-0.16	0.0
SR	X	19	L	005B0K	0.46	0.38	-0.02	-0.32	0.38	-0.12	0.0
SR	X	21	L	005B2E	0.29	0.33	0.33	-0.17	-0.29	0.11	0.0
SR	X	22	L	005EWE	0.24	0.44	-0.04	-0.28	-0.10	0.44	0.0
SR	X	23	L	005AYT	0.29	-0.01	-0.01	0.03	-0.16	0.15	0.0
SR	X	24	L	005ARF	0.37	0.34	0.34	-0.25	-0.02	-0.14	0.0
SR	X	25	L	005F6D	0.27	0.27	0.04	-0.03	-0.27	0.27	0.0
SR	X	1	L	005BD3	0.30	0.10	0.07	-0.14	-0.01	0.10	0.0
SR	X	2	L	0053A9	0.25	0.22	-0.17	-0.09	0.22	0.07	0.0
SR	X	4	L	005F8U	0.22	0.31	0.31	-0.18	-0.17	0.00	0.0
SR	X	5	L	005F2D	0.08	0.17	0.13	-0.14	-0.14	0.17	0.0
SR	X	6	L	005ASF	0.35	0.36	0.36	-0.31	-0.09	-0.02	0.0
SR	X	7	L	005BB1	0.47	0.45	-0.14	0.45	-0.21	-0.23	0.0
SR	X	11	L	005AOT	0.23	0.27	0.09	-0.27	-0.04	0.27	0.0
SR	X	12	L	005FB8	0.35	0.11	-0.15	-0.09	0.11	0.08	0.0
SR	X	13	L	005FAC	0.23	-0.10	0.26	-0.10	-0.08	-0.06	0.8
SR	X	14	L	005ASC	0.45	0.51	0.51	-0.21	-0.28	-0.16	0.0
SR	X	15	L	005AUH	0.44	0.40	-0.09	0.40	-0.19	-0.23	0.0
SR	X	16	L	005ESW	0.44	0.28	-0.02	-0.06	-0.25	0.28	0.0
SR	X	17	L	005BF3	0.30	0.09	-0.22	-0.14	0.09	0.25	0.0
SR	X	18	L	005FJ1	0.33	0.02	0.16	0.02	-0.03	-0.17	0.0
SR	X	19	L	005B7K	0.24	0.01	0.11	0.03	0.01	-0.17	0.0

Item Type	Form	Pos_No	Anchor Status	ItemID	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	X	20	L	005AXH	0.19	0.08	-0.14	0.06	0.00	0.08	0.0
SR	X	22	L	0053EM	0.28	0.23	-0.20	0.23	-0.13	0.11	0.0
SR	X	23	L	005BFK	0.44	0.15	-0.14	0.09	0.15	-0.14	0.0
SR	X	26	L	005AP0	0.50	0.37	0.00	-0.27	0.37	-0.17	0.0
SR	X	27	L	005AK8	0.53	0.40	-0.22	0.40	-0.23	-0.09	0.0
SR	X	28	L	005B2R	0.37	0.12	0.13	-0.13	0.12	-0.13	0.0
MEAN(SR)					0.34	0.24	0.03	-0.04	-0.05	0.01	0.6
SD(SR)					0.12	0.15	0.20	0.21	0.17	0.18	1.1

Appendix B. Classical Item Statistics—Field Test Items

Table B-1. Classical Item Statistics, Field Test Items: HSA Government—January 2018

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0053E7	13,554	0.49	0.36	-0.18	-0.21	-0.09	0.36	0.02
SR	0053E8	6,279	0.72	0.46	-0.27	-0.22	0.46	-0.20	0.01
SR	0053AA	13,554	0.45	0.42	-0.16	-0.25	0.42	-0.11	0.01
SR	0053AB	19,833	0.22	0.18	0.18	0.13	-0.25	-0.14	0.01
SR	0053AC	19,833	0.41	0.30	-0.10	0.30	-0.07	-0.19	0.01
SR	0053AD	7,215	0.28	0.22	0.22	-0.13	-0.05	-0.03	0.01
SR	0053AE	6,279	0.66	0.47	-0.24	-0.23	0.47	-0.21	0.03
SR	0053AH	19,833	0.28	0.32	0.32	0.05	-0.25	-0.16	0.01
SR	0053AJ	12,618	0.41	0.35	-0.23	-0.06	0.35	-0.17	0.01
SR	0053AM	6,279	0.50	0.44	-0.10	0.44	-0.29	-0.15	0.01
SR	0053AO	13,554	0.38	0.30	0.03	-0.15	-0.26	0.30	0.01
SR	0053AP	12,618	0.55	0.32	-0.06	-0.22	0.32	-0.15	0.01
SR	0053AR	13,554	0.47	0.48	-0.26	-0.16	-0.21	0.48	0.01
SR	0053AT	19,833	0.31	0.21	0.21	-0.02	-0.12	-0.06	0.01
SR	0053AU	6,279	0.55	0.51	-0.27	-0.27	0.51	-0.17	0.00
SR	0053AV	13,554	0.50	0.58	-0.25	-0.24	-0.25	0.58	0.01
SR	0053AZ	19,833	0.39	0.33	-0.16	0.33	-0.22	-0.01	0.02
SR	0053B2	19,833	0.37	0.23	-0.08	0.23	-0.16	-0.01	0.01
SR	0053B3	6,279	0.52	0.43	-0.16	-0.23	0.43	-0.19	0.02
SR	0053B5	13,554	0.29	0.17	-0.15	0.17	-0.14	0.10	0.01
SR	0053B7	19,833	0.48	0.35	-0.13	-0.20	0.35	-0.10	0.01
SR	0053B9	13,554	0.26	0.32	-0.08	-0.12	-0.11	0.32	0.03
SR	0053BC	13,554	0.46	0.45	-0.16	-0.15	-0.24	0.45	0.01
SR	0053BE	7,215	0.39	0.37	0.37	-0.25	-0.16	-0.02	0.01
SR	0053BH	13,554	0.30	0.35	-0.04	-0.09	-0.26	0.35	0.02
SR	0053BJ	12,618	0.53	0.39	-0.16	0.39	-0.22	-0.16	0.01
SR	0053BK	19,833	0.58	0.39	-0.15	0.39	-0.23	-0.15	0.01
SR	0053BL	6,279	0.39	0.26	-0.10	-0.04	-0.14	0.26	0.01

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0053BM	19,833	0.70	0.47	-0.18	0.47	-0.25	-0.26	0.01
SR	0053BO	13,554	0.36	0.30	-0.13	0.30	-0.04	-0.19	0.03
SR	0053BQ	12,618	0.76	0.29	0.29	-0.12	-0.22	-0.10	0.01
SR	0053BV	13,554	0.57	0.33	-0.22	-0.13	0.33	-0.10	0.00
SR	0053C0	6,279	0.28	0.29	-0.10	-0.17	0.29	-0.01	0.02
SR	0053C2	6,279	0.29	0.21	0.21	-0.23	-0.23	0.16	0.01
SR	0053C4	19,833	0.40	0.21	-0.09	-0.23	0.21	0.02	0.00
SR	0053C5	19,833	0.68	0.32	-0.18	-0.16	-0.16	0.32	0.00
SR	0053CB	13,554	0.50	0.42	-0.17	-0.20	0.42	-0.17	0.01
SR	0053CH	6,279	0.35	0.20	0.20	-0.15	-0.09	0.05	0.01
SR	0053CI	19,833	0.36	0.22	-0.16	0.22	-0.17	0.13	0.01
SR	0053CK	19,833	0.25	0.32	-0.16	0.02	0.32	-0.17	0.01
SR	0053CN	6,279	0.38	0.34	-0.15	-0.13	0.34	-0.10	0.01
SR	0053CV	6,279	0.35	0.49	-0.17	-0.27	-0.15	0.49	0.01
SR	0053CW	13,554	0.32	0.41	-0.14	-0.08	-0.23	0.41	0.01
SR	0053CX	13,554	0.21	0.36	-0.08	0.36	-0.14	-0.11	0.01
SR	0053CY	19,833	0.40	0.26	-0.15	0.01	-0.17	0.26	0.00
SR	0053D1	12,618	0.55	0.31	-0.19	0.31	-0.11	-0.11	0.01
SR	0053D2	19,833	0.41	0.27	0.27	-0.16	-0.10	-0.11	0.00
SR	0053D3	19,833	0.38	0.26	0.26	-0.09	-0.21	-0.03	0.00
SR	0053D6	19,833	0.52	0.39	-0.15	-0.19	0.39	-0.16	0.01
SR	0053D7	19,833	0.56	0.39	0.39	-0.14	-0.10	-0.28	0.00
SR	0053D8	7,215	0.46	0.47	0.47	-0.24	-0.22	-0.13	0.01
SR	0053D9	12,618	0.38	0.29	-0.06	-0.19	-0.10	0.29	0.00
SR	0053DC	6,279	0.44	0.39	-0.18	-0.18	0.39	-0.14	0.01
SR	0053DD	6,279	0.44	0.21	0.03	0.21	-0.18	-0.10	0.01
SR	0053DG	6,279	0.47	0.39	-0.19	-0.14	-0.15	0.39	0.01
SR	0053DH	6,279	0.45	0.42	0.42	-0.13	-0.26	-0.16	0.01
SR	0053DL	6,279	0.54	0.10	-0.09	0.10	0.06	-0.08	0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0053DM	13,554	0.27	0.23	0.23	-0.06	-0.13	0.00	0.01
SR	0053DS	7,215	0.43	0.43	-0.14	0.43	-0.22	-0.16	0.01
SR	0053DT	6,279	0.27	0.33	-0.12	-0.10	-0.11	0.33	0.01
SR	0053DU	13,554	0.29	0.33	0.04	-0.09	0.33	-0.25	0.00
SR	0053DW	6,279	0.80	0.42	0.42	-0.22	-0.22	-0.20	0.02
SR	0053DX	19,833	0.76	0.40	-0.21	0.40	-0.20	-0.20	0.01
SR	0053DY	13,554	0.38	0.45	0.45	-0.16	-0.20	-0.16	0.01
SR	0053DZ	13,554	0.49	0.53	-0.32	-0.23	-0.18	0.53	0.00
SR	0053ED	12,618	0.21	0.22	0.22	0.07	-0.20	-0.10	0.01
SR	0053EI	19,833	0.73	0.27	-0.19	-0.14	-0.10	0.27	0.00
SR	0053EK	7,215	0.31	0.34	-0.12	0.34	-0.15	-0.07	0.01
SR	0053EO	7,215	0.43	0.35	-0.10	-0.22	0.35	-0.10	0.01
SR	0053EP	7,215	0.30	0.37	0.37	-0.10	-0.19	-0.09	0.01
SR	0053EQ	6,279	0.53	0.45	-0.16	-0.22	-0.21	0.45	0.01
SR	0053ES	6,279	0.53	0.47	-0.16	-0.23	-0.23	0.47	0.01
SR	0053EV	19,833	0.37	0.20	0.20	-0.15	-0.14	-0.03	0.01
SR	0053F2	13,554	0.60	0.33	-0.10	-0.25	0.33	-0.10	0.00
SR	0053F3	19,833	0.32	0.21	-0.06	-0.14	0.21	0.00	0.02
SR	0053F4	19,833	0.59	0.37	-0.13	-0.21	-0.18	0.37	0.00
SR	0053F5	19,833	0.53	0.28	0.28	-0.18	-0.19	0.01	0.02
SR	0053F6	13,554	0.42	0.42	-0.17	-0.21	0.42	-0.14	0.01
SR	0053H7	19,833	0.55	0.30	-0.17	0.30	-0.13	-0.10	0.00
SR	0053H8	7,215	0.29	0.15	0.01	0.15	-0.05	-0.13	0.01
SR	0053H9	19,833	0.46	0.20	0.08	0.20	-0.19	-0.11	0.03
SR	0053HB	19,833	0.58	0.41	-0.22	0.41	-0.16	-0.18	0.01
SR	0053HF	6,279	0.46	0.06	0.11	0.06	-0.05	-0.14	0.01
SR	0053HN	12,618	0.49	0.29	0.29	-0.04	-0.19	-0.18	0.01
SR	0053HQ	13,554	0.49	0.43	0.43	-0.14	-0.21	-0.22	0.01
SR	0053HR	19,833	0.66	0.50	0.50	-0.26	-0.29	-0.18	0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	0053HS	7,215	0.50	0.42	-0.16	-0.20	0.42	-0.19	0.01
SR	0053HT	12,618	0.23	0.28	0.28	-0.17	-0.08	0.00	0.01
SR	0053HU	19,833	0.36	0.37	-0.19	-0.08	0.37	-0.19	0.01
SR	0053HW	13,554	0.76	0.43	-0.23	0.43	-0.22	-0.20	0.02
SR	0053HY	19,833	0.39	0.34	-0.11	-0.12	0.34	-0.17	0.00
SR	0053I5	7,215	0.56	0.43	-0.16	-0.23	-0.19	0.43	0.01
SR	0053IC	13,554	0.40	0.47	-0.23	-0.31	0.47	-0.04	0.01
SR	0053ID	12,618	0.42	0.42	-0.19	0.42	-0.11	-0.22	0.01
SR	0053IE	6,279	0.52	0.38	-0.15	-0.20	0.38	-0.17	0.00
SR	0053IH	19,833	0.48	0.46	-0.19	-0.19	-0.22	0.46	0.01
SR	0053IJ	19,833	0.52	0.31	-0.09	0.31	-0.25	-0.09	0.01
SR	0053IN	19,833	0.41	0.43	0.43	-0.09	-0.27	-0.15	0.01
SR	0053IR	19,833	0.54	0.51	0.51	-0.24	-0.25	-0.21	0.01
SR	0053J0	12,618	0.39	0.21	0.03	-0.13	0.21	-0.15	0.01
SR	0053J1	6,279	0.34	0.28	-0.12	-0.18	-0.03	0.28	0.03
SR	0053J4	6,279	0.26	0.31	0.31	-0.15	-0.03	-0.13	0.01
SR	0053J6	13,554	0.39	0.37	0.37	-0.09	-0.16	-0.19	0.01
SR	0053J9	7,215	0.24	0.40	-0.02	-0.24	-0.14	0.40	0.01
SR	0053JB	19,833	0.46	0.41	-0.15	-0.16	-0.21	0.41	0.00
SR	0053JC	19,833	0.58	0.37	-0.14	0.37	-0.19	-0.17	0.01
SR	0053JD	19,833	0.71	0.43	-0.22	-0.22	0.43	-0.20	0.01
SR	0053JF	13,554	0.29	0.38	-0.13	0.00	-0.28	0.38	0.01
SR	0053JG	6,279	0.48	0.52	-0.20	-0.23	-0.23	0.52	0.01
SR	0053JK	6,279	0.38	0.46	-0.17	-0.18	-0.19	0.46	0.01
SR	0053JM	13,554	0.41	0.29	-0.16	-0.24	0.29	0.01	0.01
MEAN(SR)			0.45	0.35	-0.02	-0.05	-0.03	0.01	0.01
SD(SR)			0.13	0.10	0.22	0.22	0.25	0.24	0.01
CR-4	0053B6	19,833	0.26	0.57					
CR-4	0053BZ	19,833	0.27	0.71					

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
CR-4	0053C8	19,833	0.27	0.70					
CR-4	0053CZ	19,833	0.04	0.51					
CR-4	0053HX	1,998	0.21	0.70					
CR-4	0053I4	2,000	0.12	0.65					
CR-4	0053I9	2,000	0.13	0.64					
CR-4	0053IG	19,833	0.14	0.70					
CR-4	0053J3	1,999	0.10	0.55					
MEAN(CR-4)			0.17	0.64					
SD(CR-4)			0.08	0.08					

Table B-2. Classical Item Statistics, Field Test Items: HSA MISA—January 2018

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SR	004YBF	4,292	0.47	0.34	-0.15	-0.13	-0.11	0.36	0.01
SR	005037	4,292	0.47	0.34	-0.03	-0.20	-0.17	0.35	0.00
SR	0050MX	4,292	0.49	0.40	0.52	-0.25	-0.25	-0.13	0.00
SR	004YBE	4,292	0.49	0.41	-0.11	0.38	-0.22	-0.11	0.01
SR	004YBH	4,292	0.48	0.37	0.32	-0.08	-0.10	-0.18	0.01
SR	004YBO	4,292	0.41	0.22	-0.13	-0.11	0.05	0.19	0.01
SR	0057OH	8,819	0.50	0.52	-0.14	-0.16	0.33	-0.13	0.01
SR	00507Q	8,819	0.48	0.37	0.05	-0.15	-0.18	0.23	0.01
SR	004WF3	4,292	0.49	0.38	-0.13	-0.12	-0.15	0.33	0.00
SR	004WP1	4,292	0.50	0.48	0.45	-0.19	-0.23	-0.16	0.00
SR	004WOM	4,292	0.43	0.24	0.25	-0.13	-0.01	-0.15	0.00
SR	004YBZ	8,819	0.49	0.38	-0.11	0.26	-0.16	-0.02	0.01
SR	0050E1	4,292	0.40	0.20	0.24	0.02	-0.18	-0.07	0.00
SR	0050D0	4,264	0.50	0.43	-0.23	-0.21	-0.13	0.44	0.00
SR	0050DY	4,264	0.49	0.38	-0.07	0.34	-0.21	-0.15	0.00
SR	00503M	4,527	0.50	0.52	-0.19	-0.18	0.45	-0.23	0.01
SR	004YBB	4,264	0.49	0.41	-0.15	-0.09	0.35	-0.20	0.01
SR	004YB5	4,264	0.49	0.39	-0.09	0.40	-0.26	-0.11	0.01
SR	004YBA	4,527	0.50	0.49	-0.22	0.45	-0.19	-0.17	0.01
SR	004WTF	4,527	0.49	0.60	-0.15	0.42	-0.19	-0.25	0.00
SR	004WES	4,527	0.49	0.60	-0.18	-0.19	0.26	0.00	0.00
SR	004WEV	4,264	0.50	0.53	-0.14	0.36	-0.22	-0.14	0.00
SR	004WTG	4,264	0.41	0.22	-0.06	0.19	-0.05	-0.07	0.00
SR	0050NB	263	0.47	0.32	0.24	-0.21	-0.04	0.00	0.01
SR	0050LC	263	0.47	0.33	0.32	-0.20	-0.06	-0.11	0.00
SR	0050MC	263	0.37	0.16	-0.02	-0.18	-0.07	0.34	0.00
SR	00509Z	263	0.50	0.43	0.35	-0.12	-0.22	-0.06	0.01
SR	00509Y	263	0.44	0.26	-0.07	-0.15	0.27	-0.03	0.02
MEAN(SR)			0.47	0.38	0.01	-0.01	-0.06	-0.01	0.01

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	%Omits
SD(SR)			0.04	0.12	0.22	0.24	0.20	0.21	0.00
CMP-1	0050II	263	0.06	0.00					
CMP-2	004WOD	263	0.40	0.09					
MS-1	0050A1	263	0.22	0.05					
MS-1	004YB9	263	0.20	0.04					
MS-1	004X3L	263	0.25	0.06					
MS-2	00508U	8,819	0.30	0.03					
MS-2	00508T	8,819	0.45	0.10					
MS-2	004WPC	263	0.53	0.13					
OR-2	00508V	8,764	0.71	0.33					
OR-3	004WZ6	1,894	0.65	0.17					
OR-3	004WTS	1,996	0.78	0.33					
OR-4	0050QO	1,997	0.76	0.12					
OR-4	004YBP	1,985	1.01	0.25					
OR-4	0050QP	1,999	0.71	0.12					
OR-4	004YBQ	1,998	0.86	0.17					
TEI-1	004YB8	4,292	0.50	0.49					
TEI-1	004WCX	4,292	0.28	0.08					
TEI-1	0050KK	4,292	0.50	0.46					
TEI-1	0050ME	4,292	0.46	0.30					
TEI-1	0050N2	4,264	0.30	0.10					
TEI-1	0050IA	4,264	0.42	0.23					
TEI-1	004YBD	4,264	0.49	0.60					
TEI-1	004YBN	4,264	0.33	0.12					
MEAN(TEI-1)			0.41	0.30					
SD(TEI-1)			0.09	0.20					
TEI-2	004X3U	4,292	0.65	0.28					
TEI-2	004X3P	4,264	0.47	0.13					

Mean and SD of *P*-Values (*P_Val*) and Point Biserials (*R_ITT*) not shown for an item type for which fewer than 5 items of that type were field tested.

Table B-3. Classical Item Statistics, Field Test Items: HSA MISA—May 2018

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	00507Q	35,239	0.49	0.39	0.02	-0.13	-0.19	0.24		0.01
SR	0057OH	35,239	0.50	0.53	-0.15	-0.18	0.35	-0.14		0.01
SR	004YBZ	35,239	0.48	0.37	-0.12	0.25	-0.14	-0.02		0.01
SR	005897	1,452	0.47	0.32	-0.13	-0.08	-0.11	0.28		0.00
SR	005CV5	2,882	0.50	0.45	-0.09	-0.19	0.27	-0.06		0.01
SR	005CQQ	2,851	0.50	0.44	0.44	-0.26	-0.18	-0.13		0.00
SR	00587W	2,882	0.50	0.47	0.52	-0.25	-0.25	-0.18		0.00
SR	00588V	2,882	0.45	0.27	-0.05	0.33	-0.20	-0.07		0.00
SR	005CJL	1,452	0.50	0.53	0.31	-0.17	-0.15	-0.08		0.00
SR	005CK8	1,452	0.48	0.36	-0.01	0.13	-0.15	0.02		0.00
SR	005HU2	1,452	0.46	0.31	0.02	-0.17	-0.18	0.31		0.00
SR	005CVE	2,829	0.46	0.31	0.33	-0.15	-0.13	-0.09		0.01
SR	005CUJ	1,399	0.49	0.60	-0.20	-0.17	-0.20	0.41		0.01
SR	00588W	1,399	0.32	0.11	-0.14	0.11	-0.23	0.27		0.00
SR	00588X	1,399	0.44	0.26	-0.02	0.30	-0.20	-0.14		0.00
SR	005880	1,399	0.50	0.50	-0.14	0.41	-0.23	-0.17		0.00
SR	0058OP	1,450	0.48	0.35	0.42	-0.28	-0.13	-0.07		0.00
SR	0058E6	1,450	0.50	0.45	0.34	-0.03	-0.18	-0.21		0.01
SR	005QFZ	1,450	0.28	0.08	-0.08	0.01	-0.04	0.16		0.01
SR	0058DH	2,924	0.48	0.36	-0.13	0.27	-0.09	-0.08		0.01
SR	005KUN	1,450	0.45	0.29	0.34	-0.16	-0.18	-0.02		0.01
SR	005KUQ	1,450	0.40	0.19	0.17	0.15	-0.17	-0.21		0.01
SR	0057JN	2,924	0.49	0.41	0.36	-0.19	-0.13	-0.13		0.01
SR	005894	1,450	0.50	0.45	-0.02	-0.18	0.30	-0.16		0.01
SR	005KUG	1,450	0.48	0.63	-0.16	-0.27	0.35	-0.10		0.01
SR	0058PA	1,449	0.44	0.27	0.08	-0.09	0.11	-0.14		0.00
SR	0058OM	2,923	0.45	0.29	-0.12	-0.09	-0.16	0.33		0.00
SR	005QF1	2,923	0.48	0.37	-0.06	-0.21	0.27	-0.01		0.01
SR	005KUP	1,449	0.42	0.22	0.15	0.15	-0.22	-0.08		0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	00582E	2,923	0.50	0.52	-0.15	-0.25	0.44	-0.18		0.01
SR	0058BK	1,449	0.50	0.48	0.40	-0.20	-0.18	-0.14		0.01
SR	0057KJ	1,449	0.50	0.52	-0.14	0.42	-0.20	-0.21		0.01
SR	0058FT	2,923	0.50	0.45	-0.09	-0.09	-0.22	0.30		0.01
SR	005KUE	1,449	0.50	0.49	-0.12	-0.23	-0.24	0.43		0.00
SR	005KUF	2,923	0.47	0.34	-0.13	0.30	-0.19	-0.04		0.00
SR	005KUI	1,474	0.50	0.49	0.26	-0.12	-0.17	-0.12		0.01
SR	0050SR	1,401	0.39	0.19	-0.02	0.00	-0.07	0.09		0.01
SR	005487	2,846	0.48	0.35	0.34	-0.13	-0.20	-0.06		0.01
SR	005K55	1,401	0.50	0.45	-0.05	-0.21	0.27	-0.10		0.00
SR	005705	1,401	0.49	0.43	-0.10	-0.19	-0.23	0.42		0.00
SR	0056ZX	1,401	0.47	0.34	0.32	-0.01	-0.18	-0.17		0.00
SR	0056ZP	2,827	0.46	0.32	-0.10	-0.05	0.24	-0.12		0.00
SR	005H6O	2,846	0.47	0.32	-0.17	-0.07	-0.15	0.34		0.00
SR	005H6H	2,846	0.49	0.40	0.10	0.00	-0.12	-0.06		0.00
SR	005HGE	2,846	0.40	0.20	-0.08	0.11	0.07	-0.13		0.00
SR	0052LN	1,426	0.50	0.55	-0.21	-0.18	0.43	-0.18		0.01
SR	005484	1,426	0.48	0.35	-0.06	0.31	-0.15	-0.12		0.01
SR	0054EN	1,426	0.48	0.36	0.34	-0.14	-0.13	-0.10		0.01
SR	0056UE	1,426	0.50	0.50	-0.23	-0.23	0.42	-0.08		0.00
SR	0056ZV	2,871	0.50	0.47	-0.12	-0.04	-0.29	0.33		0.00
SR	005H2S	1,426	0.48	0.35	-0.12	-0.20	0.25	0.04		0.00
SR	005H6C	1,426	0.37	0.16	-0.06	0.02	-0.03	0.10		0.00
SR	005H65	1,426	0.50	0.49	-0.09	-0.23	0.35	-0.19		0.00
SR	0054EQ	1,445	0.50	0.57	-0.15	0.42	-0.27	-0.15		0.01
SR	0050SI	1,445	0.49	0.38	-0.18	-0.18	-0.11	0.40		0.01
SR	0054EW	1,445	0.50	0.50	0.50	-0.25	-0.20	-0.20		0.01
SR	0056UO	1,445	0.50	0.44	-0.01	0.21	-0.15	-0.11		0.00
SR	005700	1,445	0.49	0.59	0.44	-0.25	-0.20	-0.18		0.00
SR	0056ZU	1,445	0.48	0.37	-0.21	0.36	-0.12	-0.16		0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	005H2R	1,445	0.46	0.31	-0.07	-0.21	-0.11	0.31		0.00
SR	00596T	1,434	0.50	0.55	-0.20	0.46	-0.26	-0.17		0.01
SR	0052UB	3,606	0.40	0.19	0.06	-0.19	-0.02	0.20		0.01
SR	0055DX	1,434	0.50	0.48	-0.17	0.29	-0.06	-0.14		0.00
SR	0052US	2,889	0.50	0.54	-0.19	-0.19	-0.24	0.46		0.01
SR	0059X2	1,434	0.50	0.54	-0.23	-0.18	-0.23	0.46		0.00
SR	0063VJ	2,889	0.47	0.34	-0.08	-0.13	-0.21	0.37		0.00
SR	0058LD	3,606	0.49	0.40	-0.15	0.41	-0.23	-0.11		0.01
SR	00597T	1,434	0.50	0.48	-0.19	-0.15	0.36	-0.17		0.01
SR	00596R	3,606	0.50	0.50	-0.13	0.40	-0.24	-0.15		0.00
SR	0055AK	1,455	0.48	0.37	-0.06	-0.18	0.23	-0.02		0.01
SR	0063VN	3,627	0.50	0.46	-0.17	-0.16	0.39	-0.18		0.00
SR	0058L9	1,455	0.49	0.38	-0.14	-0.20	0.26	0.01		0.01
SR	0052UZ	1,455	0.50	0.44	-0.18	0.43	-0.21	-0.15		0.01
SR	0058LB	1,455	0.50	0.49	-0.18	-0.26	-0.25	0.53		0.01
SR	00596Q	1,455	0.50	0.47	-0.12	-0.21	-0.27	0.48		0.01
SR	00598O	3,627	0.47	0.33	-0.10	0.20	-0.07	-0.05		0.01
SR	0059O9	1,435	0.50	0.46	-0.05	0.38	-0.29	-0.16		0.00
SR	0059OD	1,435	0.49	0.42	-0.15	-0.19	-0.21	0.44		0.00
SR	0059OE	2,888	0.49	0.40	0.42	-0.16	-0.22	-0.13		0.00
SR	00536O	2,888	0.46	0.29	0.03	-0.23	-0.14	0.32		0.01
SR	00518F	1,435	0.48	0.37	0.14	-0.23	0.23	-0.17		0.01
SR	0053QQ	1,435	0.50	0.46	-0.19	-0.15	0.34	-0.08		0.00
SR	0053NG	2,880	0.49	0.39	-0.12	0.32	-0.18	-0.08		0.00
SR	0053OI	2,880	0.50	0.45	-0.07	-0.22	-0.28	0.41		0.00
SR	0059NY	2,898	0.48	0.38	0.06	-0.14	0.12	-0.07		0.01
SR	004ZJA	1,445	0.49	0.60	-0.20	-0.16	-0.27	0.45		0.01
SR	0059P7	1,445	0.50	0.57	-0.18	0.24	-0.13	-0.13		0.01
SR	0059NK	1,445	0.48	0.36	-0.14	0.32	-0.20	-0.01		0.01
SR	0054AK	1,445	0.49	0.41	-0.21	0.37	-0.17	-0.07		0.01

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	00512F	1,445	0.45	0.27	0.19	-0.20	-0.21	0.16		0.01
SR	0053XX	1,445	0.49	0.38	0.27	-0.13	-0.01	-0.21		0.00
SR	0053P4	1,445	0.49	0.58	-0.20	-0.25	-0.26	0.51		0.00
SR	005DNV	1,453	0.50	0.45	-0.17	-0.18	0.36	-0.10		0.01
SR	00518P	1,453	0.48	0.35	-0.05	-0.19	-0.20	0.39		0.01
SR	0050SP	1,453	0.45	0.27	-0.03	0.14	-0.02	-0.15		0.01
SR	0053PV	1,453	0.47	0.32	-0.11	-0.09	-0.10	0.28		0.00
SR	0053O8	1,453	0.50	0.57	-0.19	-0.22	0.41	-0.17		0.00
SR	005CI3	2,846	0.50	0.43	0.40	-0.11	-0.23	-0.14		0.01
SR	005BUK	2,846	0.49	0.41	-0.13	-0.14	0.30	-0.10		0.01
SR	005BUM	1,435	0.49	0.38	0.39	-0.12	-0.22	-0.12		0.01
SR	005BUI	1,435	0.48	0.37	-0.08	0.31	-0.18	-0.09		0.01
SR	005CH7	1,435	0.49	0.41	0.00	-0.07	0.19	-0.18		0.01
SR	005CHH	1,435	0.50	0.44	-0.12	0.23	-0.19	0.03		0.01
SR	0056GN	1,435	0.31	0.11	0.01	-0.07	-0.14	0.27		0.00
SR	005CHG	2,846	0.43	0.25	-0.18	-0.22	0.12	0.22		0.01
SR	005BUJ	2,847	0.49	0.42	-0.07	-0.22	0.30	-0.14		0.01
SR	005BUG	2,847	0.50	0.56	-0.16	0.40	-0.21	-0.17		0.01
SR	005BUR	1,411	0.48	0.35	0.03	0.30	-0.18	-0.19		0.01
SR	005CHJ	2,847	0.42	0.23	-0.09	-0.04	0.21	-0.04		0.01
SR	0056GJ	1,411	0.50	0.46	0.41	-0.10	-0.23	-0.19		0.00
SR	0056HS	1,411	0.49	0.39	0.30	-0.15	-0.12	-0.07		0.00
SR	0056GU	2,847	0.47	0.33	-0.13	-0.09	0.06	0.15		0.00
SR	005BUN	1,436	0.49	0.42	-0.12	-0.18	-0.16	0.38		0.01
SR	005BUP	1,436	0.47	0.32	-0.01	-0.06	-0.09	0.17		0.01
SR	005CHZ	1,436	0.50	0.51	-0.09	-0.24	0.40	-0.18		0.01
SR	005CIB	1,436	0.50	0.50	-0.14	-0.16	0.31	-0.08		0.02
SR	0056HR	1,436	0.46	0.31	-0.03	-0.08	0.20	-0.10		0.01
SR	0052IC	2,838	0.50	0.55	-0.14	-0.22	0.42	-0.18		0.01
SR	0052FX	2,838	0.50	0.43	-0.16	-0.20	0.38	-0.11		0.01

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	0052DW	1,425	0.49	0.41	-0.07	-0.04	0.21	-0.11		0.01
SR	005L7T	1,425	0.49	0.39	0.47	-0.21	-0.21	-0.14		0.01
SR	005428	1,425	0.42	0.22	-0.12	0.15	-0.14	0.08		0.00
SR	00547Q	1,425	0.42	0.23	0.15	-0.20	0.09	-0.05		0.00
SR	0054BB	1,425	0.43	0.24	0.04	0.08	-0.06	-0.06		0.00
SR	0052LS	1,448	0.48	0.35	0.31	-0.13	-0.17	-0.03		0.01
SR	0052YD	1,448	0.50	0.57	-0.18	0.48	-0.26	-0.20		0.01
SR	0052FF	2,861	0.48	0.35	-0.09	-0.23	-0.18	0.47		0.01
SR	005L9T	2,861	0.50	0.44	-0.17	0.39	-0.22	-0.09		0.01
SR	005L5H	1,448	0.50	0.56	0.40	-0.18	-0.23	-0.16		0.00
SR	005L8Q	1,448	0.45	0.28	0.32	-0.13	-0.14	-0.07		0.01
SR	0054BI	1,448	0.47	0.33	0.37	-0.16	-0.15	-0.12		0.00
SR	00543K	1,448	0.45	0.28	-0.08	-0.10	-0.15	0.33		0.00
SR	005L8T	1,413	0.49	0.41	-0.09	0.32	-0.17	-0.12		0.01
SR	00547L	1,413	0.44	0.26	-0.05	-0.10	-0.16	0.31		0.00
SR	00543Z	1,413	0.46	0.31	0.08	0.18	-0.16	-0.15		0.00
SR	0054G9	1,456	0.50	0.52	-0.13	-0.17	0.36	-0.17		0.01
SR	0054G3	4,351	0.50	0.47	-0.13	0.37	-0.20	-0.12		0.01
SR	0054FV	2,916	0.49	0.42	0.43	-0.22	-0.18	-0.11		0.01
SR	0055SS	2,916	0.50	0.47	-0.19	-0.18	0.36	-0.10		0.00
SR	0055TN	2,916	0.40	0.20	-0.04	-0.13	0.27	-0.10		0.00
SR	0055UT	2,916	0.45	0.28	-0.04	-0.01	-0.17	0.23		0.00
SR	005A3L	1,456	0.50	0.54	-0.15	-0.22	-0.25	0.46		0.00
SR	005A21	1,456	0.49	0.41	-0.06	0.30	-0.16	-0.15		0.01
SR	005A3T	4,351	0.46	0.29	0.32	-0.16	-0.10	-0.06		0.01
SR	0054FW	1,435	0.49	0.40	-0.05	-0.16	0.31	-0.14		0.01
SR	0054GB	1,435	0.48	0.35	-0.04	0.40	-0.17	-0.21		0.01
SR	005A3N	1,435	0.48	0.36	0.29	-0.08	-0.18	-0.14		0.00
SR	005A46	2,895	0.50	0.43	0.03	-0.21	-0.21	0.26		0.01
SR	005A3F	1,435	0.47	0.33	-0.04	-0.14	0.26	-0.17		0.00

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
SR	0055U2	1,435	0.50	0.45	-0.18	-0.19	0.41	-0.16		0.00
SR	0055TT	1,435	0.37	0.16	-0.09	0.09	-0.04	0.03		0.00
SR	0055TD	1,435	0.39	0.18	0.13	0.09	-0.12	-0.14		0.00
SR	0055SG	1,435	0.47	0.68	-0.18	0.27	-0.16	-0.11		0.00
SR	0054G2	1,460	0.50	0.45	-0.16	-0.20	-0.22	0.47		0.01
SR	005A3K	1,460	0.50	0.52	-0.12	0.42	-0.25	-0.17		0.00
SR	005896	1,430	0.50	0.50	-0.21	0.43	-0.26	-0.11		0.00
SR	005CUB	1,430	0.49	0.41	-0.18	-0.11	0.35	-0.13		0.00
SR	005893	1,430	0.49	0.57	0.43	-0.19	-0.18	-0.18	-0.15	0.00
SR	005HST	1,430	0.50	0.45	-0.09	-0.14	0.31	-0.15		0.01
SR	005CKA	1,430	0.48	0.35	-0.05	0.27	-0.17	-0.06		0.01
SR	005CJH	1,430	0.37	0.16	0.19	-0.04	-0.13	0.05		0.01
SR	0055MQ	2,172	0.39	0.19	-0.02	-0.15	-0.07	0.27		0.00
SR	0055G5	2,172	0.50	0.52	-0.12	-0.13	-0.17	0.31		0.00
SR	0063VE	2,172	0.49	0.40	-0.12	0.29	-0.14	-0.10		0.00
SR	0055NF	2,172	0.46	0.30	-0.05	0.21	-0.12	-0.04		0.00
SR	0058LE	2,172	0.49	0.38	0.36	-0.15	-0.10	-0.10	-0.13	0.01
SR	0058LF	2,172	0.45	0.29	-0.07	-0.11	0.21	-0.03		0.01
SR	00596K	2,172	0.37	0.17	0.15	-0.01	-0.08	-0.04		0.00
MEAN(SR)			0.47	0.39	0.00	-0.02	-0.05	0.00	-0.14	0.01
SD(SR)			0.04	0.12	0.20	0.22	0.22	0.21	0.01	0.00
CMP-1	00588U	1,430	0.40	0.20						
CMP-2	005126	1,453	0.67	0.40						
CMP-2	005872	1,474	0.84	0.37						
CMP-2	0052PJ	1,413	0.69	0.34						
CMP-2	0053LX	1,453	0.61	0.29						
CMP-2	00547A	1,425	0.39	0.09						
CMP-2	00549H	1,425	0.71	0.33						
CMP-2	0055UA	1,456	0.79	0.29						
CMP-2	0056H1	1,435	0.47	0.13						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
CMP-2	0056HE	1,435	0.52	0.20						
CMP-2	0056I0	1,435	0.56	0.19						
CMP-2	0056ZR	1,426	0.78	0.26						
CMP-2	0058OQ	1,474	0.69	0.35						
CMP-2	0058OZ	2,899	0.72	0.44						
CMP-2	0058P4	1,450	0.65	0.30						
CMP-2	00596J	1,455	0.67	0.31						
CMP-2	00596U	1,455	0.78	0.44						
CMP-2	0059OI	1,445	0.53	0.14						
CMP-2	005CHC	1,436	0.55	0.16						
CMP-2	005CIA	1,436	0.51	0.08						
CMP-2	005DKP	1,452	0.68	0.17						
CMP-2	005H2Z	1,401	0.60	0.22						
CMP-2	005HGN	1,426	0.73	0.42						
CMP-2	005HUC	1,399	0.64	0.30						
CMP-2	005HUT	1,399	0.63	0.25						
CMP-2	005L57	1,425	0.67	0.49						
CMP-2	005L7S	1,448	0.59	0.23						
CMP-2	005L8D	1,448	0.71	0.35						
CMP-2	005L9M	1,425	0.60	0.21						
CMP-2	005M6F	1,435	0.89	0.44						
CMP-2	005MT2	2,172	0.62	0.23						
MEAN(CMP-2)			0.65	0.28						
SD(CMP-2)			0.11	0.11						
MS-1	0053ZX	1,435	0.40	0.20						
MS-1	00540I	1,435	0.50	0.54						
MS-1	0054A9	2,861	0.45	0.29						
MS-1	0055T6	1,456	0.24	0.06						
MS-1	0056GR	1,436	0.25	0.07						
MS-1	00588J	1,452	0.47	0.32						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
MS-1	0058LA	3,606	0.28	0.09						
MS-1	0058OS	1,450	0.29	0.09						
MS-1	0058P9	1,450	0.27	0.08						
MS-1	005CK0	1,399	0.36	0.15						
MS-1	005HUA	1,399	0.32	0.12						
MS-1	005HUE	1,399	0.27	0.08						
MS-1	005KUH	1,474	0.38	0.17						
MS-1	005KUM	1,449	0.29	0.10						
MEAN(MS-1)			0.34	0.17						
SD(MS-1)			0.09	0.13						
MS-2	00508T	35,239	0.50	0.11						
MS-2	00508U	35,239	0.39	0.04						
MS-2	0052JE	2,838	0.64	0.42						
MS-2	0052M1	1,401	0.56	0.13						
MS-2	0052NO	1,453	0.82	0.72						
MS-2	0052YO	1,448	0.68	0.33						
MS-2	00532D	1,448	0.71	0.46						
MS-2	00536H	1,445	0.80	0.37						
MS-2	0054ES	2,871	0.57	0.39						
MS-2	0054FU	2,891	0.65	0.46						
MS-2	0054G8	2,916	0.53	0.17						
MS-2	0056GT	1,435	0.36	0.06						
MS-2	0056ZT	1,426	0.71	0.27						
MS-2	0058C3	1,450	0.75	0.48						
MS-2	0058OY	1,474	0.47	0.40						
MS-2	00596I	2,172	0.54	0.21						
MS-2	0059O3	1,445	0.77	0.34						
MS-2	005A3X	1,456	0.74	0.36						
MS-2	005BUH	1,435	0.74	0.50						
MS-2	005CGQ	1,460	0.76	0.34						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
MS-2	005CUU	1,399	0.61	0.19						
MS-2	005DPL	1,452	0.68	0.41						
MS-2	005GKJ	1,452	0.50	0.12						
MS-2	005JGI	1,411	0.58	0.14						
MS-2	005T3U	1,435	0.49	0.13						
MEAN(MS-2)			0.62	0.30						
SD(MS-2)			0.13	0.17						
OR-2	004ZJV	1,818	0.56	0.19						
OR-2	004ZQ9	1,295	0.64	0.27						
OR-2	00508V	32,023	0.68	0.33						
OR-2	00532Y	1,823	0.62	0.25						
OR-2	00533D	1,264	0.59	0.19						
OR-2	0054GE	1,336	0.45	0.09						
OR-2	0054GF	1,878	0.46	0.11						
OR-2	0056I4	1,273	0.54	0.14						
OR-2	0056I8	1,800	0.34	0.04						
OR-2	0058PB	1,376	0.53	0.29						
OR-2	0058PC	1,887	0.60	0.27						
OR-2	00598Q	1,268	0.30	0.04						
OR-2	00598R	1,803	0.52	0.13						
OR-2	005CV4	1,855	0.55	0.16						
OR-2	005CV9	1,318	0.53	0.17						
OR-2	005LA3	1,789	0.47	0.12						
OR-2	005LA8	1,290	0.58	0.20						
MEAN(OR-2)			0.53	0.18						
SD(OR-2)			0.10	0.09						
OR-3	005488	1,272	0.53	0.08						
OR-3	0050SQ	1,316	0.63	0.14						
OR-3	0053YT	1,842	0.72	0.22						
OR-3	0054ER	1,862	0.63	0.11						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
OR-3	0055VC	1,893	0.76	0.17						
OR-3	0055VM	1,333	0.64	0.12						
OR-3	00570A	1,319	0.50	0.10						
OR-3	00570B	1,896	0.55	0.16						
OR-3	0058GA	1,856	0.39	0.05						
OR-3	0059PK	1,325	0.91	0.21						
OR-3	0059PO	1,848	0.59	0.13						
OR-3	005A48	1,782	0.68	0.12						
OR-3	005A4H	1,307	0.67	0.15						
OR-3	005BUW	1,312	0.68	0.17						
OR-3	005BV5	1,833	0.61	0.13						
OR-3	005CIC	1,285	0.56	0.09						
OR-3	005CIE	1,831	0.82	0.22						
OR-3	005CKY	1,762	0.56	0.10						
OR-3	005CL1	1,270	0.54	0.11						
OR-3	005HGO	1,902	0.66	0.18						
OR-3	005HGP	1,341	0.72	0.16						
MEAN(OR-3)			0.64	0.14						
SD(OR-3)			0.12	0.05						
OR-4	005898	1,818	0.79	0.10						
OR-4	005899	1,350	0.80	0.17						
OR-4	00542P	1,918	0.60	0.10						
OR-4	00542R	1,342	0.43	0.05						
OR-4	0055GG	1,348	0.87	0.18						
OR-4	0055IK	1,850	0.60	0.08						
OR-4	0058LH	1,324	0.97	0.19						
OR-4	0058LI	1,806	0.73	0.10						
OR-4	005KUR	1,318	1.00	0.17						
OR-4	005KUS	1,835	0.49	0.05						
MEAN(OR-4)			0.73	0.12						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
	SD(OR-4)		0.19	0.05						
TEI-1	005415	1,445	0.49	0.59						
TEI-1	005890	1,452	0.49	0.57						
TEI-1	005895	1,399	0.50	0.56						
TEI-1	0053QI	1,453	0.50	0.45						
TEI-1	0053ZA	1,453	0.46	0.31						
TEI-1	00540J	1,413	0.26	0.07						
TEI-1	00542X	1,426	0.49	0.60						
TEI-1	00543A	1,401	0.48	0.38						
TEI-1	00548H	1,401	0.40	0.20						
TEI-1	0054AW	1,448	0.45	0.27						
TEI-1	00558V	1,455	0.50	0.55						
TEI-1	00559S	1,434	0.36	0.16						
TEI-1	0055EU	2,889	0.46	0.30						
TEI-1	0055T2	1,460	0.44	0.26						
TEI-1	0056TL	1,401	0.47	0.32						
TEI-1	00588P	1,399	0.44	0.26						
TEI-1	0058LC	1,434	0.48	0.63						
TEI-1	0058LG	1,455	0.43	0.25						
TEI-1	0058OO	1,474	0.48	0.35						
TEI-1	0058OR	1,449	0.45	0.28						
TEI-1	0058P8	1,474	0.39	0.18						
TEI-1	00596S	1,455	0.37	0.16						
TEI-1	0059NG	1,453	0.44	0.26						
TEI-1	0059OQ	1,435	0.47	0.68						
TEI-1	005A3E	1,460	0.47	0.32						
TEI-1	005A3M	1,456	0.46	0.69						
TEI-1	005BUQ	1,435	0.47	0.34						
TEI-1	005CHT	1,411	0.50	0.49						
TEI-1	005CJI	1,452	0.29	0.09						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
TEI-1	005CK9	1,430	0.24	0.06						
TEI-1	005H30	1,426	0.47	0.32						
TEI-1	005KUD	1,450	0.49	0.60						
TEI-1	005KUO	1,474	0.33	0.13						
TEI-1	005L59	2,838	0.46	0.30						
TEI-1	005L8I	1,425	0.33	0.13						
MEAN(TEI-1)			0.43	0.35						
SD(TEI-1)			0.07	0.18						
TEI-2	005335	1,445	0.63	0.30						
TEI-2	005836	1,449	0.89	0.34						
TEI-2	005973	1,434	0.57	0.21						
TEI-2	004ZTF	1,435	0.73	0.62						
TEI-2	0052NE	1,435	0.79	0.75						
TEI-2	0052NP	1,425	0.78	0.20						
TEI-2	0053YA	1,435	0.75	0.42						
TEI-2	00544C	1,448	0.36	0.08						
TEI-2	00548T	1,413	0.81	0.38						
TEI-2	0054FT	1,435	0.88	0.53						
TEI-2	0055U4	1,460	0.85	0.24						
TEI-2	0056GS	1,411	0.86	0.29						
TEI-2	0056GV	1,411	0.60	0.23						
TEI-2	0056HD	1,436	0.50	0.16						
TEI-2	0056HW	1,436	0.51	0.16						
TEI-2	0056ZQ	1,445	0.99	0.51						
TEI-2	0056ZS	1,401	0.69	0.31						
TEI-2	0058P3	1,449	0.54	0.17						
TEI-2	00596M	1,434	0.66	0.30						
TEI-2	0059O1	1,435	0.76	0.51						
TEI-2	005A3O	1,460	0.98	0.42						
TEI-2	005BUL	1,436	0.77	0.18						

Item Type	ItemID	N	P_Val	R_ITT	P_BIS1	P_BIS2	P_BIS3	P_BIS4	P_BIS_5	%Omits
TEI-2	005CH8	1,435	0.52	0.27						
TEI-2	005CI4	1,411	0.94	0.35						
TEI-2	005CJQ	1,430	0.60	0.23						
TEI-2	005CKB	1,452	0.68	0.25						
TEI-2	005CQZ	1,430	0.86	0.29						
TEI-2	005CTZ	1,399	0.62	0.43						
TEI-2	005DNW	1,453	0.40	0.08						
TEI-2	005GJD	1,430	0.55	0.22						
TEI-2	005H2T	1,445	0.50	0.15						
TEI-2	005L5I	1,413	0.67	0.30						
TEI-2	005L7Y	1,413	0.68	0.33						
MEAN(TEI-2)			0.69	0.31						
SD(TEI-2)			0.16	0.15						

CR (Constructed Response items worth 4 points), CMP (2-part Composite items worth either 1 or 2 points), MS (Multi-Select items worth either 1 or two points), OR (Open Response items worth 2, 3, or 4 points), SR (Selected Response items), TEI (Technology Enhanced Items worth either 1 or 2 points).