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# Review of the Kentucky Occupational Skill Standards and Assessment (KOSSA) System

Final Report

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## Executive Summary

### Project Background

The Kentucky Department of Education (KDE) contracted with Human Resources Research Organization (HumRRO) to conduct a comprehensive review of the Kentucky Occupational Skill Standards Assessment (KOSSA) system. The purpose of this review was to evaluate the quality of the KOSSA test items, as well as the quality of the KOSSA test forms. Additionally, the review was to explore options for moving KOSSA to a model that would allow for more accurate year-to-year comparisons. Finally, we were tasked to develop a draft validity argument framework, an organized list of evidence to support the validity of KOSSA's scores and uses of those scores, to allow KDE to determine how best to support KOSSA and its mission.

### About KOSSA

There are currently 31 KOSSA tests. Each KOSSA test form contains 120 multiple choice items, 20 of which are field test items that do not count toward a student's score. Of the 100 items on which student scores are based, 50 of those are aligned to occupational skill standards, 25 to academic skill standards, and 25 to employability skill standards. Academic and employability items are common across all KOSSA tests, whereas occupational items are specific to the career and technical education (CTE) program area. Student scores are determined by calculating the percentage of correctly answered items. Students scoring a 70 or higher pass the assessment.

### Study Methods

To evaluate the quality of test items and test forms, HumRRO conducted several types of analyses. All analyses were conducted on KOSSA test data provided by KDE via secure transfer. The methods used for each of the five tasks we performed are described below.

**Task 1: Item Quality.** Classical Item Theory (CTT) statistics were calculated to provide information about how difficult the test items are, and about how well the test items differentiate between high- and low-performing students. We then flagged items that were either more difficult or easier than expected and items that did not relate strongly to overall test performance. We also reviewed the percentage of students selecting incorrect answer choices to identify items that have incorrect answer choices that are distracting to high-performing test takers.

**Task 2: Test Form Quality.** Students' scores on the KOSSA tests are based on 100 items that are combined on a single test form. Each career and technical education (CTE) program area is tested with one test form. HumRRO analyzed the data for each test to determine the reliability of students' test scores. Specifically, we looked at how well the items on each test form related to one another. If items are not highly related to one another, then it becomes unclear if the items are measuring the same thing. Reliability tells us how closely we might expect students to score if they took a different form of the same test. Next, we looked further at the relationships among the items on each KOSSA test form by conducting confirmatory factor analysis (CFA). This type of analysis provides evidence to support that there are subsets of items measuring academic

skills, employability skills, and occupational skills. This reflects KOSSA's intended design. Finally, we computed classification accuracy ratings for each test form. This provides an indication of the percentage of students correctly classified as passing or failing.

**Task 3: Scaling and Equating.** The current KOSSA design does not allow for scores to be directly comparable across years. These types of comparisons are very useful for providing feedback to educators about the effectiveness of educational programs, for instance. To explore the possibility of changing the KOSSA design to allow for such comparisons, we analyzed the data for each test using Item Response Theory (IRT). This analysis produced new statistics providing additional information about the quality of the KOSSA items. We conducted the same analysis using data from 2016, which then allowed us to compare the difficulty of items from one year to the next to see if there were substantial differences. The IRT analyses also produced a *theta* score that corresponded with each possible raw score on the test. This theta score reflected students' transition readiness on a normally distributed scale. We then applied a simple mathematical formula to put these values on a 100-300 reporting scale with a passing cut score of 210.

**Task 4: Standards Setting Plan.** We surveyed relevant literature and drew from prior experience to offer recommendations for setting a new passing standard for the KOSSA assessments. We conducted a hypothetical mathematical standard setting by identifying an IRT-based student ability score that corresponds to the previously used raw score of 70.

**Task 5: Validity Framework.** We consulted the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) and drew from prior experience conducting validity studies for other assessment programs to develop an example validity framework and to identify potential directions for future research.

## *Study Results*

The results from each of the five tasks are described below.

**Task 1: Item Quality.** CTT item statistics tended to fall within acceptable ranges, indicating that items were appropriately difficult and provided information about students' transition readiness. The small number of items that were flagged for CTT statistics that fell out of acceptable ranges tended to be for tests taken by a relatively small number of students, where CTT statistics were less reliable. All items flagged by our analyses were forwarded to KDE for review.

**Task 2: Test Form Quality.** All KOSSA test forms demonstrated adequate levels of internal consistency reliability. However, this is largely driven by the length of the tests. A closer look at the correlations among items found that items were not as closely related as would be expected. This suggests that the group of KOSSA items may not be measuring the same construct (i.e., transition readiness), and that reporting academic, employability, and occupational subscores may not be appropriate.

**Task 3: Scaling and Equating.** IRT results indicate that it would be appropriate to transition KOSSA to an IRT model. Such a model would potentially resolve the issues that result from some KOSSA tests being taken by only a small number of students. An analysis of IRT statistics from 2016 and 2017 indicate that the majority of items are stable over time. This is a key component of building an equating model that will allow for KOSSA scores to be compared over time.

**Task 4: Standards Setting Plan.** The KOSSA system would benefit from a formal standard setting process. Although passing standards may be set using relatively simple mathematics, a more robust design would incorporate input from educational and occupational experts. The modified Angoff method of standard setting is appropriate given KOSSA's design, and is widely used in educational and employment certification programs.

**Task 5: Validity Framework.** The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) outline the types of evidence that could be used to demonstrate that a test produces scores that are valid for making certain interpretations or decisions. We found that there are some areas where validity evidence is available, but other areas where there are gaps. Because KOSSA is in its early stages of use, it is not unexpected that there would be such gaps.

### *Recommendations*

Based on the results from these tasks, we provide the following recommendations:

- *Create a KOSSA theory-of-action (TOA).* This document (or figure) would describe the way that KOSSA is intended to function, including any impact that the test itself and the test scores are expected to elicit (see Kane, 2006). From that document, we can create a series of claims and assumptions that must hold for KOSSA to achieve its intended purpose(s). Then, we collect evidence to support or refute those claims and assumptions. This process will help KDE validate KOSSA and will provide clear guidance on future improvements that may be necessary, and it will guide the KOSSA research agenda.

- *Transition KOSSA to an IRT model.* We recommend the Rasch model, as it is appropriate for tests with small numbers of tested students.

- *Conduct KOSSA item review(s).* We recommend convening a panel of educational and occupational experts who have not previously been involved in the item writing process. Items should be reviewed for how well they align to the standards, but also to ensure that the items are appropriately challenging for the student population taking KOSSA.

- *Conduct KOSSA standard setting.* The validity of decisions made around students' passing KOSSA scores will be strengthened through a formal standard setting process. This may need to be conducted in stages to account for items that are common across all assessments and those that are specific to a particular occupational area.

## Background

The Kentucky Occupational Skill Standards Assessment (KOSSA) system is currently composed of 31 assessments aligned to occupational, academic, and employability skill standards. The assessments are used for both student- and school-level decisions. Students passing assessments with established articulation agreements may earn credit at participating postsecondary institutions. Schools and districts use KOSSA as a measure of transition readiness under the state accountability system.

The Kentucky Department of Education (KDE) contracted with Human Resources Research Organization (HumRRO) to conduct a comprehensive review of the KOSSA system. This review was to include evaluations of item quality and test form quality, which would add to the body of validity evidence for the assessments. Additionally, the review was to explore options for moving KOSSA to a model that would allow for year-to-year comparisons. Finally, we were tasked to develop a draft validity argument framework that would allow KDE to determine gaps in its existing validity evidence.

Each KOSSA test form contains 120 multiple choice items. Not all items contribute to a student's score; 20 are field test items. Of the 100 items on which student scores are based, 50 of those are aligned to occupational skill standards, 25 to academic skill standards, and 25 to employability skill standards. Academic and employability items are common across all KOSSA test forms, whereas occupational items are specific to the career and technical education (CTE) program area. The 31 assessments are presented in Table 1.

*Table 1. 2018 KOSSA Assessments*

| KOSSA Assessments | KOSSA Assessments |
| --- | --- |
| Accounting | Early Childhood Education |
| Administrative Support Services | Environmental Science Natural Resources[3] |
| Ag Power, Structural, Technical Systems[1] | Fashion & Interior Design |
| Agribiotechnology | Financial Services |
| Agribusiness | Food Science & Processing Systems[4] |
| Allied Health | *Graphic Design* |
| Animal Science | Horticulture |
| Automotive Technology | Hospitality Services[5] |
| Business Management | Information Support & Services[6] |
| *Cinematography & Video Production* | Marketing |
| Collision Repair | Network Administration |
| Computerized Manufacturing & Machining[2] | Production Crop |
| Computer Programming | Retail Services |
| Consumer & Family Management | Web Development/Administration[7] |
| *Digital Design & Game Development* | Welding |
| Culinary & Food Services | |

*Note.* Italicized assessments (*Cinematography & Video Production, Digital Design & Game Development,* and *Graphic Design*) were new in 2018. [1]Heretofore referred to as Ag Power. [2]Heretofore referred to as Computerized Manufacturing. [3]Heretofore referred to as Environmental Science. [4]Heretofore referred to as Food Science. [5]Heretofore referred to as Hospitality. [6]Heretofore referred to as Information Support. [7]Heretofore referred to as Web Development.

Student scores are determined by calculating the percentage of correctly answered items. Students scoring a 70 or higher pass the assessment. KDE publishes annual state level results on the academic, employability, and occupational skill standards for each program area. One of the criticisms of the KOSSA assessments is the inability to track performance from year to year.

The remainder of this report will be organized around a series of tasks that comprised the evaluation. Task 1 involved the review of test item quality. Task 2 involved the review of test form quality. Task 3 explored a plan for scaling and equating, Task 4 developed recommendations for standards setting, and Task 5 drafted a validity argument framework.

## Task 1: Review of Item Quality

Developing high-quality test items is a key step in ensuring the validity of test scores. KOSSA items are developed to reflect the skill standards to which schools' CTE curriculum should be aligned. Each item is linked to a specific element of the skills standards, and items are routinely reviewed by subject matter experts. Beyond content representation, it is important to establish that test scores are based on items that demonstrate acceptable measurement characteristics. The purpose of this task was to document the psychometric quality of KOSSA items.

### Methods

HumRRO provided KDE access to a secure file transfer protocol (SFTP) for delivering test item data and student score data. Data from the 2015-16 and 2016-17 school years were provided. Data for Cinematography and Video Production, Digital Design and Game Development, and Graphic Design assessments were not included as they were introduced in the 2017-2018 school year. Our analysis focused on 2017 assessment results.

Item-level data included classical test theory (CTT) item difficulty and discrimination statistics. These were based on all students taking the item during the annual test administration period. Thus, item difficulty and discrimination for academic and employability items were based on all students across all assessments. To explore differences in item statistics among the different occupational tests, HumRRO independently calculated p-values and item-total correlations for each. All item statistics were computed using SAS 9.4.

Items were then flagged if they met a series of criteria that HumRRO routinely uses to evaluate the quality of state accountability assessment items. These included low difficulty (p-value greater than .95), high difficulty (p-value less than .10), low discrimination (item-total correlation less than .10, distractors being selected more frequently than the correct response, and distractors that were more discriminating than the correct answer.

### Results

Table 2 presents a summary of CTT item difficulty statistics for 2017 items across the 28 KOSSA assessments. Detailed tables broken out by assessment and item type are presented in Appendix A. Items with p-values greater than .95 indicates that these items were very easy for the group of examinees, while items with p-values less than .10 indicate that these items were very difficult for the group of examinees. Items that are very easy or very difficult contribute little information to our understanding of student achievement, and so ideally item p-values will fall between these values.

An important caveat should be considered when interpreting these and other results throughout this report. CTT statistics are form-dependent; they are based on the sample of students taking a particular test form at a particular point in time. It would be misleading to compute CTT statistics based on student performance across different tests forms (i.e., combine student responses for an item that has appeared on several different tests and use those responses to calculate p-values). However, CTT statistics based on small samples sizes may not be reliable. Although this report presents CTT results for all KOSSA tests, results based on fewer than 100 students tested (Agribiotechnology, Hospitality, and Production Crop) should be interpreted with caution. We present these results not only for transparency, but to highlight one of the benefits of moving KOSSA to an IRT model, as discussed in subsequent sections of this report. As Table 2 shows, average p-values for each item type ranged between .56 and .85. On average, only a small percentage of operational items were flagged for item difficulty values outside of the optimal range. The modal percentage of flags indicates that for most of the KOSSA assessments, no operational occupational or academic items were flagged. There was one operational employability item that was flagged for being very easy on 22 of the 28 assessments. Three assessments (Allied Health, Food Science, and Retail Services) had one occupational field test item flagged for low difficulty. Five assessments (Agribiotechnology, Collision Repair, Food Science, Horticulture, and Retail Services) had one occupational field test item flagged for high difficulty. Among the academic field test items, one common item was flagged for easiness on five of the assessments (Allied Health, Computer Programming, Fashion & Interior Design, Network Administration, and Web Development). No academic field test items were flagged for being too difficult. Among the employability field test items, one common item was flagged for easiness on 14 of the 28 assessments[1]. Another common item was flagged for easiness on four of the assessments (Allied Health, Computer Programming, Network Administration and Retail Services). No employability field test items were flagged for being too difficult.

Table 2 also presents analysis of multiple-choice item distractors that further inform item difficulty. Items with one or more appealing distractors may have lower p-values. For operational occupational items, the percentage of items flagged for having a distractor that was selected more often than the correct response ranged from 0% (Computer Programming) to 34% (Agribiotechnology). Among operational academic items, one common item was flagged on all but four assessments (Accounting, Computer Programming, Network Administration, and Web Development). Among operational employability items, one common item was flagged on two assessments (Agribiotechnology and Collision Repair). For field tested occupational items, the percentage of items flagged for having a distractor that was selected more often than the correct response ranged from 0% (Culinary & Food Services, Marketing, Network Administration, and Welding) to 50% (Automotive Technology and Environmental Science). Among field tested academic items no items were flagged for any of the assessments. Among field tested employability items, one common item was flagged for five assessments (Agribiotechnology, Collision Repair, Consumer & Family Management, Culinary & Food Service, and Early Childhood Education).

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[1] Administrative Support Services, Agribiotechnology, Allied Health, Animal Science, Computer Programming, Culinary & Food Services, Early Childhood Education, Financial Services, Hospitality, Information Support, Marketing, Network Administration, Retail Services, and Welding.

**Table 2. Summary of CTT Item Difficulty Statistics**

| Item Type | Average Item p-values Mean | Average Item p-values SD | % Items Flagged for Difficulty (p < .10 or > .95) Mean | % Items Flagged for Distractors (p < .10 or > .95) Mode | % Items Flagged for Distractors Mean | % Items Flagged for Distractors Mode |
|---|---|---|---|---|---|---|
| Operational Items | | | | | | |
|   Occupational | .606 | .077 | 0.29 | 0 | 10.93 | 8 |
|   Academic | .562 | .077 | 0.71 | 0 | 3.43 | 4 |
|   Employability | .761 | .040 | 3.71 | 4 | 0.43 | 0 |
| Field Test Items | | | | | | |
|   Occupational | .559 | .077 | 2.86 | 0 | 21.48 | 20 |
|   Academic | .850 | .042 | 4.29 | 0 | 0.00 | 0 |
|   Employability | .720 | .031 | 12.86 | 20 | 3.57 | 0 |

Table 3 presents a summary of CTT item discrimination statistics for 2017 items across the 28 KOSSA assessments. Detailed tables broken out by assessment and item type are presented in Appendix A. Items with item-total correlations less than .10 do not help differentiate between students who are low performing and students who are high performing.

Table 3 shows average item-total correlations for each item type ranged between approximately .25 and .40. On average, a small percentage of operational items were flagged for item discrimination values outside of the optimal range. The modal percentage of flags indicates that for most of the KOSSA assessments, no operational academic or employability items were flagged. Between 0% (Consumer & Family Management, Financial Services, and Marketing) and 36% (Agribiotechnology) of operational occupational items were flagged for a low item-total correlation. Among the operational academic items, one common item was flagged for four assessments (Agribiotechnology, Allied Health, Collision Repair, and Fashion & Interior Design). Another common operational academic item was flagged for three assessments (Computer Programming, Information Support, and Network Administration). Among the operational employability items, one common item was flagged for two assessments (Collison Repair and Computerized Manufacturing). Between 0% (Administrative Support Services, Computer Programming, Financial Services, Marketing, and Network Administration) and 40% (Ag Power, Agribiotechnology, Automotive Technology, and Hospitality) of field tested occupational items were flagged for low levels of discrimination. One field tested academic item was flagged for Agribiotechnology only. One field tested employability item was flagged for Agribiotechnology only, and another was flagged for Production Crop only.

Table 3 also presents analysis of the correlations between multiple choice item distractors and total test score. A distractor-total correlation that is higher than the key-total correlation would indicate that higher ability students are selecting the distractor more frequently than the correct response. For a majority of KOSSA assessments, no operational occupational items were flagged for having a distractor with a higher item-total correlation. Otherwise, between 2% (Ag Power, Business Management, Production Crop) and 8% (Agribiotechnology) of operational occupational items were flagged. No operational academic or employability items were flagged. Similarly, for a majority of assessments, no field test occupational items were flagged. Otherwise, between 10% (Agribusiness, Collision Repair, Consumer and Family Management, Food Science, Horticulture, Retail Services, and Web Development) and 20%

(Agribiotechnology and Automotive Technology) of field test occupational items were flagged. No field test academic or employability items were flagged.

*Table 3. Summary of CTT Item Discrimination Statistics*

| Item Type | Average Item-Total Correlations Mean | Average Item-Total Correlations SD | % Items Flagged for Discrimination (correlation > .95) | % Items Flagged for Discrimination (correlation < .10) | Mean % Items Flagged for Distractors | Modal % Items Flagged for Distractors |
|---|---|---|---|---|---|---|
| Operational Items | | | | | | |
| CTE | .292 | .045 | 7.21 | 4 | 0.93 | 0 |
| Academic | .340 | .032 | 1.71 | 0 | 0.00 | 0 |
| Employability | .369 | .033 | 1.14 | 0 | 0.00 | 0 |
| Field Test Items | | | | | | |
| CTE | .249 | .060 | 15.71 | 10 | 3.93 | 0 |
| Academic | .399 | .062 | 0.71 | 0 | 0.00 | 0 |
| Employability | .345 | .061 | 1.43 | 0 | 0.00 | 0 |

## Discussion

Results from these analyses generally support the quality of the KOSSA item pool. Average item p-values and item-total correlations are largely within appropriate ranges, and standard deviations indicate that this is consistent across KOSSA tests. Relatively low numbers of items were flagged for difficulty or discrimination values that fell outside of the acceptable ranges, or for problematic distractors. Tests with larger numbers of flagged items tended to be those with smaller tested samples. Considering the patterns observed across the KOSSA tests, it is assumed that the number of flagged items would be smaller when the test is administered to a larger sample.

HumRRO delivered to KDE a file containing the items flagged for each test. We recommend that these items undergo additional scrutiny to determine what if any action is needed. Any items that are edited because of this additional scrutiny should be field tested before subsequent operational use.

## Task 2: Review of Test Form Quality

Within the CTT framework, observed test scores are composed the examinee's unobservable true score, plus some amount of measurement error. To ensure valid inferences are made based on test scores, it is necessary to first establish that those scores are reliable. The purpose of this task was to document the psychometric quality of KOSSA test forms.

## Methods

Using the same files described in the Task 1 section of this report, HumRRO calculated students' total KOSSA scores and analyzed these distributions to identify any characteristics that would have implications for score reliability estimation.

Next, we calculated the internal consistent reliability (Cronbach's alpha; $r$) for total scores and sub scores. Internal consistency refers to the extent to which items on a test form are interrelated. Because Cronbach's alpha is highly dependent on the number of test items, we

also calculated the average inter-item correlation for each test. We also examined score distributions and computed reliability statistics for the academic, employability, and occupational sub scores. Internal consistency reliability statistics were calculated using IBM SPSS 25.

Next, we conducted confirmatory factor analysis (CFA) for each assessment. CFA posits latent factors underlying the observed item response data. We ran a *bifactor* model in which each test item reflects the overall *transition readiness* factor, as well as either an academic, employability, or occupational factor (as assigned during item development). We reviewed the fit statistics associated for each assessment to determine if the data supported an overall KOSSA score as well as academic, employability, and occupational subscores. We also analyzed patterns of factor loadings across the assessments to further inform the appropriateness of subscores.

Finally, we computed classification accuracy ratings for each 2017 test. This provides an indication of how accurately we can expect students pass/fail classifications to be, given the measurement properties of the test. First, we calculated the standard error of measurement (SEM) for each test (SD * ($\sqrt{1-r}$)). The SEM was then used to identify the probability of achieving each score level, assuming the underlying true score was either in the passing range or in the failing range. Finally, these probabilities were combined to determine the overall probability of correct classification (see Dickinson, Levinson, Thacker, & Hoffman, 2013 for full technical details).

## *Results*

Table 4 summarizes the total score distributions for each of the 28 KOSSA assessments. Mean scores ranged from 52 to 74, and standard deviations from 10 to 16. Median scores ranged from 52 to 77.

### *Table 4. 2017 Total Raw Score Distributions*

| Test | N | Mean | SD | Median |
|---|---|---|---|---|
| Accounting | 683 | 66.45 | 13.35 | 68.0 |
| Administrative Support Services | 2,361 | 69.73 | 13.83 | 73.0 |
| Ag Power | 1,506 | 63.80 | 14.19 | 67.0 |
| Agribiotechnology | 20 | 56.90 | 10.21 | 59.0 |
| Agribusiness | 538 | 67.99 | 15.01 | 71.0 |
| Allied Health | 3,817 | 70.95 | 11.80 | 73.0 |
| Animal Science | 2,646 | 67.61 | 13.44 | 70.0 |
| Automotive Technology | 722 | 60.18 | 14.19 | 63.0 |
| Business Management | 1,883 | 67.14 | 15.08 | 70.0 |
| Collision Repair | 124 | 52.39 | 12.41 | 52.0 |
| Computerized Manufacturing | 311 | 62.54 | 13.33 | 64.0 |
| Computer Programming | 353 | 74.29 | 13.00 | 77.0 |
| Consumer & Family Management | 1,808 | 71.59 | 15.70 | 75.0 |
| Culinary & Food Services | 1,618 | 69.78 | 13.75 | 72.0 |
| Early Childhood Education | 1,442 | 71.09 | 13.00 | 73.0 |
| Environmental Science | 542 | 69.94 | 14.17 | 72.0 |
| Fashion & Interior Design | 215 | 66.10 | 14.39 | 69.0 |
| Financial Services | 609 | 74.49 | 13.36 | 77.0 |
| Food Science | 124 | 67.40 | 13.62 | 68.5 |
| Horticulture | 2,086 | 61.71 | 13.73 | 64.0 |

(continued)

**Table 4. 2017 Total Raw Score Distributions (continued)**

| Test | N | Mean | SD | Median |
|------|-----|-------|-------|--------|
| Hospitality | 70 | 69.33 | 14.95 | 74.5 |
| Information Support | 354 | 68.01 | 14.03 | 70.5 |
| Marketing | 1,375 | 72.89 | 14.82 | 76 |
| Network Administration | 261 | 72.25 | 12.63 | 75 |
| Production Crop | 74 | 64.76 | 16.44 | 69 |
| Retail Services | 132 | 74.33 | 14.09 | 76.5 |
| Web Development | 280 | 68.83 | 12.18 | 71 |
| Welding | 922 | 64.36 | 13.47 | 66 |

Figure 1 offers a visual depiction of these score distributions. The differences in heights of the curves reflects the differences in sample sizes. Of more interest is the shape of the curves, which tend to take on a bell shape, but with a somewhat negative skew (skewed to the right). With the exception of Agribiotechnology, which had the smallest sample size and least variation in total scores, there do not appear to be major concerns about the score distributions (e.g., restriction of range) that would have implications for reliability coefficients.
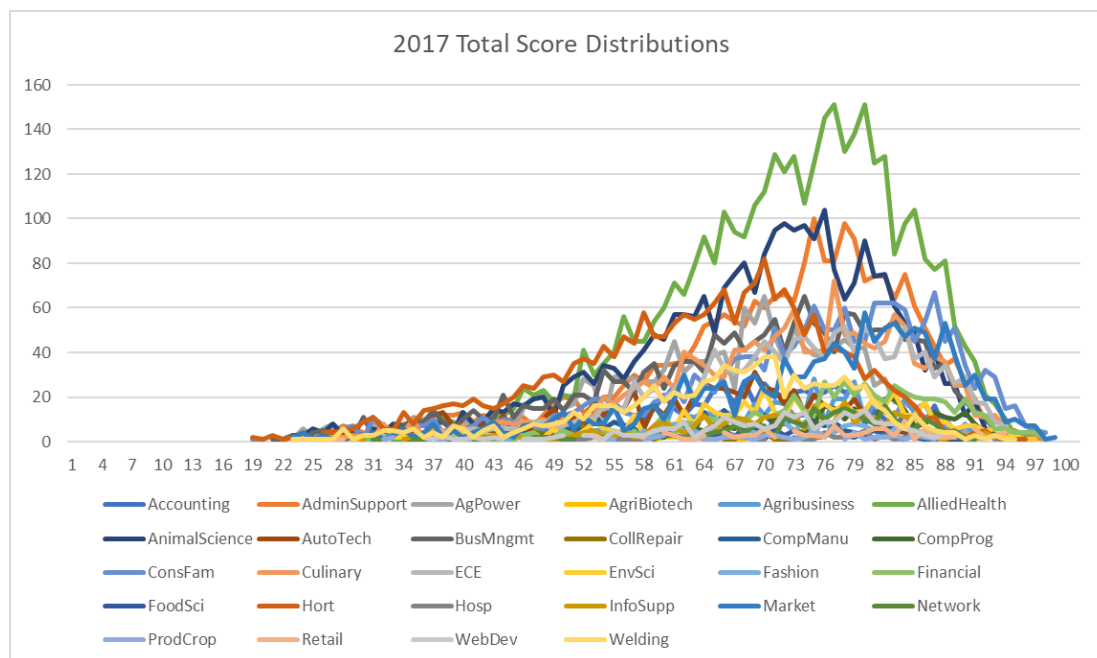
*Figure 1. 2017 KOSSA total score distributions.*

### Test Form Reliability

Table 5 presents the internal consistency reliability coefficients (Cronbach's alpha) for each of the assessments. All coefficients fall above .70, which is widely considered to be the minimally acceptable value. Cronbach's alpha is dependent upon two characteristics of a test form, the number of items and the average level of correlation among those items. Taking a closer look at average interitem correlations can therefore mitigate concerns over inflated reliability statistics associated with long tests. Though guidance on acceptable levels of interitem correlation is limited, a range of .15 to .50 has been recommended for scales spanning multiple constructs

(Clark and Watson, 1995). Table 5 shows that none of the KOSSA assessments demonstrated acceptable levels of average interitem correlation.

Since total scores on KOSSA are made up of three subscores, it is informative to look at those distributions as well. Table 6 summarizes these subscore distributions. Tables showing details for each assessment are presented in Appendix A. Mean/median occupational subscores ranged from 21.15/22 (Agribiotechnology) to 36.06/38 (Consumer & Family Management). Mean/median academic subscores ranged from 14.81/15 (Collision Repair) to 20.16/21 (Computer Programming). Mean/median employability subscores ranged from 16.13/17 (Collision Repair) to 20.88/22 (Computer Programming).

*Table 5. 2017 Internal Consistency Reliability*

| Test | N | Cronbach's Alpha | Average Interitem Correlation |
|------|---|-----------------|-------------------------------|
| Accounting | 683 | .895 | .082 |
| Administrative Support Services | 2,361 | .907 | .096 |
| Ag Power | 1,506 | .905 | .093 |
| Agribiotechnology | 20 | .815 | .045 |
| Agribusiness | 538 | .915 | .104 |
| Allied Health | 3,817 | .881 | .071 |
| Animal Science | 2,646 | .894 | .083 |
| Automotive Technology | 722 | .899 | .085 |
| Business Management | 1,883 | .918 | .106 |
| Collision Repair | 124 | .866 | .061 |
| Computerized Manufacturing | 311 | .899 | .086 |
| Computer Programming | 353 | .909 | .099 |
| Consumer & Family Management | 1,808 | .929 | .124 |
| Culinary & Food Services | 1,618 | .907 | .095 |
| Early Childhood Education | 1,442 | .898 | .083 |
| Environmental Science | 542 | .910 | .099 |
| Fashion & Interior Design | 215 | .908 | .096 |
| Financial Services | 609 | .903 | .092 |
| Food Science | 124 | .898 | .089 |
| Horticulture | 2,086 | .897 | .085 |
| Hospitality | 70 | .899 | .084 |
| Information Support | 354 | .910 | .097 |
| Marketing | 1,375 | .920 | .109 |
| Network Administration | 261 | .883 | .077 |
| Production Crop | 74 | .937 | .141 |
| Retail Services | 132 | .912 | .101 |
| Web Development | 280 | .877 | .071 |
| Welding | 922 | .887 | .078 |

*Note.* Results for tests with sample sizes less than 100 should be interpreted with caution. Reliability coefficients should be greater than .70. Average interitem correlations should be between .15 and .50.

## Table 6. Summary of 2017 Subscore Distributions

| Subscore | Mean | SD | Median |
|---|---|---|---|
| Occupational | 21.15 - 36.06 | 4.73 - 8.14 | 22 - 38 |
| Academic | 14.81- 20.16 | 3.36 - 4.95 | 15 - 21 |
| Employability | 16.13 - 20.88 | 3.32 - 5.41 | 19 - 22 |

Since these subscores are based on a smaller number of items than the total test, it is useful to further explore score reliability by focusing in on the subscores. Not surprisingly, alpha coefficients tend to be smaller for these subsets of items, but generally above the minimally acceptable value. However, average interitem correlations still tend to fall below the acceptable range, which is particularly concerning since the subsets of items are intended to represent more narrowly defined constructs.

## Table 7. 2017 Reliability of Subscales

| Test | N | Academic Alpha | Academic Avg. Interitem Corr. | Employ-ability Alpha | Employ-ability Avg. Interitem Corr. | Occupational Alpha | Occupational Avg. Interitem Corr. |
|---|---|---|---|---|---|---|---|
| Accounting | 683 | .718 | .095 | .732 | .108 | .815 | .081 |
| Administrative Support Services | 2,361 | .764 | .120 | .792 | .141 | .802 | .080 |
| Ag Power | 1,506 | .778 | .127 | .814 | .157 | .789 | .071 |
| Agribiotechnology | 20 | .629 | .058 | .806 | .174 | .507 | .018 |
| Agribusiness | 538 | .778 | .129 | .813 | .160 | .826 | .089 |
| Allied Health | 3,817 | .668 | .074 | .708 | .091 | .793 | .074 |
| Animal Science | 2,646 | .754 | .115 | .782 | .135 | .778 | .067 |
| Automotive Technology | 722 | .762 | .117 | .816 | .157 | .771 | .062 |
| Business Management | 1,883 | .769 | .123 | .792 | .142 | .843 | .099 |
| Collision Repair | 124 | .731 | .098 | .801 | .142 | .693 | .043 |
| Computerized Manufacturing | 311 | .754 | .112 | .787 | .135 | .797 | .074 |
| Computer Programming | 353 | .763 | .124 | .756 | .125 | .838 | .098 |
| Consumer & Family Management | 1,808 | .747 | .109 | .811 | .154 | .876 | .135 |
| Culinary & Food Services | 1,618 | .723 | .098 | .775 | .127 | .816 | .087 |
| Early Childhood Education | 1,442 | .707 | .088 | .765 | .118 | .801 | .078 |
| Environmental Science | 542 | .774 | .129 | .787 | .139 | .830 | .092 |
| Fashion & Interior Design | 215 | .757 | .115 | .801 | .149 | .809 | .081 |
| Financial Services | 609 | .726 | .099 | .789 | .136 | .810 | .085 |
| Food Science | 124 | .794 | .144 | .808 | .168 | .783 | .070 |
| Horticulture | 2,086 | .773 | .124 | .805 | .151 | .772 | .064 |
| Hospitality | 70 | .756 | .110 | .811 | .154 | .822 | .085 |
| Information Support | 354 | .740 | .105 | .779 | .132 | .829 | .092 |
| Marketing | 1,375 | .732 | .104 | .766 | .127 | .863 | .118 |
| Network Administration | 261 | .692 | .085 | .734 | .106 | .784 | .072 |
| Production Crop | 74 | .840 | .186 | .882 | .241 | .831 | .093 |
| Retail Services | 132 | .725 | .102 | .777 | .131 | .826 | .093 |
| Web Development | 280 | .724 | .097 | .724 | .103 | .782 | .069 |
| Welding | 922 | .742 | .108 | .764 | .122 | .807 | .080 |

*Note.* Results for tests with sample sizes less than 100 should be interpreted with caution. Reliability coefficients should be greater than .70. Average interitem correlations should be between .15 and .50.

## Confirmatory Factor Analysis

The purpose of factor analysis is to represent the relationships between test response data and the underlying characteristics that led to those responses. Factor analysis can be exploratory, when the characteristics underlying the response patterns are unknown, or confirmatory, when there is a hypothesized set of characteristics that lead to those response patterns. Because KOSSA items are designated as measuring particular elements of transition readiness (academic skills, employability skills, or occupational skills), confirmatory factor analysis (CFA) was chosen to evaluate the factor structure of the KOSSA assessments. Results from CFAs provide one form of validity evidence based on internal structure.

Table 8 summarizes the model fit statistics from the bifactor CFA models. Due to having sample sizes less than 200, the Agribiotechnology, Collision Repair, Food Science, Hospitality, Production Crop, and Retail assessments were not included. Higher values of the Comparative Fit Index (CFI; $\geq$ .90) and the Tucker Lewis Index (TLI; $\geq$ .95), and lower values of the Root Mean Square Error of Approximation (RMSEA; $\leq$ .05), indicate good model fit (Kline, 2005). Across the assessments, model fit statistics indicated good model fit, though the TLI values for the Network Administration and Web Development assessments would be considered acceptable rather than good. These results support a common transition readiness construct, as well as separate academic, employability, and occupational constructs that are distinct from transition readiness. The bifactor model is often used to warrant the reporting of an overall test score along with subscores (DeMars, 2013).

### Table 8. Confirmatory Factor Analysis: Model Fit

| Test | Standard Model Fit Indices CFI | Standard Model Fit Indices TLI | Standard Model Fit Indices RMSEA (90% C.I.) |
|---|---|---|---|
| Accounting | .962 | .960 | .010 (.007-.013) |
| Administrative Support Services | .974 | .973 | .011 (.010-.012) |
| Ag Power | .950 | .948 | .015 (.014-.016) |
| Agribiotechnology (insufficient sample size) | | | |
| Agribusiness | *.981* | *.980* | *.009 (.004-.012)* |
| Allied Health | .976 | .975 | .011 (.010-.011) |
| Animal Science | .952 | .950 | .014 (.014-.015) |
| Automotive Technology | .961 | .959 | .012 (.009-.014) |
| Business Management | .981 | .981 | .010 (.009-.011) |
| Collision Repair (insufficient sample size) | | | |
| Computerized Manufacturing | .965 | .964 | .009 (.000-.014) |
| Computer Programming | *.953* | *.951* | *.011 (.004-.015)* |
| Consumer & Family Management | .982 | .981 | .011 (.010-.012) |
| Culinary & Food Services | .975 | .974 | .010 (.009-.011) |
| Early Childhood Education | *.981* | *.980* | *.008 (.007-.010)* |
| Environmental Science | *.954* | *.952* | *.012 (.009-.015)* |
| Fashion & Interior Design | *.955* | *.953* | *.011 (.000-.017)* |
| Financial Services | *.977* | *.976* | *.008 (.002-.011)* |
| Food Science (insufficient sample size) | | | |
| Horticulture | .968 | .966 | .012 (.011-.013) |

(continued)

## Table 8. Confirmatory Factor Analysis: Model Fit (continued)

| Test | Standard Model Fit Indices CFI | Standard Model Fit Indices TLI | Standard Model Fit Indices RMSEA (90% C.I.) |
|---|---|---|---|
| Hospitality (insufficient sample size) | | | |
| Information Support | .966 | .964 | .010 (.000-.014) |
| Marketing | *.986* | *.985* | *.008 (.007-.010)* |
| Network Administration | *.931* | *.928* | *.011 (.000-.016)* |
| Production Crop (insufficient sample size) | | | |
| Retail Services (insufficient sample size) | | | |
| Web Development | .942 | .940 | .010 (.000-.015) |
| Welding | .971 | .970 | .009 (.007-.011) |

*Note.* Values presented in *italics* reflect models in which one common employability item had to be removed due to high levels of correlation with one or more other items (i.e., not positive definite). For the Fashion & Interior Design bifactor model, the employability item and an academic item had to be removed. 90% CI accounts for measurement error in the estimation of the RMSEA statistic.

While model fit provides evidence that the patterns of test responses fit with the intended structure of the test, the factor loadings provide an indication of the strength of the relationship between the items and the construct they are intended to measure. In the context of the bifactor model that was employed in the current analysis, loadings for the academic skills, employability skills, and occupational skills factors represent the strength of the relationship between items and the specific readiness factor, after controlling for transition readiness in general.

Table 9 presents an example of the factor loadings from the Accounting test (see Appendix B for all CFA results). Generally speaking, standardized factor loadings greater than .45 are considered fair and those greater than .55 are considered good (Di Stefano & Hess, 2005). Factor loadings with a two-tailed p-value less than .05 are not statistically significantly from 0. The loadings for the general transition readiness factor are presented in the bottommost portion of the table. Less than half of the factor loadings are considered fair, reflecting an overall lack of strength in terms of how well the group of items measure a common factor. Looking at the factor loadings for the academic, employability, and occupational factors indicate that after controlling for the relationship among test items that is accounted for by a general transition readiness factor, only a very small number of items have adequate factor loadings. If bifactor model factor loadings are high on the general factor but low on the specific factors, it is arguable that a single factor score is most appropriate for reporting purposes (DeMars, 2013).

**Table 9. Standardized Factor Loadings - Bifactor Model - Accounting**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.041 | 0.086 | 0.632 |
| Q2 | 0.047 | 0.061 | 0.442 |
| Q4 | 0.086 | 0.070 | 0.223 |
| Q5 | 0.092 | 0.068 | 0.181 |
| Q56 | -0.136 | 0.086 | 0.114 |
| Q62 | -0.054 | 0.065 | 0.407 |
| Q68 | -0.029 | 0.056 | 0.609 |
| Q69 | 0.147 | 0.080 | 0.068 |
| Q70 | -0.141 | 0.078 | 0.071 |
| Q72 | 0.031 | 0.072 | 0.666 |
| Q73 | -0.014 | 0.073 | 0.848 |
| Q74 | 0.036 | 0.061 | 0.547 |
| Q75 | 0.000 | 0.063 | 0.997 |
| Q76 | -0.043 | 0.087 | 0.623 |
| Q77 | 0.041 | 0.064 | 0.518 |
| Q78 | -0.029 | 0.069 | 0.677 |
| Q80 | -0.050 | 0.059 | 0.399 |
| Q81 | -0.010 | 0.058 | 0.867 |
| Q94 | -0.077 | 0.064 | 0.229 |
| Q95 | -0.022 | 0.062 | 0.719 |
| Q96 | -0.004 | 0.063 | 0.944 |
| Q97 | 0.028 | 0.059 | 0.638 |
| Q99 | 0.594 | 0.099 | 0.000 |
| Q106 | -0.163 | 0.063 | 0.010 |
| Q110 | 0.932 | 0.141 | 0.000 |
| Employability | | | |
| Q6 | -0.111 | 0.105 | 0.287 |
| Q7 | 0.215 | 0.093 | 0.020 |
| Q8 | -0.006 | 0.087 | 0.941 |
| Q10 | -0.094 | 0.086 | 0.277 |
| Q13 | 0.099 | 0.092 | 0.283 |
| Q57 | 0.196 | 0.076 | 0.010 |
| Q64 | 0.003 | 0.078 | 0.971 |
| Q65 | 0.001 | 0.086 | 0.991 |
| Q82 | 0.065 | 0.086 | 0.452 |
| Q83 | 0.041 | 0.101 | 0.686 |
| Q84 | -0.058 | 0.092 | 0.526 |
| Q85 | -0.037 | 0.085 | 0.669 |
| Q87 | 0.183 | 0.118 | 0.119 |
| Q88 | 0.223 | 0.083 | 0.007 |
| Q89 | -0.029 | 0.091 | 0.751 |

(continued)

## Table 9. Standardized Factor Loadings - Bifactor Model - Accounting (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | n/a | n/a | n/a |
| Q90 | 0.211 | 0.090 | 0.019 |
| Q91 | 0.146 | 0.101 | 0.149 |
| Q92 | 0.179 | 0.081 | 0.027 |
| Q93 | 0.159 | 0.093 | 0.085 |
| Q100 | 0.487 | 0.091 | 0.000 |
| Q101 | 0.504 | 0.085 | 0.000 |
| Q102 | 0.773 | 0.134 | 0.000 |
| Q103 | 0.182 | 0.098 | 0.063 |
| Q108 | 0.069 | 0.103 | 0.504 |
| Q109 | 0.315 | 0.096 | 0.001 |
| Occupational | | | |
| Q14 | 0.086 | 0.063 | 0.174 |
| Q15 | 0.066 | 0.060 | 0.267 |
| Q16 | -0.088 | 0.070 | 0.207 |
| Q17 | 0.068 | 0.065 | 0.288 |
| Q18 | 0.016 | 0.060 | 0.790 |
| Q19 | 0.257 | 0.065 | 0.000 |
| Q20 | 0.275 | 0.061 | 0.000 |
| Q21 | -0.037 | 0.062 | 0.551 |
| Q23 | 0.030 | 0.059 | 0.612 |
| Q24 | 0.296 | 0.051 | 0.000 |
| Q25 | 0.149 | 0.065 | 0.022 |
| Q26 | 0.013 | 0.071 | 0.859 |
| Q27 | 0.034 | 0.064 | 0.595 |
| Q29 | 0.003 | 0.059 | 0.957 |
| Q31 | -0.029 | 0.063 | 0.646 |
| Q35 | 0.217 | 0.062 | 0.000 |
| Q36 | 0.205 | 0.053 | 0.000 |
| Q37 | 0.202 | 0.060 | 0.001 |
| Q38 | 0.413 | 0.057 | 0.000 |
| Q39 | 0.248 | 0.066 | 0.000 |
| Q40 | 0.214 | 0.057 | 0.000 |
| Q41 | 0.472 | 0.057 | 0.000 |
| Q42 | -0.158 | 0.078 | 0.042 |
| Q43 | 0.043 | 0.062 | 0.488 |
| Q44 | 0.227 | 0.068 | 0.001 |
| Q45 | -0.027 | 0.061 | 0.660 |
| Q46 | 0.103 | 0.062 | 0.097 |
| Q47 | 0.359 | 0.061 | 0.000 |
| Q48 | 0.270 | 0.064 | 0.000 |
| Q49 | 0.269 | 0.057 | 0.000 |
| Q51 | 0.057 | 0.057 | 0.320 |

(continued)

*Table 9. Standardized Factor Loadings - Bifactor Model - Accounting (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q52 | 0.334 | 0.058 | 0.000 |
| Q53 | 0.287 | 0.059 | 0.000 |
| Q54 | 0.173 | 0.061 | 0.005 |
| Q55 | 0.183 | 0.064 | 0.004 |
| Q58 | 0.144 | 0.054 | 0.008 |
| Q59 | 0.045 | 0.055 | 0.412 |
| Q60 | 0.112 | 0.055 | 0.043 |
| Q61 | 0.178 | 0.091 | 0.050 |
| Q66 | 0.446 | 0.053 | 0.000 |
| Q67 | 0.300 | 0.057 | 0.000 |
| Q104 | 0.379 | 0.057 | 0.000 |
| Q105 | 0.327 | 0.058 | 0.000 |
| Q111 | 0.208 | 0.072 | 0.004 |
| Q112 | -0.070 | 0.063 | 0.263 |
| Q113 | -0.068 | 0.064 | 0.287 |
| Q114 | 0.290 | 0.066 | 0.000 |
| Q115 | 0.286 | 0.058 | 0.000 |
| Q117 | 0.232 | 0.065 | 0.000 |
| Q120 | 0.155 | 0.067 | 0.021 |
| Transition Readiness | n/a | n/a | n/a |
| Q1 | 0.443 | 0.084 | 0.000 |
| Q2 | 0.367 | 0.047 | 0.000 |
| Q4 | 0.500 | 0.054 | 0.000 |
| Q5 | 0.424 | 0.061 | 0.000 |
| Q6 | 0.417 | 0.060 | 0.000 |
| Q7 | 0.458 | 0.059 | 0.000 |
| Q8 | 0.352 | 0.049 | 0.000 |
| Q10 | 0.591 | 0.043 | 0.000 |
| Q13 | 0.310 | 0.053 | 0.000 |
| Q14 | 0.296 | 0.049 | 0.000 |
| Q15 | 0.688 | 0.045 | 0.000 |
| Q16 | 0.343 | 0.062 | 0.000 |
| Q17 | 0.071 | 0.053 | 0.178 |
| Q18 | 0.497 | 0.044 | 0.000 |
| Q19 | 0.284 | 0.057 | 0.000 |
| Q20 | 0.249 | 0.051 | 0.000 |
| Q21 | 0.166 | 0.051 | 0.001 |
| Q23 | 0.367 | 0.048 | 0.000 |
| Q24 | 0.500 | 0.041 | 0.000 |
| Q25 | 0.175 | 0.054 | 0.001 |
| Q26 | 0.382 | 0.060 | 0.000 |

(continued)

*Table 9. Standardized Factor Loadings - Bifactor Model - Accounting (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q27 | 0.327 | 0.051 | 0.000 |
| Q29 | 0.517 | 0.046 | 0.000 |
| Q31 | 0.330 | 0.050 | 0.000 |
| Q35 | 0.229 | 0.051 | 0.000 |
| Q36 | 0.484 | 0.044 | 0.000 |
| Q37 | 0.422 | 0.048 | 0.000 |
| Q38 | 0.310 | 0.049 | 0.000 |
| Q39 | 0.321 | 0.051 | 0.000 |
| Q40 | 0.324 | 0.049 | 0.000 |
| Q41 | 0.216 | 0.051 | 0.000 |
| Q42 | 0.508 | 0.062 | 0.000 |
| Q43 | 0.286 | 0.050 | 0.000 |
| Q44 | 0.133 | 0.054 | 0.014 |
| Q45 | 0.280 | 0.050 | 0.000 |
| Q46 | 0.379 | 0.051 | 0.000 |
| Q47 | 0.198 | 0.054 | 0.000 |
| Q48 | 0.177 | 0.054 | 0.001 |
| Q49 | 0.363 | 0.048 | 0.000 |
| Q51 | 0.549 | 0.045 | 0.000 |
| Q52 | 0.216 | 0.050 | 0.000 |
| Q53 | 0.310 | 0.050 | 0.000 |
| Q54 | 0.408 | 0.049 | 0.000 |
| Q55 | 0.133 | 0.052 | 0.010 |
| Q56 | 0.274 | 0.078 | 0.000 |
| Q57 | 0.407 | 0.047 | 0.000 |
| Q58 | 0.680 | 0.041 | 0.000 |
| Q59 | 0.649 | 0.040 | 0.000 |
| Q60 | 0.559 | 0.041 | 0.000 |
| Q61 | 0.321 | 0.081 | 0.000 |
| Q62 | 0.622 | 0.048 | 0.000 |
| Q64 | 0.516 | 0.044 | 0.000 |
| Q65 | 0.638 | 0.041 | 0.000 |
| Q66 | 0.531 | 0.044 | 0.000 |
| Q67 | 0.358 | 0.048 | 0.000 |
| Q68 | 0.533 | 0.043 | 0.000 |
| Q69 | 0.394 | 0.081 | 0.000 |
| Q70 | 0.573 | 0.059 | 0.000 |
| Q72 | 0.551 | 0.059 | 0.000 |
| Q73 | 0.586 | 0.051 | 0.000 |
| Q74 | 0.319 | 0.048 | 0.000 |

(continued)

*Table 9. Standardized Factor Loadings - Bifactor Model - Accounting (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q75 | 0.426 | 0.054 | 0.000 |
| Q76 | 0.251 | 0.089 | 0.005 |
| Q77 | 0.680 | 0.042 | 0.000 |
| Q78 | 0.455 | 0.052 | 0.000 |
| Q80 | 0.618 | 0.040 | 0.000 |
| Q81 | 0.604 | 0.043 | 0.000 |
| Q82 | 0.349 | 0.047 | 0.000 |
| Q83 | 0.526 | 0.053 | 0.000 |
| Q84 | 0.569 | 0.049 | 0.000 |
| Q85 | 0.522 | 0.042 | 0.000 |
| Q87 | 0.524 | 0.079 | 0.000 |
| Q88 | 0.436 | 0.053 | 0.000 |
| Q89 | 0.320 | 0.050 | 0.000 |
| Q90 | 0.331 | 0.059 | 0.000 |
| Q91 | 0.692 | 0.058 | 0.000 |
| Q92 | 0.668 | 0.048 | 0.000 |
| Q93 | 0.376 | 0.065 | 0.000 |
| Q94 | 0.411 | 0.054 | 0.000 |
| Q95 | 0.097 | 0.054 | 0.072 |
| Q96 | 0.268 | 0.055 | 0.000 |
| Q97 | 0.601 | 0.044 | 0.000 |
| Q99 | 0.418 | 0.049 | 0.000 |
| Q100 | 0.088 | 0.063 | 0.160 |
| Q101 | 0.489 | 0.065 | 0.000 |
| Q102 | 0.720 | 0.073 | 0.000 |
| Q103 | 0.581 | 0.055 | 0.000 |
| Q104 | 0.541 | 0.045 | 0.000 |
| Q105 | 0.434 | 0.045 | 0.000 |
| Q106 | 0.366 | 0.050 | 0.000 |
| Q108 | 0.522 | 0.061 | 0.000 |
| Q109 | 0.270 | 0.063 | 0.000 |
| Q110 | 0.377 | 0.048 | 0.000 |
| Q111 | 0.168 | 0.056 | 0.003 |
| Q112 | 0.306 | 0.049 | 0.000 |
| Q113 | 0.267 | 0.054 | 0.000 |
| Q114 | 0.215 | 0.056 | 0.000 |
| Q115 | 0.334 | 0.047 | 0.000 |
| Q117 | 0.128 | 0.055 | 0.019 |
| Q120 | 0.006 | 0.057 | 0.915 |

## Classification Accuracy

Coefficient alpha, in conjunction with total test variability, can be used to quantify the likelihood of correct classification into reporting categories, such as pass/fail. Table 10 shows that classification accuracy rates across the KOSSA assessments ranged from approximately 88% to approximately 97%, which is comparable to classification accuracy rates found in other state accountability systems (Dickinson, Levinson, Thacker, & Hoffman, 2013). Agribiotechnology has a noticeably high classification accuracy rate in part due to the fact that most students scored well below the passing score. Correct classification is more likely the further away from the cut score. Due to error that is inherent in measurement, it is possible that a student's observed score is different than their unobservable "true" score. Students scoring closer to the cut score therefore are more likely to be misclassified.

### *Table 10. 2017 Classification Accuracy*

| Test | N | % Accurately Classified |
|---|---|---|
| Accounting | 683 | 88.65 |
| Administrative Support Services | 2,361 | 90.49 |
| Ag Power | 1,506 | 88.80 |
| Agribiotechnology | 20 | 96.90 |
| Agribusiness | 538 | 89.90 |
| Allied Health | 3,817 | 89.80 |
| Animal Science | 2,646 | 88.33 |
| Automotive Technology | 722 | 88.78 |
| Business Management | 1,883 | 90.77 |
| Collision Repair | 124 | 94.79 |
| Computerized Manufacturing | 311 | 90.16 |
| Computer Programming | 353 | 92.85 |
| Consumer & Family Management | 1,808 | 92.00 |
| Culinary & Food Services | 1,618 | 90.48 |
| Early Childhood Education | 1,442 | 90.66 |
| Environmental Science | 542 | 90.40 |
| Fashion & Interior Design | 215 | 89.91 |
| Financial Services | 609 | 92.64 |
| Food Science | 124 | 87.50 |
| Horticulture | 2,086 | 88.96 |
| Hospitality | 70 | 93.74 |
| Information Support | 354 | 89.61 |
| Marketing | 1,375 | 93.50 |
| Network Administration | 261 | 91.49 |
| Production Crop | 74 | 89.48 |
| Retail Services | 132 | 92.45 |
| Web Development | 280 | 89.34 |
| Welding | 922 | 87.22 |

*Note.* Results for tests with sample sizes less than 100 should be interpreted with caution.

## *Discussion*

Across the KOSSA tests, scores tended to be somewhat negatively skewed. One concern about this is that it violates assumptions of normality that underlie most common statistical analyses. However, other distributional issues, such as restriction of range, did not appear to be a concern. Restriction of range attenuates the value of correlations, which impacts the evaluation of test score reliability. Task 3 will explore how transition to an IRT model could mitigate issues related to the shape of the raw score distribution.

KOSSA tests' internal consistency reliability coefficients, which provide an indication of the extent to which test scores are free from error related to inconsistencies among test items, tend to fall within the desired range. This is the case for both total test scores, and for sub scores. One concern is that the length of the tests contributes to these high levels of internal consistency reliability, and essentially masks low inter-item correlations. The results of this task do in fact raise concerns about the relations among the test items. It may be useful to closely scrutinize the operational item sets and determine if there are any obvious content-related concerns about the inclusion of certain items. Reducing the overall number of items, while at the same time strengthening the consistency of test content, may increase interitem correlations, which could counterbalance the impact of a reduction in test length on alpha coefficients.

CFA analyses provide additional information about inter-item relationships. Specifically, CFA results provide an indication of the appropriateness of viewing a set of items as representing a common factor. CFA analysis was used to determine if KOSSA data fit well with the conceptual model in which items were designated as measuring *transition readiness* and its distinct subcomponents. Such a conceptual model supports the reporting of an overall score and subscores, should KDE opt to move in that direction for KOSSA reporting. Although model fit statistics support that KOSSA response data reflect a general readiness factor and three specific readiness factors, factor loadings indicate that it may not be appropriate to derive subscores without some sort of weighting scheme.

For several assessments, one particular item[2] proved problematic for one or more of the CFA models, due to its near-perfect correlation with one or more other items. When this item was removed, those models were estimated normally. This item was one that tended to be flagged for item quality issues, so it may be worth considering removing this item from subsequent versions of the tests.

Student classification accuracy rates tend to be comparable to other testing systems that employ a single cut score. Classification accuracy is highly influenced by the reliability coefficient. Issues related to inflation of reliability therefore have implications for the accuracy of student classifications. Classification accuracy is also dependent on standard error of measurement (SEM), which was a single value across all student score levels. Moving from a CTT model to an IRT model, will allow for conditional SEM values to be calculated, thereby recognizing differences in precision in estimating student ability at different levels of test performance.

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[2] Although item-level details are not presented in this report, this item has been identified for KDE.

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# Task 3: Exploration of a Plan for Scaling and Equating

Unlike CTT, Item Response Theory (IRT) is not highly dependent on the test form and sample of test takers. IRT offers greater flexibility than CTT by linking item responses with ability level, and then reporting item statistics and ability levels on the same metric. This allows for a more precise understanding of the relationship between how a student responds to an item and their underlying ability.

IRT models also facilitate the movement from a simple percentage correct scale toward a more robust reporting scale. A reporting scale would allow educators to characterize their students' performance in terms of distance to the cut score on an ability scale. It would also allow for much better tracking of student performance across years.

There are several IRT models to choose from, each modeling a different subset of item characteristics. The simplest of these is the Rasch model; which estimates a single item parameter associated with each possible score point for a given item (the item's difficulty level), and a single person parameter that reflects a test taker's level of the trait (i.e., career readiness) being measured (Rasch, 1961). This section explores the benefits of moving the KOSSA assessments to an IRT scaling model.

## Methods

To explore IRT scaling of the KOSSA assessments, HumRRO estimated IRT parameters for the operational items for each assessment using WINSTEPS v. 3.53. This process produced additional information about the quality of the test items, along with an estimation of the student ability level (theta) associated with each possible raw score point.

Theta values range from negative to positive infinity, and so are rarely used for reporting purposes. We converted student raw scores to an example scale by identifying the theta value associated with a raw score of 70 (the current KOSSA passing score) for each test and then determining the linear transformation that would convert that theta value to 210 (the current K-PREP proficiency cut). We did this by setting the slope at 30, which allowed for a reasonable range of scale scores. This linear transformation was then applied to the theta value associated with each raw score. This yielded a distribution of student scores on a new scale.

Employing IRT also has benefits for the comparison of students' scores from year-to-year. Although there are many approaches to equating different administrations of a test, large-scale assessments such as KOSSA typically use a set of items that are administered across test administration years (i.e., anchor items). Simply put, the differences in item parameters from the two test administrations can be used to calculate an intercept and slope that are then used to put the current year test onto the previous year's scale. This approach does require that the set of anchor items have relatively stable item parameters from year to year. To explore the quality of KOSSA items for use in an anchor set, we estimated item parameters for the 2016 administration and then evaluated the extent to which item parameters "drifted" from one year to the next.

## Results

Model fit concerns the extent to which test data correspond with the theoretical IRT model. Poorly fitting items have implications for how accurately student ability is estimated. Winsteps produces two statistics that are useful for identifying any potentially problematic items. The

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standardized infit is an information-weighted fit statistic that is sensitive to unexpected item performance near a person's estimated ability level. The standardized outfit is an outlier-sensitive fit statistic that is sensitive to unexpected item performance far from a person's estimated ability level.

Infit and Outfit statistics greater than 1.5 are considered unproductive for measurement[3]. Table 11 summarizes the number of items flagged for misfit on each KOSSA assessment. Across the tests, no items were flagged for infit, and between 0-6 items were flagged for outfit. Poor fit does not necessarily mean that items must be discarded, but that it may be appropriate to use an alternative approach to the parameter estimation process to minimize the influence of these items (e.g., estimate good fitting items and then estimate poor fitting items by anchoring them to the good items' parameters).

*Table 11. IRT Item Quality Indicators (N items = 100)*

| Test | % > 1.5 Infit | % > 1.5 Outfit |
|---|---|---|
| Accounting | 0 | 0 |
| Administrative Support Services | 0 | 1 |
| Ag Power | 0 | 1 |
| Agribiotechnology | 0 | 6 |
| Agribusiness | 0 | 1 |
| Allied Health | 0 | 0 |
| Animal Science | 0 | 0 |
| Automotive Technology | 0 | 1 |
| Business Management | 0 | 1 |
| Collision Repair | 0 | 0 |
| Computerized Manufacturing | 0 | 1 |
| Computer Programming | 0 | 0 |
| Consumer & Family Management | 0 | 1 |
| Culinary & Food Services | 0 | 0 |
| Early Childhood Education | 0 | 1 |
| Environmental Science | 0 | 0 |
| Fashion & Interior Design | 0 | 0 |
| Financial Services | 0 | 1 |
| Food Science | 0 | 2 |
| Horticulture | 0 | 0 |
| Hospitality | 0 | 2 |
| Information Support | 0 | 0 |
| Marketing | 0 | 1 |
| Network Administration | 0 | 1 |
| Production Crop | 0 | 6 |
| Retail Services | 0 | 1 |
| Web Development | 0 | 1 |
| Welding | 0 | 0 |

Winsteps also outputs person and item separation and reliability indexes, which further inform the quality of the set of items. Person separation is used to classify people. Low values for

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[3] https://www.winsteps.com/winman/misfitdiagnosis.htm

person separation (less than 2) and reliability (less than 0.8) indicate that the test items may not be distinguishing well among high and low performing students. Low values for item separation (less than 3) and reliability (less than 0.9) indicate that the tested sample may be too small to produce stable parameter estimates.[4]

Table 12 shows that across the tests, person separation and reliability statistics meet established criteria. Only those tests with the smallest numbers of students tested demonstrated item separation and/or reliability statistics below the established criteria. As KOSSA expands the population of tested students, it is anticipated that these values will increase.

*Table 12. IRT Reliability Statistics*

| Test | N | Person Separation | Person Reliability | Item Separation | Item Reliability |
|---|---|---|---|---|---|
| Accounting | 683 | 2.81 | .89 | 10.64 | .99 |
| Administrative Support Services | 2,361 | 2.94 | .90 | 18.37 | 1.00 |
| Ag Power | 1,506 | 2.93 | .90 | 14.15 | 1.00 |
| Agribiotechnology | 20 | 2.15 | .82 | 1.92 | .79 |
| Agribusiness | 538 | 3.10 | .91 | 8.65 | .99 |
| Allied Health | 3,817 | 2.57 | .87 | 23.03 | 1.00 |
| Animal Science | 2,646 | 2.79 | .89 | 18.28 | 1.00 |
| Automotive Technology | 722 | 2.87 | .89 | 10.12 | .99 |
| Business Management | 1,883 | 3.08 | .90 | 16.45 | 1.00 |
| Collision Repair | 124 | 2.51 | .86 | 4.29 | .95 |
| Computerized Manufacturing | 311 | 2.81 | .89 | 7.23 | .98 |
| Computer Programming | 353 | 2.83 | .89 | 6.64 | .98 |
| Consumer & Family Management | 1,808 | 3.25 | .91 | 14.58 | 1.00 |
| Culinary & Food Services | 1,618 | 2.91 | .89 | 14.31 | 1.00 |
| Early Childhood Education | 1,442 | 2.82 | .89 | 14.38 | 1.00 |
| Environmental Science | 542 | 2.98 | .90 | 8.30 | .99 |
| Fashion & Interior Design | 215 | 3.01 | .90 | 5.53 | .97 |
| Financial Services | 609 | 2.75 | .88 | 8.24 | .99 |
| Food Science | 124 | 2.89 | .89 | 4.38 | .95 |
| Horticulture | 2,086 | 2.83 | .89 | 19.03 | 1.00 |
| Hospitality | 70 | 3.02 | .90 | 2.80 | .89 |
| Information Support | 354 | 2.93 | .90 | 6.86 | .98 |
| Marketing | 1,375 | 3.05 | .90 | 12.51 | .99 |
| Network Administration | 261 | 2.54 | .87 | 5.79 | .97 |
| Production Crop | 74 | 3.36 | .92 | 3.24 | .91 |
| Retail Services | 132 | 3.01 | .90 | 3.34 | .92 |
| Web Development | 280 | 2.60 | .87 | 6.50 | .98 |
| Welding | 922 | 2.76 | .88 | 11.74 | .99 |

Figure 2 depicts the distributions of students' scores on each KOSSA assessment, after IRT-based estimates of student ability were transformed to a hypothetical reporting scale. Compared to Figure 1, these distributions better conform to the normal bell-shaped distribution, without the negative skew. Normality of score distributions is a major assumption of many statistical

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[4] https://www.winsteps.com/winman/reliability.htm

models, which is important for subsequent validity investigations (e.g., predicting student outcomes from test scores).
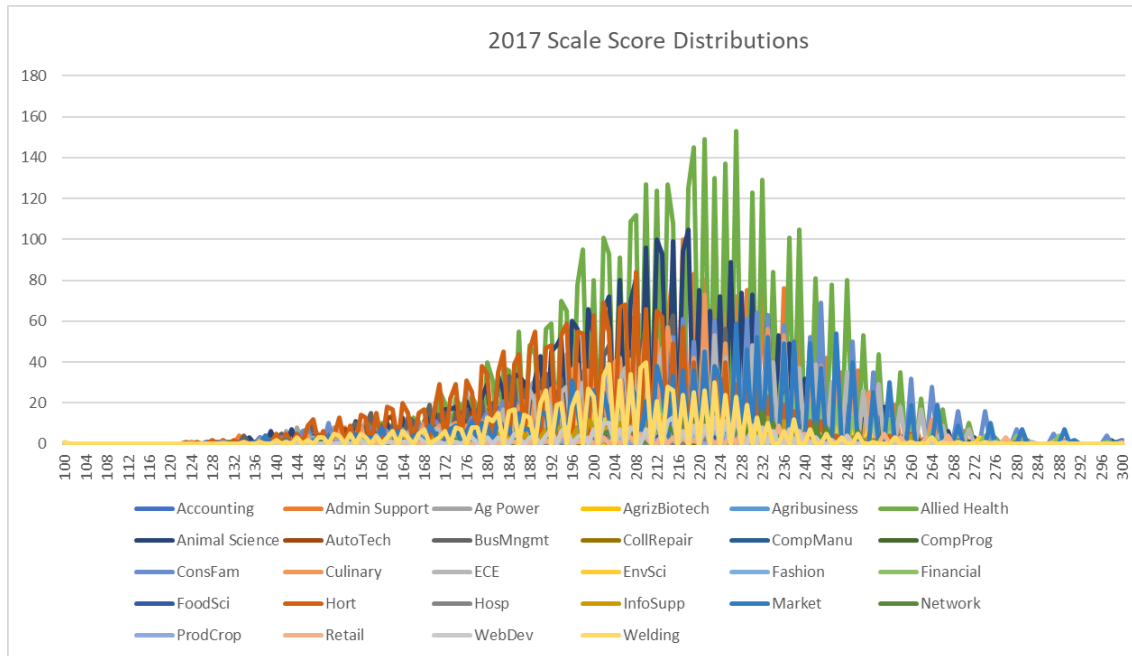


*Figure 2. 2017 KOSSA scaled score distributions*

Item parameter drift was evaluated using the robust Z statistic. Robust Z provides an indication of whether the observed change in item parameters across two test administrations is considered an outlier compared to other parameter changes. If the robust Z value for an item is smaller in absolute value than a critical value (in this case 1.96, or 95% confidence), then the item is considered stable. If the robust Z value is greater than the critical value, then the item is considered unstable. Ideally, an anchor set will consist of stable items, and unstable items may be removed from the anchor set to achieve a more accurate equating solution.

To explore the quality of the pool of KOSSA items for developing an anchor set, we calculated robust Z for operational 2016 items that were repeated as operational items in 2017. Flagged items would be inappropriate for use in an anchor set. Table 13 summarizes the number of potential anchor items available, after flagging for item drift. For all tests, between 40 and 75 had stable parameters, suggesting that they may be appropriate for use as anchors. Too few anchor items are potentially problematic for equating tests, so having a large item pool to draw from is helpful. It is important to note that this analysis is only intended to inform the quality of the KOSSA item pool for supporting the transition to an equating model. Anchor items will need to be carefully selected for content representation and will need to be evaluated for parameter drift after subsequent test administrations. Because robust Z values are dependent on the other items in the anchor set, removal of one flagged item may result in other items no longer being flagged for removal.

**Table 13. Evaluation of Potential Anchor Items**

| Test | Number of Repeated Items | Number of Items Flagged for Drift | Number of Potential Anchor Items |
|---|---|---|---|
| Accounting | 72 | 12 | 60 |
| Administrative Support Services | 74 | 4 | 70 |
| Ag Power | 86 | 14 | 72 |
| Agribiotechnology | 76 | 5 | 71 |
| Agribusiness | 87 | 12 | 75 |
| Allied Health | 76 | 5 | 71 |
| Animal Science | 76 | 8 | 68 |
| Automotive Technology | 70 | 11 | 59 |
| Business Management | 70 | 4 | 66 |
| Collision Repair (Not Administered in 2016) | | | |
| Computerized Manufacturing (Not Administered in 2016 | | | |
| Computer Programming | 70 | 4 | 66 |
| Consumer & Family Management | 76 | 8 | 68 |
| Culinary & Food Services | 71 | 6 | 65 |
| Early Childhood Education | 74 | 8 | 66 |
| Environmental Science | 69 | 2 | 67 |
| Fashion & Interior Design | 51 | 11 | 40 |
| Financial Services | 72 | 20 | 52 |
| Food Science | 81 | 7 | 74 |
| Horticulture | 71 | 4 | 67 |
| Hospitality | 72 | 7 | 65 |
| Information Support | 69 | 6 | 63 |
| Marketing | 74 | 7 | 67 |
| Network Administration | 68 | 2 | 66 |
| Production Crop | 76 | 6 | 70 |
| Retail Services | 70 | 15 | 55 |
| Web Development | 71 | 9 | 62 |
| Welding | 65 | 6 | 59 |

## Discussion

Transitioning to an IRT model offers many benefits for KOSSA. First, it produces item difficulty parameters that are not test form-dependent. This would mitigate the issues related to the small numbers of students who take particular KOSSA tests. For example, item parameters for academic and employability items that are common to all KOSSA tests could be estimated at once, and then item parameters for occupational items could be placed on the same scale. This would allow the tests with small sample sizes to "borrow" from tests that are administered to large numbers of students.

An IRT approach increases flexibility for building test forms, allowing for alternate forms to be created at similar difficulty levels. IRT also produces ability scores for students that share a common metric with those item parameters. These ability scores are on an interval scale that can readily be transformed for ease of reporting. This process can mitigate any undesirable properties of the distribution of raw scores.

KOSSA items tended to demonstrate acceptable levels of model fit, indicating that a transition to a Rasch model would be appropriate. Similarly, IRT reliability statistics met established benchmarks, with only the exception of those tests in which only a small number of students participated in 2017. At this stage, we can only recommend a Rasch model because it requires the fewest examinees to generate stable parameters. Other IRT models, that typically contain additional parameters, require more examinees. KOSSA simply does not have sufficient numbers of examinees for many tests to support other IRT models.

IRT item parameters can also be used to account for differences in the difficulty level of test forms when comparing scores across test administrations. Through an equating process, scores from different administrations can be made comparable, allowing KDE to draw stronger inferences about student gains in transition readiness. A relatively large proportion of KOSSA items demonstrated stable item parameters between 2016 and 2017, supporting their suitability for use in a common-items equating design.

## Task 4: Recommendation of a Standards Setting Method

The *Standards for Educational and Psychological Testing* (heretofore referred to as the *Standards*), which outline best practices for educational assessments, state that cut scores used to classify examinees into categories such as passing/failing must be well-documented, including a detailed rationale (AERA, APA, & NCME, 2014). KOSSA currently uses a percent correct cut score to determine passing, but there is limited evidence to explain and support this approach. HumRRO proposes moving the KOSSA system to a more formal standard setting method, thereby demonstrating adherence to industry standards and expanding KOSSA's overall validity evidence. This section proposes a standard setting method for future KOSSA administration years.

The hypothetical scaling described in the Task 3 section, in which the IRT-based ability (theta) level associated with a raw score of 70 was transformed to a reporting scale, is an example of mathematical standard setting. This is a relatively simple approach that has the benefit of maintaining the interpretation of "passing" from prior KOSSA administrations. However, it does little to help us understand what adequate student performance on KOSSA should look like.

For tests such as KOSSA that are composed of multiple-choice questions, the Angoff approach to standard setting is frequently used and has been thoroughly researched. This method requires panelists (subject matter experts) to judge whether a "just qualified (minimally competent) candidate" would answer each item correctly or incorrectly. These judgements are aggregated to generate a passing score. The modified Angoff method, built upon Angoff's originally proposed method, involves expert panelists indicating the probability of a correct response to each test item by an examinee who just meets the intended standard of performance (i.e., minimally competent). Thus, the recommended cut score that comes out of such a process reflects subject matter expert's opinions about appropriate levels of student performance.

The remainder of this section discusses some considerations for implementing standard setting. KDE should reflect on these elements of the process when planning any future standard setting efforts.

## Selecting and Recruiting Panelists

Standard setting panelists are typically experts in the subject matter tested, but may also represent a variety of stakeholders with some knowledge about the content and the tested population (Cizek, 1996). For example, a KOSSA standard setting may include both educators and industry representatives. What is important is that careful thought be given to expected qualifications, and that these be outlined *a priori*. The *Standards* recommend that when judgmental standard setting is employed, that the selection and qualification of panelists should be well-documented.

The number of panelists should be sufficiently large to be demographically representative and to minimize measurement error. However, the size of panels should be considered along with practical considerations such as budget, staffing, and space. KDE may consider if standard setting for multiple KOSSA tests could be conducted by the same panel to reduce such costs.

## Training Panelists

Training standard setting panelists prior to beginning the process of rating test items is essential. Of particular importance is ensuring that all panelists understand the process and reach a common understanding of the knowledge, skills, and abilities of examinees who would be expected to perform at a minimally acceptable level. Panelists should be cautioned against thinking about specific students when they are conceptualizing minimal competence, but rather think in the abstract sense.

Early consideration should be given to the handling of situations such as panelists not understanding the task or providing ratings that are consistently out of step with the rest of the group. For example, if panelists take the KOSSA exam as part of the process and one or more of them fail the test, it is likely that their judgements should be removed from final calculations.

## The Rating Process

The modified Angoff method typically includes two or more rounds of ratings, with the presentation of empirical data to panelists between rounds (Cizek, 1996). This provides panelists with a "reality check" by allowing them to compare their expectations about student performance with actual student performance data. Typically, panelists are presented with average item performance across all examinees, but item performance may also be presented by total score deciles, which would provide information about how well each item differentiates among different levels of student performance (Plake, 1998).

It is also important that evaluation be built into the standard setting process. This includes gauging panelists understandings of and attitudes about the standard setting process at the end of training, as well as collecting information about the quality of the workshop processes, procedures, and facilities at the end of the meeting. Validity evidence for cut scores is strengthened when participants report confidence in the fidelity of the standard setting meeting.

## Accounting for KOSSA's Structure

The KOSSA assessments all contain common academic and employability items. Only the occupational items are unique. For this reason, standards setting may need to be conducted in stages. One panel might set an "interim" passing standards for the common items only. Then additional panels might be brought in to add information about the occupational items. The

information would need to be combined to set a single overall passing score for each KOSSA assessment, but this might make the definition of academic and employability preparation on KOSSA more consistent across assessments. The specific method for combining the information from each panel should be determined in advance of the panel meetings, but several reasonable options are available.

### *Adopting Cut Scores*

Data from the standard setting workshop will yield recommendations for cut scores, which should be taken into consideration along with other data in order to determine the final operational cut score. For example, the percentage of students who would pass (as a whole, and by subgroup) if a particular cut score is used provides an indication of the impact that cut score would have. While impact data should not be as heavily weighted as panelists' judgments, it is helpful for avoiding large inconsistencies or changes in passing rates that might be confusing to the public (Geisinger and McCormick, 2010).

## Task 5: Creating a KOSSA Validity Argument Framework

KOSSA scores have implications for students as well as for school, district, and state accountability. Students who pass KOSSA may be able to earn college credit at a participating postsecondary institution. Schools and districts may use KOSSA scores as indicators of students' career readiness. At the state level, KOSSA scores are among the performance measures reported to receive federal funding for Career and Technical Education programs.

The *Standards* outline sources of evidence that could be used to evaluate the validity of test score interpretations and uses, and this provides a good starting point for creating a validity argument framework. Five broad sources contribute to an assessments overall body of validity evidence. These are (a) evidence based on test content, (b) evidence based on response processes, (c) evidence based on internal structure, (d) evidence based on relations to other variables, and (e) evidence for validity and consequences of testing. Table 14 provides examples of assumptions underlying these types of validity evidence.

**Table 14. Basic Components of a KOSSA Validity Argument Framework**

| Test Content | Response Processes | Internal Structure | Relations to Other Variables | Consequences of Testing |
|---|---|---|---|---|
| • The content domain reflects the key knowledge, skills, and abilities for career readiness.<br>• The test content represents the content domain.<br>• The cognitive demands of the test correspond to the cognitive level reflected in the content domain. | • Test items are developed to minimize construct-irrelevant variance. | • Test items measuring one element of career readiness (academic, employability, occupational) relate in expected ways to other items measuring the same element.<br>• Test items function similarly across student subgroups. | • KOSSA scores relate to measures of same or similar constructs in anticipated ways.<br>• KOSSA scores relate to measures of different constructs in anticipated ways.<br>• KOSSA scores relate to subsequent indicators of postsecondary/job performance in anticipated ways.<br>• Relations of KOSSA scores to other measures are consistent across student subgroups. | • Unintended uses of KOSSA results are minimized. |

Table 15 highlights some areas where validity evidence is available, but also areas where there are gaps or where evidence can be strengthened. For example, item level data indicates that all KOSSA items have been designed to measure a specific content standard. This provides some validity evidence based on test content. However, expert review of the items' strength of content representation, as well as review of the appropriateness of items' cognitive complexity, would further strengthen this. Results from this report provide some evidence of the internal structure of the test. Although inter-item correlations were lower than desired, factor analysis results indicate that KOSSA items can be grouped into separate academic, employability, and occupational factors. But additional studies are needed to document that these relationships among items hold for all student subgroups.

**Table 15. Example Studies by Validity Framework Component**

| Validity Framework Component | Example Study |
|---|---|
| Test Content | 1. Evaluation of content standards by subject matter experts<br>2. Evaluation of the alignment of test items to the content standards (content match and cognitive complexity) |
| Response Process | 1. Evaluation of item development processes. |
| Internal Structure | 1. Conduct differential item functioning (DIF) analyses for key student subgroups |
| Relations to Other Variables | 1. Conduct convergent and discriminant validity analyses using KOSSA, course grades, end-of-course assessments, K-PREP, ACT, etc. |
| Consequences of Testing | 1. Conduct a survey of districts and schools to determine local perceptions about, and uses of, KOSSA results |

KDE may want to consider several future studies to fill gaps in validity evidence. In Table 15, we identify additional studies that could be used for this purpose.

Validity is a matter of degree; it is established over time through continual evaluation and documentation. As KOSSA is in relatively early stages of use in the state accountability model, it is not unexpected that there would be gaps in the available validity evidence. This task has attempted to fill some of those gaps and highlight the best direction for next steps.

It is possible that KDE has information similar to what would be output by one or more of the studies presented above, but that it is not readily available and/or in a single, comprehensive document. For example, clear documentation of the item development processes and procedures in a single report might mitigate the need for a full-blown evaluation, or would greatly reduce the work associated with such an evaluation. Similarly, items are reportedly reviewed by content experts on a regular basis, so a report summarizing these processes may mitigate the need for a full-scale alignment study. Other practical considerations, such as subgroup sample sizes, will impact the feasibility of other proposed studies.

A validity argument (as described by Kane, 2006) is a way of organizing the validity evidence for specific interpretations of test scores. For KDE to approach validation in this way, it would be very useful to create a KOSSA theory-of-action (TOA). This document (or figure) would describe the way that KOSSA is intended to function, including any impact that the test itself and the test scores are expected to elicit. From that document, we can create a series of claims and assumptions that must hold for KOSSA to achieve its intended purpose(s). Then, we collect evidence to support or refute those claims and assumptions. This process will help KDE validate KOSSA and will provide clear guidance on future improvements that may be necessary, and it will guide the KOSSA research agenda.

## Conclusions

Readiness for transitioning from high school to the postsecondary world is an area where substantial research and policy interest are currently focused. Kentucky once again finds itself at the forefront of educational assessment as it is one of the states that has formulated a statewide definition of college and career readiness and has developed its own state-level assessment for measuring career readiness (McMurrer, Frizzell & McIntosh, 2013). The current report contributes to the body of validity evidence for the KOSSA system and has offered some suggestions for next steps regarding standard setting and collecting additional validity evidence.

Overall, we find that KOSSA has a large pool of items that are of sufficient psychometric quality. KOSSA test forms tend to demonstrate high levels of internal consistency reliability, which helps to ensure that errors in students' passing classifications are minimized. Our analyses also support a transition to an IRT model. A major benefit of transitioning to the IRT model would be the ability to estimate item parameters for the common academic and employability items across all tests, thereby mitigating the impact of small student sample sizes for some of the tests. The KOSSA item pool should be sufficient for supporting a strong equating design.

Less strong is the available evidence for construct validity. The high levels of internal consistency reliability appear to be driven largely by the length of the test, and less by strong relationships among test items. CFA results further highlight limitations in the internal structure of the KOSSA assessments. We recommend that KDE closely scrutinize item content to ensure that KOSSA scores reflect performance on items that closely align to the intended constructs.

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# Appendix A: CTT Item Statistics

## Table A-1. Item Difficulty Analysis 2017 CTE Operational Items

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 50 | .250 | .930 | .546 | .175 | 0 | 0 | 14% (7) |
| Administrative Support Services | 50 | .206 | .923 | .635 | .189 | 0 | 0 | 8% (4) |
| Ag Power | 50 | .097 | .882 | .575 | .162 | 0 | 2% (1) | 6% (3) |
| Agribiotechnology | 50 | .050 | .900 | .423 | .199 | 0 | 2% (1) | 34% (17) |
| Agribusiness | 50 | .100 | .880 | .616 | .180 | 0 | 0 | 4% (2) |
| Allied Health | 50 | .168 | .925 | .633 | .193 | 0 | 0 | 12% (6) |
| Animal Science | 50 | .276 | .910 | .609 | .149 | 0 | 0 | 2% (1) |
| Automotive Technology | 50 | .100 | .810 | .529 | .152 | 0 | 2% (1) | 12% (6) |
| Business Management | 50 | .200 | .930 | .590 | .164 | 0 | 0 | 8% (4) |
| Collision Repair | 50 | .145 | .774 | .429 | .163 | 0 | 0 | 30% (15) |
| Computerized Manufacturing | 50 | .183 | .900 | .549 | .203 | 0 | 0 | 22% (11) |
| Computer Programming | 50 | .357 | .932 | .665 | .165 | 0 | 0 | 0 |
| Consumer & Family Management | 50 | .280 | .940 | .722 | .152 | 0 | 0 | 6% (3) |
| Culinary & Food Services | 50 | .236 | .927 | .674 | .163 | 0 | 0 | 2% (1) |
| Early Childhood Education | 50 | .162 | .945 | .696 | .194 | 0 | 0 | 10% (5) |
| Environmental Science | 50 | .303 | .935 | .661 | 173 | 0 | 0 | 4% (2) |
| Fashion & Interior Design | 50 | .205 | .884 | .590 | .173 | 0 | 0 | 12% (6) |
| Financial Services | 50 | .250 | .962 | .713 | .163 | 2% (1) | 0 | 6% (3) |
| Food Science | 50 | .185 | .887 | .571 | .179 | 0 | 0 | 14% (7) |
| Horticulture | 50 | .205 | .948 | .499 | .166 | 0 | 0 | 26% (13) |
| Hospitality | 50 | .186 | .914 | .631 | .154 | 0 | 0 | 8% (4) |
| Information Support | 50 | .249 | .904 | .602 | .160 | 0 | 0 | 10% (5) |
| Marketing | 50 | .143 | .891 | .685 | .156 | 0 | 0 | 4% (2) |
| Network Administration | 50 | .226 | .870 | .644 | .175 | 0 | 0 | 10% (5) |
| Production Crop | 50 | .122 | .946 | .572 | .192 | 0 | 0 | 8% (4) |
| Retail Services | 50 | .348 | .909 | .711 | .124 | 0 | 0 | 2% (1) |
| Web Development | 50 | .246 | .921 | .605 | .194 | 0 | 0 | 16% (8) |
| Welding | 50 | .191 | .909 | .589 | .186 | 0 | 0 | 16% (8) |

### Table A-2. Item Difficulty Analysis 2017 CTE Field Test Items

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 10 | .200 | .810 | .480 | .226 | 0 | 0 | 40% (4) |
| Administrative Support Services | 10 | .249 | .755 | .489 | .159 | 0 | 0 | 30% (3) |
| Ag Power | 10 | .216 | .912 | .547 | .261 | 0 | 0 | 30% (3) |
| Agribiotechnology | 10 | .000 | .950 | .395 | .266 | 0 | 10% (1) | 40% (4) |
| Agribusiness | 10 | .110 | .790 | .497 | .217 | 0 | 0 | 30% (3) |
| Allied Health | 10 | .166 | .976 | .624 | .234 | 10% (1) | 0 | 10% (1) |
| Animal Science | 10 | .318 | .924 | .554 | .214 | 0 | 0 | 20% (2) |
| Automotive Technology | 10 | .100 | .812 | .529 | .152 | 0 | 0 | 50% (5) |
| Business Management | 10 | .190 | .720 | .562 | .192 | 0 | 0 | 20% (2) |
| Collision Repair | 10 | .089 | .718 | .509 | .186 | 0 | 10% (1) | 20% (2) |
| Computerized Manufacturing | 10 | .296 | .932 | .671 | .209 | 0 | 0 | 10% (1) |
| Computer Programming | 10 | .334 | .853 | .648 | .148 | 0 | 0 | 10% (1) |
| Consumer & Family Management | 10 | .210 | .830 | .595 | .222 | 0 | 0 | 20% (2) |
| Culinary & Food Services | 10 | .422 | .901 | .714 | .157 | 0 | 0 | 0 |
| Early Childhood Education | 10 | .165 | .929 | .588 | .240 | 0 | 0 | 20% (2) |
| Environmental Science | 10 | .175 | .889 | .417 | .244 | 0 | 0 | 50% (5) |
| Fashion & Interior Design | 10 | .130 | .884 | .552 | .256 | 0 | 0 | 30% (3) |
| Financial Services | 10 | .217 | .708 | .540 | .184 | 0 | 0 | 20% (2) |
| Food Science | 10 | .048 | .952 | .590 | .282 | 10% (1) | 10% (1) | 20% (2) |
| Horticulture | 10 | .095 | .776 | .454 | .212 | 0 | 10% (1) | 20% (2) |
| Hospitality | 10 | .257 | .857 | .540 | .225 | 0 | 0 | 30% (3) |
| Information Support | 10 | .268 | .867 | .566 | .191 | 0 | 0 | 20% (2) |
| Marketing | 10 | .554 | .777 | .701 | .077 | 0 | 0 | 0 |
| Network Administration | 10 | .387 | .812 | .588 | .152 | 0 | 0 | 0 |
| Production Crop | 10 | .149 | .878 | .526 | .233 | 0 | 0 | 30% (3) |
| Retail Services | 10 | .083 | .955 | .623 | .262 | 10% (1) | 10% (1) | 10% (1) |
| Web Development | 10 | .157 | .836 | .526 | .257 | 0 | 0 | 40% (4) |
| Welding | 10 | .399 | .940 | .617 | .220 | 0 | 0 | 0 |

## Table A-3. Item Difficulty Analysis 2017 Academic Operational Items

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 25 | .340 | .920 | .723 | .152 | 0 | 0 | 0 |
| Administrative Support Services | 25 | .386 | .925 | .734 | .152 | 0 | 0 | 4% (1) |
| Ag Power | 25 | .292 | .896 | .683 | .158 | 0 | 0 | 4% (1) |
| Agribiotechnology | 25 | .300 | .950 | .680 | .179 | 0 | 0 | 4% (1) |
| Agribusiness | 25 | .344 | .926 | .726 | .146 | 0 | 0 | 4% (1) |
| Allied Health | 25 | .366 | .957 | .760 | .153 | 8% (2) | 0 | 4% (1) |
| Animal Science | 25 | .312 | .927 | .723 | .153 | 0 | 0 | 4% (1) |
| Automotive Technology | 25 | .212 | .900 | .649 | .180 | 0 | 0 | 4% (1) |
| Business Management | 25 | .395 | .933 | .736 | .143 | 0 | 0 | 4% (1) |
| Collision Repair | 25 | .210 | .911 | .592 | .177 | 0 | 0 | 4% (1) |
| Computerized Manufacturing | 25 | .357 | .897 | .679 | .165 | 0 | 0 | 4% (1) |
| Computer Programming | 25 | .470 | .952 | .806 | .123 | 4% (1) | 0 | 0 |
| Consumer & Family Management | 25 | .270 | .919 | .682 | .165 | 0 | 0 | 4% (1) |
| Culinary & Food Services | 25 | .255 | .942 | .700 | .166 | 0 | 0 | 4% (1) |
| Early Childhood Education | 25 | .231 | .940 | .698 | .176 | 0 | 0 | 4% (1) |
| Environmental Science | 25 | .325 | .917 | .726 | .158 | 0 | 0 | 4% (1) |
| Fashion & Interior Design | 25 | .288 | .940 | .710 | .161 | 0 | 0 | 4% (1) |
| Financial Services | 25 | .420 | .939 | .761 | .147 | 0 | 0 | 4% (1) |
| Food Science | 25 | .363 | .960 | .762 | .141 | 4% (1) | 0 | 4% (1) |
| Horticulture | 25 | .304 | .906 | .715 | .154 | 0 | 0 | 4% (1) |
| Hospitality | 25 | .314 | .943 | .731 | .156 | 0 | 0 | 4% (1) |
| Information Support | 25 | .401 | .946 | .739 | .149 | 0 | 0 | 4% (1) |
| Marketing | 25 | .384 | .920 | .751 | .143 | 0 | 0 | 4% (1) |
| Network Administration | 25 | .475 | .954 | .782 | .129 | 4% (1) | 0 | 0 |
| Production Crop | 25 | .338 | .878 | .711 | .144 | 0 | 0 | 4% (1) |
| Retail Services | 25 | .364 | .939 | .754 | .142 | 0 | 0 | 4% (1) |
| Web Development | 25 | .436 | .950 | .748 | .142 | 0 | 0 | 0 |
| Welding | 25 | .287 | .906 | .681 | .167 | 0 | 0 | 4% (1) |

### Table A-4. Item Difficulty Analysis 2017 Academic Field Test Items

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 5 | .720 | .920 | .854 | .079 | 0 | 0 | 0 |
| Administrative Support Services | 5 | .729 | .929 | .868 | .080 | 0 | 0 | 0 |
| Ag Power | 5 | .674 | .873 | .809 | .083 | 0 | 0 | 0 |
| Agribiotechnology | 5 | .700 | .950 | .850 | .094 | 0 | 0 | 0 |
| Agribusiness | 5 | .716 | .898 | .847 | .074 | 0 | 0 | 0 |
| Allied Health | 5 | .768 | .960 | .889 | .072 | 20% (1) | 0 | 0 |
| Animal Science | 5 | .714 | .934 | .855 | .084 | 0 | 0 | 0 |
| Automotive Technology | 5 | .637 | .889 | .791 | .101 | 0 | 0 | 0 |
| Business Management | 5 | .740 | .925 | .858 | .069 | 0 | 0 | 0 |
| Collision Repair | 5 | .556 | .847 | .718 | .110 | 0 | 0 | 0 |
| Computerized Manufacturing | 5 | .682 | .875 | .813 | .079 | 0 | 0 | 0 |
| Computer Programming | 5 | .836 | .963 | .924 | .052 | 40% (2) | 0 | 0 |
| Consumer & Family Management | 5 | .696 | .910 | .831 | .082 | 0 | 0 | 0 |
| Culinary & Food Services | 5 | .681 | .932 | .842 | .096 | 0 | 0 | 0 |
| Early Childhood Education | 5 | .707 | .939 | .853 | .090 | 0 | 0 | 0 |
| Environmental Science | 5 | .736 | .937 | .859 | .077 | 0 | 0 | 0 |
| Fashion & Interior Design | 5 | .698 | .953 | .860 | .101 | 20% (1) | 0 | 0 |
| Financial Services | 5 | .793 | .938 | .887 | .056 | 0 | 0 | 0 |
| Food Science | 5 | .742 | .944 | .876 | .083 | 0 | 0 | 0 |
| Horticulture | 5 | .682 | .917 | .841 | .092 | 0 | 0 | 0 |
| Hospitality | 5 | .771 | .943 | .863 | .064 | 0 | 0 | 0 |
| Information Support | 5 | .723 | .921 | .860 | .079 | 0 | 0 | 0 |
| Marketing | 5 | .764 | .945 | .878 | .068 | 0 | 0 | 0 |
| Network Administration | 5 | .808 | .962 | .902 | .057 | 20% (1) | 0 | 0 |
| Production Crop | 5 | .662 | .878 | .792 | .087 | 0 | 0 | 0 |
| Retail Services | 5 | .848 | .932 | .903 | .034 | 0 | 0 | 0 |
| Web Development | 5 | .721 | .964 | .882 | .094 | 20% (1) | 0 | 0 |
| Welding | 5 | .638 | .879 | .800 | .102 | 0 | 0 | 0 |

## Table A-5. Item Difficulty Analysis 2017 Employability Operational Items

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 25 | .450 | .970 | .766 | .122 | 4% (1) | 0 | 0 |
| Administrative Support Services | 25 | .495 | .971 | .782 | .112 | 4% (1) | 0 | 0 |
| Ag Power | 25 | .404 | .942 | .716 | .129 | 0 | 0 | 0 |
| Agribiotechnology | 25 | .350 | .950 | .750 | .152 | 0 | 0 | 4% (1) |
| Agribusiness | 25 | .461 | .955 | .761 | .124 | 4% (1) | 0 | 0 |
| Allied Health | 25 | .490 | .994 | .811 | .116 | 8% (2) | 0 | 0 |
| Animal Science | 25 | .444 | .969 | .764 | .125 | 4% (1) | 0 | 0 |
| Automotive Technology | 25 | .429 | .945 | .701 | .134 | 0 | 0 | 4% (1) |
| Business Management | 25 | .473 | .972 | .771 | .122 | 4% (1) | 0 | 0 |
| Collision Repair | 25 | .371 | .919 | .645 | .139 | 0 | 0 | 4% (1) |
| Computerized Manufacturing | 25 | .338 | .965 | .724 | .140 | 4% (1) | 0 | 0 |
| Computer Programming | 25 | .402 | .977 | .835 | .121 | 8% (2) | 0 | 0 |
| Consumer & Family Management | 25 | .425 | .972 | .739 | .132 | 4% (1) | 0 | 0 |
| Culinary & Food Services | 25 | .405 | .982 | .743 | .143 | 4% (1) | 0 | 0 |
| Early Childhood Education | 25 | .456 | .981 | .754 | .133 | 4% (1) | 0 | 0 |
| Environmental Science | 25 | .426 | .956 | .750 | .125 | 4% (1) | 0 | 0 |
| Fashion & Interior Design | 25 | .433 | .967 | .754 | .130 | 4% (1) | 0 | 0 |
| Financial Services | 25 | .535 | .982 | .793 | .108 | 4% (1) | 0 | 0 |
| Food Science | 25 | .427 | .968 | .791 | .128 | 8% (2) | 0 | 0 |
| Horticulture | 25 | .454 | .963 | .754 | .121 | 4% (1) | 0 | 0 |
| Hospitality | 25 | .500 | .971 | .780 | .110 | 4% (1) | 0 | 0 |
| Information Support | 25 | .458 | .969 | .777 | .121 | 4% (1) | 0 | 0 |
| Marketing | 25 | .498 | .977 | .793 | .116 | 4% (1) | 0 | 0 |
| Network Administration | 25 | .444 | .989 | .821 | .119 | 8% (2) | 0 | 0 |
| Production Crop | 25 | .405 | .905 | .736 | .116 | 0 | 0 | 0 |
| Retail Services | 25 | .530 | .977 | .797 | .111 | 4% (1) | 0 | 0 |
| Web Development | 25 | .432 | .968 | .795 | .127 | 4% (1) | 0 | 0 |
| Welding | 25 | .402 | .940 | .716 | .144 | 0 | 0 | 0 |

*Table A-6. Item Difficulty Analysis 2017 Employability Field Test Items*

| Test | Item p-values N items | Item p-values Min | Item p-values Max | Item p-values Mean | Item p-values SD | Item Difficulty Flags % (N) p-value above .95 | Item Difficulty Flags % (N) p-value below .10 | Distractor Flags % (N) Distractor Selected more often than Correct Response |
|---|---|---|---|---|---|---|---|---|
| Accounting | 5 | .460 | .950 | .720 | .232 | 0 | 0 | 0 |
| Administrative Support Services | 5 | .451 | .954 | .731 | .228 | 20% (1) | 0 | 0 |
| Ag Power | 5 | .499 | .915 | .712 | .204 | 0 | 0 | 0 |
| Agribiotechnology | 5 | .400 | 1.00 | .690 | .277 | 20% (1) | 0 | 20% (1) |
| Agribusiness | 5 | .491 | .931 | .723 | .218 | 0 | 0 | 0 |
| Allied Health | 5 | .438 | .979 | .741 | .250 | 40% (2) | 0 | 0 |
| Animal Science | 5 | .475 | .951 | .726 | .227 | 20% (1) | 0 | 0 |
| Automotive Technology | 5 | .422 | .936 | .673 | .241 | 0 | 0 | 0 |
| Business Management | 5 | .487 | .937 | .726 | .222 | 0 | 0 | 0 |
| Collision Repair | 5 | .347 | .879 | .631 | .235 | 0 | 0 | 20% (1) |
| Computerized Manufacturing | 5 | .489 | .932 | .709 | .210 | 0 | 0 | 0 |
| Computer Programming | 5 | .555 | .969 | .787 | .211 | 40% (2) | 0 | 0 |
| Consumer & Family Management | 5 | .376 | .939 | .685 | .261 | 0 | 0 | 20% (1) |
| Culinary & Food Services | 5 | .395 | .951 | .687 | .269 | 20% (1) | 0 | 20% (1) |
| Early Childhood Education | 5 | .365 | .956 | .698 | .258 | 20% (1) | 0 | 20% (1) |
| Environmental Science | 5 | .487 | .941 | .729 | .222 | 0 | 0 | 0 |
| Fashion & Interior Design | 5 | .507 | .949 | .730 | .212 | 0 | 0 | 0 |
| Financial Services | 5 | .466 | .966 | .734 | .238 | 20% (1) | 0 | 0 |
| Food Science | 5 | .452 | .935 | .742 | .224 | 0 | 0 | 0 |
| Horticulture | 5 | .488 | .939 | .722 | .216 | 0 | 0 | 0 |
| Hospitality | 5 | .443 | .957 | .754 | .229 | 20% (1) | 0 | 0 |
| Information Support | 5 | .469 | .960 | .725 | .244 | 20% (1) | 0 | 0 |
| Marketing | 5 | .499 | .955 | .746 | .215 | 20% (1) | 0 | 0 |
| Network Administration | 5 | .521 | .954 | .769 | .206 | 40% (2) | 0 | 0 |
| Production Crop | 5 | .500 | .919 | .708 | .197 | 0 | 0 | 0 |
| Retail Services | 5 | .462 | .977 | .732 | .236 | 40% (2) | 0 | 0 |
| Web Development | 5 | .486 | .961 | .753 | .237 | 20% (1) | 0 | 0 |
| Welding | 5 | .443 | .927 | .688 | .235 | 0 | 0 | 0 |

### Table A-7. Item Discrimination Analysis 2017 CTE Operational Items

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 50 | .070 | .531 | .297 | .105 | 2% (1) | 0 |
| Administrative Support Services | 50 | .042 | .480 | .306 | .103 | 4% (2) | 0 |
| Ag Power | 50 | -.077 | .481 | .273 | .106 | 6% (3) | 2% (1) |
| Agribiotechnology | 50 | -.741 | .517 | .143 | .262 | 36% (18) | 16% (8) |
| Agribusiness | 50 | .027 | .515 | .318 | .130 | 8% (4) | 0 |
| Allied Health | 50 | .029 | .465 | .284 | .104 | 8% (4) | 0 |
| Animal Science | 50 | .057 | .484 | .273 | .102 | 4% (2) | 0 |
| Automotive Technology | 50 | -.038 | .422 | .256 | .108 | 10% (5) | 0 |
| Business Management | 50 | .027 | .492 | .330 | .104 | 4% (2) | 2% (1) |
| Collision Repair | 50 | -.109 | .503 | .202 | .136 | 20% (10) | 4% (2) |
| Computerized Manufacturing | 50 | -.027 | .487 | .268 | .130 | 12% (6) | 0 |
| Computer Programming | 50 | .069 | .525 | .322 | .111 | 2% (1) | 0 |
| Consumer & Family Management | 50 | .111 | .540 | .384 | .098 | 0 | 0 |
| Culinary & Food Services | 50 | .062 | .470 | .310 | .096 | 2% (1) | 0 |
| Early Childhood Education | 50 | -.079 | .478 | .295 | .108 | 4% (2) | 0 |
| Environmental Science | 50 | .095 | .434 | .316 | .074 | 2% (1) | 0 |
| Fashion & Interior Design | 50 | .039 | .527 | .298 | .113 | 8% (4) | 0 |
| Financial Services | 50 | .157 | .481 | .316 | .085 | 0 | 0 |
| Food Science | 50 | -.036 | .547 | .274 | .151 | 12% (6) | 0 |
| Horticulture | 50 | .036 | .441 | .259 | .095 | 4% (2) | 0 |
| Hospitality | 50 | -.084 | .573 | .315 | .173 | 14% (7) | 0 |
| Information Support | 50 | .072 | .531 | .313 | .116 | 2% (1) | 0 |
| Marketing | 50 | .163 | .555 | .366 | .102 | 0 | 0 |
| Network Administration | 50 | .080 | .519 | .292 | .122 | 8% (4) | 0 |
| Production Crop | 50 | -.206 | .657 | .307 | .207 | 16% (8) | 2% (1) |
| Retail Services | 50 | -.024 | .543 | .319 | .120 | 4% (2) | 0 |
| Web Development | 50 | -.013 | .414 | .268 | .102 | 6% (3) | 0 |
| Welding | 50 | .089 | .424 | .280 | .096 | 4% (2) | 0 |

**Table A-8. Item Discrimination Analysis 2017 CTE Field Test Items**

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 10 | -.052 | .378 | .208 | .149 | 20% (2) | 0 |
| Administrative Support Services | 10 | .138 | .514 | .268 | .118 | 0 | 0 |
| Ag Power | 10 | -.055 | .470 | .204 | .184 | 40% (4) | 0 |
| Agribiotechnology | 10 | -.308 | .463 | .118 | .284 | 40% (4) | 20% (2) |
| Agribusiness | 10 | .030 | .448 | .269 | .149 | 10% (1) | 10% (1) |
| Allied Health | 10 | .009 | .413 | .213 | .117 | 20% (2) | 0 |
| Animal Science | 10 | -.118 | .415 | .235 | .146 | 10% (1) | 0 |
| Automotive Technology | 10 | -.153 | .344 | .099 | .153 | 40% (4) | 20% (2) |
| Business Management | 10 | .078 | .531 | .365 | .127 | 10% (1) | 0 |
| Collision Repair | 10 | -.269 | .492 | .226 | .218 | 20% (2) | 10% (1) |
| Computerized Manufacturing | 10 | .088 | .528 | .342 | .135 | 10% (1) | 0 |
| Computer Programming | 10 | .227 | .405 | .326 | .069 | 0 | 0 |
| Consumer & Family Management | 10 | -.102 | .539 | .299 | .189 | 10% (1) | 10% (1) |
| Culinary & Food Services | 10 | .095 | .464 | .298 | .112 | 10% (1) | 0 |
| Early Childhood Education | 10 | -.020 | .361 | .208 | .138 | 20% (2) | 0 |
| Environmental Science | 10 | -.015 | .496 | .240 | .139 | 10% (1) | 0 |
| Fashion & Interior Design | 10 | -.148 | .447 | .265 | .185 | 20% (2) | 0 |
| Financial Services | 10 | .104 | .370 | .227 | .095 | 0 | 0 |
| Food Science | 10 | -.303 | .497 | .228 | .234 | 20% (2) | 10% (1) |
| Horticulture | 10 | -.003 | .487 | .287 | .156 | 10% (1) | 10% (1) |
| Hospitality | 10 | -.006 | .662 | .239 | .235 | 40% (4) | 0 |
| Information Support | 10 | .028 | .417 | .216 | .134 | 20% (2) | 0 |
| Marketing | 10 | .221 | .462 | .340 | .085 | 0 | 0 |
| Network Administration | 10 | .189 | .432 | .304 | .085 | 0 | 0 |
| Production Crop | 10 | -.225 | .482 | .217 | .196 | 30% (3) | 0 |
| Retail Services | 10 | -.113 | .430 | .238 | .151 | 10% (1) | 10% (1) |
| Web Development | 10 | -.010 | .393 | .241 | .107 | 10% (1) | 10% (1) |
| Welding | 10 | .080 | .438 | .244 | .104 | 10% (1) | 0 |

*Table A-9 Item Discrimination Analysis 2017 Academic Operational Items*

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 25 | .101 | .478 | .326 | .095 | 0 | 0 |
| Administrative Support Services | 25 | .195 | .523 | .357 | .083 | 0 | 0 |
| Ag Power | 25 | .200 | .461 | .361 | .066 | 0 | 0 |
| Agribiotechnology | 25 | -.127 | .716 | .267 | .208 | 20% (5) | 0 |
| Agribusiness | 25 | .153 | .537 | .368 | .095 | 0 | 0 |
| Allied Health | 25 | .094 | .457 | .274 | .098 | 4% (1) | 0 |
| Animal Science | 25 | .181 | .457 | .344 | .073 | 0 | 0 |
| Automotive Technology | 25 | .191 | .479 | .351 | .076 | 0 | 0 |
| Business Management | 25 | .168 | .519 | .361 | .084 | 0 | 0 |
| Collision Repair | 25 | .043 | .502 | .293 | .101 | 4% (1) | 0 |
| Computerized Manufacturing | 25 | .093 | .485 | .332 | .107 | 4% (1) | 0 |
| Computer Programming | 25 | .055 | .530 | .344 | .097 | 4% (1) | 0 |
| Consumer & Family Management | 25 | .163 | .455 | .344 | .076 | 0 | 0 |
| Culinary & Food Services | 25 | .158 | .464 | .322 | .083 | 0 | 0 |
| Early Childhood Education | 25 | .118 | .464 | .308 | .078 | 0 | 0 |
| Environmental Science | 25 | .161 | .458 | .356 | .088 | 0 | 0 |
| Fashion & Interior Design | 25 | .069 | .572 | .343 | .116 | 4% (1) | 0 |
| Financial Services | 25 | .193 | .484 | .337 | .082 | 0 | 0 |
| Food Science | 25 | .208 | .594 | .377 | .107 | 0 | 0 |
| Horticulture | 25 | .174 | .489 | .355 | .081 | 0 | 0 |
| Hospitality | 25 | .104 | .618 | .363 | .126 | 0 | 0 |
| Information Support | 25 | .084 | .445 | .320 | .088 | 4% (1) | 0 |
| Marketing | 25 | .134 | .525 | .344 | .081 | 0 | 0 |
| Network Administration | 25 | .058 | .489 | .320 | .103 | 4% (1) | 0 |
| Production Crop | 25 | .193 | .640 | .432 | .127 | 0 | 0 |
| Retail Services | 25 | .151 | .583 | .351 | .115 | 0 | 0 |
| Web Development | 25 | .169 | .537 | .322 | .087 | 0 | 0 |
| Welding | 25 | .198 | .499 | .336 | .070 | 0 | 0 |

**Table A-10. Item Discrimination Analysis 2017 Academic Field Test Items**

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 5 | .274 | .460 | .397 | .075 | 0 | 0 |
| Administrative Support Services | 5 | .351 | .500 | .424 | .057 | 0 | 0 |
| Ag Power | 5 | .390 | .517 | .435 | .051 | 0 | 0 |
| Agribiotechnology | 5 | -.028 | .534 | .331 | .214 | 20% (1) | 0 |
| Agribusiness | 5 | .368 | .574 | .455 | .081 | 0 | 0 |
| Allied Health | 5 | .200 | .330 | .276 | .054 | 0 | 0 |
| Animal Science | 5 | .343 | .451 | .387 | .048 | 0 | 0 |
| Automotive Technology | 5 | .327 | .496 | .410 | .068 | 0 | 0 |
| Business Management | 5 | .301 | .479 | .420 | .076 | 0 | 0 |
| Collision Repair | 5 | .268 | .417 | .327 | .057 | 0 | 0 |
| Computerized Manufacturing | 5 | .329 | .501 | .422 | .082 | 0 | 0 |
| Computer Programming | 5 | .354 | .427 | .385 | .027 | 0 | 0 |
| Consumer & Family Management | 5 | .319 | .518 | .414 | .074 | 0 | 0 |
| Culinary & Food Services | 5 | .260 | .469 | .369 | .074 | 0 | 0 |
| Early Childhood Education | 5 | .225 | .390 | .334 | .072 | 0 | 0 |
| Environmental Science | 5 | .332 | .494 | .393 | .063 | 0 | 0 |
| Fashion & Interior Design | 5 | .146 | .516 | .360 | .135 | 0 | 0 |
| Financial Services | 5 | .275 | .453 | .390 | .068 | 0 | 0 |
| Food Science | 5 | .322 | .693 | .451 | .141 | 0 | 0 |
| Horticulture | 5 | .366 | .449 | .412 | .032 | 0 | 0 |
| Hospitality | 5 | .282 | .673 | .529 | .148 | 0 | 0 |
| Information Support | 5 | .227 | .550 | .391 | .128 | 0 | 0 |
| Marketing | 5 | .309 | .467 | .399 | .068 | 0 | 0 |
| Network Administration | 5 | .260 | .510 | .405 | .109 | 0 | 0 |
| Production Crop | 5 | .496 | .662 | .587 | .083 | 0 | 0 |
| Retail Services | 5 | .153 | .448 | .299 | .112 | 0 | 0 |
| Web Development | 5 | .340 | .390 | .360 | .019 | 0 | 0 |
| Welding | 5 | .311 | .488 | .396 | .064 | 0 | 0 |

*Table A-11. Item Discrimination Analysis 2017 Employability Operational Items*

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 25 | .118 | .475 | .331 | 079 | 0 | 0 |
| Administrative Support Services | 25 | .161 | .518 | .381 | .078 | 0 | 0 |
| Ag Power | 25 | .260 | .485 | .378 | .064 | 0 | 0 |
| Agribiotechnology | 25 | -.201 | .749 | .394 | .244 | 20% (5) | 0 |
| Agribusiness | 25 | .205 | .523 | .406 | .087 | 0 | 0 |
| Allied Health | 25 | .037 | .461 | .296 | .099 | 0 | 0 |
| Animal Science | 25 | .181 | .503 | .359 | .072 | 0 | 0 |
| Automotive Technology | 25 | .234 | .500 | .381 | .069 | 0 | 0 |
| Business Management | 25 | .158 | .510 | .377 | .083 | 0 | 0 |
| Collision Repair | 25 | .089 | .502 | .357 | .110 | 4% (1) | 0 |
| Computerized Manufacturing | 25 | .062 | .523 | .350 | .101 | 4% (1) | 0 |
| Computer Programming | 25 | .128 | .490 | .331 | .111 | 0 | 0 |
| Consumer & Family Management | 25 | .204 | .540 | .402 | .079 | 0 | 0 |
| Culinary & Food Services | 25 | .189 | .493 | .360 | .075 | 0 | 0 |
| Early Childhood Education | 25 | .138 | .510 | .354 | .081 | 0 | 0 |
| Environmental Science | 25 | .166 | .480 | .361 | .072 | 0 | 0 |
| Fashion & Interior Design | 25 | .184 | .526 | .389 | .092 | 0 | 0 |
| Financial Services | 25 | .186 | .544 | .372 | .072 | 0 | 0 |
| Food Science | 25 | .160 | .686 | .391 | .123 | 0 | 0 |
| Horticulture | 25 | .160 | .501 | .376 | .078 | 0 | 0 |
| Hospitality | 25 | .114 | .671 | .392 | .155 | 0 | 0 |
| Information Support | 25 | .107 | .516 | .361 | .093 | 0 | 0 |
| Marketing | 25 | .173 | .566 | .380 | .566 | 0 | 0 |
| Network Administration | 25 | .208 | .546 | .355 | .100 | 0 | 0 |
| Production Crop | 25 | .208 | .678 | .465 | .139 | 0 | 0 |
| Retail Services | 25 | .156 | .540 | .400 | .089 | 0 | 0 |
| Web Development | 25 | .073 | .473 | .307 | .083 | 4% (1) | 0 |
| Welding | 25 | .194 | .505 | .339 | .076 | 0 | 0 |

**Table A-12. Item Discrimination Analysis 2017 Employability Field Test Items**

| Test | Item-Total Correlations N items | Item-Total Correlations Min | Item-Total Correlations Max | Item-Total Correlations Mean | Item-Total Correlations SD | Item Discrimination Flags % (N) Item-total correlation below .10 | Distractor Flags % (N) MC distractor-total correlation higher than key-total correlation |
|---|---|---|---|---|---|---|---|
| Accounting | 5 | .244 | .449 | .337 | .075 | 0 | 0 |
| Administrative Support Services | 5 | .284 | .464 | .357 | .076 | 0 | 0 |
| Ag Power | 5 | .254 | .489 | .375 | .104 | 0 | 0 |
| Agribiotechnology | 5 | -.160 | .716 | .308 | .365 | 20% (1) | 0 |
| Agribusiness | 5 | .241 | .566 | .389 | .152 | 0 | 0 |
| Allied Health | 5 | .207 | .274 | .244 | .028 | 0 | 0 |
| Animal Science | 5 | .267 | .471 | .354 | .089 | 0 | 0 |
| Automotive Technology | 5 | .274 | .484 | .371 | .080 | 0 | 0 |
| Business Management | 5 | .316 | .440 | .375 | .054 | 0 | 0 |
| Collision Repair | 5 | .219 | .383 | .326 | .063 | 0 | 0 |
| Computerized Manufacturing | 5 | .292 | .423 | .359 | .049 | 0 | 0 |
| Computer Programming | 5 | .301 | .410 | .349 | .047 | 0 | 0 |
| Consumer & Family Management | 5 | .283 | .510 | .358 | .096 | 0 | 0 |
| Culinary & Food Services | 5 | .275 | .422 | .338 | .061 | 0 | 0 |
| Early Childhood Education | 5 | .184 | .371 | .284 | .072 | 0 | 0 |
| Environmental Science | 5 | .226 | .456 | .094 | .362 | 0 | 0 |
| Fashion & Interior Design | 5 | .340 | .490 | .418 | .069 | 0 | 0 |
| Financial Services | 5 | .268 | .460 | .368 | .077 | 0 | 0 |
| Food Science | 5 | .281 | .549 | .376 | .123 | 0 | 0 |
| Horticulture | 5 | .285 | .454 | .363 | .070 | 0 | 0 |
| Hospitality | 5 | .224 | .557 | .375 | .145 | 0 | 0 |
| Information Support | 5 | .317 | .412 | .361 | .036 | 0 | 0 |
| Marketing | 5 | .271 | .439 | .363 | .074 | 0 | 0 |
| Network Administration | 5 | .302 | .559 | .391 | .100 | 0 | 0 |
| Production Crop | 5 | .006 | .626 | .414 | .252 | 20% (1) | 0 |
| Retail Services | 5 | .250 | .452 | .358 | .081 | 0 | 0 |
| Web Development | 5 | .218 | .465 | .328 | .104 | 0 | 0 |
| Welding | 5 | .223 | .487 | .335 | .119 | 0 | 0 |

**Table A-13. 2017 Occupational Subscores**

| Test | N | Mean | SD | Median |
|---|---|---|---|---|
| Accounting | 683 | 27.28 | 7.47 | 27 |
| Administrative Support Services | 2,361 | 31.80 | 6.92 | 33 |
| Ag Power | 1,506 | 28.79 | 7.01 | 29 |
| Agribiotechnology | 20 | 21.15 | 4.73 | 22 |
| Agribusiness | 538 | 30.79 | 7.53 | 32 |
| Allied Health | 3,817 | 31.67 | 6.68 | 32 |
| Animal Science | 2,646 | 30.43 | 6.87 | 31 |
| Automotive Technology | 722 | 26.43 | 6.90 | 27 |
| Business Management | 1,883 | 29.47 | 7.99 | 30 |
| Collision Repair | 124 | 21.45 | 5.89 | 21 |
| Computerized Manufacturing | 311 | 27.46 | 6.87 | 27 |
| Computer Programming | 353 | 33.25 | 7.45 | 34 |
| Consumer & Family Management | 1,808 | 36.06 | 8.14 | 38 |
| Culinary & Food Services | 1,618 | 33.72 | 7.02 | 34.5 |
| Early Childhood Education | 1,442 | 34.78 | 6.46 | 36 |
| Environmental Science | 542 | 33.05 | 7.44 | 33.5 |
| Fashion & Interior Design | 215 | 29.50 | 7.17 | 31 |
| Financial Services | 609 | 35.64 | 6.83 | 37 |
| Food Science | 124 | 28.57 | 6.85 | 29 |
| Horticulture | 2,086 | 24.98 | 6.82 | 25 |
| Hospitality | 70 | 31.54 | 7.64 | 32 |
| Information Support | 354 | 30.11 | 7.56 | 31 |
| Marketing | 1,375 | 34.28 | 8.14 | 36 |
| Network Administration | 261 | 32.18 | 6.79 | 33 |
| Production Crop | 74 | 28.59 | 7.61 | 30 |
| Retail Services | 132 | 35.56 | 7.09 | 37 |
| Web Development | 280 | 30.26 | 6.61 | 31 |
| Welding | 922 | 29.45 | 7.18 | 30 |

## Table A-14. 2017 Academic Subscores

| Test | N | Mean | SD | Median |
|---|---|---|---|---|
| Accounting | 683 | 19.19 | 3.72 | 20 |
| Administrative Support Services | 2,361 | 18.37 | 4.08 | 19 |
| Ag Power | 1,506 | 17.09 | 4.39 | 18 |
| Agribiotechnology | 20 | 17.00 | 3.52 | 17 |
| Agribusiness | 538 | 18.16 | 4.27 | 19 |
| Allied Health | 3,817 | 18.99 | 3.36 | 19 |
| Animal Science | 2,646 | 18.09 | 4.07 | 19 |
| Automotive Technology | 722 | 16.22 | 4.36 | 17 |
| Business Management | 1,883 | 18.39 | 4.16 | 19 |
| Collision Repair | 124 | 14.81 | 4.18 | 15 |
| Computerized Manufacturing | 311 | 16.99 | 4.21 | 17 |
| Computer Programming | 353 | 20.16 | 3.65 | 21 |
| Consumer & Family Management | 1,808 | 17.06 | 4.21 | 18 |
| Culinary & Food Services | 1,618 | 17.49 | 3.90 | 18 |
| Early Childhood Education | 1,442 | 17.45 | 3.80 | 18 |
| Environmental Science | 542 | 18.15 | 4.17 | 19 |
| Fashion & Interior Design | 215 | 17.74 | 4.06 | 18 |
| Financial Services | 608 | 19.01 | 3.76 | 20 |
| Food Science | 124 | 19.06 | 4.14 | 20 |
| Horticulture | 2,086 | 17.89 | 4.24 | 19 |
| Hospitality | 70 | 18.29 | 4.18 | 19 |
| Information Support | 354 | 18.48 | 3.88 | 19 |
| Marketing | 1,375 | 18.78 | 3.87 | 20 |
| Network Administration | 261 | 19.56 | 3.51 | 20 |
| Production Crop | 74 | 17.78 | 4.95 | 19 |
| Retail Services | 132 | 18.84 | 3.94 | 20 |
| Web Development | 280 | 18.69 | 3.85 | 19 |
| Welding | 922 | 17.03 | 4.14 | 18 |

## Table A-15. 2017 Employability Subscores

| Test | N | Mean | SD | Median |
|---|---|---|---|---|
| Accounting | 683 | 19.98 | 3.71 | 21 |
| Administrative Support Services | 2,361 | 19.57 | 4.11 | 21 |
| Ag Power | 1,506 | 17.92 | 4.64 | 19 |
| Agribiotechnology | 20 | 18.75 | 4.39 | 20 |
| Agribusiness | 538 | 19.04 | 4.45 | 20 |
| Allied Health | 3,817 | 20.28 | 3.32 | 21 |
| Animal Science | 2,646 | 19.10 | 4.12 | 20 |
| Automotive Technology | 722 | 17.53 | 4.73 | 19 |
| Business Management | 1,882 | 19.29 | 4.16 | 20 |
| Collision Repair | 124 | 16.13 | 4.78 | 17 |
| Computerized Manufacturing | 311 | 18.10 | 4.35 | 19 |
| Computer Programming | 353 | 20.88 | 3.35 | 22 |
| Consumer & Family Management | 1,808 | 18.47 | 4.52 | 19 |
| Culinary & Food Services | 1,618 | 18.57 | 4.13 | 19 |
| Early Childhood Education | 1,442 | 18.85 | 4.06 | 20 |
| Environmental Science | 542 | 18.79 | 4.20 | 20 |
| Fashion & Interior Design | 215 | 18.86 | 4.38 | 20 |
| Financial Services | 608 | 19.87 | 4.01 | 21 |
| Food Science | 124 | 19.77 | 4.10 | 21 |
| Horticulture | 2,086 | 18.87 | 4.39 | 20 |
| Hospitality | 70 | 19.50 | 4.36 | 21 |
| Information Support | 354 | 19.43 | 4.00 | 20 |
| Marketing | 1,375 | 19.84 | 3.92 | 21 |
| Network Administration | 261 | 20.51 | 3.65 | 21 |
| Production Crop | 74 | 18.39 | 5.41 | 20 |
| Retail Services | 132 | 19.92 | 4.06 | 21 |
| Web Development | 280 | 19.88 | 3.51 | 21 |
| Welding | 922 | 17.89 | 4.27 | 19 |

# Appendix B: CFA Results

## Table B-1. Standardized Factor Loadings - Bifactor Model - Accounting

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.041 | 0.086 | 0.632 |
| Q2 | 0.047 | 0.061 | 0.442 |
| Q4 | 0.086 | 0.070 | 0.223 |
| Q5 | 0.092 | 0.068 | 0.181 |
| Q56 | -0.136 | 0.086 | 0.114 |
| Q62 | -0.054 | 0.065 | 0.407 |
| Q68 | -0.029 | 0.056 | 0.609 |
| Q69 | 0.147 | 0.080 | 0.068 |
| Q70 | -0.141 | 0.078 | 0.071 |
| Q72 | 0.031 | 0.072 | 0.666 |
| Q73 | -0.014 | 0.073 | 0.848 |
| Q74 | 0.036 | 0.061 | 0.547 |
| Q75 | 0.000 | 0.063 | 0.997 |
| Q76 | -0.043 | 0.087 | 0.623 |
| Q77 | 0.041 | 0.064 | 0.518 |
| Q78 | -0.029 | 0.069 | 0.677 |
| Q80 | -0.050 | 0.059 | 0.399 |
| Q81 | -0.010 | 0.058 | 0.867 |
| Q94 | -0.077 | 0.064 | 0.229 |
| Q95 | -0.022 | 0.062 | 0.719 |
| Q96 | -0.004 | 0.063 | 0.944 |
| Q97 | 0.028 | 0.059 | 0.638 |
| Q99 | 0.594 | 0.099 | 0.000 |
| Q106 | -0.163 | 0.063 | 0.010 |
| Q110 | 0.932 | 0.141 | 0.000 |
| Employability | | | |
| Q6 | -0.111 | 0.105 | 0.287 |
| Q7 | 0.215 | 0.093 | 0.020 |
| Q8 | -0.006 | 0.087 | 0.941 |
| Q10 | -0.094 | 0.086 | 0.277 |
| Q13 | 0.099 | 0.092 | 0.283 |
| Q57 | 0.196 | 0.076 | 0.010 |
| Q64 | 0.003 | 0.078 | 0.971 |
| Q65 | 0.001 | 0.086 | 0.991 |
| Q82 | 0.065 | 0.086 | 0.452 |
| Q83 | 0.041 | 0.101 | 0.686 |
| Q84 | -0.058 | 0.092 | 0.526 |
| Q85 | -0.037 | 0.085 | 0.669 |
| Q87 | 0.183 | 0.118 | 0.119 |
| Q88 | 0.223 | 0.083 | 0.007 |

(continued)

**Table B-1. Standardized Factor Loadings - Bifactor Model – Accounting (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q89 | -0.029 | 0.091 | 0.751 |
| Q90 | 0.211 | 0.090 | 0.019 |
| Q91 | 0.146 | 0.101 | 0.149 |
| Q92 | 0.179 | 0.081 | 0.027 |
| Q93 | 0.159 | 0.093 | 0.085 |
| Q100 | 0.487 | 0.091 | 0.000 |
| Q101 | 0.504 | 0.085 | 0.000 |
| Q102 | 0.773 | 0.134 | 0.000 |
| Q103 | 0.182 | 0.098 | 0.063 |
| Q108 | 0.069 | 0.103 | 0.504 |
| Q109 | 0.315 | 0.096 | 0.001 |
| Occupational | | | |
| Q14 | 0.086 | 0.063 | 0.174 |
| Q15 | 0.066 | 0.060 | 0.267 |
| Q16 | -0.088 | 0.070 | 0.207 |
| Q17 | 0.068 | 0.065 | 0.288 |
| Q18 | 0.016 | 0.060 | 0.790 |
| Q19 | 0.257 | 0.065 | 0.000 |
| Q20 | 0.275 | 0.061 | 0.000 |
| Q21 | -0.037 | 0.062 | 0.551 |
| Q23 | 0.030 | 0.059 | 0.612 |
| Q24 | 0.296 | 0.051 | 0.000 |
| Q25 | 0.149 | 0.065 | 0.022 |
| Q26 | 0.013 | 0.071 | 0.859 |
| Q27 | 0.034 | 0.064 | 0.595 |
| Q29 | 0.003 | 0.059 | 0.957 |
| Q31 | -0.029 | 0.063 | 0.646 |
| Q35 | 0.217 | 0.062 | 0.000 |
| Q36 | 0.205 | 0.053 | 0.000 |
| Q37 | 0.202 | 0.060 | 0.001 |
| Q38 | 0.413 | 0.057 | 0.000 |
| Q39 | 0.248 | 0.066 | 0.000 |
| Q40 | 0.214 | 0.057 | 0.000 |
| Q41 | 0.472 | 0.057 | 0.000 |
| Q42 | -0.158 | 0.078 | 0.042 |
| Q43 | 0.043 | 0.062 | 0.488 |
| Q44 | 0.227 | 0.068 | 0.001 |
| Q45 | -0.027 | 0.061 | 0.660 |
| Q46 | 0.103 | 0.062 | 0.097 |
| Q47 | 0.359 | 0.061 | 0.000 |
| Q48 | 0.270 | 0.064 | 0.000 |
| Q49 | 0.269 | 0.057 | 0.000 |

(continued)

**Table B-1. Standardized Factor Loadings - Bifactor Model – Accounting (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q51 | 0.057 | 0.057 | 0.320 |
| Q52 | 0.334 | 0.058 | 0.000 |
| Q53 | 0.287 | 0.059 | 0.000 |
| Q54 | 0.173 | 0.061 | 0.005 |
| Q55 | 0.183 | 0.064 | 0.004 |
| Q58 | 0.144 | 0.054 | 0.008 |
| Q59 | 0.045 | 0.055 | 0.412 |
| Q60 | 0.112 | 0.055 | 0.043 |
| Q61 | 0.178 | 0.091 | 0.050 |
| Q66 | 0.446 | 0.053 | 0.000 |
| Q67 | 0.300 | 0.057 | 0.000 |
| Q104 | 0.379 | 0.057 | 0.000 |
| Q105 | 0.327 | 0.058 | 0.000 |
| Q111 | 0.208 | 0.072 | 0.004 |
| Q112 | -0.070 | 0.063 | 0.263 |
| Q113 | -0.068 | 0.064 | 0.287 |
| Q114 | 0.290 | 0.066 | 0.000 |
| Q115 | 0.286 | 0.058 | 0.000 |
| Q117 | 0.232 | 0.065 | 0.000 |
| Q120 | 0.155 | 0.067 | 0.021 |
| Transition Readiness | | | |
| Q1 | 0.443 | 0.084 | 0.000 |
| Q2 | 0.367 | 0.047 | 0.000 |
| Q4 | 0.500 | 0.054 | 0.000 |
| Q5 | 0.424 | 0.061 | 0.000 |
| Q6 | 0.417 | 0.060 | 0.000 |
| Q7 | 0.458 | 0.059 | 0.000 |
| Q8 | 0.352 | 0.049 | 0.000 |
| Q10 | 0.591 | 0.043 | 0.000 |
| Q13 | 0.310 | 0.053 | 0.000 |
| Q14 | 0.296 | 0.049 | 0.000 |
| Q15 | 0.688 | 0.045 | 0.000 |
| Q16 | 0.343 | 0.062 | 0.000 |
| Q17 | 0.071 | 0.053 | 0.178 |
| Q18 | 0.497 | 0.044 | 0.000 |
| Q19 | 0.284 | 0.057 | 0.000 |
| Q20 | 0.249 | 0.051 | 0.000 |
| Q21 | 0.166 | 0.051 | 0.001 |
| Q23 | 0.367 | 0.048 | 0.000 |
| Q24 | 0.500 | 0.041 | 0.000 |
| Q25 | 0.175 | 0.054 | 0.001 |
| Q26 | 0.382 | 0.060 | 0.000 |
| Q27 | 0.327 | 0.051 | 0.000 |

(continued)

## Table B-1. Standardized Factor Loadings - Bifactor Model – Accounting (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q29 | 0.517 | 0.046 | 0.000 |
| Q31 | 0.330 | 0.050 | 0.000 |
| Q35 | 0.229 | 0.051 | 0.000 |
| Q36 | 0.484 | 0.044 | 0.000 |
| Q37 | 0.422 | 0.048 | 0.000 |
| Q38 | 0.310 | 0.049 | 0.000 |
| Q39 | 0.321 | 0.051 | 0.000 |
| Q40 | 0.324 | 0.049 | 0.000 |
| Q41 | 0.216 | 0.051 | 0.000 |
| Q42 | 0.508 | 0.062 | 0.000 |
| Q43 | 0.286 | 0.050 | 0.000 |
| Q44 | 0.133 | 0.054 | 0.014 |
| Q45 | 0.280 | 0.050 | 0.000 |
| Q46 | 0.379 | 0.051 | 0.000 |
| Q47 | 0.198 | 0.054 | 0.000 |
| Q48 | 0.177 | 0.054 | 0.001 |
| Q49 | 0.363 | 0.048 | 0.000 |
| Q51 | 0.549 | 0.045 | 0.000 |
| Q52 | 0.216 | 0.050 | 0.000 |
| Q53 | 0.310 | 0.050 | 0.000 |
| Q54 | 0.408 | 0.049 | 0.000 |
| Q55 | 0.133 | 0.052 | 0.010 |
| Q56 | 0.274 | 0.078 | 0.000 |
| Q57 | 0.407 | 0.047 | 0.000 |
| Q58 | 0.680 | 0.041 | 0.000 |
| Q59 | 0.649 | 0.040 | 0.000 |
| Q60 | 0.559 | 0.041 | 0.000 |
| Q61 | 0.321 | 0.081 | 0.000 |
| Q62 | 0.622 | 0.048 | 0.000 |
| Q64 | 0.516 | 0.044 | 0.000 |
| Q65 | 0.638 | 0.041 | 0.000 |
| Q66 | 0.531 | 0.044 | 0.000 |
| Q67 | 0.358 | 0.048 | 0.000 |
| Q68 | 0.533 | 0.043 | 0.000 |
| Q69 | 0.394 | 0.081 | 0.000 |
| Q70 | 0.573 | 0.059 | 0.000 |
| Q72 | 0.551 | 0.059 | 0.000 |
| Q73 | 0.586 | 0.051 | 0.000 |
| Q74 | 0.319 | 0.048 | 0.000 |
| Q75 | 0.426 | 0.054 | 0.000 |
| Q76 | 0.251 | 0.089 | 0.005 |
| Q77 | 0.680 | 0.042 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q78 | 0.455 | 0.052 | 0.000 |
| Q80 | 0.618 | 0.040 | 0.000 |
| Q81 | 0.604 | 0.043 | 0.000 |
| Q82 | 0.349 | 0.047 | 0.000 |
| Q83 | 0.526 | 0.053 | 0.000 |
| Q84 | 0.569 | 0.049 | 0.000 |
| Q85 | 0.522 | 0.042 | 0.000 |
| Q87 | 0.524 | 0.079 | 0.000 |
| Q88 | 0.436 | 0.053 | 0.000 |
| Q89 | 0.320 | 0.050 | 0.000 |
| Q90 | 0.331 | 0.059 | 0.000 |
| Q91 | 0.692 | 0.058 | 0.000 |
| Q92 | 0.668 | 0.048 | 0.000 |
| Q93 | 0.376 | 0.065 | 0.000 |
| Q94 | 0.411 | 0.054 | 0.000 |
| Q95 | 0.097 | 0.054 | 0.072 |
| Q96 | 0.268 | 0.055 | 0.000 |
| Q97 | 0.601 | 0.044 | 0.000 |
| Q99 | 0.418 | 0.049 | 0.000 |
| Q100 | 0.088 | 0.063 | 0.160 |
| Q101 | 0.489 | 0.065 | 0.000 |
| Q102 | 0.720 | 0.073 | 0.000 |
| Q103 | 0.581 | 0.055 | 0.000 |
| Q104 | 0.541 | 0.045 | 0.000 |
| Q105 | 0.434 | 0.045 | 0.000 |
| Q106 | 0.366 | 0.050 | 0.000 |
| Q108 | 0.522 | 0.061 | 0.000 |
| Q109 | 0.270 | 0.063 | 0.000 |
| Q110 | 0.377 | 0.048 | 0.000 |
| Q111 | 0.168 | 0.056 | 0.003 |
| Q112 | 0.306 | 0.049 | 0.000 |
| Q113 | 0.267 | 0.054 | 0.000 |
| Q114 | 0.215 | 0.056 | 0.000 |
| Q115 | 0.334 | 0.047 | 0.000 |
| Q117 | 0.128 | 0.055 | 0.019 |
| Q120 | 0.006 | 0.057 | 0.915 |

**_Table B-2. Standardized Factor Loading - Bifactor Model - Administrative Support Services_**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.195 | 0.040 | 0.000 |
| Q2 | 0.009 | 0.034 | 0.784 |
| Q4 | -0.055 | 0.039 | 0.155 |
| Q5 | -0.075 | 0.038 | 0.046 |
| Q14 | -0.101 | 0.050 | 0.044 |
| Q62 | -0.004 | 0.038 | 0.909 |
| Q70 | 0.145 | 0.035 | 0.000 |
| Q71 | -0.169 | 0.040 | 0.000 |
| Q72 | 0.023 | 0.047 | 0.621 |
| Q74 | -0.045 | 0.039 | 0.247 |
| Q75 | 0.226 | 0.038 | 0.000 |
| Q76 | 0.035 | 0.036 | 0.322 |
| Q77 | -0.101 | 0.038 | 0.008 |
| Q78 | -0.093 | 0.047 | 0.049 |
| Q79 | 0.087 | 0.035 | 0.013 |
| Q80 | -0.103 | 0.038 | 0.007 |
| Q82 | 0.201 | 0.034 | 0.000 |
| Q83 | 0.067 | 0.033 | 0.041 |
| Q96 | 0.038 | 0.037 | 0.309 |
| Q97 | -0.146 | 0.036 | 0.000 |
| Q98 | -0.009 | 0.036 | 0.807 |
| Q99 | 0.113 | 0.034 | 0.001 |
| Q101 | 0.663 | 0.047 | 0.000 |
| Q106 | 0.052 | 0.035 | 0.144 |
| Q110 | 0.710 | 0.050 | 0.000 |
| Employability | | | |
| Q6 | -0.195 | 0.057 | 0.001 |
| Q7 | 0.127 | 0.053 | 0.016 |
| Q8 | -0.118 | 0.052 | 0.024 |
| Q10 | -0.160 | 0.049 | 0.001 |
| Q13 | 0.038 | 0.051 | 0.466 |
| Q15 | -0.061 | 0.050 | 0.220 |
| Q64 | -0.171 | 0.050 | 0.001 |
| Q65 | -0.196 | 0.047 | 0.000 |
| Q84 | 0.017 | 0.051 | 0.744 |
| Q85 | -0.112 | 0.056 | 0.045 |
| Q86 | -0.078 | 0.051 | 0.125 |
| Q87 | -0.261 | 0.050 | 0.000 |
| Q89 | 0.175 | 0.057 | 0.002 |
| Q90 | 0.042 | 0.052 | 0.422 |
| Q91 | -0.078 | 0.054 | 0.146 |
| Q92 | 0.110 | 0.053 | 0.040 |

(continued)

**Table B-2. Standardized Factor Loading - Bifactor Model - Administrative Support Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.015 | 0.055 | 0.787 |
| Q94 | -0.162 | 0.049 | 0.001 |
| Q95 | 0.015 | 0.055 | 0.792 |
| Q102 | 0.282 | 0.058 | 0.000 |
| Q103 | 0.259 | 0.053 | 0.000 |
| Q104 | 0.576 | 0.089 | 0.000 |
| Q105 | 0.040 | 0.056 | 0.476 |
| Q108 | 0.044 | 0.055 | 0.419 |
| Q109 | 0.145 | 0.054 | 0.008 |
| Occupational | | | |
| Q16 | -0.136 | 0.046 | 0.003 |
| Q18 | 0.005 | 0.041 | 0.899 |
| Q19 | -0.059 | 0.047 | 0.212 |
| Q20 | -0.016 | 0.045 | 0.725 |
| Q21 | 0.074 | 0.041 | 0.070 |
| Q22 | -0.062 | 0.044 | 0.157 |
| Q23 | 0.005 | 0.044 | 0.913 |
| Q24 | -0.068 | 0.041 | 0.094 |
| Q25 | 0.192 | 0.040 | 0.000 |
| Q26 | -0.017 | 0.043 | 0.697 |
| Q27 | 0.108 | 0.038 | 0.005 |
| Q28 | 0.223 | 0.036 | 0.000 |
| Q30 | 0.158 | 0.040 | 0.000 |
| Q31 | 0.201 | 0.038 | 0.000 |
| Q32 | 0.095 | 0.040 | 0.019 |
| Q33 | -0.005 | 0.042 | 0.901 |
| Q34 | 0.122 | 0.040 | 0.002 |
| Q35 | 0.037 | 0.048 | 0.443 |
| Q36 | 0.006 | 0.041 | 0.893 |
| Q37 | 0.156 | 0.039 | 0.000 |
| Q38 | 0.088 | 0.045 | 0.052 |
| Q39 | -0.117 | 0.041 | 0.005 |
| Q41 | 0.106 | 0.047 | 0.024 |
| Q42 | 0.025 | 0.041 | 0.549 |
| Q43 | -0.114 | 0.043 | 0.008 |
| Q44 | 0.037 | 0.039 | 0.341 |
| Q45 | -0.058 | 0.043 | 0.176 |
| Q46 | 0.123 | 0.041 | 0.003 |
| Q48 | 0.021 | 0.041 | 0.609 |
| Q49 | 0.047 | 0.040 | 0.250 |
| Q50 | 0.051 | 0.041 | 0.205 |
| Q51 | 0.069 | 0.039 | 0.074 |

(continued)

**Table B-2. Standardized Factor Loading - Bifactor Model - Administrative Support Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q52 | 0.052 | 0.039 | 0.177 |
| Q54 | 0.066 | 0.039 | 0.094 |
| Q55 | -0.039 | 0.050 | 0.432 |
| Q56 | 0.097 | 0.041 | 0.018 |
| Q57 | -0.044 | 0.041 | 0.287 |
| Q58 | 0.067 | 0.039 | 0.086 |
| Q59 | 0.044 | 0.040 | 0.273 |
| Q60 | 0.014 | 0.041 | 0.732 |
| Q61 | -0.157 | 0.047 | 0.001 |
| Q66 | 0.536 | 0.046 | 0.000 |
| Q67 | 0.550 | 0.043 | 0.000 |
| Q68 | 0.171 | 0.039 | 0.000 |
| Q69 | 0.256 | 0.042 | 0.000 |
| Q111 | 0.065 | 0.039 | 0.092 |
| Q112 | 0.066 | 0.042 | 0.117 |
| Q115 | 0.090 | 0.040 | 0.025 |
| Q117 | 0.034 | 0.041 | 0.411 |
| Q120 | 0.109 | 0.042 | 0.009 |
| Transition Readiness | | | |
| Q1 | 0.685 | 0.030 | 0.000 |
| Q2 | 0.418 | 0.024 | 0.000 |
| Q4 | 0.516 | 0.029 | 0.000 |
| Q5 | 0.506 | 0.028 | 0.000 |
| Q14 | 0.319 | 0.044 | 0.000 |
| Q62 | 0.602 | 0.026 | 0.000 |
| Q70 | 0.474 | 0.024 | 0.000 |
| Q71 | 0.680 | 0.031 | 0.000 |
| Q72 | 0.481 | 0.035 | 0.000 |
| Q74 | 0.639 | 0.028 | 0.000 |
| Q75 | 0.550 | 0.027 | 0.000 |
| Q76 | 0.249 | 0.027 | 0.000 |
| Q77 | 0.328 | 0.031 | 0.000 |
| Q78 | 0.479 | 0.042 | 0.000 |
| Q79 | 0.560 | 0.024 | 0.000 |
| Q80 | 0.595 | 0.026 | 0.000 |
| Q82 | 0.476 | 0.024 | 0.000 |
| Q83 | 0.669 | 0.020 | 0.000 |
| Q96 | 0.444 | 0.027 | 0.000 |
| Q97 | 0.234 | 0.027 | 0.000 |
| Q98 | 0.385 | 0.027 | 0.000 |
| Q99 | 0.564 | 0.023 | 0.000 |

**Table B-2. Standardized Factor Loading - Bifactor Model - Administrative Support Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q101 | 0.395 | 0.025 | 0.000 |
| Q106 | 0.395 | 0.025 | 0.000 |
| Q110 | 0.313 | 0.026 | 0.000 |
| Q6 | 0.512 | 0.028 | 0.000 |
| Q7 | 0.572 | 0.029 | 0.000 |
| Q8 | 0.457 | 0.025 | 0.000 |
| Q10 | 0.631 | 0.023 | 0.000 |
| Q13 | 0.387 | 0.028 | 0.000 |
| Q15 | 0.450 | 0.025 | 0.000 |
| Q64 | 0.514 | 0.024 | 0.000 |
| Q65 | 0.615 | 0.022 | 0.000 |
| Q84 | 0.333 | 0.025 | 0.000 |
| Q85 | 0.559 | 0.027 | 0.000 |
| Q86 | 0.560 | 0.026 | 0.000 |
| Q87 | 0.554 | 0.023 | 0.000 |
| Q89 | 0.689 | 0.032 | 0.000 |
| Q90 | 0.467 | 0.027 | 0.000 |
| Q91 | 0.357 | 0.027 | 0.000 |
| Q92 | 0.411 | 0.030 | 0.000 |
| Q93 | 0.729 | 0.027 | 0.000 |
| Q94 | 0.736 | 0.022 | 0.000 |
| Q95 | 0.528 | 0.029 | 0.000 |
| Q102 | 0.211 | 0.033 | 0.000 |
| Q103 | 0.603 | 0.032 | 0.000 |
| Q104 | 0.806 | 0.035 | 0.000 |
| Q105 | 0.536 | 0.030 | 0.000 |
| Q108 | 0.593 | 0.027 | 0.000 |
| Q109 | 0.432 | 0.031 | 0.000 |
| Q16 | 0.512 | 0.034 | 0.000 |
| Q18 | 0.474 | 0.027 | 0.000 |
| Q19 | 0.712 | 0.029 | 0.000 |
| Q20 | 0.613 | 0.030 | 0.000 |
| Q21 | 0.411 | 0.026 | 0.000 |
| Q22 | 0.353 | 0.031 | 0.000 |
| Q23 | 0.541 | 0.030 | 0.000 |
| Q24 | 0.386 | 0.028 | 0.000 |
| Q25 | 0.292 | 0.026 | 0.000 |
| Q26 | 0.037 | 0.029 | 0.210 |
| Q27 | 0.447 | 0.025 | 0.000 |
| Q28 | 0.574 | 0.022 | 0.000 |

(continued)

**Table B-2. Standardized Factor Loading - Bifactor Model - Administrative Support Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q30 | 0.343 | 0.025 | 0.000 |
| Q31 | 0.475 | 0.024 | 0.000 |
| Q32 | 0.506 | 0.026 | 0.000 |
| Q33 | 0.367 | 0.029 | 0.000 |
| Q34 | 0.303 | 0.026 | 0.000 |
| Q35 | 0.489 | 0.036 | 0.000 |
| Q36 | 0.592 | 0.026 | 0.000 |
| Q37 | 0.397 | 0.026 | 0.000 |
| Q38 | 0.508 | 0.030 | 0.000 |
| Q39 | 0.113 | 0.028 | 0.000 |
| Q41 | 0.000 | 0.033 | 0.995 |
| Q42 | 0.489 | 0.029 | 0.000 |
| Q43 | 0.544 | 0.031 | 0.000 |
| Q44 | 0.512 | 0.025 | 0.000 |
| Q45 | 0.218 | 0.030 | 0.000 |
| Q46 | 0.141 | 0.028 | 0.000 |
| Q48 | 0.180 | 0.027 | 0.000 |
| Q49 | 0.201 | 0.027 | 0.000 |
| Q50 | 0.271 | 0.026 | 0.000 |
| Q51 | 0.396 | 0.025 | 0.000 |
| Q52 | 0.453 | 0.025 | 0.000 |
| Q54 | 0.275 | 0.026 | 0.000 |
| Q55 | 0.696 | 0.032 | 0.000 |
| Q56 | 0.242 | 0.027 | 0.000 |
| Q57 | 0.530 | 0.027 | 0.000 |
| Q58 | 0.386 | 0.025 | 0.000 |
| Q59 | 0.539 | 0.026 | 0.000 |
| Q60 | 0.308 | 0.027 | 0.000 |
| Q61 | 0.486 | 0.033 | 0.000 |
| Q66 | 0.518 | 0.028 | 0.000 |
| Q67 | 0.432 | 0.026 | 0.000 |
| Q68 | 0.457 | 0.025 | 0.000 |
| Q69 | 0.257 | 0.028 | 0.000 |
| Q111 | 0.389 | 0.025 | 0.000 |
| Q112 | 0.148 | 0.029 | 0.000 |
| Q115 | 0.202 | 0.027 | 0.000 |
| Q117 | 0.191 | 0.028 | 0.000 |
| Q120 | 0.322 | 0.027 | 0.000 |

## Table B-3. Standardized Factor Loading - Bifactor Model - Ag Power

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.096 | 0.047 | 0.040 |
| Q2 | -0.029 | 0.042 | 0.485 |
| Q4 | -0.008 | 0.044 | 0.848 |
| Q5 | -0.040 | 0.043 | 0.347 |
| Q14 | -0.001 | 0.057 | 0.979 |
| Q16 | -0.051 | 0.043 | 0.237 |
| Q70 | -0.049 | 0.044 | 0.272 |
| Q71 | 0.107 | 0.048 | 0.026 |
| Q72 | 0.043 | 0.047 | 0.362 |
| Q74 | 0.094 | 0.046 | 0.042 |
| Q75 | 0.073 | 0.049 | 0.141 |
| Q76 | 0.008 | 0.042 | 0.850 |
| Q77 | -0.005 | 0.045 | 0.906 |
| Q78 | 0.130 | 0.055 | 0.018 |
| Q79 | -0.008 | 0.042 | 0.856 |
| Q80 | -0.016 | 0.042 | 0.706 |
| Q82 | -0.022 | 0.042 | 0.599 |
| Q83 | -0.034 | 0.041 | 0.403 |
| Q96 | -0.003 | 0.043 | 0.943 |
| Q97 | 0.020 | 0.043 | 0.639 |
| Q98 | -0.021 | 0.044 | 0.643 |
| Q99 | -0.020 | 0.041 | 0.629 |
| Q101 | -0.840 | 0.128 | 0.000 |
| Q106 | -0.068 | 0.043 | 0.108 |
| Q110 | -0.612 | 0.094 | 0.000 |
| Employability | | | |
| Q6 | 0.146 | 0.053 | 0.006 |
| Q7 | 0.126 | 0.054 | 0.019 |
| Q8 | 0.278 | 0.052 | 0.000 |
| Q10 | 0.306 | 0.051 | 0.000 |
| Q13 | 0.201 | 0.052 | 0.000 |
| Q15 | 0.141 | 0.053 | 0.009 |
| Q18 | 0.285 | 0.053 | 0.000 |
| Q19 | 0.256 | 0.051 | 0.000 |
| Q84 | 0.087 | 0.054 | 0.108 |
| Q85 | 0.125 | 0.051 | 0.014 |
| Q86 | 0.351 | 0.055 | 0.000 |
| Q87 | 0.396 | 0.050 | 0.000 |
| Q89 | 0.225 | 0.063 | 0.000 |
| Q90 | 0.070 | 0.051 | 0.164 |
| Q91 | 0.255 | 0.053 | 0.000 |
| Q92 | 0.014 | 0.055 | 0.799 |

(continued)

*Table B-3. Standardized Factor Loading - Bifactor Model - Ag Power (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.216 | 0.054 | 0.000 |
| Q94 | 0.304 | 0.052 | 0.000 |
| Q95 | 0.009 | 0.055 | 0.871 |
| Q102 | 0.034 | 0.058 | 0.565 |
| Q103 | 0.146 | 0.056 | 0.009 |
| Q104 | 0.098 | 0.074 | 0.189 |
| Q105 | 0.173 | 0.053 | 0.001 |
| Q108 | 0.272 | 0.051 | 0.000 |
| Q109 | 0.037 | 0.056 | 0.509 |
| Occupational | | | |
| Q20 | 0.238 | 0.040 | 0.000 |
| Q21 | 0.047 | 0.041 | 0.245 |
| Q24 | 0.297 | 0.039 | 0.000 |
| Q25 | 0.149 | 0.040 | 0.000 |
| Q26 | 0.144 | 0.040 | 0.000 |
| Q27 | 0.027 | 0.052 | 0.604 |
| Q28 | 0.173 | 0.045 | 0.000 |
| Q29 | 0.340 | 0.039 | 0.000 |
| Q30 | 0.175 | 0.042 | 0.000 |
| Q31 | 0.271 | 0.040 | 0.000 |
| Q32 | 0.045 | 0.041 | 0.269 |
| Q33 | 0.207 | 0.041 | 0.000 |
| Q34 | -0.080 | 0.041 | 0.052 |
| Q35 | 0.121 | 0.045 | 0.007 |
| Q36 | -0.037 | 0.039 | 0.347 |
| Q37 | 0.038 | 0.041 | 0.348 |
| Q39 | 0.055 | 0.041 | 0.182 |
| Q40 | 0.059 | 0.042 | 0.156 |
| Q41 | 0.133 | 0.044 | 0.003 |
| Q42 | 0.326 | 0.041 | 0.000 |
| Q43 | 0.204 | 0.042 | 0.000 |
| Q44 | 0.121 | 0.040 | 0.002 |
| Q45 | 0.084 | 0.041 | 0.040 |
| Q47 | 0.341 | 0.038 | 0.000 |
| Q48 | 0.127 | 0.045 | 0.005 |
| Q49 | 0.307 | 0.039 | 0.000 |
| Q51 | 0.169 | 0.039 | 0.000 |
| Q52 | 0.190 | 0.040 | 0.000 |
| Q53 | 0.342 | 0.039 | 0.000 |
| Q54 | 0.079 | 0.041 | 0.055 |
| Q55 | 0.098 | 0.039 | 0.012 |
| Q56 | 0.079 | 0.041 | 0.052 |

(continued)

*Table B-3. Standardized Factor Loading - Bifactor Model - Ag Power (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q57 | 0.388 | 0.038 | 0.000 |
| Q59 | 0.095 | 0.041 | 0.020 |
| Q60 | 0.217 | 0.040 | 0.000 |
| Q61 | 0.324 | 0.040 | 0.000 |
| Q62 | 0.337 | 0.038 | 0.000 |
| Q63 | 0.266 | 0.040 | 0.000 |
| Q65 | 0.152 | 0.038 | 0.000 |
| Q66 | 0.123 | 0.045 | 0.006 |
| Q67 | 0.252 | 0.045 | 0.000 |
| Q69 | 0.218 | 0.048 | 0.000 |
| Q111 | 0.151 | 0.040 | 0.000 |
| Q112 | 0.154 | 0.040 | 0.000 |
| Q113 | 0.010 | 0.041 | 0.801 |
| Q114 | 0.141 | 0.040 | 0.000 |
| Q115 | 0.092 | 0.039 | 0.018 |
| Q118 | 0.246 | 0.040 | 0.000 |
| Q119 | 0.562 | 0.037 | 0.000 |
| Q120 | 0.560 | 0.034 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.711 | 0.032 | 0.000 |
| Q2 | 0.394 | 0.031 | 0.000 |
| Q4 | 0.509 | 0.032 | 0.000 |
| Q5 | 0.515 | 0.032 | 0.000 |
| Q14 | 0.420 | 0.047 | 0.000 |
| Q16 | 0.576 | 0.030 | 0.000 |
| Q70 | 0.393 | 0.036 | 0.000 |
| Q71 | 0.660 | 0.034 | 0.000 |
| Q72 | 0.607 | 0.035 | 0.000 |
| Q74 | 0.652 | 0.032 | 0.000 |
| Q75 | 0.573 | 0.036 | 0.000 |
| Q76 | 0.325 | 0.032 | 0.000 |
| Q77 | 0.461 | 0.035 | 0.000 |
| Q78 | 0.579 | 0.042 | 0.000 |
| Q79 | 0.499 | 0.030 | 0.000 |
| Q80 | 0.515 | 0.030 | 0.000 |
| Q82 | 0.492 | 0.030 | 0.000 |
| Q83 | 0.498 | 0.030 | 0.000 |
| Q96 | 0.477 | 0.032 | 0.000 |
| Q97 | 0.255 | 0.033 | 0.000 |
| Q98 | 0.485 | 0.035 | 0.000 |
| Q99 | 0.527 | 0.028 | 0.000 |
| Q101 | 0.413 | 0.032 | 0.000 |
| Q106 | 0.417 | 0.032 | 0.000 |

(continued)

*Table B-3. Standardized Factor Loading - Bifactor Model - Ag Power (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q110 | 0.303 | 0.034 | 0.000 |
| Q6 | 0.538 | 0.032 | 0.000 |
| Q7 | 0.528 | 0.034 | 0.000 |
| Q8 | 0.357 | 0.033 | 0.000 |
| Q10 | 0.484 | 0.031 | 0.000 |
| Q13 | 0.427 | 0.032 | 0.000 |
| Q15 | 0.411 | 0.032 | 0.000 |
| Q18 | 0.383 | 0.032 | 0.000 |
| Q19 | 0.480 | 0.030 | 0.000 |
| Q84 | 0.359 | 0.033 | 0.000 |
| Q85 | 0.554 | 0.032 | 0.000 |
| Q86 | 0.450 | 0.034 | 0.000 |
| Q87 | 0.482 | 0.030 | 0.000 |
| Q89 | 0.706 | 0.035 | 0.000 |
| Q90 | 0.532 | 0.031 | 0.000 |
| Q91 | 0.310 | 0.034 | 0.000 |
| Q92 | 0.392 | 0.038 | 0.000 |
| Q93 | 0.698 | 0.032 | 0.000 |
| Q94 | 0.599 | 0.030 | 0.000 |
| Q95 | 0.655 | 0.033 | 0.000 |
| Q102 | 0.358 | 0.038 | 0.000 |
| Q103 | 0.627 | 0.034 | 0.000 |
| Q104 | 0.746 | 0.043 | 0.000 |
| Q105 | 0.556 | 0.033 | 0.000 |
| Q108 | 0.541 | 0.031 | 0.000 |
| Q109 | 0.418 | 0.038 | 0.000 |
| Q20 | 0.106 | 0.035 | 0.002 |
| Q21 | 0.326 | 0.033 | 0.000 |
| Q24 | 0.170 | 0.035 | 0.000 |
| Q25 | 0.230 | 0.034 | 0.000 |
| Q26 | 0.301 | 0.033 | 0.000 |
| Q27 | -0.200 | 0.050 | 0.000 |
| Q28 | 0.355 | 0.039 | 0.000 |
| Q29 | 0.369 | 0.033 | 0.000 |
| Q30 | 0.113 | 0.035 | 0.001 |
| Q31 | 0.286 | 0.037 | 0.000 |
| Q32 | 0.272 | 0.034 | 0.000 |
| Q33 | 0.381 | 0.034 | 0.000 |
| Q34 | 0.068 | 0.035 | 0.052 |
| Q35 | 0.404 | 0.039 | 0.000 |
| Q36 | 0.564 | 0.028 | 0.000 |
| Q37 | 0.683 | 0.028 | 0.000 |

(continued)

**Table B-3. Standardized Factor Loading - Bifactor Model - Ag Power (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q39 | 0.078 | 0.035 | 0.025 |
| Q40 | 0.090 | 0.035 | 0.010 |
| Q41 | 0.493 | 0.038 | 0.000 |
| Q42 | 0.326 | 0.036 | 0.000 |
| Q43 | 0.415 | 0.034 | 0.000 |
| Q44 | 0.325 | 0.032 | 0.000 |
| Q45 | 0.199 | 0.035 | 0.000 |
| Q47 | 0.188 | 0.034 | 0.000 |
| Q48 | 0.423 | 0.037 | 0.000 |
| Q49 | 0.271 | 0.034 | 0.000 |
| Q51 | 0.301 | 0.033 | 0.000 |
| Q52 | 0.421 | 0.033 | 0.000 |
| Q53 | 0.205 | 0.034 | 0.000 |
| Q54 | 0.634 | 0.029 | 0.000 |
| Q55 | 0.419 | 0.031 | 0.000 |
| Q56 | 0.207 | 0.034 | 0.000 |
| Q57 | 0.178 | 0.035 | 0.000 |
| Q59 | 0.244 | 0.033 | 0.000 |
| Q60 | 0.164 | 0.035 | 0.000 |
| Q61 | 0.177 | 0.035 | 0.000 |
| Q62 | 0.314 | 0.033 | 0.000 |
| Q63 | 0.286 | 0.034 | 0.000 |
| Q65 | 0.524 | 0.030 | 0.000 |
| Q66 | 0.270 | 0.046 | 0.000 |
| Q67 | 0.660 | 0.035 | 0.000 |
| Q69 | 0.444 | 0.040 | 0.000 |
| Q111 | 0.403 | 0.031 | 0.000 |
| Q112 | 0.228 | 0.038 | 0.000 |
| Q113 | 0.392 | 0.031 | 0.000 |
| Q114 | 0.400 | 0.032 | 0.000 |
| Q115 | 0.468 | 0.030 | 0.000 |
| Q118 | 0.106 | 0.035 | 0.002 |
| Q119 | 0.146 | 0.036 | 0.000 |
| Q120 | 0.211 | 0.035 | 0.000 |

**Table B-4. Standardized Factor Loadings - Bifactor Model - Agribusiness**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.089 | 0.084 | 0.291 |
| Q2 | 0.089 | 0.071 | 0.210 |
| Q4 | 0.046 | 0.075 | 0.541 |
| Q5 | -0.113 | 0.081 | 0.165 |
| Q14 | 0.059 | 0.108 | 0.584 |
| Q16 | -0.054 | 0.072 | 0.456 |
| Q20 | 0.072 | 0.073 | 0.322 |
| Q21 | -0.022 | 0.081 | 0.790 |
| Q22 | -0.015 | 0.085 | 0.860 |
| Q24 | -0.026 | 0.080 | 0.747 |
| Q25 | 0.182 | 0.077 | 0.019 |
| Q26 | -0.106 | 0.074 | 0.152 |
| Q27 | -0.051 | 0.078 | 0.508 |
| Q28 | -0.214 | 0.083 | 0.010 |
| Q29 | -0.111 | 0.076 | 0.142 |
| Q30 | -0.027 | 0.075 | 0.721 |
| Q32 | 0.015 | 0.075 | 0.841 |
| Q33 | 0.031 | 0.067 | 0.640 |
| Q46 | 0.147 | 0.073 | 0.045 |
| Q47 | -0.003 | 0.076 | 0.969 |
| Q48 | 0.092 | 0.075 | 0.217 |
| Q49 | 0.108 | 0.069 | 0.116 |
| Q51 | 0.725 | 0.116 | 0.000 |
| Q56 | -0.006 | 0.078 | 0.934 |
| Q60 | 0.668 | 0.108 | 0.000 |
| Employability | | | |
| Q6 | -0.123 | 0.095 | 0.199 |
| Q7 | 0.423 | 0.109 | 0.000 |
| Q8 | 0.162 | 0.090 | 0.073 |
| Q10 | 0.163 | 0.091 | 0.073 |
| Q13 | 0.151 | 0.093 | 0.103 |
| Q15 | -0.078 | 0.092 | 0.396 |
| Q18 | 0.365 | 0.095 | 0.000 |
| Q19 | -0.064 | 0.084 | 0.448 |
| Q34 | 0.034 | 0.094 | 0.716 |
| Q35 | 0.301 | 0.098 | 0.002 |
| Q36 | 0.092 | 0.096 | 0.335 |
| Q37 | 0.202 | 0.085 | 0.017 |
| Q39 | -0.036 | 0.115 | 0.753 |
| Q40 | 0.011 | 0.088 | 0.903 |
| Q41 | -0.313 | 0.096 | 0.001 |
| Q42 | -0.200 | 0.090 | 0.025 |
| Q43 | -0.146 | 0.108 | 0.175 |
| Q44 | 0.138 | 0.094 | 0.140 |
| Q45 | 0.043 | 0.103 | 0.676 |
| Q52 | -0.015 | 0.104 | 0.883 |
| Q53 | -0.118 | 0.103 | 0.251 |
| Q55 | 0.093 | 0.129 | 0.470 |

(continued)

*Table B-4. Standardized Factor Loadings - Bifactor Model - Agribusiness (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q58 | 0.109 | 0.088 | 0.215 |
| Q59 | 0.002 | 0.097 | 0.985 |
| Occupational | | | |
| Q61 | 0.049 | 0.077 | 0.521 |
| Q62 | -0.066 | 0.081 | 0.415 |
| Q63 | 0.269 | 0.087 | 0.002 |
| Q64 | 0.086 | 0.069 | 0.211 |
| Q65 | 0.025 | 0.079 | 0.747 |
| Q66 | 0.118 | 0.079 | 0.135 |
| Q67 | -0.233 | 0.088 | 0.008 |
| Q68 | 0.024 | 0.069 | 0.726 |
| Q69 | 0.155 | 0.077 | 0.045 |
| Q71 | 0.174 | 0.069 | 0.012 |
| Q73 | 0.359 | 0.074 | 0.000 |
| Q74 | 0.213 | 0.083 | 0.011 |
| Q75 | 0.005 | 0.078 | 0.953 |
| Q76 | 0.001 | 0.073 | 0.994 |
| Q77 | 0.005 | 0.077 | 0.946 |
| Q78 | 0.250 | 0.077 | 0.001 |
| Q79 | 0.050 | 0.078 | 0.523 |
| Q80 | 0.215 | 0.077 | 0.005 |
| Q81 | -0.273 | 0.075 | 0.000 |
| Q82 | 0.054 | 0.068 | 0.430 |
| Q83 | 0.162 | 0.065 | 0.013 |
| Q85 | 0.220 | 0.069 | 0.002 |
| Q86 | 0.187 | 0.081 | 0.021 |
| Q88 | -0.328 | 0.082 | 0.000 |
| Q89 | 0.141 | 0.083 | 0.089 |
| Q90 | 0.180 | 0.080 | 0.024 |
| Q91 | 0.149 | 0.067 | 0.027 |
| Q92 | -0.281 | 0.081 | 0.001 |
| Q94 | 0.036 | 0.072 | 0.613 |
| Q95 | -0.121 | 0.080 | 0.130 |
| Q96 | 0.295 | 0.072 | 0.000 |
| Q97 | 0.002 | 0.070 | 0.981 |
| Q98 | -0.040 | 0.070 | 0.566 |
| Q99 | 0.114 | 0.079 | 0.152 |
| Q100 | -0.144 | 0.067 | 0.032 |
| Q101 | 0.130 | 0.070 | 0.065 |
| Q102 | 0.044 | 0.071 | 0.535 |
| Q103 | 0.171 | 0.074 | 0.022 |
| Q106 | -0.046 | 0.074 | 0.537 |
| Q107 | 0.113 | 0.081 | 0.161 |
| Q108 | 0.030 | 0.082 | 0.717 |
| Q110 | 0.108 | 0.083 | 0.191 |
| Q111 | 0.115 | 0.074 | 0.119 |
| Q112 | -0.237 | 0.065 | 0.000 |
| Q113 | -0.221 | 0.074 | 0.003 |
| Q115 | -0.085 | 0.079 | 0.281 |

(continued)

*Table B-4. Standardized Factor Loadings - Bifactor Model - Agribusiness (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q116 | 0.210 | 0.104 | 0.042 |
| Q117 | 0.283 | 0.072 | 0.000 |
| Q118 | 0.238 | 0.086 | 0.006 |
| Q120 | 0.214 | 0.077 | 0.006 |
| Transition Readiness | | | |
| Q1 | 0.701 | 0.054 | 0.000 |
| Q2 | 0.470 | 0.051 | 0.000 |
| Q4 | 0.558 | 0.052 | 0.000 |
| Q5 | 0.496 | 0.062 | 0.000 |
| Q14 | 0.234 | 0.084 | 0.005 |
| Q16 | 0.708 | 0.044 | 0.000 |
| Q20 | 0.441 | 0.058 | 0.000 |
| Q21 | 0.808 | 0.047 | 0.000 |
| Q22 | 0.648 | 0.056 | 0.000 |
| Q24 | 0.620 | 0.055 | 0.000 |
| Q25 | 0.486 | 0.058 | 0.000 |
| Q26 | 0.249 | 0.055 | 0.000 |
| Q27 | 0.437 | 0.058 | 0.000 |
| Q28 | 0.628 | 0.075 | 0.000 |
| Q29 | 0.476 | 0.051 | 0.000 |
| Q30 | 0.528 | 0.052 | 0.000 |
| Q32 | 0.342 | 0.054 | 0.000 |
| Q33 | 0.622 | 0.044 | 0.000 |
| Q46 | 0.424 | 0.055 | 0.000 |
| Q47 | 0.255 | 0.056 | 0.000 |
| Q48 | 0.400 | 0.058 | 0.000 |
| Q49 | 0.562 | 0.045 | 0.000 |
| Q51 | 0.454 | 0.051 | 0.000 |
| Q56 | 0.308 | 0.057 | 0.000 |
| Q60 | 0.387 | 0.052 | 0.000 |
| Q6 | 0.615 | 0.052 | 0.000 |
| Q7 | 0.527 | 0.057 | 0.000 |
| Q8 | 0.419 | 0.051 | 0.000 |
| Q10 | 0.654 | 0.043 | 0.000 |
| Q13 | 0.451 | 0.055 | 0.000 |
| Q15 | 0.381 | 0.054 | 0.000 |
| Q18 | 0.498 | 0.047 | 0.000 |
| Q19 | 0.633 | 0.045 | 0.000 |
| Q34 | 0.289 | 0.054 | 0.000 |
| Q35 | 0.618 | 0.052 | 0.000 |
| Q36 | 0.505 | 0.054 | 0.000 |
| Q37 | 0.572 | 0.046 | 0.000 |
| Q39 | 0.716 | 0.057 | 0.000 |
| Q40 | 0.519 | 0.052 | 0.000 |
| Q41 | 0.358 | 0.054 | 0.000 |
| Q42 | 0.498 | 0.056 | 0.000 |
| Q43 | 0.779 | 0.049 | 0.000 |
| Q44 | 0.708 | 0.043 | 0.000 |

(continued)

**_Table B-4. Standardized Factor Loadings - Bifactor Model - Agribusiness (continued)_**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q45 | 0.473 | 0.063 | 0.000 |
| Q52 | 0.257 | 0.064 | 0.000 |
| Q53 | 0.724 | 0.056 | 0.000 |
| Q55 | 0.497 | 0.070 | 0.000 |
| Q58 | 0.695 | 0.046 | 0.000 |
| Q59 | 0.561 | 0.061 | 0.000 |
| Q61 | 0.456 | 0.051 | 0.000 |
| Q62 | 0.451 | 0.057 | 0.000 |
| Q63 | 0.237 | 0.062 | 0.000 |
| Q64 | 0.495 | 0.048 | 0.000 |
| Q65 | 0.161 | 0.057 | 0.005 |
| Q66 | 0.177 | 0.057 | 0.002 |
| Q67 | 0.494 | 0.073 | 0.000 |
| Q68 | 0.621 | 0.053 | 0.000 |
| Q69 | 0.250 | 0.055 | 0.000 |
| Q71 | 0.496 | 0.048 | 0.000 |
| Q73 | 0.359 | 0.050 | 0.000 |
| Q74 | 0.174 | 0.057 | 0.002 |
| Q75 | 0.386 | 0.058 | 0.000 |
| Q76 | 0.380 | 0.051 | 0.000 |
| Q77 | 0.469 | 0.056 | 0.000 |
| Q78 | 0.443 | 0.054 | 0.000 |
| Q79 | 0.612 | 0.052 | 0.000 |
| Q80 | 0.360 | 0.053 | 0.000 |
| Q81 | 0.484 | 0.058 | 0.000 |
| Q82 | 0.666 | 0.046 | 0.000 |
| Q83 | 0.595 | 0.042 | 0.000 |
| Q85 | 0.521 | 0.049 | 0.000 |
| Q86 | 0.218 | 0.058 | 0.000 |
| Q88 | 0.603 | 0.058 | 0.000 |
| Q89 | 0.479 | 0.059 | 0.000 |
| Q90 | 0.189 | 0.055 | 0.001 |
| Q91 | 0.600 | 0.045 | 0.000 |
| Q92 | 0.465 | 0.058 | 0.000 |
| Q94 | 0.479 | 0.052 | 0.000 |
| Q95 | 0.010 | 0.058 | 0.870 |
| Q96 | 0.465 | 0.052 | 0.000 |
| Q97 | 0.500 | 0.055 | 0.000 |
| Q98 | 0.573 | 0.046 | 0.000 |
| Q99 | 0.195 | 0.055 | 0.000 |
| Q100 | 0.615 | 0.043 | 0.000 |
| Q101 | 0.527 | 0.048 | 0.000 |
| Q102 | 0.432 | 0.050 | 0.000 |
| Q103 | 0.333 | 0.052 | 0.000 |
| Q106 | 0.365 | 0.054 | 0.000 |
| Q107 | 0.368 | 0.061 | 0.000 |

(continued)

*Table B-4. Standardized Factor Loadings - Bifactor Model - Agribusiness (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q108 | 0.582 | 0.062 | 0.000 |
| Q110 | -0.012 | 0.063 | 0.846 |
| Q111 | 0.395 | 0.050 | 0.000 |
| Q112 | 0.678 | 0.046 | 0.000 |
| Q113 | 0.722 | 0.047 | 0.000 |
| Q115 | 0.062 | 0.057 | 0.280 |
| Q116 | -0.007 | 0.080 | 0.932 |
| Q117 | 0.290 | 0.055 | 0.000 |
| Q118 | 0.151 | 0.069 | 0.028 |
| Q120 | 0.289 | 0.058 | 0.000 |

**Table B-5 Standardized Factor Loading - Bifactor Model - Allied Health**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.018 | 0.046 | 0.691 |
| Q2 | 0.035 | 0.027 | 0.196 |
| Q4 | -0.053 | 0.032 | 0.096 |
| Q5 | -0.005 | 0.037 | 0.891 |
| Q14 | 0.001 | 0.041 | 0.981 |
| Q64 | 0.011 | 0.033 | 0.750 |
| Q72 | -0.002 | 0.027 | 0.937 |
| Q73 | 0.036 | 0.042 | 0.400 |
| Q74 | -0.030 | 0.038 | 0.427 |
| Q76 | 0.058 | 0.035 | 0.091 |
| Q77 | 0.046 | 0.030 | 0.130 |
| Q78 | 0.039 | 0.028 | 0.153 |
| Q79 | 0.027 | 0.031 | 0.387 |
| Q80 | 0.003 | 0.047 | 0.956 |
| Q81 | 0.049 | 0.028 | 0.085 |
| Q82 | 0.051 | 0.029 | 0.081 |
| Q84 | -0.015 | 0.026 | 0.578 |
| Q85 | -0.002 | 0.026 | 0.939 |
| Q98 | 0.064 | 0.029 | 0.030 |
| Q99 | -0.025 | 0.028 | 0.376 |
| Q100 | 0.070 | 0.029 | 0.015 |
| Q101 | 0.112 | 0.027 | 0.000 |
| Q103 | 0.664 | 0.072 | 0.000 |
| Q108 | 0.008 | 0.028 | 0.769 |
| Q112 | 0.833 | 0.089 | 0.000 |
| Employability | | | |
| Q6 | 0.094 | 0.045 | 0.039 |
| Q7 | 0.242 | 0.052 | 0.000 |
| Q8 | 0.261 | 0.042 | 0.000 |
| Q10 | 0.145 | 0.042 | 0.000 |
| Q13 | 0.134 | 0.045 | 0.003 |
| Q15 | 0.043 | 0.043 | 0.318 |
| Q66 | 0.072 | 0.043 | 0.094 |
| Q68 | 0.209 | 0.040 | 0.000 |
| Q86 | 0.027 | 0.042 | 0.515 |
| Q87 | 0.171 | 0.046 | 0.000 |
| Q88 | 0.193 | 0.043 | 0.000 |
| Q89 | 0.182 | 0.039 | 0.000 |
| Q91 | 0.199 | 0.069 | 0.004 |
| Q92 | 0.140 | 0.046 | 0.002 |
| Q93 | 0.043 | 0.045 | 0.338 |
| Q94 | 0.190 | 0.050 | 0.000 |

(continued)

*Table B-5 Standardized Factor Loading - Bifactor Model - Allied Health (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q95 | 0.208 | 0.054 | 0.000 |
| Q96 | 0.222 | 0.047 | 0.000 |
| Q97 | 0.141 | 0.048 | 0.003 |
| Q104 | 0.092 | 0.053 | 0.085 |
| Q105 | 0.132 | 0.054 | 0.015 |
| Q106 | 0.374 | 0.146 | 0.010 |
| Q107 | 0.267 | 0.051 | 0.000 |
| Q110 | 0.334 | 0.052 | 0.000 |
| Q111 | 0.148 | 0.054 | 0.006 |
| Occupational | | | |
| Q16 | 0.089 | 0.026 | 0.001 |
| Q17 | -0.013 | 0.027 | 0.631 |
| Q18 | -0.062 | 0.031 | 0.045 |
| Q19 | -0.026 | 0.028 | 0.350 |
| Q20 | -0.066 | 0.027 | 0.014 |
| Q21 | -0.097 | 0.025 | 0.000 |
| Q22 | 0.036 | 0.033 | 0.268 |
| Q23 | -0.075 | 0.028 | 0.008 |
| Q24 | -0.139 | 0.031 | 0.000 |
| Q25 | -0.076 | 0.026 | 0.003 |
| Q26 | -0.060 | 0.027 | 0.027 |
| Q27 | -0.108 | 0.027 | 0.000 |
| Q32 | -0.037 | 0.026 | 0.152 |
| Q33 | -0.003 | 0.035 | 0.922 |
| Q34 | 0.031 | 0.026 | 0.224 |
| Q35 | -0.084 | 0.028 | 0.003 |
| Q37 | 0.033 | 0.026 | 0.201 |
| Q39 | 0.003 | 0.027 | 0.899 |
| Q40 | 0.025 | 0.025 | 0.318 |
| Q41 | 0.026 | 0.026 | 0.321 |
| Q42 | 0.051 | 0.026 | 0.046 |
| Q43 | 0.050 | 0.026 | 0.055 |
| Q44 | -0.163 | 0.032 | 0.000 |
| Q45 | 0.090 | 0.029 | 0.002 |
| Q46 | -0.112 | 0.038 | 0.003 |
| Q47 | -0.003 | 0.027 | 0.906 |
| Q48 | -0.091 | 0.027 | 0.001 |
| Q49 | -0.084 | 0.029 | 0.004 |
| Q51 | -0.140 | 0.028 | 0.000 |
| Q53 | -0.110 | 0.027 | 0.000 |
| Q54 | -0.082 | 0.032 | 0.010 |
| Q55 | -0.088 | 0.035 | 0.012 |

(continued)

*Table B-5 Standardized Factor Loading - Bifactor Model - Allied Health (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q56 | -0.045 | 0.027 | 0.095 |
| Q57 | -0.150 | 0.030 | 0.000 |
| Q59 | 0.021 | 0.027 | 0.439 |
| Q60 | -0.091 | 0.032 | 0.004 |
| Q61 | -0.054 | 0.026 | 0.036 |
| Q62 | -0.060 | 0.027 | 0.026 |
| Q63 | -0.006 | 0.024 | 0.795 |
| Q67 | -0.058 | 0.028 | 0.040 |
| Q69 | 0.861 | 0.012 | 0.000 |
| Q70 | 0.844 | 0.012 | 0.000 |
| Q71 | 0.828 | 0.012 | 0.000 |
| Q113 | -0.070 | 0.026 | 0.007 |
| Q114 | -0.067 | 0.031 | 0.028 |
| Q115 | 0.006 | 0.025 | 0.818 |
| Q117 | 0.038 | 0.027 | 0.157 |
| Q118 | -0.029 | 0.026 | 0.268 |
| Q119 | -0.089 | 0.027 | 0.001 |
| Q120 | -0.133 | 0.025 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.416 | 0.041 | 0.000 |
| Q2 | 0.333 | 0.021 | 0.000 |
| Q4 | 0.445 | 0.023 | 0.000 |
| Q5 | 0.360 | 0.030 | 0.000 |
| Q14 | 0.125 | 0.032 | 0.000 |
| Q64 | 0.492 | 0.025 | 0.000 |
| Q72 | 0.481 | 0.019 | 0.000 |
| Q73 | 0.367 | 0.040 | 0.000 |
| Q74 | 0.367 | 0.033 | 0.000 |
| Q76 | 0.445 | 0.028 | 0.000 |
| Q77 | 0.562 | 0.021 | 0.000 |
| Q78 | 0.191 | 0.022 | 0.000 |
| Q79 | 0.183 | 0.024 | 0.000 |
| Q80 | 0.178 | 0.047 | 0.000 |
| Q81 | 0.465 | 0.020 | 0.000 |
| Q82 | 0.455 | 0.021 | 0.000 |
| Q84 | 0.500 | 0.019 | 0.000 |
| Q85 | 0.602 | 0.017 | 0.000 |
| Q98 | 0.357 | 0.023 | 0.000 |
| Q99 | 0.121 | 0.023 | 0.000 |
| Q100 | 0.305 | 0.023 | 0.000 |
| Q101 | 0.526 | 0.019 | 0.000 |
| Q103 | 0.397 | 0.020 | 0.000 |
| Q108 | 0.338 | 0.021 | 0.000 |

(continued)

*Table B-5 Standardized Factor Loading - Bifactor Model - Allied Health (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q112 | 0.335 | 0.021 | 0.000 |
| Q6 | 0.503 | 0.023 | 0.000 |
| Q7 | 0.321 | 0.027 | 0.000 |
| Q8 | 0.395 | 0.020 | 0.000 |
| Q10 | 0.553 | 0.018 | 0.000 |
| Q13 | 0.274 | 0.023 | 0.000 |
| Q15 | 0.406 | 0.021 | 0.000 |
| Q66 | 0.484 | 0.020 | 0.000 |
| Q68 | 0.586 | 0.018 | 0.000 |
| Q86 | 0.310 | 0.020 | 0.000 |
| Q87 | 0.479 | 0.023 | 0.000 |
| Q88 | 0.510 | 0.020 | 0.000 |
| Q89 | 0.492 | 0.019 | 0.000 |
| Q91 | 0.474 | 0.036 | 0.000 |
| Q92 | 0.344 | 0.024 | 0.000 |
| Q93 | 0.267 | 0.023 | 0.000 |
| Q94 | 0.269 | 0.029 | 0.000 |
| Q95 | 0.612 | 0.026 | 0.000 |
| Q96 | 0.649 | 0.021 | 0.000 |
| Q97 | 0.489 | 0.026 | 0.000 |
| Q104 | 0.008 | 0.028 | 0.782 |
| Q105 | 0.432 | 0.030 | 0.000 |
| Q106 | 0.435 | 0.086 | 0.000 |
| Q107 | 0.441 | 0.026 | 0.000 |
| Q110 | 0.499 | 0.024 | 0.000 |
| Q111 | 0.231 | 0.028 | 0.000 |
| Q16 | 0.335 | 0.021 | 0.000 |
| Q17 | 0.275 | 0.022 | 0.000 |
| Q18 | 0.518 | 0.023 | 0.000 |
| Q19 | 0.367 | 0.021 | 0.000 |
| Q20 | 0.209 | 0.021 | 0.000 |
| Q21 | 0.435 | 0.019 | 0.000 |
| Q22 | 0.498 | 0.024 | 0.000 |
| Q23 | 0.610 | 0.020 | 0.000 |
| Q24 | 0.619 | 0.021 | 0.000 |
| Q25 | 0.460 | 0.020 | 0.000 |
| Q26 | 0.308 | 0.022 | 0.000 |
| Q27 | 0.075 | 0.022 | 0.001 |
| Q32 | 0.318 | 0.021 | 0.000 |
| Q33 | 0.627 | 0.023 | 0.000 |
| Q34 | 0.327 | 0.021 | 0.000 |
| Q35 | 0.111 | 0.024 | 0.000 |

(continued)

*Table B-5 Standardized Factor Loading - Bifactor Model - Allied Health (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q37 | 0.251 | 0.021 | 0.000 |
| Q39 | -0.011 | 0.022 | 0.616 |
| Q40 | 0.435 | 0.019 | 0.000 |
| Q41 | 0.542 | 0.019 | 0.000 |
| Q42 | 0.367 | 0.020 | 0.000 |
| Q43 | 0.238 | 0.021 | 0.000 |
| Q44 | 0.532 | 0.024 | 0.000 |
| Q45 | 0.637 | 0.020 | 0.000 |
| Q46 | 0.481 | 0.027 | 0.000 |
| Q47 | 0.387 | 0.021 | 0.000 |
| Q48 | 0.267 | 0.021 | 0.000 |
| Q49 | 0.429 | 0.022 | 0.000 |
| Q51 | 0.431 | 0.021 | 0.000 |
| Q53 | 0.451 | 0.020 | 0.000 |
| Q54 | 0.318 | 0.025 | 0.000 |
| Q55 | 0.509 | 0.029 | 0.000 |
| Q56 | 0.369 | 0.021 | 0.000 |
| Q57 | 0.034 | 0.026 | 0.192 |
| Q59 | 0.259 | 0.024 | 0.000 |
| Q60 | 0.092 | 0.028 | 0.001 |
| Q61 | 0.294 | 0.021 | 0.000 |
| Q62 | 0.396 | 0.021 | 0.000 |
| Q63 | 0.591 | 0.017 | 0.000 |
| Q67 | 0.162 | 0.024 | 0.000 |
| Q69 | 0.491 | 0.020 | 0.000 |
| Q70 | 0.485 | 0.020 | 0.000 |
| Q71 | 0.511 | 0.019 | 0.000 |
| Q113 | 0.095 | 0.022 | 0.000 |
| Q114 | 0.321 | 0.025 | 0.000 |
| Q115 | 0.435 | 0.020 | 0.000 |
| Q117 | 0.545 | 0.020 | 0.000 |
| Q118 | 0.183 | 0.022 | 0.000 |
| Q119 | 0.169 | 0.022 | 0.000 |
| Q120 | 0.478 | 0.019 | 0.000 |

*Table B-6. Standardized Factor Loading - Bifactor Model - Animal Science*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.020 | 0.040 | 0.620 |
| Q2 | 0.052 | 0.032 | 0.101 |
| Q4 | 0.030 | 0.033 | 0.359 |
| Q5 | -0.056 | 0.036 | 0.123 |
| Q14 | -0.082 | 0.046 | 0.077 |
| Q16 | 0.009 | 0.034 | 0.784 |
| Q70 | 0.009 | 0.033 | 0.795 |
| Q71 | -0.034 | 0.040 | 0.388 |
| Q72 | -0.035 | 0.040 | 0.384 |
| Q74 | 0.078 | 0.037 | 0.035 |
| Q75 | 0.114 | 0.036 | 0.001 |
| Q76 | 0.036 | 0.033 | 0.265 |
| Q77 | 0.022 | 0.035 | 0.534 |
| Q78 | -0.116 | 0.045 | 0.009 |
| Q79 | 0.006 | 0.032 | 0.839 |
| Q80 | -0.014 | 0.032 | 0.672 |
| Q82 | 0.088 | 0.031 | 0.005 |
| Q83 | 0.013 | 0.030 | 0.657 |
| Q96 | -0.040 | 0.034 | 0.249 |
| Q97 | -0.034 | 0.033 | 0.302 |
| Q98 | -0.004 | 0.033 | 0.898 |
| Q99 | 0.028 | 0.031 | 0.356 |
| Q101 | 0.606 | 0.076 | 0.000 |
| Q106 | 0.016 | 0.033 | 0.617 |
| Q110 | 0.865 | 0.107 | 0.000 |
| Employability | | | |
| Q6 | -0.022 | 0.044 | 0.611 |
| Q7 | 0.020 | 0.049 | 0.683 |
| Q8 | -0.169 | 0.046 | 0.000 |
| Q10 | -0.221 | 0.042 | 0.000 |
| Q13 | 0.095 | 0.045 | 0.036 |
| Q15 | -0.007 | 0.043 | 0.864 |
| Q18 | -0.217 | 0.044 | 0.000 |
| Q19 | -0.251 | 0.042 | 0.000 |
| Q84 | -0.030 | 0.045 | 0.510 |
| Q85 | -0.007 | 0.044 | 0.877 |
| Q86 | -0.235 | 0.046 | 0.000 |
| Q87 | -0.156 | 0.043 | 0.000 |
| Q89 | 0.171 | 0.047 | 0.000 |
| Q90 | 0.010 | 0.044 | 0.817 |
| Q91 | -0.160 | 0.044 | 0.000 |
| Q92 | 0.201 | 0.045 | 0.000 |

(continued)

## Table B-6. Standardized Factor Loading - Bifactor Model - Animal Science (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.009 | 0.047 | 0.853 |
| Q94 | -0.121 | 0.043 | 0.005 |
| Q95 | 0.025 | 0.050 | 0.618 |
| Q102 | 0.315 | 0.049 | 0.000 |
| Q103 | 0.343 | 0.044 | 0.000 |
| Q104 | 0.614 | 0.075 | 0.000 |
| Q105 | 0.024 | 0.046 | 0.598 |
| Q108 | -0.041 | 0.045 | 0.364 |
| Q109 | 0.163 | 0.049 | 0.001 |
| Occupational | | | |
| Q20 | 0.187 | 0.032 | 0.000 |
| Q21 | 0.038 | 0.036 | 0.297 |
| Q22 | -0.068 | 0.033 | 0.038 |
| Q23 | 0.191 | 0.028 | 0.000 |
| Q24 | -0.080 | 0.032 | 0.012 |
| Q25 | 0.110 | 0.032 | 0.000 |
| Q26 | 0.029 | 0.032 | 0.359 |
| Q27 | 0.057 | 0.031 | 0.069 |
| Q29 | 0.171 | 0.030 | 0.000 |
| Q30 | 0.149 | 0.031 | 0.000 |
| Q31 | 0.100 | 0.034 | 0.003 |
| Q32 | -0.048 | 0.032 | 0.141 |
| Q34 | -0.045 | 0.032 | 0.157 |
| Q35 | 0.038 | 0.033 | 0.252 |
| Q36 | 0.061 | 0.030 | 0.042 |
| Q37 | 0.099 | 0.032 | 0.002 |
| Q39 | 0.087 | 0.030 | 0.003 |
| Q41 | 0.042 | 0.031 | 0.175 |
| Q42 | -0.194 | 0.040 | 0.000 |
| Q43 | 0.037 | 0.032 | 0.241 |
| Q44 | 0.060 | 0.032 | 0.061 |
| Q45 | 0.139 | 0.031 | 0.000 |
| Q46 | 0.085 | 0.034 | 0.013 |
| Q47 | -0.096 | 0.035 | 0.006 |
| Q48 | 0.064 | 0.031 | 0.041 |
| Q49 | -0.049 | 0.032 | 0.129 |
| Q50 | 0.153 | 0.031 | 0.000 |
| Q51 | 0.197 | 0.031 | 0.000 |
| Q52 | 0.063 | 0.031 | 0.045 |
| Q53 | 0.114 | 0.029 | 0.000 |
| Q54 | 0.232 | 0.030 | 0.000 |
| Q56 | 0.072 | 0.032 | 0.025 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q58 | 0.106 | 0.032 | 0.001 |
| Q59 | 0.110 | 0.033 | 0.001 |
| Q60 | 0.008 | 0.033 | 0.801 |
| Q61 | 0.042 | 0.034 | 0.225 |
| Q63 | 0.075 | 0.032 | 0.019 |
| Q65 | 0.145 | 0.032 | 0.000 |
| Q66 | -0.024 | 0.032 | 0.442 |
| Q67 | 0.057 | 0.031 | 0.068 |
| Q68 | -0.007 | 0.043 | 0.877 |
| Q69 | 0.201 | 0.029 | 0.000 |
| Q111 | 0.042 | 0.034 | 0.214 |
| Q112 | -0.034 | 0.034 | 0.318 |
| Q113 | 0.111 | 0.032 | 0.000 |
| Q114 | 0.128 | 0.033 | 0.000 |
| Q115 | 0.050 | 0.032 | 0.113 |
| Q118 | 0.046 | 0.034 | 0.179 |
| Q119 | 0.729 | 0.030 | 0.000 |
| Q120 | 0.760 | 0.031 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.683 | 0.030 | 0.000 |
| Q2 | 0.419 | 0.024 | 0.000 |
| Q4 | 0.506 | 0.025 | 0.000 |
| Q5 | 0.558 | 0.028 | 0.000 |
| Q14 | 0.398 | 0.040 | 0.000 |
| Q16 | 0.593 | 0.024 | 0.000 |
| Q70 | 0.372 | 0.026 | 0.000 |
| Q71 | 0.653 | 0.030 | 0.000 |
| Q72 | 0.570 | 0.030 | 0.000 |
| Q74 | 0.577 | 0.027 | 0.000 |
| Q75 | 0.534 | 0.025 | 0.000 |
| Q76 | 0.228 | 0.025 | 0.000 |
| Q77 | 0.416 | 0.027 | 0.000 |
| Q78 | 0.461 | 0.042 | 0.000 |
| Q79 | 0.469 | 0.023 | 0.000 |
| Q80 | 0.529 | 0.023 | 0.000 |
| Q82 | 0.453 | 0.023 | 0.000 |
| Q83 | 0.582 | 0.020 | 0.000 |
| Q96 | 0.415 | 0.026 | 0.000 |
| Q97 | 0.222 | 0.026 | 0.000 |
| Q98 | 0.420 | 0.026 | 0.000 |
| Q99 | 0.546 | 0.022 | 0.000 |
| Q101 | 0.432 | 0.023 | 0.000 |
| Q106 | 0.323 | 0.025 | 0.000 |

(continued)

*Table B-6. Standardized Factor Loading - Bifactor Model - Animal Science (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q110 | 0.318 | 0.025 | 0.000 |
| Q6 | 0.533 | 0.026 | 0.000 |
| Q7 | 0.510 | 0.028 | 0.000 |
| Q8 | 0.366 | 0.024 | 0.000 |
| Q10 | 0.550 | 0.022 | 0.000 |
| Q13 | 0.380 | 0.027 | 0.000 |
| Q15 | 0.444 | 0.024 | 0.000 |
| Q18 | 0.443 | 0.023 | 0.000 |
| Q19 | 0.566 | 0.021 | 0.000 |
| Q84 | 0.287 | 0.024 | 0.000 |
| Q85 | 0.560 | 0.025 | 0.000 |
| Q86 | 0.513 | 0.024 | 0.000 |
| Q87 | 0.483 | 0.023 | 0.000 |
| Q89 | 0.745 | 0.029 | 0.000 |
| Q90 | 0.483 | 0.025 | 0.000 |
| Q91 | 0.364 | 0.025 | 0.000 |
| Q92 | 0.434 | 0.030 | 0.000 |
| Q93 | 0.778 | 0.022 | 0.000 |
| Q94 | 0.660 | 0.022 | 0.000 |
| Q95 | 0.542 | 0.028 | 0.000 |
| Q102 | 0.232 | 0.032 | 0.000 |
| Q103 | 0.569 | 0.032 | 0.000 |
| Q104 | 0.756 | 0.043 | 0.000 |
| Q105 | 0.454 | 0.028 | 0.000 |
| Q108 | 0.585 | 0.026 | 0.000 |
| Q109 | 0.433 | 0.031 | 0.000 |
| Q20 | 0.266 | 0.026 | 0.000 |
| Q21 | 0.423 | 0.029 | 0.000 |
| Q22 | 0.129 | 0.027 | 0.000 |
| Q23 | 0.590 | 0.021 | 0.000 |
| Q24 | 0.361 | 0.025 | 0.000 |
| Q25 | 0.630 | 0.023 | 0.000 |
| Q26 | 0.165 | 0.025 | 0.000 |
| Q27 | 0.285 | 0.024 | 0.000 |
| Q29 | 0.451 | 0.024 | 0.000 |
| Q30 | 0.178 | 0.026 | 0.000 |
| Q31 | 0.322 | 0.027 | 0.000 |
| Q32 | 0.150 | 0.027 | 0.000 |
| Q34 | 0.088 | 0.027 | 0.001 |
| Q35 | 0.397 | 0.027 | 0.000 |
| Q36 | 0.432 | 0.024 | 0.000 |
| Q37 | 0.177 | 0.026 | 0.000 |

(continued)

*Table B-6. Standardized Factor Loading - Bifactor Model - Animal Science (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q39 | 0.433 | 0.023 | 0.000 |
| Q41 | 0.438 | 0.024 | 0.000 |
| Q42 | 0.437 | 0.034 | 0.000 |
| Q43 | 0.276 | 0.025 | 0.000 |
| Q44 | 0.096 | 0.026 | 0.000 |
| Q45 | 0.300 | 0.025 | 0.000 |
| Q46 | 0.545 | 0.026 | 0.000 |
| Q47 | 0.526 | 0.026 | 0.000 |
| Q48 | 0.352 | 0.024 | 0.000 |
| Q49 | 0.040 | 0.026 | 0.126 |
| Q50 | 0.265 | 0.025 | 0.000 |
| Q51 | 0.274 | 0.025 | 0.000 |
| Q52 | 0.279 | 0.025 | 0.000 |
| Q53 | 0.603 | 0.020 | 0.000 |
| Q54 | 0.253 | 0.025 | 0.000 |
| Q56 | 0.367 | 0.025 | 0.000 |
| Q58 | 0.335 | 0.027 | 0.000 |
| Q59 | 0.197 | 0.028 | 0.000 |
| Q60 | 0.138 | 0.028 | 0.000 |
| Q61 | 0.064 | 0.028 | 0.024 |
| Q63 | 0.321 | 0.026 | 0.000 |
| Q65 | 0.214 | 0.026 | 0.000 |
| Q66 | 0.328 | 0.024 | 0.000 |
| Q67 | 0.254 | 0.025 | 0.000 |
| Q68 | 0.505 | 0.035 | 0.000 |
| Q69 | 0.419 | 0.024 | 0.000 |
| Q111 | 0.273 | 0.028 | 0.000 |
| Q112 | 0.434 | 0.027 | 0.000 |
| Q113 | 0.227 | 0.026 | 0.000 |
| Q114 | 0.211 | 0.028 | 0.000 |
| Q115 | 0.371 | 0.025 | 0.000 |
| Q118 | 0.630 | 0.024 | 0.000 |
| Q119 | 0.435 | 0.023 | 0.000 |
| Q120 | 0.368 | 0.025 | 0.000 |

*Table B-7. Standardized Factor Loading - Bifactor Model - Automotive Technology*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.091 | 0.076 | 0.231 |
| Q2 | 0.080 | 0.066 | 0.229 |
| Q4 | -0.176 | 0.070 | 0.012 |
| Q5 | -0.040 | 0.069 | 0.556 |
| Q14 | 0.051 | 0.096 | 0.593 |
| Q16 | 0.035 | 0.069 | 0.614 |
| Q60 | 0.214 | 0.073 | 0.004 |
| Q61 | -0.191 | 0.070 | 0.007 |
| Q62 | -0.078 | 0.083 | 0.349 |
| Q64 | 0.164 | 0.078 | 0.036 |
| Q65 | 0.296 | 0.074 | 0.000 |
| Q66 | 0.059 | 0.070 | 0.399 |
| Q67 | -0.132 | 0.076 | 0.082 |
| Q68 | -0.037 | 0.083 | 0.660 |
| Q69 | 0.365 | 0.066 | 0.000 |
| Q70 | -0.013 | 0.070 | 0.853 |
| Q72 | 0.383 | 0.061 | 0.000 |
| Q73 | 0.288 | 0.066 | 0.000 |
| Q86 | -0.076 | 0.074 | 0.304 |
| Q87 | -0.145 | 0.070 | 0.038 |
| Q88 | 0.053 | 0.067 | 0.430 |
| Q89 | 0.372 | 0.061 | 0.000 |
| Q91 | 0.313 | 0.066 | 0.000 |
| Q96 | 0.333 | 0.064 | 0.000 |
| Q100 | 0.358 | 0.067 | 0.231 |
| Employability | | | |
| Q6 | 0.302 | 0.069 | 0.000 |
| Q7 | 0.174 | 0.070 | 0.013 |
| Q8 | 0.380 | 0.068 | 0.000 |
| Q10 | 0.349 | 0.062 | 0.000 |
| Q13 | 0.219 | 0.069 | 0.001 |
| Q15 | 0.276 | 0.069 | 0.000 |
| Q18 | 0.315 | 0.068 | 0.000 |
| Q19 | 0.058 | 0.066 | 0.383 |
| Q74 | 0.105 | 0.073 | 0.151 |
| Q75 | 0.444 | 0.066 | 0.000 |
| Q76 | 0.135 | 0.068 | 0.048 |
| Q77 | 0.385 | 0.065 | 0.000 |
| Q79 | 0.202 | 0.075 | 0.007 |
| Q80 | 0.042 | 0.066 | 0.519 |
| Q81 | 0.119 | 0.071 | 0.096 |
| Q82 | 0.089 | 0.074 | 0.228 |

(continued)

**Table B-7. Standardized Factor Loading - Bifactor Model - Automotive Technology (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q83 | 0.017 | 0.076 | 0.823 |
| Q84 | 0.271 | 0.060 | 0.000 |
| Q85 | 0.240 | 0.073 | 0.001 |
| Q92 | 0.046 | 0.073 | 0.531 |
| Q93 | 0.235 | 0.070 | 0.001 |
| Q94 | 0.173 | 0.093 | 0.064 |
| Q95 | 0.296 | 0.068 | 0.000 |
| Q98 | 0.319 | 0.062 | 0.000 |
| Q99 | 0.127 | 0.075 | 0.089 |
| Occupational | | | |
| Q20 | 0.075 | 0.059 | 0.207 |
| Q21 | 0.075 | 0.065 | 0.252 |
| Q25 | -0.083 | 0.058 | 0.155 |
| Q26 | 0.029 | 0.076 | 0.698 |
| Q27 | 0.327 | 0.057 | 0.000 |
| Q28 | 0.466 | 0.054 | 0.000 |
| Q29 | -0.270 | 0.059 | 0.000 |
| Q30 | -0.110 | 0.062 | 0.074 |
| Q31 | 0.063 | 0.058 | 0.279 |
| Q32 | 0.059 | 0.060 | 0.325 |
| Q34 | -0.089 | 0.056 | 0.115 |
| Q35 | -0.163 | 0.059 | 0.006 |
| Q36 | -0.095 | 0.059 | 0.107 |
| Q37 | -0.123 | 0.057 | 0.032 |
| Q38 | 0.022 | 0.061 | 0.719 |
| Q39 | 0.016 | 0.067 | 0.808 |
| Q40 | -0.002 | 0.060 | 0.976 |
| Q41 | -0.100 | 0.061 | 0.099 |
| Q43 | -0.060 | 0.058 | 0.306 |
| Q44 | -0.161 | 0.058 | 0.006 |
| Q45 | -0.064 | 0.060 | 0.289 |
| Q46 | 0.370 | 0.056 | 0.000 |
| Q47 | 0.425 | 0.055 | 0.000 |
| Q48 | -0.045 | 0.060 | 0.456 |
| Q49 | 0.363 | 0.054 | 0.000 |
| Q50 | 0.432 | 0.054 | 0.000 |
| Q51 | -0.223 | 0.058 | 0.000 |
| Q52 | -0.159 | 0.059 | 0.007 |
| Q53 | 0.001 | 0.062 | 0.982 |
| Q54 | 0.406 | 0.056 | 0.000 |
| Q55 | 0.126 | 0.058 | 0.030 |
| Q56 | 0.401 | 0.057 | 0.000 |

(continued)

*Table B-7. Standardized Factor Loading - Bifactor Model - Automotive Technology (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q57 | -0.056 | 0.059 | 0.337 |
| Q58 | 0.231 | 0.058 | 0.000 |
| Q59 | -0.038 | 0.059 | 0.520 |
| Q101 | 0.169 | 0.059 | 0.004 |
| Q102 | 0.017 | 0.056 | 0.763 |
| Q103 | 0.096 | 0.063 | 0.129 |
| Q105 | 0.170 | 0.057 | 0.003 |
| Q106 | 0.106 | 0.059 | 0.071 |
| Q107 | 0.161 | 0.059 | 0.007 |
| Q108 | 0.006 | 0.061 | 0.916 |
| Q109 | 0.076 | 0.060 | 0.203 |
| Q111 | 0.096 | 0.060 | 0.108 |
| Q113 | 0.038 | 0.070 | 0.594 |
| Q114 | 0.494 | 0.052 | 0.000 |
| Q115 | 0.339 | 0.061 | 0.000 |
| Q116 | 0.030 | 0.059 | 0.615 |
| Q117 | 0.076 | 0.066 | 0.248 |
| Q119 | 0.078 | 0.059 | 0.188 |
| Transition Readiness | | | |
| Q1 | 0.713 | 0.047 | 0.000 |
| Q2 | 0.455 | 0.042 | 0.000 |
| Q4 | 0.474 | 0.046 | 0.000 |
| Q5 | 0.591 | 0.046 | 0.000 |
| Q14 | 0.448 | 0.069 | 0.000 |
| Q16 | 0.540 | 0.043 | 0.000 |
| Q60 | 0.308 | 0.055 | 0.000 |
| Q61 | 0.675 | 0.047 | 0.000 |
| Q62 | 0.452 | 0.054 | 0.000 |
| Q64 | 0.503 | 0.050 | 0.000 |
| Q65 | 0.531 | 0.048 | 0.000 |
| Q66 | 0.259 | 0.047 | 0.000 |
| Q67 | 0.452 | 0.054 | 0.000 |
| Q68 | 0.601 | 0.056 | 0.000 |
| Q69 | 0.417 | 0.045 | 0.000 |
| Q70 | 0.399 | 0.047 | 0.000 |
| Q72 | 0.574 | 0.040 | 0.000 |
| Q73 | 0.393 | 0.045 | 0.000 |
| Q86 | 0.482 | 0.050 | 0.000 |
| Q87 | 0.240 | 0.047 | 0.000 |
| Q88 | 0.484 | 0.047 | 0.000 |
| Q89 | 0.491 | 0.041 | 0.000 |

(continued)

**Table B-7. Standardized Factor Loading - Bifactor Model - Automotive Technology (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q91 | 0.380 | 0.045 | 0.000 |
| Q96 | 0.431 | 0.046 | 0.000 |
| Q100 | 0.279 | 0.048 | 0.000 |
| Q6 | 0.541 | 0.049 | 0.000 |
| Q7 | 0.453 | 0.051 | 0.000 |
| Q8 | 0.377 | 0.043 | 0.000 |
| Q10 | 0.551 | 0.042 | 0.000 |
| Q13 | 0.409 | 0.048 | 0.000 |
| Q15 | 0.374 | 0.049 | 0.000 |
| Q18 | 0.409 | 0.046 | 0.000 |
| Q19 | 0.484 | 0.044 | 0.000 |
| Q74 | 0.267 | 0.048 | 0.000 |
| Q75 | 0.454 | 0.048 | 0.000 |
| Q76 | 0.480 | 0.044 | 0.000 |
| Q77 | 0.455 | 0.043 | 0.000 |
| Q79 | 0.692 | 0.049 | 0.000 |
| Q80 | 0.525 | 0.044 | 0.000 |
| Q81 | 0.336 | 0.047 | 0.000 |
| Q82 | 0.420 | 0.052 | 0.000 |
| Q83 | 0.607 | 0.049 | 0.000 |
| Q84 | 0.619 | 0.039 | 0.000 |
| Q85 | 0.665 | 0.045 | 0.000 |
| Q92 | 0.368 | 0.058 | 0.000 |
| Q93 | 0.659 | 0.045 | 0.000 |
| Q94 | 0.760 | 0.061 | 0.000 |
| Q95 | 0.461 | 0.046 | 0.000 |
| Q98 | 0.481 | 0.045 | 0.000 |
| Q99 | 0.392 | 0.054 | 0.000 |
| Q20 | 0.160 | 0.050 | 0.001 |
| Q21 | 0.072 | 0.052 | 0.171 |
| Q25 | 0.372 | 0.046 | 0.000 |
| Q26 | 0.036 | 0.073 | 0.618 |
| Q27 | 0.229 | 0.050 | 0.000 |
| Q28 | 0.285 | 0.048 | 0.000 |
| Q29 | 0.459 | 0.047 | 0.000 |
| Q30 | 0.544 | 0.048 | 0.000 |
| Q31 | 0.393 | 0.044 | 0.000 |
| Q32 | 0.117 | 0.049 | 0.017 |
| Q34 | 0.512 | 0.042 | 0.000 |
| Q35 | 0.301 | 0.046 | 0.000 |

(continued)

**Table B-7. Standardized Factor Loading - Bifactor Model - Automotive Technology (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q36 | 0.465 | 0.048 | 0.000 |
| Q37 | 0.467 | 0.047 | 0.000 |
| Q38 | 0.278 | 0.049 | 0.000 |
| Q39 | 0.347 | 0.056 | 0.000 |
| Q40 | 0.286 | 0.047 | 0.000 |
| Q41 | 0.252 | 0.049 | 0.000 |
| Q43 | 0.471 | 0.046 | 0.000 |
| Q44 | 0.216 | 0.048 | 0.000 |
| Q45 | 0.139 | 0.049 | 0.005 |
| Q46 | 0.482 | 0.048 | 0.000 |
| Q47 | 0.380 | 0.047 | 0.000 |
| Q48 | 0.257 | 0.047 | 0.000 |
| Q49 | 0.363 | 0.046 | 0.000 |
| Q50 | 0.333 | 0.048 | 0.000 |
| Q51 | 0.368 | 0.049 | 0.000 |
| Q52 | 0.151 | 0.049 | 0.002 |
| Q53 | 0.269 | 0.047 | 0.000 |
| Q54 | 0.384 | 0.047 | 0.000 |
| Q55 | 0.270 | 0.047 | 0.000 |
| Q56 | 0.460 | 0.047 | 0.000 |
| Q57 | 0.383 | 0.045 | 0.000 |
| Q58 | 0.368 | 0.046 | 0.000 |
| Q59 | 0.385 | 0.045 | 0.000 |
| Q101 | 0.299 | 0.047 | 0.000 |
| Q102 | 0.537 | 0.040 | 0.000 |
| Q103 | 0.091 | 0.051 | 0.076 |
| Q105 | 0.377 | 0.045 | 0.000 |
| Q106 | 0.423 | 0.044 | 0.000 |
| Q107 | 0.423 | 0.046 | 0.000 |
| Q108 | 0.065 | 0.049 | 0.189 |
| Q109 | 0.278 | 0.046 | 0.000 |
| Q111 | 0.366 | 0.045 | 0.000 |
| Q113 | 0.026 | 0.059 | 0.655 |
| Q114 | 0.400 | 0.048 | 0.000 |
| Q115 | -0.132 | 0.055 | 0.016 |
| Q116 | 0.391 | 0.045 | 0.000 |
| Q117 | 0.152 | 0.063 | 0.016 |
| Q119 | 0.211 | 0.048 | 0.000 |

## Table B-8. Standardized Factor Loading - Bifactor Model - Business Management

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.138 | 0.045 | 0.002 |
| Q2 | 0.012 | 0.037 | 0.744 |
| Q4 | 0.012 | 0.042 | 0.771 |
| Q5 | -0.019 | 0.043 | 0.650 |
| Q14 | -0.040 | 0.059 | 0.497 |
| Q61 | -0.043 | 0.039 | 0.273 |
| Q70 | 0.083 | 0.037 | 0.024 |
| Q71 | -0.162 | 0.047 | 0.001 |
| Q72 | -0.044 | 0.048 | 0.366 |
| Q74 | -0.020 | 0.045 | 0.659 |
| Q75 | 0.083 | 0.043 | 0.053 |
| Q76 | 0.086 | 0.039 | 0.029 |
| Q77 | -0.078 | 0.042 | 0.062 |
| Q78 | -0.113 | 0.049 | 0.020 |
| Q79 | 0.012 | 0.039 | 0.756 |
| Q80 | -0.026 | 0.042 | 0.524 |
| Q82 | 0.021 | 0.038 | 0.582 |
| Q83 | 0.045 | 0.034 | 0.189 |
| Q96 | -0.054 | 0.040 | 0.182 |
| Q97 | -0.150 | 0.040 | 0.000 |
| Q98 | -0.010 | 0.040 | 0.798 |
| Q99 | 0.064 | 0.036 | 0.078 |
| Q101 | 0.754 | 0.077 | 0.000 |
| Q106 | 0.073 | 0.040 | 0.065 |
| Q110 | 0.688 | 0.071 | 0.000 |
| Employability | | | |
| Q6 | -0.060 | 0.056 | 0.279 |
| Q7 | 0.213 | 0.051 | 0.000 |
| Q8 | -0.024 | 0.047 | 0.612 |
| Q10 | -0.136 | 0.051 | 0.008 |
| Q13 | 0.099 | 0.052 | 0.057 |
| Q15 | -0.023 | 0.051 | 0.654 |
| Q63 | -0.155 | 0.054 | 0.004 |
| Q64 | -0.044 | 0.048 | 0.354 |
| Q84 | 0.023 | 0.054 | 0.671 |
| Q85 | 0.122 | 0.054 | 0.024 |
| Q86 | 0.023 | 0.055 | 0.676 |
| Q87 | -0.149 | 0.051 | 0.004 |
| Q89 | 0.236 | 0.058 | 0.000 |
| Q90 | 0.169 | 0.049 | 0.001 |
| Q91 | 0.034 | 0.054 | 0.527 |
| Q92 | 0.211 | 0.055 | 0.000 |

(continued)

**Table B-8. Standardized Factor Loading - Bifactor Model - Business Management (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.161 | 0.050 | 0.001 |
| Q94 | 0.007 | 0.051 | 0.887 |
| Q95 | 0.110 | 0.056 | 0.050 |
| Q102 | 0.473 | 0.060 | 0.000 |
| Q103 | 0.271 | 0.052 | 0.000 |
| Q104 | 0.792 | 0.080 | 0.000 |
| Q105 | 0.005 | 0.056 | 0.933 |
| Q108 | -0.027 | 0.054 | 0.620 |
| Q109 | 0.167 | 0.057 | 0.003 |
| Occupational | | | |
| Q16 | 0.300 | 0.039 | 0.000 |
| Q17 | -0.053 | 0.043 | 0.217 |
| Q18 | 0.158 | 0.040 | 0.000 |
| Q19 | 0.001 | 0.045 | 0.974 |
| Q20 | 0.400 | 0.041 | 0.000 |
| Q21 | 0.099 | 0.039 | 0.010 |
| Q22 | 0.308 | 0.042 | 0.000 |
| Q23 | 0.104 | 0.049 | 0.033 |
| Q24 | -0.128 | 0.046 | 0.005 |
| Q25 | 0.386 | 0.039 | 0.000 |
| Q26 | 0.277 | 0.039 | 0.000 |
| Q28 | 0.102 | 0.040 | 0.010 |
| Q29 | -0.124 | 0.043 | 0.004 |
| Q30 | 0.227 | 0.041 | 0.000 |
| Q31 | 0.159 | 0.048 | 0.001 |
| Q32 | 0.040 | 0.042 | 0.335 |
| Q33 | 0.031 | 0.041 | 0.456 |
| Q35 | 0.035 | 0.044 | 0.430 |
| Q36 | 0.039 | 0.045 | 0.384 |
| Q37 | 0.132 | 0.041 | 0.001 |
| Q38 | 0.194 | 0.043 | 0.000 |
| Q40 | 0.190 | 0.042 | 0.000 |
| Q41 | 0.083 | 0.043 | 0.054 |
| Q43 | -0.009 | 0.043 | 0.826 |
| Q44 | -0.074 | 0.041 | 0.071 |
| Q45 | 0.192 | 0.039 | 0.000 |
| Q46 | 0.211 | 0.041 | 0.000 |
| Q47 | 0.224 | 0.041 | 0.000 |
| Q48 | 0.039 | 0.037 | 0.293 |
| Q49 | -0.200 | 0.046 | 0.000 |
| Q50 | 0.217 | 0.040 | 0.000 |
| Q51 | 0.092 | 0.042 | 0.029 |

(continued)

**Table B-8. Standardized Factor Loading - Bifactor Model - Business Management (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q52 | 0.092 | 0.040 | 0.023 |
| Q53 | 0.185 | 0.042 | 0.000 |
| Q54 | -0.002 | 0.049 | 0.969 |
| Q55 | 0.118 | 0.038 | 0.002 |
| Q57 | 0.136 | 0.039 | 0.000 |
| Q58 | 0.235 | 0.042 | 0.000 |
| Q59 | 0.243 | 0.042 | 0.000 |
| Q60 | -0.093 | 0.044 | 0.035 |
| Q65 | -0.349 | 0.061 | 0.000 |
| Q67 | -0.146 | 0.052 | 0.005 |
| Q68 | 0.192 | 0.039 | 0.000 |
| Q111 | 0.223 | 0.044 | 0.000 |
| Q112 | -0.010 | 0.040 | 0.801 |
| Q113 | 0.014 | 0.041 | 0.735 |
| Q114 | 0.066 | 0.043 | 0.121 |
| Q115 | -0.074 | 0.040 | 0.061 |
| Q116 | -0.078 | 0.042 | 0.062 |
| Q117 | 0.022 | 0.043 | 0.614 |
| Transition Readiness | | | |
| Q1 | 0.634 | 0.034 | 0.000 |
| Q2 | 0.476 | 0.026 | 0.000 |
| Q4 | 0.511 | 0.030 | 0.000 |
| Q5 | 0.564 | 0.030 | 0.000 |
| Q14 | 0.333 | 0.048 | 0.000 |
| Q61 | 0.649 | 0.026 | 0.000 |
| Q70 | 0.504 | 0.026 | 0.000 |
| Q71 | 0.618 | 0.036 | 0.000 |
| Q72 | 0.585 | 0.035 | 0.000 |
| Q74 | 0.585 | 0.031 | 0.000 |
| Q75 | 0.567 | 0.028 | 0.000 |
| Q76 | 0.220 | 0.030 | 0.000 |
| Q77 | 0.462 | 0.031 | 0.000 |
| Q78 | 0.490 | 0.041 | 0.000 |
| Q79 | 0.551 | 0.027 | 0.000 |
| Q80 | 0.525 | 0.029 | 0.000 |
| Q82 | 0.474 | 0.027 | 0.000 |
| Q83 | 0.655 | 0.022 | 0.000 |
| Q96 | 0.386 | 0.030 | 0.000 |
| Q97 | 0.209 | 0.031 | 0.000 |
| Q98 | 0.475 | 0.030 | 0.000 |
| Q99 | 0.585 | 0.025 | 0.000 |

(continued)

**Table B-8. Standardized Factor Loading - Bifactor Model - Business Management (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q101 | 0.397 | 0.028 | 0.000 |
| Q106 | 0.368 | 0.029 | 0.000 |
| Q110 | 0.344 | 0.029 | 0.000 |
| Q6 | 0.587 | 0.028 | 0.000 |
| Q7 | 0.547 | 0.032 | 0.000 |
| Q8 | 0.497 | 0.026 | 0.000 |
| Q10 | 0.643 | 0.024 | 0.000 |
| Q13 | 0.381 | 0.030 | 0.000 |
| Q15 | 0.495 | 0.026 | 0.000 |
| Q63 | 0.453 | 0.027 | 0.000 |
| Q64 | 0.632 | 0.023 | 0.000 |
| Q84 | 0.298 | 0.029 | 0.000 |
| Q85 | 0.532 | 0.030 | 0.000 |
| Q86 | 0.547 | 0.029 | 0.000 |
| Q87 | 0.535 | 0.026 | 0.000 |
| Q89 | 0.665 | 0.035 | 0.000 |
| Q90 | 0.569 | 0.029 | 0.000 |
| Q91 | 0.356 | 0.029 | 0.000 |
| Q92 | 0.361 | 0.035 | 0.000 |
| Q93 | 0.772 | 0.025 | 0.000 |
| Q94 | 0.723 | 0.023 | 0.000 |
| Q95 | 0.502 | 0.032 | 0.000 |
| Q102 | 0.182 | 0.035 | 0.000 |
| Q103 | 0.541 | 0.035 | 0.000 |
| Q104 | 0.751 | 0.042 | 0.000 |
| Q105 | 0.553 | 0.031 | 0.000 |
| Q108 | 0.583 | 0.028 | 0.000 |
| Q109 | 0.427 | 0.033 | 0.000 |
| Q16 | 0.506 | 0.026 | 0.000 |
| Q17 | 0.642 | 0.027 | 0.000 |
| Q18 | 0.483 | 0.026 | 0.000 |
| Q19 | 0.494 | 0.030 | 0.000 |
| Q20 | 0.424 | 0.029 | 0.000 |
| Q21 | 0.585 | 0.025 | 0.000 |
| Q22 | 0.338 | 0.030 | 0.000 |
| Q23 | -0.003 | 0.037 | 0.933 |
| Q24 | 0.337 | 0.033 | 0.000 |
| Q25 | 0.465 | 0.028 | 0.000 |
| Q26 | 0.496 | 0.027 | 0.000 |
| Q28 | 0.457 | 0.027 | 0.000 |

(continued)

*Table B-8. Standardized Factor Loading - Bifactor Model - Business Management (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q29 | 0.358 | 0.030 | 0.000 |
| Q30 | 0.342 | 0.029 | 0.000 |
| Q31 | 0.214 | 0.034 | 0.000 |
| Q32 | 0.351 | 0.029 | 0.000 |
| Q33 | 0.359 | 0.029 | 0.000 |
| Q35 | 0.080 | 0.031 | 0.010 |
| Q36 | 0.191 | 0.031 | 0.000 |
| Q37 | 0.499 | 0.028 | 0.000 |
| Q38 | 0.256 | 0.031 | 0.000 |
| Q40 | 0.261 | 0.030 | 0.000 |
| Q41 | 0.320 | 0.030 | 0.000 |
| Q43 | 0.184 | 0.030 | 0.000 |
| Q44 | 0.431 | 0.029 | 0.000 |
| Q45 | 0.513 | 0.026 | 0.000 |
| Q46 | 0.274 | 0.030 | 0.000 |
| Q47 | 0.402 | 0.028 | 0.000 |
| Q48 | 0.635 | 0.024 | 0.000 |
| Q49 | 0.712 | 0.030 | 0.000 |
| Q50 | 0.452 | 0.027 | 0.000 |
| Q51 | 0.261 | 0.030 | 0.000 |
| Q52 | 0.454 | 0.027 | 0.000 |
| Q53 | 0.302 | 0.029 | 0.000 |
| Q54 | 0.622 | 0.032 | 0.000 |
| Q55 | 0.580 | 0.025 | 0.000 |
| Q57 | 0.513 | 0.026 | 0.000 |
| Q58 | 0.311 | 0.029 | 0.000 |
| Q59 | 0.387 | 0.028 | 0.000 |
| Q60 | 0.299 | 0.031 | 0.000 |
| Q65 | 0.566 | 0.044 | 0.000 |
| Q67 | 0.615 | 0.035 | 0.000 |
| Q68 | 0.539 | 0.025 | 0.000 |
| Q111 | 0.270 | 0.031 | 0.000 |
| Q112 | 0.520 | 0.028 | 0.000 |
| Q113 | 0.344 | 0.029 | 0.000 |
| Q114 | 0.205 | 0.030 | 0.000 |
| Q115 | 0.620 | 0.025 | 0.000 |
| Q116 | 0.520 | 0.027 | 0.000 |
| Q117 | 0.372 | 0.029 | 0.000 |

**Table B-9. Standardized Factor Loading - Bifactor Model - Computerized Manufacturing**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.437 | 0.105 | 0.000 |
| Q2 | 0.085 | 0.105 | 0.417 |
| Q4 | 0.298 | 0.101 | 0.003 |
| Q5 | 0.137 | 0.109 | 0.206 |
| Q14 | 0.167 | 0.123 | 0.175 |
| Q16 | 0.095 | 0.099 | 0.339 |
| Q20 | 0.065 | 0.105 | 0.536 |
| Q21 | 0.009 | 0.118 | 0.941 |
| Q22 | 0.142 | 0.130 | 0.276 |
| Q24 | -0.076 | 0.101 | 0.452 |
| Q25 | -0.459 | 0.124 | 0.000 |
| Q26 | -0.184 | 0.103 | 0.073 |
| Q27 | -0.137 | 0.109 | 0.210 |
| Q28 | 0.474 | 0.126 | 0.000 |
| Q29 | -0.053 | 0.099 | 0.590 |
| Q30 | -0.174 | 0.099 | 0.079 |
| Q32 | 0.015 | 0.097 | 0.878 |
| Q33 | 0.045 | 0.102 | 0.654 |
| Q46 | 0.039 | 0.119 | 0.741 |
| Q47 | 0.232 | 0.101 | 0.022 |
| Q48 | -0.053 | 0.104 | 0.613 |
| Q49 | -0.289 | 0.095 | 0.002 |
| Q51 | 0.364 | 0.092 | 0.000 |
| Q56 | -0.243 | 0.101 | 0.017 |
| Q60 | 0.398 | 0.102 | 0.000 |
| Employability | | | |
| Q6 | 0.125 | 0.097 | 0.197 |
| Q7 | 0.028 | 0.103 | 0.784 |
| Q8 | 0.304 | 0.099 | 0.002 |
| Q10 | 0.073 | 0.105 | 0.490 |
| Q13 | 0.456 | 0.106 | 0.000 |
| Q15 | 0.237 | 0.102 | 0.020 |
| Q18 | 0.229 | 0.103 | 0.027 |
| Q19 | 0.101 | 0.102 | 0.323 |
| Q34 | 0.033 | 0.112 | 0.767 |
| Q35 | 0.484 | 0.085 | 0.000 |
| Q36 | 0.208 | 0.108 | 0.055 |
| Q37 | 0.276 | 0.097 | 0.005 |
| Q39 | 0.048 | 0.111 | 0.665 |
| Q40 | 0.099 | 0.102 | 0.330 |
| Q41 | -0.010 | 0.103 | 0.921 |
| Q42 | 0.112 | 0.113 | 0.320 |

(continued)

**Table B-9. Standardized Factor Loading - Bifactor Model - Computerized Manufacturing (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | 0.416 | 0.090 | 0.000 |
| Q44 | 0.125 | 0.095 | 0.187 |
| Q45 | -0.023 | 0.106 | 0.825 |
| Q52 | 0.217 | 0.114 | 0.057 |
| Q53 | 0.450 | 0.084 | 0.000 |
| Q54 | 0.635 | 0.117 | 0.000 |
| Q55 | 0.059 | 0.106 | 0.578 |
| Q58 | 0.441 | 0.099 | 0.000 |
| Q59 | -0.020 | 0.100 | 0.839 |
| Occupational | | | |
| Q61 | 0.100 | 0.091 | 0.272 |
| Q62 | 0.237 | 0.080 | 0.003 |
| Q64 | 0.233 | 0.081 | 0.004 |
| Q65 | 0.387 | 0.076 | 0.000 |
| Q66 | 0.362 | 0.083 | 0.000 |
| Q67 | 0.245 | 0.100 | 0.015 |
| Q68 | 0.162 | 0.091 | 0.075 |
| Q69 | 0.338 | 0.092 | 0.000 |
| Q70 | 0.261 | 0.085 | 0.002 |
| Q71 | 0.450 | 0.071 | 0.000 |
| Q72 | -0.095 | 0.085 | 0.267 |
| Q73 | 0.314 | 0.080 | 0.000 |
| Q74 | 0.391 | 0.072 | 0.000 |
| Q75 | 0.003 | 0.097 | 0.978 |
| Q76 | 0.094 | 0.084 | 0.260 |
| Q77 | 0.370 | 0.065 | 0.000 |
| Q78 | 0.131 | 0.081 | 0.106 |
| Q79 | 0.317 | 0.085 | 0.000 |
| Q80 | 0.358 | 0.083 | 0.000 |
| Q81 | 0.096 | 0.083 | 0.247 |
| Q82 | -0.207 | 0.100 | 0.039 |
| Q83 | 0.084 | 0.087 | 0.334 |
| Q84 | 0.214 | 0.085 | 0.012 |
| Q86 | 0.168 | 0.082 | 0.041 |
| Q87 | -0.120 | 0.112 | 0.283 |
| Q88 | 0.056 | 0.086 | 0.514 |
| Q90 | 0.160 | 0.082 | 0.052 |
| Q91 | 0.110 | 0.088 | 0.211 |
| Q92 | 0.212 | 0.081 | 0.009 |
| Q93 | 0.345 | 0.075 | 0.000 |
| Q94 | 0.168 | 0.084 | 0.045 |
| Q95 | 0.199 | 0.096 | 0.040 |

(continued)

**Table B-9. Standardized Factor Loading - Bifactor Model - Computerized Manufacturing (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q96 | 0.178 | 0.091 | 0.050 |
| Q97 | -0.262 | 0.079 | 0.001 |
| Q98 | 0.477 | 0.078 | 0.000 |
| Q101 | 0.654 | 0.073 | 0.000 |
| Q102 | 0.124 | 0.082 | 0.131 |
| Q103 | 0.002 | 0.096 | 0.987 |
| Q104 | 0.191 | 0.088 | 0.030 |
| Q105 | 0.446 | 0.069 | 0.000 |
| Q106 | 0.242 | 0.103 | 0.019 |
| Q107 | 0.440 | 0.075 | 0.000 |
| Q108 | 0.464 | 0.081 | 0.000 |
| Q109 | 0.375 | 0.085 | 0.000 |
| Q110 | 0.106 | 0.089 | 0.233 |
| Q111 | 0.082 | 0.082 | 0.315 |
| Q112 | 0.244 | 0.075 | 0.001 |
| Q113 | 0.116 | 0.089 | 0.194 |
| Q114 | 0.190 | 0.080 | 0.018 |
| Q115 | 0.292 | 0.073 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.557 | 0.076 | 0.000 |
| Q2 | 0.440 | 0.070 | 0.000 |
| Q4 | 0.405 | 0.073 | 0.000 |
| Q5 | 0.433 | 0.074 | 0.000 |
| Q14 | 0.301 | 0.110 | 0.006 |
| Q16 | 0.556 | 0.066 | 0.000 |
| Q20 | 0.495 | 0.072 | 0.000 |
| Q21 | 0.628 | 0.079 | 0.000 |
| Q22 | 0.461 | 0.090 | 0.000 |
| Q24 | 0.704 | 0.058 | 0.000 |
| Q25 | 0.770 | 0.060 | 0.000 |
| Q26 | 0.109 | 0.075 | 0.148 |
| Q27 | 0.529 | 0.072 | 0.000 |
| Q28 | 0.362 | 0.089 | 0.000 |
| Q29 | 0.571 | 0.060 | 0.000 |
| Q30 | 0.484 | 0.067 | 0.000 |
| Q32 | 0.562 | 0.062 | 0.000 |
| Q33 | 0.524 | 0.065 | 0.000 |
| Q46 | 0.371 | 0.075 | 0.000 |
| Q47 | 0.332 | 0.074 | 0.000 |
| Q48 | 0.169 | 0.082 | 0.040 |
| Q49 | 0.630 | 0.054 | 0.000 |

(continued)

**Table B-9. Standardized Factor Loading - Bifactor Model - Computerized Manufacturing (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q51 | 0.452 | 0.065 | 0.000 |
| Q56 | 0.349 | 0.072 | 0.000 |
| Q60 | 0.230 | 0.078 | 0.003 |
| Q6 | 0.583 | 0.062 | 0.000 |
| Q7 | 0.382 | 0.076 | 0.000 |
| Q8 | 0.429 | 0.065 | 0.000 |
| Q10 | 0.472 | 0.063 | 0.000 |
| Q13 | 0.235 | 0.083 | 0.005 |
| Q15 | 0.283 | 0.074 | 0.000 |
| Q18 | 0.336 | 0.071 | 0.000 |
| Q19 | 0.504 | 0.062 | 0.000 |
| Q34 | 0.340 | 0.067 | 0.000 |
| Q35 | 0.563 | 0.065 | 0.000 |
| Q36 | 0.365 | 0.076 | 0.000 |
| Q37 | 0.515 | 0.062 | 0.000 |
| Q39 | 0.813 | 0.067 | 0.000 |
| Q40 | 0.510 | 0.068 | 0.000 |
| Q41 | 0.454 | 0.065 | 0.000 |
| Q42 | 0.309 | 0.092 | 0.001 |
| Q43 | 0.725 | 0.058 | 0.000 |
| Q44 | 0.668 | 0.060 | 0.000 |
| Q45 | 0.548 | 0.082 | 0.000 |
| Q52 | 0.014 | 0.097 | 0.884 |
| Q53 | 0.625 | 0.070 | 0.000 |
| Q54 | 0.743 | 0.074 | 0.000 |
| Q55 | 0.478 | 0.075 | 0.000 |
| Q58 | 0.454 | 0.069 | 0.000 |
| Q59 | 0.569 | 0.076 | 0.000 |
| Q61 | 0.578 | 0.077 | 0.000 |
| Q62 | 0.394 | 0.067 | 0.000 |
| Q64 | 0.294 | 0.075 | 0.000 |
| Q65 | 0.186 | 0.074 | 0.012 |
| Q66 | 0.359 | 0.070 | 0.000 |
| Q67 | -0.042 | 0.079 | 0.592 |
| Q68 | 0.328 | 0.070 | 0.000 |
| Q69 | 0.105 | 0.084 | 0.208 |
| Q70 | 0.091 | 0.079 | 0.252 |
| Q71 | 0.485 | 0.071 | 0.000 |
| Q72 | 0.227 | 0.066 | 0.001 |
| Q73 | 0.063 | 0.076 | 0.404 |

(continued)

**Table B-9. Standardized Factor Loading - Bifactor Model - Computerized Manufacturing (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q74 | 0.358 | 0.069 | 0.000 |
| Q75 | 0.506 | 0.092 | 0.000 |
| Q76 | 0.359 | 0.073 | 0.000 |
| Q77 | 0.547 | 0.063 | 0.000 |
| Q78 | 0.357 | 0.070 | 0.000 |
| Q79 | 0.004 | 0.076 | 0.957 |
| Q80 | 0.223 | 0.078 | 0.004 |
| Q81 | 0.141 | 0.076 | 0.065 |
| Q82 | 0.493 | 0.083 | 0.000 |
| Q83 | 0.405 | 0.074 | 0.000 |
| Q84 | 0.178 | 0.075 | 0.017 |
| Q86 | 0.144 | 0.074 | 0.052 |
| Q87 | 0.655 | 0.085 | 0.000 |
| Q88 | 0.508 | 0.072 | 0.000 |
| Q90 | 0.554 | 0.096 | 0.000 |
| Q91 | 0.410 | 0.069 | 0.000 |
| Q92 | 0.006 | 0.080 | 0.942 |
| Q93 | 0.249 | 0.075 | 0.001 |
| Q94 | 0.483 | 0.065 | 0.000 |
| Q95 | 0.262 | 0.072 | 0.000 |
| Q96 | -0.132 | 0.083 | 0.111 |
| Q97 | 0.212 | 0.073 | 0.004 |
| Q98 | 0.146 | 0.078 | 0.059 |
| Q101 | 0.123 | 0.085 | 0.146 |
| Q102 | 0.465 | 0.068 | 0.000 |
| Q103 | 0.043 | 0.079 | 0.586 |
| Q104 | 0.617 | 0.067 | 0.000 |
| Q105 | 0.223 | 0.077 | 0.004 |
| Q106 | 0.106 | 0.096 | 0.269 |
| Q107 | 0.270 | 0.074 | 0.000 |
| Q108 | 0.473 | 0.068 | 0.000 |
| Q109 | 0.041 | 0.079 | 0.606 |
| Q110 | 0.560 | 0.070 | 0.000 |
| Q111 | 0.290 | 0.073 | 0.000 |
| Q112 | 0.509 | 0.063 | 0.000 |
| Q113 | -0.048 | 0.081 | 0.553 |
| Q114 | 0.594 | 0.056 | 0.000 |
| Q115 | 0.477 | 0.066 | 0.000 |

*Table B-10. Standardized Factor Loading - Bifactor Model - Computer Programming*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.247 | 0.117 | 0.035 |
| Q2 | 0.076 | 0.085 | 0.372 |
| Q4 | 0.154 | 0.102 | 0.129 |
| Q5 | 0.025 | 0.104 | 0.810 |
| Q14 | 0.296 | 0.116 | 0.011 |
| Q16 | -0.043 | 0.098 | 0.662 |
| Q20 | 0.018 | 0.081 | 0.821 |
| Q21 | 0.008 | 0.109 | 0.939 |
| Q22 | 0.025 | 0.114 | 0.826 |
| Q24 | 0.321 | 0.110 | 0.004 |
| Q25 | 0.258 | 0.113 | 0.022 |
| Q26 | 0.091 | 0.087 | 0.293 |
| Q27 | -0.234 | 0.108 | 0.029 |
| Q28 | 0.110 | 0.114 | 0.332 |
| Q29 | 0.143 | 0.092 | 0.121 |
| Q30 | -0.093 | 0.089 | 0.297 |
| Q32 | 0.075 | 0.097 | 0.438 |
| Q33 | 0.018 | 0.085 | 0.835 |
| Q46 | 0.202 | 0.103 | 0.051 |
| Q47 | 0.184 | 0.093 | 0.048 |
| Q48 | -0.044 | 0.096 | 0.647 |
| Q49 | 0.193 | 0.082 | 0.019 |
| Q51 | -0.660 | 0.106 | 0.000 |
| Q56 | 0.286 | 0.086 | 0.001 |
| Q60 | -0.664 | 0.098 | 0.000 |
| Employability | | | |
| Q6 | 0.172 | 0.104 | 0.097 |
| Q7 | 0.250 | 0.136 | 0.067 |
| Q8 | 0.221 | 0.124 | 0.075 |
| Q10 | 0.060 | 0.105 | 0.563 |
| Q13 | 0.116 | 0.130 | 0.375 |
| Q15 | 0.182 | 0.099 | 0.066 |
| Q18 | -0.066 | 0.111 | 0.552 |
| Q19 | -0.050 | 0.101 | 0.621 |
| Q34 | 0.176 | 0.113 | 0.119 |
| Q35 | -0.006 | 0.146 | 0.966 |
| Q36 | 0.139 | 0.122 | 0.252 |
| Q37 | -0.170 | 0.114 | 0.135 |
| Q39 | -0.253 | 0.287 | 0.378 |
| Q40 | -0.248 | 0.126 | 0.049 |
| Q41 | 0.042 | 0.122 | 0.733 |
| Q42 | 0.352 | 0.117 | 0.003 |

(continued)

## Table B-10. Standardized Factor Loading - Bifactor Model - Computer Programming (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | 0.124 | 0.135 | 0.358 |
| Q44 | 0.058 | 0.123 | 0.638 |
| Q45 | 0.174 | 0.144 | 0.229 |
| Q52 | 0.319 | 0.115 | 0.006 |
| Q53 | 0.353 | 0.128 | 0.006 |
| Q55 | 0.493 | 0.107 | 0.000 |
| Q58 | 0.268 | 0.122 | 0.028 |
| Q59 | 0.360 | 0.122 | 0.003 |
| Occupational | | | |
| Q61 | 0.318 | 0.081 | 0.000 |
| Q62 | 0.027 | 0.104 | 0.797 |
| Q63 | 0.087 | 0.087 | 0.313 |
| Q64 | 0.154 | 0.090 | 0.089 |
| Q65 | 0.146 | 0.101 | 0.148 |
| Q66 | 0.022 | 0.098 | 0.823 |
| Q67 | -0.038 | 0.085 | 0.655 |
| Q69 | 0.101 | 0.079 | 0.199 |
| Q70 | 0.053 | 0.090 | 0.556 |
| Q71 | -0.126 | 0.086 | 0.142 |
| Q72 | 0.113 | 0.086 | 0.190 |
| Q74 | -0.156 | 0.087 | 0.072 |
| Q76 | 0.181 | 0.081 | 0.025 |
| Q77 | 0.237 | 0.090 | 0.008 |
| Q80 | 0.285 | 0.083 | 0.001 |
| Q81 | -0.188 | 0.105 | 0.074 |
| Q82 | 0.434 | 0.077 | 0.000 |
| Q83 | 0.055 | 0.079 | 0.483 |
| Q84 | 0.198 | 0.089 | 0.026 |
| Q85 | 0.272 | 0.088 | 0.002 |
| Q86 | 0.274 | 0.077 | 0.000 |
| Q87 | 0.328 | 0.075 | 0.000 |
| Q88 | 0.404 | 0.072 | 0.000 |
| Q89 | 0.093 | 0.085 | 0.277 |
| Q90 | 0.294 | 0.074 | 0.000 |
| Q91 | 0.274 | 0.080 | 0.001 |
| Q92 | 0.229 | 0.076 | 0.003 |
| Q93 | 0.267 | 0.088 | 0.003 |
| Q95 | 0.482 | 0.077 | 0.000 |
| Q96 | 0.199 | 0.085 | 0.019 |
| Q97 | -0.005 | 0.137 | 0.971 |
| Q98 | 0.455 | 0.068 | 0.000 |
| Q99 | 0.065 | 0.098 | 0.507 |

(continued)

**Table B-10. Standardized Factor Loading - Bifactor Model - Computer Programming (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q101 | 0.356 | 0.080 | 0.000 |
| Q102 | 0.456 | 0.075 | 0.000 |
| Q103 | 0.080 | 0.083 | 0.334 |
| Q104 | 0.243 | 0.079 | 0.002 |
| Q106 | 0.055 | 0.084 | 0.514 |
| Q107 | -0.079 | 0.095 | 0.405 |
| Q108 | 0.167 | 0.078 | 0.032 |
| Q109 | 0.304 | 0.081 | 0.000 |
| Q111 | 0.278 | 0.088 | 0.002 |
| Q112 | 0.443 | 0.070 | 0.000 |
| Q113 | 0.184 | 0.085 | 0.031 |
| Q114 | 0.215 | 0.084 | 0.011 |
| Q115 | 0.424 | 0.076 | 0.000 |
| Q117 | 0.312 | 0.081 | 0.000 |
| Q118 | 0.215 | 0.090 | 0.016 |
| Q119 | 0.378 | 0.075 | 0.000 |
| Q120 | 0.278 | 0.088 | 0.002 |
| Transition Readiness | | | |
| Q1 | 0.455 | 0.113 | 0.000 |
| Q2 | 0.528 | 0.064 | 0.000 |
| Q4 | 0.546 | 0.085 | 0.000 |
| Q5 | 0.579 | 0.067 | 0.000 |
| Q14 | 0.408 | 0.114 | 0.000 |
| Q16 | 0.570 | 0.077 | 0.000 |
| Q20 | 0.590 | 0.060 | 0.000 |
| Q21 | 0.551 | 0.093 | 0.000 |
| Q22 | 0.563 | 0.095 | 0.000 |
| Q24 | 0.555 | 0.086 | 0.000 |
| Q25 | 0.730 | 0.075 | 0.000 |
| Q26 | 0.417 | 0.064 | 0.000 |
| Q27 | 0.459 | 0.084 | 0.000 |
| Q28 | 0.547 | 0.130 | 0.000 |
| Q29 | 0.668 | 0.062 | 0.000 |
| Q30 | 0.491 | 0.076 | 0.000 |
| Q32 | 0.583 | 0.065 | 0.000 |
| Q33 | 0.787 | 0.051 | 0.000 |
| Q46 | 0.359 | 0.084 | 0.000 |
| Q47 | 0.026 | 0.077 | 0.736 |
| Q48 | 0.344 | 0.078 | 0.000 |
| Q49 | 0.581 | 0.067 | 0.000 |
| Q51 | 0.582 | 0.058 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q56 | 0.523 | 0.069 | 0.000 |
| Q60 | 0.366 | 0.065 | 0.000 |
| Q6 | 0.728 | 0.065 | 0.000 |
| Q7 | 0.652 | 0.088 | 0.000 |
| Q8 | 0.422 | 0.067 | 0.000 |
| Q10 | 0.655 | 0.064 | 0.000 |
| Q13 | 0.191 | 0.087 | 0.029 |
| Q15 | 0.568 | 0.060 | 0.000 |
| Q18 | 0.599 | 0.062 | 0.000 |
| Q19 | 0.695 | 0.052 | 0.000 |
| Q34 | 0.350 | 0.065 | 0.000 |
| Q35 | 0.677 | 0.089 | 0.000 |
| Q36 | 0.633 | 0.075 | 0.000 |
| Q37 | 0.480 | 0.071 | 0.000 |
| Q39 | 0.556 | 0.158 | 0.000 |
| Q40 | 0.434 | 0.079 | 0.000 |
| Q41 | 0.354 | 0.074 | 0.000 |
| Q42 | 0.161 | 0.087 | 0.065 |
| Q43 | 0.820 | 0.065 | 0.000 |
| Q44 | 0.821 | 0.057 | 0.000 |
| Q45 | 0.335 | 0.101 | 0.001 |
| Q52 | 0.186 | 0.089 | 0.037 |
| Q53 | 0.513 | 0.106 | 0.000 |
| Q55 | 0.522 | 0.073 | 0.000 |
| Q58 | 0.517 | 0.095 | 0.000 |
| Q59 | 0.283 | 0.106 | 0.007 |
| Q61 | 0.394 | 0.073 | 0.000 |
| Q62 | 0.425 | 0.085 | 0.000 |
| Q63 | 0.587 | 0.076 | 0.000 |
| Q64 | 0.816 | 0.062 | 0.000 |
| Q65 | 0.418 | 0.081 | 0.000 |
| Q66 | 0.497 | 0.092 | 0.000 |
| Q67 | 0.305 | 0.060 | 0.000 |
| Q69 | 0.418 | 0.060 | 0.000 |
| Q70 | 0.296 | 0.072 | 0.000 |
| Q71 | 0.121 | 0.069 | 0.080 |
| Q72 | 0.624 | 0.066 | 0.000 |
| Q74 | 0.108 | 0.080 | 0.175 |
| Q76 | 0.445 | 0.064 | 0.000 |
| Q77 | 0.582 | 0.078 | 0.000 |

(continued)

*Table B-10. Standardized Factor Loading - Bifactor Model - Computer Programming (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q80 | 0.413 | 0.073 | 0.000 |
| Q81 | 0.479 | 0.094 | 0.000 |
| Q82 | 0.401 | 0.068 | 0.000 |
| Q83 | 0.494 | 0.056 | 0.000 |
| Q84 | 0.221 | 0.073 | 0.002 |
| Q85 | 0.164 | 0.075 | 0.030 |
| Q86 | 0.430 | 0.068 | 0.000 |
| Q87 | 0.478 | 0.061 | 0.000 |
| Q88 | 0.452 | 0.061 | 0.000 |
| Q89 | 0.228 | 0.070 | 0.001 |
| Q90 | 0.469 | 0.067 | 0.000 |
| Q91 | 0.440 | 0.070 | 0.000 |
| Q92 | 0.405 | 0.064 | 0.000 |
| Q93 | 0.445 | 0.084 | 0.000 |
| Q95 | 0.281 | 0.071 | 0.000 |
| Q96 | 0.299 | 0.072 | 0.000 |
| Q97 | 0.459 | 0.112 | 0.000 |
| Q98 | 0.555 | 0.060 | 0.000 |
| Q99 | 0.266 | 0.088 | 0.003 |
| Q101 | 0.196 | 0.073 | 0.007 |
| Q102 | 0.537 | 0.067 | 0.000 |
| Q103 | 0.187 | 0.068 | 0.006 |
| Q104 | 0.482 | 0.067 | 0.000 |
| Q106 | 0.211 | 0.069 | 0.002 |
| Q107 | 0.253 | 0.079 | 0.001 |
| Q108 | 0.533 | 0.057 | 0.000 |
| Q109 | 0.293 | 0.071 | 0.000 |
| Q111 | 0.190 | 0.076 | 0.012 |
| Q112 | 0.405 | 0.060 | 0.000 |
| Q113 | 0.336 | 0.073 | 0.000 |
| Q114 | 0.230 | 0.073 | 0.002 |
| Q115 | 0.614 | 0.066 | 0.000 |
| Q117 | 0.701 | 0.062 | 0.000 |
| Q118 | 0.106 | 0.076 | 0.161 |
| Q119 | 0.340 | 0.070 | 0.000 |
| Q120 | 0.290 | 0.079 | 0.000 |

*Table B-11. Standardized Factor Loading - Bifactor Model - Consumer & Family Management*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.169 | 0.047 | 0.000 |
| Q2 | 0.052 | 0.040 | 0.185 |
| Q4 | 0.002 | 0.041 | 0.956 |
| Q5 | -0.095 | 0.044 | 0.032 |
| Q14 | -0.098 | 0.060 | 0.104 |
| Q57 | 0.046 | 0.041 | 0.254 |
| Q70 | 0.199 | 0.043 | 0.000 |
| Q71 | -0.232 | 0.048 | 0.000 |
| Q72 | -0.129 | 0.045 | 0.004 |
| Q74 | 0.106 | 0.044 | 0.016 |
| Q75 | 0.249 | 0.041 | 0.000 |
| Q76 | 0.068 | 0.042 | 0.106 |
| Q77 | 0.011 | 0.044 | 0.802 |
| Q78 | -0.214 | 0.050 | 0.000 |
| Q79 | 0.209 | 0.040 | 0.000 |
| Q80 | 0.022 | 0.041 | 0.588 |
| Q82 | 0.205 | 0.040 | 0.000 |
| Q83 | 0.128 | 0.037 | 0.001 |
| Q96 | -0.021 | 0.041 | 0.610 |
| Q97 | -0.056 | 0.041 | 0.172 |
| Q98 | 0.006 | 0.040 | 0.882 |
| Q99 | 0.203 | 0.040 | 0.000 |
| Q101 | 0.649 | 0.046 | 0.000 |
| Q106 | 0.175 | 0.041 | 0.000 |
| Q110 | 0.624 | 0.045 | 0.000 |
| Employability | | | |
| Q6 | -0.128 | 0.054 | 0.018 |
| Q7 | 0.061 | 0.054 | 0.260 |
| Q8 | -0.054 | 0.051 | 0.284 |
| Q10 | -0.253 | 0.054 | 0.000 |
| Q13 | -0.021 | 0.055 | 0.701 |
| Q15 | -0.128 | 0.052 | 0.014 |
| Q59 | -0.140 | 0.052 | 0.007 |
| Q64 | -0.119 | 0.052 | 0.022 |
| Q84 | -0.145 | 0.056 | 0.010 |
| Q85 | -0.161 | 0.060 | 0.007 |
| Q86 | -0.260 | 0.058 | 0.000 |
| Q87 | -0.305 | 0.058 | 0.000 |
| Q89 | 0.042 | 0.065 | 0.519 |
| Q90 | 0.050 | 0.052 | 0.339 |
| Q91 | -0.104 | 0.054 | 0.054 |
| Q92 | -0.022 | 0.054 | 0.680 |

(continued)

*Table B-11. Standardized Factor Loading - Bifactor Model - Consumer & Family Management (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.077 | 0.052 | 0.141 |
| Q94 | -0.101 | 0.050 | 0.044 |
| Q95 | -0.142 | 0.054 | 0.009 |
| Q102 | 0.345 | 0.061 | 0.000 |
| Q103 | 0.263 | 0.056 | 0.000 |
| Q104 | 0.583 | 0.092 | 0.000 |
| Q105 | 0.003 | 0.058 | 0.964 |
| Q108 | 0.036 | 0.052 | 0.497 |
| Q109 | -0.016 | 0.059 | 0.779 |
| Occupational | | | |
| Q16 | 0.097 | 0.041 | 0.016 |
| Q17 | -0.055 | 0.041 | 0.174 |
| Q18 | -0.036 | 0.040 | 0.370 |
| Q21 | -0.055 | 0.042 | 0.193 |
| Q22 | -0.057 | 0.045 | 0.208 |
| Q23 | -0.023 | 0.037 | 0.540 |
| Q25 | 0.135 | 0.042 | 0.001 |
| Q26 | 0.000 | 0.038 | 0.990 |
| Q27 | 0.010 | 0.038 | 0.793 |
| Q28 | 0.077 | 0.037 | 0.038 |
| Q29 | -0.016 | 0.047 | 0.739 |
| Q30 | 0.027 | 0.037 | 0.457 |
| Q31 | 0.040 | 0.039 | 0.298 |
| Q32 | 0.044 | 0.039 | 0.258 |
| Q33 | -0.041 | 0.044 | 0.349 |
| Q34 | -0.191 | 0.047 | 0.000 |
| Q36 | -0.128 | 0.044 | 0.003 |
| Q38 | 0.039 | 0.039 | 0.319 |
| Q39 | -0.119 | 0.040 | 0.003 |
| Q40 | 0.007 | 0.041 | 0.869 |
| Q41 | 0.011 | 0.040 | 0.779 |
| Q42 | -0.074 | 0.040 | 0.061 |
| Q43 | 0.022 | 0.042 | 0.605 |
| Q44 | -0.022 | 0.039 | 0.578 |
| Q46 | -0.012 | 0.038 | 0.747 |
| Q47 | -0.049 | 0.042 | 0.248 |
| Q48 | -0.027 | 0.038 | 0.481 |
| Q49 | -0.208 | 0.041 | 0.000 |
| Q50 | -0.011 | 0.040 | 0.792 |
| Q51 | -0.081 | 0.040 | 0.041 |
| Q52 | -0.083 | 0.042 | 0.050 |
| Q53 | -0.153 | 0.040 | 0.000 |

(continued)

*Table B-11. Standardized Factor Loading - Bifactor Model - Consumer & Family Management (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q54 | -0.062 | 0.043 | 0.153 |
| Q55 | -0.177 | 0.050 | 0.000 |
| Q60 | -0.006 | 0.039 | 0.873 |
| Q61 | -0.186 | 0.054 | 0.001 |
| Q62 | -0.162 | 0.046 | 0.000 |
| Q63 | -0.025 | 0.038 | 0.513 |
| Q65 | -0.009 | 0.040 | 0.827 |
| Q67 | -0.039 | 0.043 | 0.366 |
| Q68 | -0.021 | 0.038 | 0.577 |
| Q69 | -0.038 | 0.040 | 0.334 |
| Q111 | 0.058 | 0.041 | 0.158 |
| Q112 | -0.186 | 0.050 | 0.000 |
| Q113 | -0.028 | 0.041 | 0.497 |
| Q114 | -0.039 | 0.038 | 0.313 |
| Q116 | 0.053 | 0.039 | 0.178 |
| Q117 | -0.073 | 0.042 | 0.085 |
| Q118 | 0.729 | 0.050 | 0.000 |
| Q120 | 0.707 | 0.050 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.631 | 0.033 | 0.000 |
| Q2 | 0.387 | 0.028 | 0.000 |
| Q4 | 0.492 | 0.029 | 0.000 |
| Q5 | 0.603 | 0.030 | 0.000 |
| Q14 | 0.306 | 0.049 | 0.000 |
| Q57 | 0.586 | 0.028 | 0.000 |
| Q70 | 0.371 | 0.032 | 0.000 |
| Q71 | 0.595 | 0.034 | 0.000 |
| Q72 | 0.598 | 0.035 | 0.000 |
| Q74 | 0.533 | 0.030 | 0.000 |
| Q75 | 0.485 | 0.029 | 0.000 |
| Q76 | 0.173 | 0.031 | 0.000 |
| Q77 | 0.345 | 0.033 | 0.000 |
| Q78 | 0.577 | 0.044 | 0.000 |
| Q79 | 0.386 | 0.029 | 0.000 |
| Q80 | 0.411 | 0.030 | 0.000 |
| Q82 | 0.391 | 0.029 | 0.000 |
| Q83 | 0.565 | 0.024 | 0.000 |
| Q96 | 0.470 | 0.029 | 0.000 |
| Q97 | 0.298 | 0.030 | 0.000 |
| Q98 | 0.484 | 0.028 | 0.000 |
| Q99 | 0.451 | 0.028 | 0.000 |

(continued)

**Table B-11. Standardized Factor Loading - Bifactor Model - Consumer & Family Management (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q101 | 0.413 | 0.028 | 0.000 |
| Q106 | 0.293 | 0.030 | 0.000 |
| Q110 | 0.296 | 0.030 | 0.000 |
| Q6 | 0.572 | 0.028 | 0.000 |
| Q7 | 0.519 | 0.031 | 0.000 |
| Q8 | 0.502 | 0.026 | 0.000 |
| Q10 | 0.552 | 0.026 | 0.000 |
| Q13 | 0.456 | 0.030 | 0.000 |
| Q15 | 0.411 | 0.029 | 0.000 |
| Q59 | 0.472 | 0.027 | 0.000 |
| Q64 | 0.615 | 0.024 | 0.000 |
| Q84 | 0.283 | 0.030 | 0.000 |
| Q85 | 0.620 | 0.030 | 0.000 |
| Q86 | 0.500 | 0.028 | 0.000 |
| Q87 | 0.492 | 0.028 | 0.000 |
| Q89 | 0.726 | 0.032 | 0.000 |
| Q90 | 0.522 | 0.029 | 0.000 |
| Q91 | 0.358 | 0.030 | 0.000 |
| Q92 | 0.542 | 0.030 | 0.000 |
| Q93 | 0.743 | 0.026 | 0.000 |
| Q94 | 0.719 | 0.023 | 0.000 |
| Q95 | 0.602 | 0.028 | 0.000 |
| Q102 | 0.287 | 0.040 | 0.000 |
| Q103 | 0.630 | 0.033 | 0.000 |
| Q104 | 0.779 | 0.045 | 0.000 |
| Q105 | 0.501 | 0.032 | 0.000 |
| Q108 | 0.646 | 0.026 | 0.000 |
| Q109 | 0.427 | 0.033 | 0.000 |
| Q16 | 0.171 | 0.033 | 0.000 |
| Q17 | 0.313 | 0.031 | 0.000 |
| Q18 | 0.510 | 0.030 | 0.000 |
| Q21 | 0.400 | 0.031 | 0.000 |
| Q22 | 0.218 | 0.036 | 0.000 |
| Q23 | 0.572 | 0.026 | 0.000 |
| Q25 | 0.112 | 0.035 | 0.001 |
| Q26 | 0.353 | 0.029 | 0.000 |
| Q27 | 0.454 | 0.027 | 0.000 |
| Q28 | 0.641 | 0.025 | 0.000 |
| Q29 | 0.740 | 0.027 | 0.000 |
| Q30 | 0.637 | 0.025 | 0.000 |

(continued)

## Table B-11. Standardized Factor Loading - Bifactor Model - Consumer & Family Management (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q31 | 0.429 | 0.029 | 0.000 |
| Q32 | 0.267 | 0.030 | 0.000 |
| Q33 | 0.614 | 0.031 | 0.000 |
| Q34 | 0.656 | 0.036 | 0.000 |
| Q36 | 0.495 | 0.032 | 0.000 |
| Q38 | 0.639 | 0.026 | 0.000 |
| Q39 | 0.347 | 0.031 | 0.000 |
| Q40 | 0.465 | 0.031 | 0.000 |
| Q41 | 0.673 | 0.025 | 0.000 |
| Q42 | 0.299 | 0.030 | 0.000 |
| Q43 | 0.399 | 0.031 | 0.000 |
| Q44 | 0.439 | 0.029 | 0.000 |
| Q46 | 0.487 | 0.027 | 0.000 |
| Q47 | 0.634 | 0.029 | 0.000 |
| Q48 | 0.584 | 0.027 | 0.000 |
| Q49 | 0.770 | 0.025 | 0.000 |
| Q50 | 0.565 | 0.028 | 0.000 |
| Q51 | 0.517 | 0.029 | 0.000 |
| Q52 | 0.549 | 0.031 | 0.000 |
| Q53 | 0.453 | 0.031 | 0.000 |
| Q54 | 0.580 | 0.030 | 0.000 |
| Q55 | 0.801 | 0.029 | 0.000 |
| Q60 | 0.589 | 0.027 | 0.000 |
| Q61 | 0.744 | 0.031 | 0.000 |
| Q62 | 0.757 | 0.029 | 0.000 |
| Q63 | 0.510 | 0.027 | 0.000 |
| Q65 | 0.373 | 0.030 | 0.000 |
| Q67 | 0.413 | 0.031 | 0.000 |
| Q68 | 0.422 | 0.028 | 0.000 |
| Q69 | 0.593 | 0.028 | 0.000 |
| Q111 | 0.396 | 0.032 | 0.000 |
| Q112 | 0.786 | 0.030 | 0.000 |
| Q113 | 0.662 | 0.027 | 0.000 |
| Q114 | 0.473 | 0.028 | 0.000 |
| Q116 | 0.340 | 0.029 | 0.000 |
| Q117 | 0.603 | 0.029 | 0.000 |
| Q118 | 0.495 | 0.028 | 0.000 |
| Q120 | 0.577 | 0.026 | 0.000 |

*Table B-12. Standardized Factor Loading - Bifactor Model - Culinary & Food Services*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.023 | 0.056 | 0.679 |
| Q2 | -0.049 | 0.042 | 0.239 |
| Q4 | -0.021 | 0.048 | 0.662 |
| Q5 | 0.051 | 0.048 | 0.285 |
| Q14 | -0.090 | 0.063 | 0.152 |
| Q60 | -0.027 | 0.045 | 0.547 |
| Q70 | -0.013 | 0.046 | 0.774 |
| Q71 | 0.029 | 0.056 | 0.609 |
| Q72 | 0.044 | 0.052 | 0.405 |
| Q74 | -0.024 | 0.048 | 0.618 |
| Q75 | -0.015 | 0.046 | 0.734 |
| Q76 | 0.005 | 0.044 | 0.905 |
| Q77 | -0.034 | 0.046 | 0.458 |
| Q78 | 0.035 | 0.063 | 0.576 |
| Q79 | -0.030 | 0.042 | 0.474 |
| Q80 | 0.017 | 0.045 | 0.711 |
| Q82 | 0.013 | 0.041 | 0.758 |
| Q83 | -0.016 | 0.040 | 0.688 |
| Q96 | 0.039 | 0.044 | 0.374 |
| Q97 | 0.028 | 0.044 | 0.519 |
| Q98 | -0.058 | 0.044 | 0.186 |
| Q99 | -0.018 | 0.041 | 0.656 |
| Q101 | 0.657 | 0.122 | 0.000 |
| Q106 | -0.106 | 0.043 | 0.015 |
| Q110 | 0.756 | 0.140 | 0.000 |
| Employability | | | |
| Q6 | -0.285 | 0.065 | 0.000 |
| Q7 | 0.073 | 0.065 | 0.258 |
| Q8 | -0.213 | 0.059 | 0.000 |
| Q10 | -0.224 | 0.055 | 0.000 |
| Q13 | 0.011 | 0.061 | 0.850 |
| Q15 | -0.097 | 0.057 | 0.091 |
| Q62 | -0.175 | 0.059 | 0.003 |
| Q66 | -0.115 | 0.053 | 0.032 |
| Q84 | -0.111 | 0.059 | 0.061 |
| Q85 | -0.133 | 0.060 | 0.027 |
| Q86 | -0.100 | 0.060 | 0.094 |
| Q87 | -0.139 | 0.056 | 0.014 |
| Q89 | 0.052 | 0.079 | 0.513 |
| Q90 | 0.051 | 0.056 | 0.369 |
| Q91 | -0.064 | 0.059 | 0.275 |
| Q92 | 0.185 | 0.062 | 0.003 |

(continued)

**Table B-12. Standardized Factor Loading - Bifactor Model - Culinary & Food Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | -0.038 | 0.065 | 0.560 |
| Q94 | -0.235 | 0.059 | 0.000 |
| Q95 | -0.149 | 0.063 | 0.019 |
| Q102 | 0.381 | 0.072 | 0.000 |
| Q103 | 0.179 | 0.069 | 0.009 |
| Q104 | 0.494 | 0.138 | 0.000 |
| Q105 | -0.085 | 0.060 | 0.154 |
| Q108 | 0.025 | 0.061 | 0.679 |
| Q109 | 0.102 | 0.068 | 0.137 |
| Occupational | | | |
| Q16 | 0.299 | 0.050 | 0.000 |
| Q17 | 0.058 | 0.054 | 0.286 |
| Q18 | 0.085 | 0.045 | 0.060 |
| Q19 | -0.007 | 0.049 | 0.883 |
| Q20 | 0.061 | 0.048 | 0.208 |
| Q22 | -0.109 | 0.052 | 0.036 |
| Q24 | -0.055 | 0.048 | 0.253 |
| Q25 | -0.103 | 0.053 | 0.051 |
| Q27 | -0.176 | 0.063 | 0.006 |
| Q28 | -0.007 | 0.049 | 0.879 |
| Q29 | 0.300 | 0.049 | 0.000 |
| Q31 | 0.059 | 0.048 | 0.220 |
| Q32 | -0.006 | 0.043 | 0.891 |
| Q33 | 0.096 | 0.050 | 0.057 |
| Q34 | 0.136 | 0.049 | 0.005 |
| Q35 | -0.196 | 0.059 | 0.001 |
| Q36 | 0.365 | 0.049 | 0.000 |
| Q37 | 0.200 | 0.048 | 0.000 |
| Q38 | 0.018 | 0.048 | 0.700 |
| Q39 | 0.067 | 0.048 | 0.163 |
| Q40 | 0.333 | 0.049 | 0.000 |
| Q41 | 0.021 | 0.052 | 0.692 |
| Q42 | -0.057 | 0.054 | 0.290 |
| Q43 | -0.012 | 0.064 | 0.846 |
| Q44 | 0.021 | 0.051 | 0.675 |
| Q47 | 0.240 | 0.051 | 0.000 |
| Q48 | 0.169 | 0.049 | 0.000 |
| Q49 | -0.094 | 0.047 | 0.046 |
| Q50 | 0.013 | 0.050 | 0.795 |
| Q51 | 0.083 | 0.050 | 0.094 |
| Q52 | -0.021 | 0.049 | 0.676 |
| Q53 | -0.046 | 0.053 | 0.389 |

(continued)

**Table B-12. Standardized Factor Loading - Bifactor Model - Culinary & Food Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q54 | 0.013 | 0.052 | 0.810 |
| Q55 | 0.088 | 0.051 | 0.082 |
| Q56 | -0.072 | 0.050 | 0.150 |
| Q57 | -0.132 | 0.053 | 0.013 |
| Q59 | -0.010 | 0.052 | 0.854 |
| Q63 | 0.064 | 0.049 | 0.188 |
| Q64 | -0.061 | 0.048 | 0.200 |
| Q65 | 0.127 | 0.051 | 0.012 |
| Q67 | -0.108 | 0.051 | 0.032 |
| Q69 | -0.060 | 0.049 | 0.220 |
| Q111 | 0.059 | 0.053 | 0.265 |
| Q112 | 0.303 | 0.055 | 0.000 |
| Q113 | -0.279 | 0.061 | 0.000 |
| Q114 | -0.116 | 0.052 | 0.026 |
| Q116 | -0.065 | 0.054 | 0.232 |
| Q118 | 0.207 | 0.048 | 0.000 |
| Q119 | -0.193 | 0.054 | 0.000 |
| Q120 | -0.141 | 0.050 | 0.005 |
| Transition Readiness | | | |
| Q1 | 0.668 | 0.040 | 0.000 |
| Q2 | 0.398 | 0.029 | 0.000 |
| Q4 | 0.423 | 0.034 | 0.000 |
| Q5 | 0.538 | 0.034 | 0.000 |
| Q14 | 0.275 | 0.059 | 0.000 |
| Q60 | 0.565 | 0.029 | 0.000 |
| Q70 | 0.453 | 0.031 | 0.000 |
| Q71 | 0.619 | 0.040 | 0.000 |
| Q72 | 0.479 | 0.039 | 0.000 |
| Q74 | 0.459 | 0.035 | 0.000 |
| Q75 | 0.515 | 0.031 | 0.000 |
| Q76 | 0.171 | 0.033 | 0.000 |
| Q77 | 0.317 | 0.034 | 0.000 |
| Q78 | 0.492 | 0.060 | 0.000 |
| Q79 | 0.472 | 0.029 | 0.000 |
| Q80 | 0.424 | 0.031 | 0.000 |
| Q82 | 0.507 | 0.028 | 0.000 |
| Q83 | 0.583 | 0.025 | 0.000 |
| Q96 | 0.377 | 0.032 | 0.000 |
| Q97 | 0.171 | 0.033 | 0.000 |
| Q98 | 0.407 | 0.032 | 0.000 |
| Q99 | 0.531 | 0.027 | 0.000 |

(continued)

**Table B-12. Standardized Factor Loading - Bifactor Model - Culinary & Food Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q101 | 0.349 | 0.031 | 0.000 |
| Q106 | 0.300 | 0.031 | 0.000 |
| Q110 | 0.315 | 0.031 | 0.000 |
| Q6 | 0.585 | 0.030 | 0.000 |
| Q7 | 0.454 | 0.035 | 0.000 |
| Q8 | 0.438 | 0.029 | 0.000 |
| Q10 | 0.560 | 0.027 | 0.000 |
| Q13 | 0.366 | 0.033 | 0.000 |
| Q15 | 0.415 | 0.030 | 0.000 |
| Q62 | 0.362 | 0.030 | 0.000 |
| Q66 | 0.582 | 0.025 | 0.000 |
| Q84 | 0.315 | 0.030 | 0.000 |
| Q85 | 0.501 | 0.032 | 0.000 |
| Q86 | 0.496 | 0.030 | 0.000 |
| Q87 | 0.463 | 0.029 | 0.000 |
| Q89 | 0.654 | 0.043 | 0.000 |
| Q90 | 0.507 | 0.031 | 0.000 |
| Q91 | 0.281 | 0.032 | 0.000 |
| Q92 | 0.526 | 0.036 | 0.000 |
| Q93 | 0.675 | 0.032 | 0.000 |
| Q94 | 0.671 | 0.027 | 0.000 |
| Q95 | 0.528 | 0.034 | 0.000 |
| Q102 | 0.252 | 0.039 | 0.000 |
| Q103 | 0.612 | 0.039 | 0.000 |
| Q104 | 0.733 | 0.068 | 0.000 |
| Q105 | 0.559 | 0.031 | 0.000 |
| Q108 | 0.555 | 0.032 | 0.000 |
| Q109 | 0.387 | 0.040 | 0.000 |
| Q16 | 0.298 | 0.033 | 0.000 |
| Q17 | 0.419 | 0.035 | 0.000 |
| Q18 | 0.509 | 0.027 | 0.000 |
| Q19 | 0.489 | 0.032 | 0.000 |
| Q20 | 0.294 | 0.032 | 0.000 |
| Q22 | 0.590 | 0.032 | 0.000 |
| Q24 | 0.537 | 0.028 | 0.000 |
| Q25 | 0.677 | 0.030 | 0.000 |
| Q27 | 0.601 | 0.047 | 0.000 |
| Q28 | 0.302 | 0.032 | 0.000 |
| Q29 | 0.377 | 0.033 | 0.000 |
| Q31 | 0.510 | 0.031 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q32 | 0.582 | 0.026 | 0.000 |
| Q33 | 0.142 | 0.033 | 0.000 |
| Q34 | 0.349 | 0.031 | 0.000 |
| Q35 | 0.712 | 0.038 | 0.000 |
| Q36 | 0.352 | 0.032 | 0.000 |
| Q37 | 0.384 | 0.030 | 0.000 |
| Q38 | 0.560 | 0.030 | 0.000 |
| Q39 | 0.362 | 0.030 | 0.000 |
| Q40 | 0.465 | 0.033 | 0.000 |
| Q41 | 0.414 | 0.033 | 0.000 |
| Q42 | 0.120 | 0.036 | 0.001 |
| Q43 | 0.687 | 0.038 | 0.000 |
| Q44 | 0.310 | 0.033 | 0.000 |
| Q47 | 0.385 | 0.032 | 0.000 |
| Q48 | 0.302 | 0.031 | 0.000 |
| Q49 | 0.525 | 0.030 | 0.000 |
| Q50 | 0.125 | 0.033 | 0.000 |
| Q51 | 0.248 | 0.033 | 0.000 |
| Q52 | 0.370 | 0.032 | 0.000 |
| Q53 | 0.502 | 0.035 | 0.000 |
| Q54 | 0.336 | 0.034 | 0.000 |
| Q55 | 0.117 | 0.034 | 0.000 |
| Q56 | 0.444 | 0.033 | 0.000 |
| Q57 | 0.320 | 0.034 | 0.000 |
| Q59 | 0.418 | 0.033 | 0.000 |
| Q63 | 0.346 | 0.030 | 0.000 |
| Q64 | 0.383 | 0.030 | 0.000 |
| Q65 | 0.200 | 0.033 | 0.000 |
| Q67 | 0.459 | 0.031 | 0.000 |
| Q69 | 0.571 | 0.030 | 0.000 |
| Q111 | 0.525 | 0.033 | 0.000 |
| Q112 | 0.177 | 0.039 | 0.000 |
| Q113 | 0.429 | 0.040 | 0.000 |
| Q114 | 0.475 | 0.035 | 0.000 |
| Q116 | 0.643 | 0.030 | 0.000 |
| Q118 | 0.402 | 0.030 | 0.000 |
| Q119 | 0.352 | 0.039 | 0.000 |
| Q120 | 0.050 | 0.034 | 0.140 |

*Table B-13. Standardized Factor Loading - Bifactor Model - Early Childhood Education*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.125 | 0.067 | 0.060 |
| Q2 | 0.044 | 0.045 | 0.323 |
| Q4 | 0.019 | 0.049 | 0.691 |
| Q5 | -0.027 | 0.056 | 0.630 |
| Q14 | -0.139 | 0.067 | 0.036 |
| Q60 | -0.101 | 0.049 | 0.040 |
| Q70 | 0.093 | 0.048 | 0.053 |
| Q71 | -0.027 | 0.058 | 0.648 |
| Q72 | -0.069 | 0.059 | 0.247 |
| Q74 | 0.032 | 0.052 | 0.538 |
| Q75 | 0.131 | 0.045 | 0.004 |
| Q76 | -0.050 | 0.046 | 0.276 |
| Q77 | -0.050 | 0.048 | 0.305 |
| Q78 | -0.109 | 0.067 | 0.105 |
| Q79 | 0.040 | 0.045 | 0.368 |
| Q80 | 0.028 | 0.046 | 0.542 |
| Q82 | 0.131 | 0.043 | 0.002 |
| Q83 | -0.018 | 0.042 | 0.674 |
| Q96 | 0.026 | 0.046 | 0.568 |
| Q97 | 0.018 | 0.046 | 0.695 |
| Q98 | -0.030 | 0.045 | 0.504 |
| Q99 | 0.074 | 0.043 | 0.081 |
| Q101 | 0.741 | 0.083 | 0.000 |
| Q106 | 0.105 | 0.045 | 0.021 |
| Q110 | 0.692 | 0.077 | 0.000 |
| Employability | | | |
| Q6 | -0.376 | 0.074 | 0.000 |
| Q7 | 0.129 | 0.071 | 0.070 |
| Q8 | 0.048 | 0.061 | 0.431 |
| Q10 | -0.192 | 0.062 | 0.002 |
| Q13 | 0.206 | 0.068 | 0.003 |
| Q15 | -0.023 | 0.062 | 0.710 |
| Q62 | -0.186 | 0.064 | 0.004 |
| Q63 | -0.291 | 0.061 | 0.000 |
| Q84 | 0.078 | 0.066 | 0.237 |
| Q85 | 0.039 | 0.067 | 0.560 |
| Q86 | -0.160 | 0.063 | 0.011 |
| Q87 | -0.230 | 0.062 | 0.000 |
| Q89 | 0.065 | 0.084 | 0.442 |
| Q90 | -0.085 | 0.066 | 0.201 |
| Q91 | -0.093 | 0.062 | 0.129 |
| Q92 | 0.027 | 0.063 | 0.665 |

(continued)

**Table B-13. Standardized Factor Loading - Bifactor Model - Early Childhood Education (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.077 | 0.071 | 0.277 |
| Q94 | -0.096 | 0.068 | 0.155 |
| Q95 | 0.071 | 0.065 | 0.273 |
| Q102 | 0.228 | 0.075 | 0.002 |
| Q103 | 0.059 | 0.076 | 0.436 |
| Q105 | -0.035 | 0.068 | 0.612 |
| Q108 | 0.095 | 0.074 | 0.201 |
| Q109 | 0.075 | 0.067 | 0.267 |
| Occupational | | | |
| Q16 | -0.087 | 0.054 | 0.106 |
| Q17 | -0.118 | 0.051 | 0.021 |
| Q18 | -0.036 | 0.055 | 0.507 |
| Q19 | 0.266 | 0.055 | 0.000 |
| Q20 | 0.085 | 0.054 | 0.115 |
| Q21 | 0.155 | 0.078 | 0.047 |
| Q23 | 0.230 | 0.057 | 0.000 |
| Q24 | 0.034 | 0.051 | 0.502 |
| Q25 | -0.005 | 0.053 | 0.925 |
| Q26 | -0.040 | 0.056 | 0.479 |
| Q27 | -0.024 | 0.056 | 0.667 |
| Q28 | -0.123 | 0.055 | 0.024 |
| Q30 | -0.320 | 0.060 | 0.000 |
| Q31 | -0.013 | 0.055 | 0.817 |
| Q32 | 0.084 | 0.053 | 0.112 |
| Q33 | -0.213 | 0.054 | 0.000 |
| Q34 | -0.097 | 0.054 | 0.072 |
| Q35 | -0.101 | 0.054 | 0.063 |
| Q36 | 0.038 | 0.059 | 0.519 |
| Q38 | -0.161 | 0.054 | 0.003 |
| Q39 | 0.072 | 0.075 | 0.335 |
| Q40 | -0.100 | 0.053 | 0.060 |
| Q41 | 0.213 | 0.069 | 0.002 |
| Q42 | 0.055 | 0.056 | 0.327 |
| Q43 | -0.109 | 0.055 | 0.047 |
| Q44 | -0.034 | 0.058 | 0.552 |
| Q46 | 0.181 | 0.061 | 0.003 |
| Q47 | -0.048 | 0.057 | 0.394 |
| Q48 | 0.220 | 0.069 | 0.002 |
| Q49 | 0.246 | 0.060 | 0.000 |
| Q51 | -0.009 | 0.062 | 0.890 |
| Q53 | 0.078 | 0.060 | 0.198 |
| Q54 | 0.126 | 0.064 | 0.048 |

(continued)

## Table B-13. Standardized Factor Loading - Bifactor Model - Early Childhood Education (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q55 | -0.027 | 0.053 | 0.609 |
| Q56 | 0.067 | 0.078 | 0.391 |
| Q58 | -0.302 | 0.054 | 0.000 |
| Q59 | 0.089 | 0.062 | 0.148 |
| Q65 | 0.180 | 0.076 | 0.018 |
| Q66 | 0.137 | 0.057 | 0.017 |
| Q67 | -0.216 | 0.051 | 0.000 |
| Q68 | 0.170 | 0.065 | 0.009 |
| Q69 | -0.082 | 0.050 | 0.100 |
| Q111 | 0.217 | 0.056 | 0.000 |
| Q113 | 0.103 | 0.052 | 0.046 |
| Q114 | 0.034 | 0.055 | 0.536 |
| Q115 | 0.029 | 0.054 | 0.589 |
| Q116 | -0.002 | 0.064 | 0.974 |
| Q117 | -0.338 | 0.053 | 0.000 |
| Q118 | -0.042 | 0.057 | 0.468 |
| Q119 | -0.031 | 0.069 | 0.658 |
| Transition Readiness | | | |
| Q1 | 0.516 | 0.054 | 0.000 |
| Q2 | 0.346 | 0.033 | 0.000 |
| Q4 | 0.444 | 0.035 | 0.000 |
| Q5 | 0.487 | 0.040 | 0.000 |
| Q14 | 0.149 | 0.056 | 0.008 |
| Q60 | 0.504 | 0.034 | 0.000 |
| Q70 | 0.484 | 0.036 | 0.000 |
| Q71 | 0.531 | 0.045 | 0.000 |
| Q72 | 0.394 | 0.045 | 0.000 |
| Q74 | 0.472 | 0.037 | 0.000 |
| Q75 | 0.478 | 0.032 | 0.000 |
| Q76 | 0.185 | 0.034 | 0.000 |
| Q77 | 0.249 | 0.037 | 0.000 |
| Q78 | 0.413 | 0.063 | 0.000 |
| Q79 | 0.394 | 0.032 | 0.000 |
| Q80 | 0.423 | 0.033 | 0.000 |
| Q82 | 0.467 | 0.031 | 0.000 |
| Q83 | 0.590 | 0.027 | 0.000 |
| Q96 | 0.451 | 0.033 | 0.000 |
| Q97 | 0.229 | 0.035 | 0.000 |
| Q98 | 0.409 | 0.033 | 0.000 |
| Q99 | 0.529 | 0.029 | 0.000 |
| Q101 | 0.390 | 0.032 | 0.000 |
| Q106 | 0.245 | 0.034 | 0.000 |

(continued)

**Table B-13. Standardized Factor Loading - Bifactor Model - Early Childhood Education (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q110 | 0.375 | 0.032 | 0.000 |
| Q6 | 0.529 | 0.033 | 0.000 |
| Q7 | 0.416 | 0.038 | 0.000 |
| Q8 | 0.505 | 0.029 | 0.000 |
| Q10 | 0.533 | 0.029 | 0.000 |
| Q13 | 0.350 | 0.037 | 0.000 |
| Q15 | 0.426 | 0.031 | 0.000 |
| Q62 | 0.450 | 0.030 | 0.000 |
| Q63 | 0.638 | 0.025 | 0.000 |
| Q84 | 0.309 | 0.033 | 0.000 |
| Q85 | 0.543 | 0.035 | 0.000 |
| Q86 | 0.466 | 0.031 | 0.000 |
| Q87 | 0.511 | 0.029 | 0.000 |
| Q89 | 0.597 | 0.040 | 0.000 |
| Q90 | 0.458 | 0.035 | 0.000 |
| Q91 | 0.370 | 0.032 | 0.000 |
| Q92 | 0.503 | 0.035 | 0.000 |
| Q93 | 0.712 | 0.030 | 0.000 |
| Q94 | 0.646 | 0.029 | 0.000 |
| Q95 | 0.552 | 0.033 | 0.000 |
| Q102 | 0.154 | 0.043 | 0.000 |
| Q103 | 0.548 | 0.042 | 0.000 |
| Q105 | 0.446 | 0.037 | 0.000 |
| Q108 | 0.534 | 0.034 | 0.000 |
| Q109 | 0.309 | 0.042 | 0.000 |
| Q16 | 0.187 | 0.034 | 0.000 |
| Q17 | 0.424 | 0.031 | 0.000 |
| Q18 | 0.261 | 0.035 | 0.000 |
| Q19 | 0.154 | 0.035 | 0.000 |
| Q20 | 0.277 | 0.034 | 0.000 |
| Q21 | 0.563 | 0.045 | 0.000 |
| Q23 | 0.604 | 0.032 | 0.000 |
| Q24 | 0.614 | 0.027 | 0.000 |
| Q25 | 0.308 | 0.033 | 0.000 |
| Q26 | 0.412 | 0.033 | 0.000 |
| Q27 | 0.442 | 0.034 | 0.000 |
| Q28 | 0.614 | 0.030 | 0.000 |
| Q30 | 0.138 | 0.039 | 0.000 |
| Q31 | 0.314 | 0.035 | 0.000 |
| Q32 | 0.439 | 0.032 | 0.000 |

(continued)

**Table B-13. Standardized Factor Loading - Bifactor Model - Early Childhood Education (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q33 | 0.470 | 0.032 | 0.000 |
| Q34 | 0.485 | 0.031 | 0.000 |
| Q35 | 0.038 | 0.035 | 0.277 |
| Q36 | 0.310 | 0.037 | 0.000 |
| Q38 | 0.395 | 0.033 | 0.000 |
| Q39 | 0.314 | 0.051 | 0.000 |
| Q40 | 0.394 | 0.032 | 0.000 |
| Q41 | 0.264 | 0.051 | 0.000 |
| Q42 | 0.499 | 0.035 | 0.000 |
| Q43 | 0.332 | 0.034 | 0.000 |
| Q44 | 0.232 | 0.037 | 0.000 |
| Q46 | 0.472 | 0.040 | 0.000 |
| Q47 | 0.430 | 0.034 | 0.000 |
| Q48 | 0.490 | 0.041 | 0.000 |
| Q49 | 0.566 | 0.038 | 0.000 |
| Q51 | 0.383 | 0.038 | 0.000 |
| Q53 | 0.424 | 0.037 | 0.000 |
| Q54 | 0.595 | 0.035 | 0.000 |
| Q55 | 0.398 | 0.031 | 0.000 |
| Q56 | 0.537 | 0.050 | 0.000 |
| Q58 | 0.520 | 0.031 | 0.000 |
| Q59 | 0.473 | 0.042 | 0.000 |
| Q65 | 0.438 | 0.051 | 0.000 |
| Q66 | 0.511 | 0.035 | 0.000 |
| Q67 | 0.639 | 0.031 | 0.000 |
| Q68 | 0.295 | 0.041 | 0.000 |
| Q69 | 0.548 | 0.028 | 0.000 |
| Q111 | 0.102 | 0.036 | 0.005 |
| Q113 | 0.505 | 0.031 | 0.000 |
| Q114 | 0.219 | 0.036 | 0.000 |
| Q115 | 0.353 | 0.034 | 0.000 |
| Q116 | -0.185 | 0.041 | 0.000 |
| Q117 | 0.433 | 0.031 | 0.000 |
| Q118 | 0.607 | 0.032 | 0.000 |
| Q119 | 0.318 | 0.045 | 0.000 |

*Table B-14. Standardized Factor Loading - Bifactor Model - Environmental Science*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.043 | 0.080 | 0.592 |
| Q2 | -0.076 | 0.071 | 0.283 |
| Q4 | -0.005 | 0.079 | 0.945 |
| Q5 | 0.061 | 0.077 | 0.431 |
| Q14 | 0.041 | 0.097 | 0.671 |
| Q16 | -0.005 | 0.071 | 0.945 |
| Q20 | -0.196 | 0.073 | 0.007 |
| Q21 | 0.027 | 0.086 | 0.758 |
| Q22 | -0.091 | 0.080 | 0.253 |
| Q24 | 0.028 | 0.078 | 0.725 |
| Q25 | -0.027 | 0.077 | 0.726 |
| Q26 | -0.217 | 0.071 | 0.002 |
| Q27 | -0.032 | 0.081 | 0.695 |
| Q28 | 0.007 | 0.094 | 0.941 |
| Q29 | -0.113 | 0.072 | 0.117 |
| Q30 | -0.034 | 0.073 | 0.639 |
| Q32 | -0.025 | 0.074 | 0.736 |
| Q33 | 0.065 | 0.067 | 0.332 |
| Q46 | 0.166 | 0.069 | 0.015 |
| Q47 | 0.031 | 0.072 | 0.663 |
| Q48 | 0.070 | 0.075 | 0.350 |
| Q49 | -0.142 | 0.066 | 0.031 |
| Q51 | 0.568 | 0.091 | 0.000 |
| Q56 | 0.041 | 0.072 | 0.571 |
| Q60 | 0.842 | 0.124 | 0.000 |
| Employability | | | |
| Q6 | 0.224 | 0.102 | 0.029 |
| Q7 | -0.089 | 0.096 | 0.354 |
| Q8 | 0.264 | 0.086 | 0.002 |
| Q10 | 0.272 | 0.094 | 0.004 |
| Q13 | -0.002 | 0.093 | 0.980 |
| Q15 | 0.097 | 0.087 | 0.265 |
| Q18 | 0.270 | 0.093 | 0.004 |
| Q19 | 0.229 | 0.080 | 0.004 |
| Q34 | 0.084 | 0.091 | 0.355 |
| Q35 | 0.241 | 0.098 | 0.014 |
| Q36 | 0.172 | 0.095 | 0.070 |
| Q37 | 0.126 | 0.092 | 0.172 |
| Q39 | -0.227 | 0.100 | 0.024 |
| Q40 | 0.161 | 0.097 | 0.096 |
| Q41 | 0.205 | 0.091 | 0.024 |
| Q42 | -0.233 | 0.091 | 0.010 |

(continued)

**Table B-14. Standardized Factor Loading - Bifactor Model - Environmental Science (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | -0.072 | 0.101 | 0.476 |
| Q44 | 0.139 | 0.099 | 0.160 |
| Q45 | -0.158 | 0.106 | 0.133 |
| Q52 | -0.403 | 0.098 | 0.000 |
| Q53 | -0.213 | 0.092 | 0.021 |
| Q55 | -0.065 | 0.099 | 0.515 |
| Q58 | -0.060 | 0.091 | 0.507 |
| Q59 | -0.216 | 0.099 | 0.029 |
| Occupational | | | |
| Q63 | 0.211 | 0.065 | 0.001 |
| Q65 | -0.030 | 0.071 | 0.672 |
| Q66 | 0.119 | 0.067 | 0.077 |
| Q67 | 0.261 | 0.059 | 0.000 |
| Q68 | 0.451 | 0.055 | 0.000 |
| Q69 | 0.277 | 0.062 | 0.000 |
| Q70 | 0.211 | 0.061 | 0.001 |
| Q71 | 0.055 | 0.064 | 0.390 |
| Q72 | 0.115 | 0.071 | 0.106 |
| Q73 | 0.204 | 0.060 | 0.001 |
| Q74 | 0.096 | 0.063 | 0.125 |
| Q75 | 0.269 | 0.060 | 0.000 |
| Q76 | 0.087 | 0.075 | 0.241 |
| Q78 | 0.052 | 0.084 | 0.533 |
| Q79 | 0.140 | 0.087 | 0.108 |
| Q80 | 0.258 | 0.060 | 0.000 |
| Q82 | 0.074 | 0.079 | 0.352 |
| Q83 | 0.168 | 0.069 | 0.014 |
| Q85 | 0.354 | 0.067 | 0.000 |
| Q86 | 0.206 | 0.061 | 0.001 |
| Q87 | 0.517 | 0.054 | 0.000 |
| Q88 | 0.297 | 0.060 | 0.000 |
| Q89 | 0.056 | 0.062 | 0.360 |
| Q90 | 0.017 | 0.059 | 0.767 |
| Q91 | 0.347 | 0.078 | 0.000 |
| Q92 | 0.154 | 0.070 | 0.029 |
| Q93 | 0.028 | 0.083 | 0.735 |
| Q95 | 0.357 | 0.059 | 0.000 |
| Q96 | 0.201 | 0.059 | 0.001 |
| Q97 | 0.038 | 0.064 | 0.558 |
| Q98 | 0.190 | 0.063 | 0.003 |
| Q99 | 0.088 | 0.060 | 0.143 |

(continued)

**Table B-14. Standardized Factor Loading - Bifactor Model - Environmental Science (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q101 | 0.331 | 0.062 | 0.000 |
| Q102 | 0.399 | 0.060 | 0.000 |
| Q104 | 0.582 | 0.050 | 0.000 |
| Q105 | 0.611 | 0.060 | 0.000 |
| Q106 | 0.331 | 0.058 | 0.000 |
| Q108 | 0.129 | 0.072 | 0.073 |
| Q109 | 0.286 | 0.060 | 0.000 |
| Q110 | 0.205 | 0.066 | 0.002 |
| Q111 | 0.141 | 0.062 | 0.022 |
| Q112 | 0.143 | 0.062 | 0.022 |
| Q113 | 0.257 | 0.068 | 0.000 |
| Q114 | 0.055 | 0.071 | 0.437 |
| Q115 | 0.115 | 0.070 | 0.099 |
| Q116 | 0.297 | 0.068 | 0.000 |
| Q117 | 0.036 | 0.069 | 0.598 |
| Q118 | 0.582 | 0.051 | 0.000 |
| Q119 | 0.624 | 0.052 | 0.000 |
| Q120 | 0.329 | 0.060 | 0.000 |
| Transition Readiness | | | |
| Q1 | 0.731 | 0.054 | 0.000 |
| Q2 | 0.391 | 0.053 | 0.000 |
| Q4 | 0.576 | 0.057 | 0.000 |
| Q5 | 0.594 | 0.056 | 0.000 |
| Q14 | 0.272 | 0.086 | 0.002 |
| Q16 | 0.633 | 0.053 | 0.000 |
| Q20 | 0.466 | 0.048 | 0.000 |
| Q21 | 0.751 | 0.055 | 0.000 |
| Q22 | 0.627 | 0.060 | 0.000 |
| Q24 | 0.608 | 0.061 | 0.000 |
| Q25 | 0.552 | 0.061 | 0.000 |
| Q26 | 0.271 | 0.056 | 0.000 |
| Q27 | 0.491 | 0.062 | 0.000 |
| Q28 | 0.538 | 0.084 | 0.000 |
| Q29 | 0.507 | 0.050 | 0.000 |
| Q30 | 0.557 | 0.051 | 0.000 |
| Q32 | 0.415 | 0.054 | 0.000 |
| Q33 | 0.618 | 0.043 | 0.000 |
| Q46 | 0.528 | 0.052 | 0.000 |
| Q47 | 0.217 | 0.057 | 0.000 |
| Q48 | 0.324 | 0.064 | 0.000 |
| Q49 | 0.586 | 0.047 | 0.000 |

(continued)

**Table B-14. Standardized Factor Loading - Bifactor Model - Environmental Science (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q51 | 0.460 | 0.050 | 0.000 |
| Q56 | 0.403 | 0.052 | 0.000 |
| Q60 | 0.282 | 0.057 | 0.000 |
| Q6 | 0.487 | 0.060 | 0.000 |
| Q7 | 0.498 | 0.062 | 0.000 |
| Q8 | 0.487 | 0.050 | 0.000 |
| Q10 | 0.513 | 0.052 | 0.000 |
| Q13 | 0.410 | 0.056 | 0.000 |
| Q15 | 0.452 | 0.050 | 0.000 |
| Q18 | 0.472 | 0.051 | 0.000 |
| Q19 | 0.601 | 0.044 | 0.000 |
| Q34 | 0.269 | 0.055 | 0.000 |
| Q35 | 0.474 | 0.059 | 0.000 |
| Q36 | 0.466 | 0.055 | 0.000 |
| Q37 | 0.407 | 0.053 | 0.000 |
| Q39 | 0.719 | 0.065 | 0.000 |
| Q40 | 0.470 | 0.056 | 0.000 |
| Q41 | 0.386 | 0.054 | 0.000 |
| Q42 | 0.399 | 0.063 | 0.000 |
| Q43 | 0.751 | 0.054 | 0.000 |
| Q44 | 0.652 | 0.050 | 0.000 |
| Q45 | 0.540 | 0.062 | 0.000 |
| Q52 | 0.208 | 0.071 | 0.003 |
| Q53 | 0.571 | 0.067 | 0.000 |
| Q55 | 0.459 | 0.060 | 0.000 |
| Q58 | 0.687 | 0.046 | 0.000 |
| Q59 | 0.443 | 0.066 | 0.000 |
| Q63 | 0.366 | 0.056 | 0.000 |
| Q65 | 0.321 | 0.067 | 0.000 |
| Q66 | 0.590 | 0.057 | 0.000 |
| Q67 | 0.437 | 0.052 | 0.000 |
| Q68 | 0.338 | 0.055 | 0.000 |
| Q69 | 0.137 | 0.058 | 0.019 |
| Q70 | 0.271 | 0.056 | 0.000 |
| Q71 | 0.289 | 0.055 | 0.000 |
| Q72 | 0.537 | 0.055 | 0.000 |
| Q73 | 0.371 | 0.051 | 0.000 |
| Q74 | 0.400 | 0.054 | 0.000 |
| Q75 | 0.406 | 0.049 | 0.000 |
| Q76 | 0.651 | 0.063 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q78 | 0.459 | 0.071 | 0.000 |
| Q79 | 0.369 | 0.084 | 0.000 |
| Q80 | 0.328 | 0.055 | 0.000 |
| Q82 | 0.475 | 0.080 | 0.000 |
| Q83 | 0.439 | 0.059 | 0.000 |
| Q85 | 0.542 | 0.061 | 0.000 |
| Q86 | 0.345 | 0.054 | 0.000 |
| Q87 | 0.274 | 0.058 | 0.000 |
| Q88 | 0.276 | 0.056 | 0.000 |
| Q89 | 0.413 | 0.052 | 0.000 |
| Q90 | 0.463 | 0.046 | 0.000 |
| Q91 | 0.659 | 0.080 | 0.000 |
| Q92 | 0.651 | 0.060 | 0.000 |
| Q93 | 0.546 | 0.074 | 0.000 |
| Q95 | 0.344 | 0.055 | 0.000 |
| Q96 | 0.429 | 0.053 | 0.000 |
| Q97 | 0.093 | 0.058 | 0.112 |
| Q98 | 0.065 | 0.058 | 0.264 |
| Q99 | 0.461 | 0.050 | 0.000 |
| Q101 | 0.360 | 0.061 | 0.000 |
| Q102 | 0.193 | 0.060 | 0.001 |
| Q104 | 0.410 | 0.057 | 0.000 |
| Q105 | 0.335 | 0.067 | 0.000 |
| Q106 | 0.331 | 0.053 | 0.000 |
| Q108 | 0.306 | 0.059 | 0.000 |
| Q109 | 0.233 | 0.055 | 0.000 |
| Q110 | 0.324 | 0.064 | 0.000 |
| Q111 | 0.419 | 0.051 | 0.000 |
| Q112 | 0.289 | 0.058 | 0.000 |
| Q113 | 0.332 | 0.063 | 0.000 |
| Q114 | 0.459 | 0.070 | 0.000 |
| Q115 | 0.279 | 0.061 | 0.000 |
| Q116 | 0.384 | 0.061 | 0.000 |
| Q117 | 0.156 | 0.065 | 0.016 |
| Q118 | 0.194 | 0.058 | 0.001 |
| Q119 | 0.076 | 0.059 | 0.194 |
| Q120 | 0.244 | 0.058 | 0.000 |

**Table B-15. Standardized Factor Loading - Bifactor Model - Fashion & Interior Design**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.067 | 0.168 | 0.689 |
| Q2 | -0.400 | 0.128 | 0.002 |
| Q4 | 0.249 | 0.131 | 0.057 |
| Q5 | 0.441 | 0.128 | 0.001 |
| Q14 | 0.426 | 0.153 | 0.005 |
| Q62 | -0.055 | 0.132 | 0.674 |
| Q70 | -0.056 | 0.133 | 0.672 |
| Q71 | 0.294 | 0.145 | 0.043 |
| Q72 | 0.199 | 0.151 | 0.188 |
| Q74 | -0.141 | 0.147 | 0.337 |
| Q75 | -0.324 | 0.124 | 0.009 |
| Q76 | 0.111 | 0.121 | 0.360 |
| Q77 | -0.196 | 0.129 | 0.130 |
| Q78 | 0.276 | 0.165 | 0.094 |
| Q79 | -0.346 | 0.128 | 0.007 |
| Q80 | -0.094 | 0.116 | 0.418 |
| Q82 | -0.006 | 0.120 | 0.958 |
| Q83 | -0.045 | 0.106 | 0.670 |
| Q96 | -0.210 | 0.117 | 0.074 |
| Q97 | 0.324 | 0.125 | 0.009 |
| Q98 | 0.149 | 0.127 | 0.241 |
| Q99 | 0.002 | 0.121 | 0.986 |
| Q101 | 0.047 | 0.123 | 0.703 |
| Q106 | 0.225 | 0.123 | 0.067 |
| Employability | | | |
| Q6 | 0.185 | 0.127 | 0.145 |
| Q7 | 0.132 | 0.147 | 0.370 |
| Q8 | 0.049 | 0.120 | 0.682 |
| Q10 | 0.082 | 0.110 | 0.456 |
| Q13 | 0.270 | 0.120 | 0.024 |
| Q15 | 0.017 | 0.112 | 0.877 |
| Q64 | -0.055 | 0.114 | 0.628 |
| Q65 | 0.373 | 0.105 | 0.000 |
| Q84 | -0.104 | 0.130 | 0.421 |
| Q85 | -0.029 | 0.139 | 0.834 |
| Q86 | -0.145 | 0.132 | 0.273 |
| Q87 | 0.060 | 0.132 | 0.646 |
| Q89 | 0.144 | 0.126 | 0.254 |
| Q90 | 0.072 | 0.135 | 0.594 |
| Q91 | 0.040 | 0.122 | 0.743 |
| Q92 | 0.036 | 0.147 | 0.809 |
| Q93 | 0.228 | 0.127 | 0.072 |
| Q94 | -0.044 | 0.124 | 0.725 |

(continued)

**Table B-15. Standardized Factor Loading - Bifactor Model - Fashion & Interior Design (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q95 | 0.029 | 0.137 | 0.830 |
| Q102 | 0.273 | 0.128 | 0.033 |
| Q103 | 0.429 | 0.130 | 0.001 |
| Q105 | 0.573 | 0.121 | 0.000 |
| Q108 | 0.195 | 0.125 | 0.120 |
| Q109 | 0.622 | 0.130 | 0.000 |
| Occupational | | | |
| Q16 | 0.189 | 0.105 | 0.070 |
| Q17 | 0.017 | 0.105 | 0.874 |
| Q18 | 0.477 | 0.088 | 0.000 |
| Q19 | 0.350 | 0.098 | 0.000 |
| Q20 | -0.128 | 0.119 | 0.282 |
| Q21 | -0.288 | 0.109 | 0.008 |
| Q22 | 0.153 | 0.103 | 0.138 |
| Q23 | 0.030 | 0.132 | 0.820 |
| Q24 | 0.027 | 0.112 | 0.809 |
| Q25 | -0.004 | 0.132 | 0.977 |
| Q26 | -0.061 | 0.107 | 0.565 |
| Q27 | -0.197 | 0.115 | 0.087 |
| Q28 | -0.250 | 0.113 | 0.027 |
| Q29 | 0.011 | 0.122 | 0.926 |
| Q30 | 0.267 | 0.102 | 0.009 |
| Q31 | -0.006 | 0.109 | 0.955 |
| Q32 | 0.137 | 0.125 | 0.273 |
| Q33 | -0.271 | 0.113 | 0.016 |
| Q34 | -0.108 | 0.108 | 0.317 |
| Q35 | -0.022 | 0.111 | 0.846 |
| Q36 | 0.139 | 0.119 | 0.242 |
| Q38 | 0.090 | 0.113 | 0.429 |
| Q39 | 0.191 | 0.109 | 0.080 |
| Q40 | 0.038 | 0.150 | 0.801 |
| Q41 | -0.279 | 0.106 | 0.009 |
| Q42 | 0.269 | 0.129 | 0.037 |
| Q43 | 0.052 | 0.110 | 0.635 |
| Q46 | 0.311 | 0.107 | 0.004 |
| Q47 | 0.055 | 0.107 | 0.606 |
| Q48 | 0.019 | 0.112 | 0.865 |
| Q49 | -0.223 | 0.115 | 0.052 |
| Q50 | 0.203 | 0.113 | 0.072 |
| Q51 | -0.173 | 0.114 | 0.130 |
| Q52 | 0.123 | 0.109 | 0.260 |

(continued)

## Table B-15. Standardized Factor Loading - Bifactor Model - Fashion & Interior Design (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q53 | 0.161 | 0.117 | 0.169 |
| Q54 | -0.199 | 0.110 | 0.069 |
| Q55 | -0.042 | 0.106 | 0.696 |
| Q57 | 0.053 | 0.115 | 0.643 |
| Q58 | 0.304 | 0.117 | 0.010 |
| Q60 | 0.267 | 0.104 | 0.011 |
| Q61 | 0.158 | 0.111 | 0.156 |
| Q66 | -0.125 | 0.105 | 0.235 |
| Q67 | 0.179 | 0.108 | 0.097 |
| Q111 | 0.021 | 0.111 | 0.848 |
| Q112 | 0.081 | 0.119 | 0.499 |
| Q113 | -0.022 | 0.114 | 0.845 |
| Q114 | 0.151 | 0.117 | 0.197 |
| Q115 | -0.350 | 0.109 | 0.001 |
| Q116 | -0.252 | 0.106 | 0.017 |
| Q118 | -0.020 | 0.116 | 0.860 |
| Transition Readiness | | | |
| Q1 | 0.727 | 0.103 | 0.000 |
| Q2 | 0.354 | 0.082 | 0.000 |
| Q4 | 0.451 | 0.088 | 0.000 |
| Q5 | 0.590 | 0.096 | 0.000 |
| Q14 | 0.126 | 0.144 | 0.382 |
| Q62 | 0.651 | 0.078 | 0.000 |
| Q70 | 0.438 | 0.075 | 0.000 |
| Q71 | 0.774 | 0.084 | 0.000 |
| Q72 | 0.508 | 0.117 | 0.000 |
| Q74 | 0.465 | 0.090 | 0.000 |
| Q75 | 0.658 | 0.068 | 0.000 |
| Q76 | 0.383 | 0.078 | 0.000 |
| Q77 | 0.414 | 0.084 | 0.000 |
| Q78 | 0.411 | 0.137 | 0.003 |
| Q79 | 0.530 | 0.077 | 0.000 |
| Q80 | 0.556 | 0.071 | 0.000 |
| Q82 | 0.469 | 0.074 | 0.000 |
| Q83 | 0.748 | 0.059 | 0.000 |
| Q96 | 0.573 | 0.070 | 0.000 |
| Q97 | 0.185 | 0.090 | 0.041 |
| Q98 | 0.428 | 0.079 | 0.000 |
| Q99 | 0.445 | 0.076 | 0.000 |
| Q101 | 0.370 | 0.083 | 0.000 |
| Q106 | 0.257 | 0.087 | 0.003 |

(continued)

**Table B-15. Standardized Factor Loading - Bifactor Model - Fashion & Interior Design (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q6 | 0.610 | 0.088 | 0.000 |
| Q7 | 0.305 | 0.097 | 0.002 |
| Q8 | 0.522 | 0.074 | 0.000 |
| Q10 | 0.607 | 0.069 | 0.000 |
| Q13 | 0.358 | 0.091 | 0.000 |
| Q15 | 0.581 | 0.065 | 0.000 |
| Q64 | 0.604 | 0.064 | 0.000 |
| Q65 | 0.625 | 0.064 | 0.000 |
| Q84 | 0.252 | 0.080 | 0.002 |
| Q85 | 0.587 | 0.081 | 0.000 |
| Q86 | 0.591 | 0.070 | 0.000 |
| Q87 | 0.434 | 0.078 | 0.000 |
| Q89 | 0.708 | 0.075 | 0.000 |
| Q90 | 0.489 | 0.084 | 0.000 |
| Q91 | 0.429 | 0.082 | 0.000 |
| Q92 | 0.483 | 0.094 | 0.000 |
| Q93 | 0.770 | 0.068 | 0.000 |
| Q94 | 0.713 | 0.070 | 0.000 |
| Q95 | 0.519 | 0.082 | 0.000 |
| Q102 | 0.308 | 0.114 | 0.007 |
| Q103 | 0.524 | 0.103 | 0.000 |
| Q105 | 0.398 | 0.107 | 0.000 |
| Q108 | 0.629 | 0.083 | 0.000 |
| Q109 | 0.372 | 0.100 | 0.000 |
| Q16 | 0.267 | 0.086 | 0.002 |
| Q17 | 0.429 | 0.080 | 0.000 |
| Q18 | 0.615 | 0.063 | 0.000 |
| Q19 | 0.603 | 0.074 | 0.000 |
| Q20 | 0.412 | 0.079 | 0.000 |
| Q21 | 0.249 | 0.090 | 0.006 |
| Q22 | 0.505 | 0.069 | 0.000 |
| Q23 | 0.508 | 0.099 | 0.000 |
| Q24 | 0.255 | 0.102 | 0.012 |
| Q25 | 0.406 | 0.082 | 0.000 |
| Q26 | 0.419 | 0.080 | 0.000 |
| Q27 | 0.736 | 0.077 | 0.000 |
| Q28 | 0.384 | 0.078 | 0.000 |
| Q29 | 0.523 | 0.085 | 0.000 |
| Q30 | 0.236 | 0.088 | 0.007 |
| Q31 | 0.529 | 0.074 | 0.000 |

(continued)

***Table B-15. Standardized Factor Loading - Bifactor Model - Fashion & Interior Design (continued)***

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q32 | 0.096 | 0.089 | 0.282 |
| Q33 | 0.182 | 0.097 | 0.060 |
| Q34 | 0.663 | 0.060 | 0.000 |
| Q35 | 0.301 | 0.090 | 0.001 |
| Q36 | 0.300 | 0.079 | 0.000 |
| Q38 | 0.509 | 0.093 | 0.000 |
| Q39 | 0.287 | 0.084 | 0.001 |
| Q40 | 0.498 | 0.102 | 0.000 |
| Q41 | 0.238 | 0.083 | 0.004 |
| Q42 | 0.678 | 0.081 | 0.000 |
| Q43 | 0.268 | 0.086 | 0.002 |
| Q46 | 0.226 | 0.086 | 0.008 |
| Q47 | 0.411 | 0.077 | 0.000 |
| Q48 | 0.109 | 0.088 | 0.218 |
| Q49 | 0.420 | 0.079 | 0.000 |
| Q50 | 0.415 | 0.093 | 0.000 |
| Q51 | 0.330 | 0.086 | 0.000 |
| Q52 | 0.004 | 0.090 | 0.964 |
| Q53 | 0.393 | 0.101 | 0.000 |
| Q54 | 0.343 | 0.079 | 0.000 |
| Q55 | 0.547 | 0.072 | 0.000 |
| Q57 | 0.187 | 0.086 | 0.030 |
| Q58 | 0.380 | 0.089 | 0.000 |
| Q60 | 0.279 | 0.083 | 0.001 |
| Q61 | 0.076 | 0.093 | 0.414 |
| Q66 | 0.498 | 0.078 | 0.000 |
| Q67 | 0.362 | 0.088 | 0.000 |
| Q111 | 0.538 | 0.075 | 0.000 |
| Q112 | 0.391 | 0.107 | 0.000 |
| Q113 | 0.329 | 0.082 | 0.000 |
| Q114 | 0.254 | 0.091 | 0.005 |
| Q115 | 0.607 | 0.068 | 0.000 |
| Q116 | 0.554 | 0.085 | 0.000 |
| Q118 | 0.417 | 0.086 | 0.000 |

*Table B-16. Standardized Factor Loading - Bifactor Model - Financial Services*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.204 | 0.098 | 0.038 |
| Q2 | 0.045 | 0.069 | 0.509 |
| Q4 | -0.051 | 0.078 | 0.516 |
| Q5 | 0.058 | 0.082 | 0.478 |
| Q14 | 0.160 | 0.122 | 0.187 |
| Q61 | 0.005 | 0.078 | 0.951 |
| Q70 | 0.077 | 0.065 | 0.237 |
| Q71 | -0.055 | 0.084 | 0.512 |
| Q72 | -0.166 | 0.093 | 0.073 |
| Q74 | -0.033 | 0.090 | 0.712 |
| Q75 | 0.207 | 0.088 | 0.019 |
| Q76 | 0.153 | 0.070 | 0.030 |
| Q77 | -0.196 | 0.082 | 0.016 |
| Q78 | -0.336 | 0.112 | 0.003 |
| Q79 | 0.066 | 0.078 | 0.398 |
| Q80 | 0.136 | 0.080 | 0.090 |
| Q82 | 0.127 | 0.067 | 0.060 |
| Q83 | 0.063 | 0.069 | 0.361 |
| Q96 | -0.111 | 0.075 | 0.137 |
| Q97 | -0.182 | 0.070 | 0.009 |
| Q98 | 0.052 | 0.072 | 0.469 |
| Q99 | 0.214 | 0.069 | 0.002 |
| Q101 | 0.687 | 0.081 | 0.000 |
| Q106 | 0.053 | 0.071 | 0.456 |
| Q110 | 0.663 | 0.080 | 0.000 |
| Employability | | | |
| Q6 | 0.258 | 0.088 | 0.003 |
| Q7 | 0.115 | 0.102 | 0.258 |
| Q8 | 0.333 | 0.079 | 0.000 |
| Q10 | 0.318 | 0.080 | 0.000 |
| Q13 | 0.256 | 0.089 | 0.004 |
| Q15 | 0.157 | 0.082 | 0.054 |
| Q63 | 0.152 | 0.082 | 0.062 |
| Q66 | 0.230 | 0.077 | 0.003 |
| Q84 | 0.043 | 0.081 | 0.591 |
| Q85 | 0.293 | 0.088 | 0.001 |
| Q86 | 0.311 | 0.089 | 0.000 |
| Q87 | 0.254 | 0.077 | 0.001 |
| Q89 | 0.005 | 0.120 | 0.964 |
| Q90 | 0.172 | 0.084 | 0.041 |
| Q91 | 0.377 | 0.085 | 0.000 |
| Q92 | 0.079 | 0.092 | 0.392 |

(continued)

**Table B-16. Standardized Factor Loading - Bifactor Model - Financial Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.393 | 0.108 | 0.000 |
| Q94 | 0.162 | 0.077 | 0.036 |
| Q95 | 0.092 | 0.112 | 0.414 |
| Q102 | -0.256 | 0.091 | 0.005 |
| Q103 | 0.080 | 0.106 | 0.452 |
| Q105 | 0.189 | 0.092 | 0.041 |
| Q108 | 0.060 | 0.107 | 0.576 |
| Q109 | 0.055 | 0.092 | 0.545 |
| Occupational | | | |
| Q17 | -0.046 | 0.088 | 0.600 |
| Q19 | -0.377 | 0.105 | 0.000 |
| Q20 | 0.046 | 0.074 | 0.539 |
| Q21 | -0.171 | 0.081 | 0.035 |
| Q22 | 0.122 | 0.073 | 0.093 |
| Q23 | 0.029 | 0.080 | 0.717 |
| Q24 | -0.277 | 0.092 | 0.003 |
| Q25 | -0.115 | 0.094 | 0.223 |
| Q26 | -0.209 | 0.091 | 0.021 |
| Q27 | -0.056 | 0.074 | 0.449 |
| Q29 | 0.193 | 0.072 | 0.007 |
| Q30 | -0.189 | 0.084 | 0.025 |
| Q31 | 0.179 | 0.071 | 0.012 |
| Q32 | 0.050 | 0.073 | 0.495 |
| Q33 | -0.017 | 0.075 | 0.819 |
| Q34 | -0.057 | 0.082 | 0.490 |
| Q36 | -0.260 | 0.106 | 0.014 |
| Q37 | -0.063 | 0.124 | 0.614 |
| Q38 | 0.166 | 0.076 | 0.029 |
| Q39 | 0.103 | 0.075 | 0.168 |
| Q40 | 0.033 | 0.078 | 0.671 |
| Q41 | -0.009 | 0.087 | 0.917 |
| Q42 | 0.132 | 0.075 | 0.079 |
| Q44 | 0.143 | 0.082 | 0.082 |
| Q46 | 0.028 | 0.075 | 0.712 |
| Q47 | -0.118 | 0.072 | 0.102 |
| Q48 | -0.134 | 0.080 | 0.095 |
| Q49 | -0.074 | 0.084 | 0.379 |
| Q50 | 0.184 | 0.070 | 0.008 |
| Q51 | 0.044 | 0.069 | 0.524 |
| Q53 | 0.148 | 0.070 | 0.034 |
| Q54 | -0.041 | 0.071 | 0.568 |
| Q55 | 0.100 | 0.074 | 0.179 |
| Q56 | 0.054 | 0.073 | 0.459 |

(continued)

**Table B-16. Standardized Factor Loading - Bifactor Model - Financial Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q57 | 0.048 | 0.076 | 0.530 |
| Q58 | 0.586 | 0.076 | 0.000 |
| Q59 | 0.093 | 0.072 | 0.197 |
| Q64 | -0.034 | 0.075 | 0.651 |
| Q65 | 0.052 | 0.076 | 0.499 |
| Q67 | 0.053 | 0.073 | 0.468 |
| Q68 | 0.038 | 0.071 | 0.588 |
| Q69 | 0.073 | 0.071 | 0.300 |
| Q111 | 0.259 | 0.070 | 0.000 |
| Q112 | -0.113 | 0.091 | 0.211 |
| Q113 | 0.628 | 0.076 | 0.000 |
| Q116 | 0.026 | 0.092 | 0.776 |
| Q117 | 0.109 | 0.073 | 0.132 |
| Q118 | 0.063 | 0.075 | 0.398 |
| Q119 | 0.160 | 0.079 | 0.042 |
| Q120 | 0.211 | 0.070 | 0.002 |
| Transition Readiness | | | |
| Q1 | 0.698 | 0.068 | 0.000 |
| Q2 | 0.354 | 0.050 | 0.000 |
| Q4 | 0.524 | 0.058 | 0.000 |
| Q5 | 0.466 | 0.059 | 0.000 |
| Q14 | 0.290 | 0.082 | 0.000 |
| Q61 | 0.622 | 0.051 | 0.000 |
| Q70 | 0.463 | 0.049 | 0.000 |
| Q71 | 0.741 | 0.059 | 0.000 |
| Q72 | 0.541 | 0.067 | 0.000 |
| Q74 | 0.510 | 0.068 | 0.000 |
| Q75 | 0.385 | 0.057 | 0.000 |
| Q76 | 0.246 | 0.053 | 0.000 |
| Q77 | 0.345 | 0.062 | 0.000 |
| Q78 | 0.385 | 0.110 | 0.000 |
| Q79 | 0.585 | 0.053 | 0.000 |
| Q80 | 0.562 | 0.055 | 0.000 |
| Q82 | 0.454 | 0.049 | 0.000 |
| Q83 | 0.619 | 0.043 | 0.000 |
| Q96 | 0.400 | 0.056 | 0.000 |
| Q97 | 0.234 | 0.055 | 0.000 |
| Q98 | 0.313 | 0.054 | 0.000 |
| Q99 | 0.479 | 0.050 | 0.000 |
| Q101 | 0.435 | 0.049 | 0.000 |
| Q106 | 0.393 | 0.052 | 0.000 |
| Q110 | 0.377 | 0.051 | 0.000 |
| Q6 | 0.485 | 0.058 | 0.000 |

(continued)

**Table B-16. Standardized Factor Loading - Bifactor Model - Financial Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q7 | 0.417 | 0.063 | 0.000 |
| Q8 | 0.392 | 0.052 | 0.000 |
| Q10 | 0.574 | 0.046 | 0.000 |
| Q13 | 0.404 | 0.056 | 0.000 |
| Q15 | 0.406 | 0.050 | 0.000 |
| Q63 | 0.483 | 0.049 | 0.000 |
| Q66 | 0.573 | 0.045 | 0.000 |
| Q84 | 0.448 | 0.046 | 0.000 |
| Q85 | 0.527 | 0.054 | 0.000 |
| Q86 | 0.485 | 0.054 | 0.000 |
| Q87 | 0.507 | 0.044 | 0.000 |
| Q89 | 0.643 | 0.066 | 0.000 |
| Q90 | 0.493 | 0.055 | 0.000 |
| Q91 | 0.372 | 0.054 | 0.000 |
| Q92 | 0.402 | 0.058 | 0.000 |
| Q93 | 0.629 | 0.060 | 0.000 |
| Q94 | 0.761 | 0.043 | 0.000 |
| Q95 | 0.523 | 0.063 | 0.000 |
| Q102 | 0.257 | 0.065 | 0.000 |
| Q103 | 0.495 | 0.075 | 0.000 |
| Q105 | 0.635 | 0.055 | 0.000 |
| Q108 | 0.566 | 0.059 | 0.000 |
| Q109 | 0.366 | 0.067 | 0.000 |
| Q17 | 0.402 | 0.060 | 0.000 |
| Q19 | 0.331 | 0.083 | 0.000 |
| Q20 | 0.261 | 0.053 | 0.000 |
| Q21 | 0.514 | 0.056 | 0.000 |
| Q22 | 0.482 | 0.047 | 0.000 |
| Q23 | 0.251 | 0.059 | 0.000 |
| Q24 | 0.759 | 0.065 | 0.000 |
| Q25 | 0.350 | 0.070 | 0.000 |
| Q26 | 0.703 | 0.063 | 0.000 |
| Q27 | 0.396 | 0.055 | 0.000 |
| Q29 | 0.284 | 0.055 | 0.000 |
| Q30 | 0.577 | 0.061 | 0.000 |
| Q31 | 0.304 | 0.050 | 0.000 |
| Q32 | 0.570 | 0.052 | 0.000 |
| Q33 | 0.550 | 0.053 | 0.000 |
| Q34 | 0.502 | 0.060 | 0.000 |
| Q36 | 0.583 | 0.081 | 0.000 |
| Q37 | 0.699 | 0.084 | 0.000 |
| Q38 | 0.451 | 0.055 | 0.000 |

(continued)

**Table B-16. Standardized Factor Loading - Bifactor Model - Financial Services (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q39 | 0.475 | 0.045 | 0.000 |
| Q40 | 0.365 | 0.056 | 0.000 |
| Q41 | 0.297 | 0.066 | 0.000 |
| Q42 | 0.325 | 0.051 | 0.000 |
| Q44 | 0.677 | 0.051 | 0.000 |
| Q46 | 0.324 | 0.055 | 0.000 |
| Q47 | 0.642 | 0.057 | 0.000 |
| Q48 | 0.687 | 0.054 | 0.000 |
| Q49 | 0.254 | 0.067 | 0.000 |
| Q50 | 0.443 | 0.048 | 0.000 |
| Q51 | 0.416 | 0.047 | 0.000 |
| Q53 | 0.352 | 0.049 | 0.000 |
| Q54 | 0.388 | 0.050 | 0.000 |
| Q55 | 0.234 | 0.054 | 0.000 |
| Q56 | 0.203 | 0.054 | 0.000 |
| Q57 | 0.214 | 0.055 | 0.000 |
| Q58 | 0.295 | 0.060 | 0.000 |
| Q59 | 0.501 | 0.051 | 0.000 |
| Q64 | 0.157 | 0.057 | 0.005 |
| Q65 | 0.213 | 0.058 | 0.000 |
| Q67 | 0.295 | 0.051 | 0.000 |
| Q68 | 0.440 | 0.049 | 0.000 |
| Q69 | 0.277 | 0.052 | 0.000 |
| Q111 | 0.526 | 0.046 | 0.000 |
| Q112 | 0.312 | 0.070 | 0.000 |
| Q113 | 0.347 | 0.063 | 0.000 |
| Q116 | 0.597 | 0.058 | 0.000 |
| Q117 | 0.308 | 0.051 | 0.000 |
| Q118 | 0.331 | 0.055 | 0.000 |
| Q119 | 0.447 | 0.053 | 0.000 |
| Q120 | 0.363 | 0.051 | 0.000 |

*Table B-17. Standardized Factor Loading - Bifactor Model - Horticulture*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.081 | 0.047 | 0.086 |
| Q2 | -0.057 | 0.037 | 0.124 |
| Q4 | -0.039 | 0.041 | 0.343 |
| Q5 | 0.003 | 0.041 | 0.941 |
| Q14 | -0.028 | 0.051 | 0.589 |
| Q16 | 0.002 | 0.038 | 0.966 |
| Q70 | 0.059 | 0.040 | 0.143 |
| Q71 | -0.166 | 0.045 | 0.000 |
| Q72 | -0.027 | 0.047 | 0.563 |
| Q74 | 0.043 | 0.044 | 0.326 |
| Q75 | 0.007 | 0.046 | 0.878 |
| Q76 | 0.028 | 0.039 | 0.465 |
| Q77 | -0.050 | 0.042 | 0.240 |
| Q78 | -0.165 | 0.052 | 0.002 |
| Q79 | 0.135 | 0.038 | 0.000 |
| Q80 | -0.012 | 0.039 | 0.760 |
| Q82 | 0.063 | 0.037 | 0.090 |
| Q83 | 0.075 | 0.034 | 0.030 |
| Q96 | 0.054 | 0.039 | 0.163 |
| Q97 | 0.015 | 0.039 | 0.698 |
| Q98 | -0.014 | 0.040 | 0.728 |
| Q99 | 0.047 | 0.037 | 0.210 |
| Q101 | 0.716 | 0.075 | 0.000 |
| Q106 | 0.089 | 0.038 | 0.018 |
| Q110 | 0.654 | 0.070 | 0.000 |
| Employability | | | |
| Q6 | 0.022 | 0.055 | 0.682 |
| Q7 | 0.254 | 0.054 | 0.000 |
| Q8 | 0.023 | 0.052 | 0.653 |
| Q10 | -0.096 | 0.050 | 0.057 |
| Q13 | 0.201 | 0.055 | 0.000 |
| Q15 | -0.085 | 0.053 | 0.113 |
| Q18 | -0.118 | 0.052 | 0.023 |
| Q19 | -0.137 | 0.051 | 0.007 |
| Q84 | -0.031 | 0.055 | 0.571 |
| Q85 | 0.132 | 0.054 | 0.014 |
| Q86 | -0.055 | 0.054 | 0.310 |
| Q87 | -0.081 | 0.052 | 0.117 |
| Q89 | 0.432 | 0.064 | 0.000 |
| Q90 | 0.121 | 0.054 | 0.025 |
| Q91 | -0.133 | 0.056 | 0.017 |
| Q92 | 0.274 | 0.059 | 0.000 |

(continued)

**Table B-17. Standardized Factor Loading - Bifactor Model – Horticulture (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q93 | 0.139 | 0.054 | 0.011 |
| Q94 | 0.018 | 0.049 | 0.714 |
| Q95 | 0.085 | 0.056 | 0.127 |
| Q102 | 0.276 | 0.060 | 0.000 |
| Q103 | 0.194 | 0.061 | 0.002 |
| Q105 | 0.032 | 0.056 | 0.567 |
| Q108 | 0.112 | 0.053 | 0.037 |
| Q109 | 0.273 | 0.060 | 0.000 |
| Occupational | | | |
| Q20 | 0.196 | 0.035 | 0.000 |
| Q21 | 0.271 | 0.034 | 0.000 |
| Q22 | 0.346 | 0.036 | 0.000 |
| Q23 | 0.221 | 0.037 | 0.000 |
| Q24 | 0.174 | 0.038 | 0.000 |
| Q25 | 0.195 | 0.035 | 0.000 |
| Q26 | 0.258 | 0.040 | 0.000 |
| Q27 | 0.028 | 0.044 | 0.519 |
| Q28 | 0.151 | 0.037 | 0.000 |
| Q29 | 0.137 | 0.040 | 0.001 |
| Q30 | 0.194 | 0.038 | 0.000 |
| Q31 | 0.387 | 0.036 | 0.000 |
| Q32 | 0.295 | 0.035 | 0.000 |
| Q33 | 0.211 | 0.036 | 0.000 |
| Q34 | 0.198 | 0.035 | 0.000 |
| Q35 | 0.178 | 0.037 | 0.000 |
| Q36 | 0.121 | 0.037 | 0.001 |
| Q37 | 0.051 | 0.039 | 0.192 |
| Q38 | 0.203 | 0.039 | 0.000 |
| Q39 | 0.129 | 0.037 | 0.001 |
| Q40 | 0.262 | 0.046 | 0.000 |
| Q41 | 0.303 | 0.035 | 0.000 |
| Q42 | 0.297 | 0.037 | 0.000 |
| Q43 | 0.314 | 0.033 | 0.000 |
| Q44 | 0.274 | 0.035 | 0.000 |
| Q45 | 0.045 | 0.038 | 0.238 |
| Q46 | 0.003 | 0.038 | 0.948 |
| Q48 | 0.092 | 0.037 | 0.012 |
| Q49 | 0.247 | 0.037 | 0.000 |
| Q50 | 0.072 | 0.042 | 0.086 |
| Q52 | 0.108 | 0.038 | 0.004 |
| Q53 | 0.275 | 0.036 | 0.000 |
| Q55 | 0.130 | 0.038 | 0.001 |
| Q57 | 0.283 | 0.036 | 0.000 |

(continued)

## Table B-17. Standardized Factor Loading - Bifactor Model – Horticulture (continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q58 | 0.013 | 0.038 | 0.727 |
| Q59 | 0.308 | 0.035 | 0.000 |
| Q60 | -0.087 | 0.039 | 0.027 |
| Q61 | 0.268 | 0.040 | 0.000 |
| Q62 | 0.195 | 0.039 | 0.000 |
| Q63 | 0.279 | 0.038 | 0.000 |
| Q64 | 0.034 | 0.037 | 0.355 |
| Q65 | 0.355 | 0.034 | 0.000 |
| Q66 | 0.061 | 0.048 | 0.206 |
| Q67 | 0.098 | 0.036 | 0.007 |
| Q69 | 0.173 | 0.039 | 0.000 |
| Q113 | 0.139 | 0.035 | 0.000 |
| Q114 | 0.056 | 0.038 | 0.146 |
| Q118 | 0.144 | 0.037 | 0.000 |
| Q119 | 0.193 | 0.036 | 0.000 |
| Q120 | 0.084 | 0.036 | 0.022 |
| Transition Readiness | | | |
| Q1 | 0.675 | 0.031 | 0.000 |
| Q2 | 0.439 | 0.026 | 0.000 |
| Q4 | 0.539 | 0.028 | 0.000 |
| Q5 | 0.647 | 0.026 | 0.000 |
| Q14 | 0.323 | 0.040 | 0.000 |
| Q16 | 0.661 | 0.024 | 0.000 |
| Q70 | 0.413 | 0.030 | 0.000 |
| Q71 | 0.704 | 0.031 | 0.000 |
| Q72 | 0.555 | 0.033 | 0.000 |
| Q74 | 0.564 | 0.029 | 0.000 |
| Q75 | 0.485 | 0.030 | 0.000 |
| Q76 | 0.264 | 0.028 | 0.000 |
| Q77 | 0.367 | 0.031 | 0.000 |
| Q78 | 0.416 | 0.042 | 0.000 |
| Q79 | 0.501 | 0.026 | 0.000 |
| Q80 | 0.549 | 0.026 | 0.000 |
| Q82 | 0.469 | 0.026 | 0.000 |
| Q83 | 0.635 | 0.022 | 0.000 |
| Q96 | 0.465 | 0.028 | 0.000 |
| Q97 | 0.213 | 0.029 | 0.000 |
| Q98 | 0.388 | 0.031 | 0.000 |
| Q99 | 0.553 | 0.024 | 0.000 |
| Q101 | 0.456 | 0.026 | 0.000 |
| Q106 | 0.420 | 0.027 | 0.000 |
| Q110 | 0.414 | 0.027 | 0.000 |
| Q6 | 0.577 | 0.027 | 0.000 |

(continued)

*Table B-17. Standardized Factor Loading - Bifactor Model – Horticulture (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q7 | 0.553 | 0.029 | 0.000 |
| Q8 | 0.436 | 0.026 | 0.000 |
| Q10 | 0.600 | 0.023 | 0.000 |
| Q13 | 0.440 | 0.029 | 0.000 |
| Q15 | 0.444 | 0.027 | 0.000 |
| Q18 | 0.520 | 0.025 | 0.000 |
| Q19 | 0.633 | 0.022 | 0.000 |
| Q84 | 0.316 | 0.027 | 0.000 |
| Q85 | 0.553 | 0.028 | 0.000 |
| Q86 | 0.537 | 0.027 | 0.000 |
| Q87 | 0.530 | 0.025 | 0.000 |
| Q89 | 0.705 | 0.031 | 0.000 |
| Q90 | 0.509 | 0.028 | 0.000 |
| Q91 | 0.376 | 0.028 | 0.000 |
| Q92 | 0.387 | 0.032 | 0.000 |
| Q93 | 0.742 | 0.025 | 0.000 |
| Q94 | 0.702 | 0.023 | 0.000 |
| Q95 | 0.574 | 0.028 | 0.000 |
| Q102 | 0.207 | 0.033 | 0.000 |
| Q103 | 0.640 | 0.031 | 0.000 |
| Q105 | 0.539 | 0.028 | 0.000 |
| Q108 | 0.629 | 0.025 | 0.000 |
| Q109 | 0.394 | 0.034 | 0.000 |
| Q20 | 0.325 | 0.028 | 0.000 |
| Q21 | 0.417 | 0.027 | 0.000 |
| Q22 | 0.237 | 0.030 | 0.000 |
| Q23 | 0.318 | 0.029 | 0.000 |
| Q24 | 0.269 | 0.034 | 0.000 |
| Q25 | 0.394 | 0.027 | 0.000 |
| Q26 | 0.161 | 0.031 | 0.000 |
| Q27 | -0.011 | 0.033 | 0.747 |
| Q28 | 0.264 | 0.028 | 0.000 |
| Q29 | 0.129 | 0.032 | 0.000 |
| Q30 | 0.411 | 0.031 | 0.000 |
| Q31 | 0.264 | 0.029 | 0.000 |
| Q32 | 0.298 | 0.028 | 0.000 |
| Q33 | 0.218 | 0.029 | 0.000 |
| Q34 | 0.549 | 0.026 | 0.000 |
| Q35 | 0.272 | 0.028 | 0.000 |
| Q36 | 0.302 | 0.028 | 0.000 |
| Q37 | 0.084 | 0.030 | 0.005 |
| Q38 | 0.211 | 0.030 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q39 | 0.153 | 0.029 | 0.000 |
| Q40 | 0.075 | 0.035 | 0.032 |
| Q41 | 0.332 | 0.028 | 0.000 |
| Q42 | 0.231 | 0.030 | 0.000 |
| Q43 | 0.404 | 0.026 | 0.000 |
| Q44 | 0.363 | 0.027 | 0.000 |
| Q45 | 0.276 | 0.030 | 0.000 |
| Q46 | 0.090 | 0.030 | 0.003 |
| Q48 | 0.426 | 0.028 | 0.000 |
| Q49 | 0.223 | 0.029 | 0.000 |
| Q50 | 0.044 | 0.034 | 0.191 |
| Q52 | 0.204 | 0.029 | 0.000 |
| Q53 | 0.241 | 0.028 | 0.000 |
| Q55 | 0.080 | 0.031 | 0.009 |
| Q57 | 0.214 | 0.029 | 0.000 |
| Q58 | 0.200 | 0.029 | 0.000 |
| Q59 | 0.381 | 0.027 | 0.000 |
| Q60 | 0.405 | 0.031 | 0.000 |
| Q61 | 0.132 | 0.033 | 0.000 |
| Q62 | 0.125 | 0.031 | 0.000 |
| Q63 | 0.256 | 0.031 | 0.000 |
| Q64 | 0.429 | 0.028 | 0.000 |
| Q65 | 0.449 | 0.027 | 0.000 |
| Q66 | 0.705 | 0.035 | 0.000 |
| Q67 | 0.294 | 0.028 | 0.000 |
| Q69 | 0.129 | 0.031 | 0.000 |
| Q113 | 0.488 | 0.025 | 0.000 |
| Q114 | 0.326 | 0.033 | 0.000 |
| Q118 | 0.327 | 0.029 | 0.000 |
| Q119 | 0.351 | 0.028 | 0.000 |
| Q120 | 0.438 | 0.026 | 0.000 |

*Table B-18. Standardized Factor Loading - Bifactor Model - Information Support*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.166 | 0.118 | 0.160 |
| Q2 | -0.045 | 0.087 | 0.607 |
| Q4 | 0.069 | 0.091 | 0.444 |
| Q5 | -0.010 | 0.101 | 0.922 |
| Q14 | 0.179 | 0.150 | 0.235 |
| Q16 | -0.104 | 0.101 | 0.300 |
| Q20 | 0.128 | 0.084 | 0.128 |
| Q21 | -0.151 | 0.083 | 0.067 |
| Q22 | 0.099 | 0.101 | 0.323 |
| Q24 | 0.192 | 0.097 | 0.047 |
| Q25 | 0.233 | 0.105 | 0.026 |
| Q26 | 0.256 | 0.088 | 0.004 |
| Q27 | -0.043 | 0.110 | 0.695 |
| Q28 | -0.009 | 0.132 | 0.947 |
| Q29 | 0.281 | 0.098 | 0.004 |
| Q30 | -0.024 | 0.114 | 0.833 |
| Q32 | 0.090 | 0.087 | 0.298 |
| Q33 | 0.032 | 0.094 | 0.735 |
| Q46 | -0.032 | 0.098 | 0.741 |
| Q47 | -0.119 | 0.090 | 0.184 |
| Q48 | 0.051 | 0.087 | 0.555 |
| Q49 | 0.203 | 0.082 | 0.013 |
| Q51 | 0.626 | 0.088 | 0.000 |
| Q56 | 0.000 | 0.090 | 0.996 |
| Q60 | 0.763 | 0.094 | 0.000 |
| Employability | | | |
| Q6 | -0.274 | 0.105 | 0.009 |
| Q7 | -0.004 | 0.115 | 0.973 |
| Q8 | -0.021 | 0.096 | 0.822 |
| Q10 | -0.229 | 0.107 | 0.032 |
| Q13 | -0.034 | 0.110 | 0.758 |
| Q15 | -0.131 | 0.102 | 0.202 |
| Q18 | 0.350 | 0.095 | 0.000 |
| Q19 | 0.009 | 0.093 | 0.927 |
| Q34 | -0.284 | 0.099 | 0.004 |
| Q35 | -0.313 | 0.105 | 0.003 |
| Q36 | -0.447 | 0.107 | 0.000 |
| Q37 | 0.004 | 0.096 | 0.970 |
| Q39 | -0.019 | 0.147 | 0.900 |
| Q40 | 0.184 | 0.103 | 0.075 |
| Q41 | -0.065 | 0.096 | 0.498 |
| Q42 | 0.065 | 0.099 | 0.513 |

(continued)

*Table B-18. Standardized Factor Loading - Bifactor Model - Information Support (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | -0.225 | 0.130 | 0.084 |
| Q44 | 0.005 | 0.104 | 0.960 |
| Q45 | 0.035 | 0.134 | 0.793 |
| Q52 | 0.325 | 0.098 | 0.001 |
| Q53 | 0.437 | 0.108 | 0.000 |
| Q54 | 0.555 | 0.186 | 0.003 |
| Q55 | 0.090 | 0.111 | 0.419 |
| Q58 | -0.083 | 0.111 | 0.454 |
| Q59 | 0.157 | 0.124 | 0.207 |
| Occupational | | | |
| Q61 | 0.189 | 0.076 | 0.012 |
| Q62 | -0.135 | 0.087 | 0.123 |
| Q63 | 0.026 | 0.080 | 0.745 |
| Q64 | 0.116 | 0.083 | 0.160 |
| Q65 | 0.200 | 0.074 | 0.007 |
| Q66 | 0.176 | 0.083 | 0.035 |
| Q67 | 0.164 | 0.088 | 0.064 |
| Q68 | -0.030 | 0.082 | 0.717 |
| Q69 | 0.142 | 0.082 | 0.085 |
| Q70 | 0.000 | 0.085 | 0.997 |
| Q71 | 0.101 | 0.082 | 0.219 |
| Q72 | 0.089 | 0.082 | 0.280 |
| Q73 | 0.208 | 0.081 | 0.010 |
| Q75 | 0.316 | 0.081 | 0.000 |
| Q76 | 0.430 | 0.079 | 0.000 |
| Q77 | -0.014 | 0.084 | 0.868 |
| Q78 | 0.064 | 0.094 | 0.495 |
| Q80 | 0.009 | 0.084 | 0.912 |
| Q81 | 0.180 | 0.083 | 0.029 |
| Q82 | 0.573 | 0.073 | 0.000 |
| Q83 | 0.499 | 0.088 | 0.000 |
| Q84 | -0.171 | 0.092 | 0.063 |
| Q85 | 0.144 | 0.089 | 0.104 |
| Q86 | 0.241 | 0.076 | 0.002 |
| Q87 | 0.240 | 0.076 | 0.002 |
| Q88 | 0.003 | 0.085 | 0.968 |
| Q89 | 0.320 | 0.078 | 0.000 |
| Q91 | 0.164 | 0.079 | 0.038 |
| Q92 | -0.117 | 0.086 | 0.174 |
| Q93 | -0.198 | 0.087 | 0.023 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q94 | 0.116 | 0.082 | 0.157 |
| Q95 | 0.069 | 0.086 | 0.424 |
| Q96 | 0.202 | 0.088 | 0.022 |
| Q97 | -0.067 | 0.085 | 0.430 |
| Q98 | 0.098 | 0.070 | 0.158 |
| Q99 | 0.081 | 0.086 | 0.345 |
| Q101 | -0.098 | 0.086 | 0.254 |
| Q102 | 0.158 | 0.082 | 0.053 |
| Q105 | 0.165 | 0.078 | 0.035 |
| Q106 | 0.004 | 0.089 | 0.968 |
| Q108 | 0.103 | 0.088 | 0.241 |
| Q109 | -0.033 | 0.084 | 0.695 |
| Q111 | 0.197 | 0.086 | 0.022 |
| Q112 | 0.689 | 0.071 | 0.000 |
| Q113 | 0.071 | 0.088 | 0.421 |
| Q114 | -0.079 | 0.083 | 0.336 |
| Q115 | 0.020 | 0.084 | 0.815 |
| Q116 | -0.107 | 0.084 | 0.203 |
| Q117 | 0.218 | 0.087 | 0.013 |
| Q118 | 0.238 | 0.085 | 0.005 |
| Transition Readiness | | | |
| Q1 | 0.446 | 0.105 | 0.000 |
| Q2 | 0.416 | 0.065 | 0.000 |
| Q4 | 0.604 | 0.064 | 0.000 |
| Q5 | 0.452 | 0.072 | 0.000 |
| Q14 | 0.232 | 0.107 | 0.031 |
| Q16 | 0.549 | 0.062 | 0.000 |
| Q20 | 0.496 | 0.054 | 0.000 |
| Q21 | 0.704 | 0.076 | 0.000 |
| Q22 | 0.470 | 0.085 | 0.000 |
| Q24 | 0.476 | 0.082 | 0.000 |
| Q25 | 0.629 | 0.075 | 0.000 |
| Q26 | 0.250 | 0.069 | 0.000 |
| Q27 | 0.376 | 0.078 | 0.000 |
| Q28 | 0.490 | 0.118 | 0.000 |
| Q29 | 0.325 | 0.071 | 0.000 |
| Q30 | 0.383 | 0.075 | 0.000 |
| Q32 | 0.538 | 0.061 | 0.000 |
| Q33 | 0.509 | 0.063 | 0.000 |
| Q46 | 0.395 | 0.073 | 0.000 |
| Q47 | 0.099 | 0.072 | 0.172 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q48 | 0.420 | 0.069 | 0.000 |
| Q49 | 0.562 | 0.056 | 0.000 |
| Q51 | 0.359 | 0.066 | 0.000 |
| Q56 | 0.429 | 0.064 | 0.000 |
| Q60 | 0.323 | 0.067 | 0.000 |
| Q6 | 0.448 | 0.077 | 0.000 |
| Q7 | 0.551 | 0.086 | 0.000 |
| Q8 | 0.515 | 0.055 | 0.000 |
| Q10 | 0.587 | 0.059 | 0.000 |
| Q13 | 0.423 | 0.072 | 0.000 |
| Q15 | 0.400 | 0.065 | 0.000 |
| Q18 | 0.576 | 0.057 | 0.000 |
| Q19 | 0.624 | 0.055 | 0.000 |
| Q34 | 0.236 | 0.067 | 0.000 |
| Q35 | 0.640 | 0.066 | 0.000 |
| Q36 | 0.578 | 0.071 | 0.000 |
| Q37 | 0.492 | 0.060 | 0.000 |
| Q39 | 0.639 | 0.090 | 0.000 |
| Q40 | 0.501 | 0.069 | 0.000 |
| Q41 | 0.464 | 0.065 | 0.000 |
| Q42 | 0.363 | 0.079 | 0.000 |
| Q43 | 0.707 | 0.080 | 0.000 |
| Q44 | 0.732 | 0.053 | 0.000 |
| Q45 | 0.463 | 0.072 | 0.000 |
| Q52 | 0.160 | 0.089 | 0.072 |
| Q53 | 0.693 | 0.071 | 0.000 |
| Q54 | 0.741 | 0.116 | 0.000 |
| Q55 | 0.440 | 0.076 | 0.000 |
| Q58 | 0.619 | 0.064 | 0.000 |
| Q59 | 0.330 | 0.079 | 0.000 |
| Q61 | 0.552 | 0.054 | 0.000 |
| Q62 | 0.622 | 0.066 | 0.000 |
| Q63 | 0.504 | 0.062 | 0.000 |
| Q64 | 0.710 | 0.056 | 0.000 |
| Q65 | 0.528 | 0.066 | 0.000 |
| Q66 | 0.489 | 0.071 | 0.000 |
| Q67 | 0.233 | 0.073 | 0.002 |
| Q68 | 0.483 | 0.062 | 0.000 |
| Q69 | 0.393 | 0.062 | 0.000 |
| Q70 | 0.317 | 0.066 | 0.000 |

(continued)

*Table B-18. Standardized Factor Loading - Bifactor Model - Information Support (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q71 | 0.311 | 0.066 | 0.000 |
| Q72 | 0.366 | 0.066 | 0.000 |
| Q73 | 0.363 | 0.073 | 0.000 |
| Q75 | 0.501 | 0.061 | 0.000 |
| Q76 | 0.423 | 0.066 | 0.000 |
| Q77 | 0.381 | 0.063 | 0.000 |
| Q78 | 0.200 | 0.070 | 0.004 |
| Q80 | 0.401 | 0.064 | 0.000 |
| Q81 | 0.426 | 0.063 | 0.000 |
| Q82 | 0.438 | 0.065 | 0.000 |
| Q83 | 0.094 | 0.086 | 0.273 |
| Q84 | 0.227 | 0.087 | 0.009 |
| Q85 | 0.466 | 0.067 | 0.000 |
| Q86 | 0.597 | 0.055 | 0.000 |
| Q87 | 0.561 | 0.062 | 0.000 |
| Q88 | 0.277 | 0.064 | 0.000 |
| Q89 | 0.324 | 0.067 | 0.000 |
| Q91 | 0.398 | 0.065 | 0.000 |
| Q92 | 0.351 | 0.065 | 0.000 |
| Q93 | 0.181 | 0.071 | 0.010 |
| Q94 | 0.529 | 0.071 | 0.000 |
| Q95 | 0.499 | 0.068 | 0.000 |
| Q96 | 0.192 | 0.070 | 0.006 |
| Q97 | 0.736 | 0.069 | 0.000 |
| Q98 | 0.620 | 0.053 | 0.000 |
| Q99 | 0.048 | 0.070 | 0.491 |
| Q101 | 0.257 | 0.071 | 0.000 |
| Q102 | 0.554 | 0.067 | 0.000 |
| Q105 | 0.433 | 0.059 | 0.000 |
| Q106 | 0.283 | 0.078 | 0.000 |
| Q108 | 0.188 | 0.070 | 0.007 |
| Q109 | 0.392 | 0.063 | 0.000 |
| Q111 | 0.117 | 0.074 | 0.114 |
| Q112 | 0.193 | 0.075 | 0.009 |
| Q113 | 0.593 | 0.067 | 0.000 |
| Q114 | 0.432 | 0.060 | 0.000 |
| Q115 | 0.510 | 0.062 | 0.000 |
| Q116 | 0.297 | 0.068 | 0.000 |
| Q117 | 0.070 | 0.072 | 0.329 |
| Q118 | 0.103 | 0.072 | 0.153 |

## Table B-19. Standardized Factor Loading - Bifactor Model - Marketing

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.083 | 0.058 | 0.150 |
| Q2 | 0.016 | 0.044 | 0.716 |
| Q4 | -0.211 | 0.048 | 0.000 |
| Q5 | -0.086 | 0.054 | 0.109 |
| Q14 | 0.018 | 0.065 | 0.776 |
| Q16 | -0.017 | 0.051 | 0.733 |
| Q20 | 0.071 | 0.043 | 0.099 |
| Q21 | -0.217 | 0.055 | 0.000 |
| Q22 | -0.082 | 0.059 | 0.165 |
| Q24 | -0.065 | 0.058 | 0.263 |
| Q25 | 0.113 | 0.055 | 0.039 |
| Q26 | 0.078 | 0.045 | 0.084 |
| Q27 | -0.038 | 0.050 | 0.444 |
| Q28 | -0.111 | 0.064 | 0.084 |
| Q29 | 0.079 | 0.047 | 0.090 |
| Q30 | 0.034 | 0.048 | 0.477 |
| Q32 | 0.093 | 0.044 | 0.033 |
| Q33 | -0.018 | 0.041 | 0.667 |
| Q46 | -0.014 | 0.047 | 0.773 |
| Q47 | -0.113 | 0.047 | 0.016 |
| Q48 | 0.000 | 0.048 | 0.992 |
| Q49 | 0.062 | 0.045 | 0.165 |
| Q51 | 0.726 | 0.070 | 0.000 |
| Q56 | 0.002 | 0.047 | 0.966 |
| Q60 | 0.761 | 0.073 | 0.000 |
| Employability | | | |
| Q6 | 0.042 | 0.066 | 0.531 |
| Q7 | 0.186 | 0.073 | 0.011 |
| Q8 | -0.095 | 0.063 | 0.134 |
| Q10 | -0.131 | 0.059 | 0.027 |
| Q13 | 0.280 | 0.068 | 0.000 |
| Q15 | -0.106 | 0.064 | 0.099 |
| Q18 | -0.227 | 0.065 | 0.001 |
| Q19 | -0.149 | 0.061 | 0.014 |
| Q34 | -0.056 | 0.065 | 0.387 |
| Q35 | 0.073 | 0.068 | 0.285 |
| Q36 | -0.081 | 0.066 | 0.222 |
| Q37 | -0.091 | 0.060 | 0.131 |
| Q39 | 0.393 | 0.073 | 0.000 |
| Q40 | 0.259 | 0.067 | 0.000 |
| Q41 | -0.080 | 0.064 | 0.212 |
| Q42 | 0.203 | 0.068 | 0.003 |

(continued)

*Table B-19. Standardized Factor Loading - Bifactor Model – Marketing (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | 0.364 | 0.069 | 0.000 |
| Q44 | 0.169 | 0.058 | 0.003 |
| Q45 | 0.067 | 0.063 | 0.285 |
| Q52 | 0.100 | 0.072 | 0.165 |
| Q53 | 0.152 | 0.079 | 0.053 |
| Q55 | 0.168 | 0.070 | 0.016 |
| Q58 | 0.191 | 0.070 | 0.007 |
| Q59 | 0.207 | 0.068 | 0.002 |
| Occupational | | | |
| Q61 | 0.079 | 0.055 | 0.148 |
| Q62 | 0.203 | 0.049 | 0.000 |
| Q63 | 0.363 | 0.050 | 0.000 |
| Q64 | 0.119 | 0.051 | 0.020 |
| Q65 | 0.018 | 0.047 | 0.708 |
| Q66 | 0.069 | 0.051 | 0.176 |
| Q67 | -0.179 | 0.058 | 0.002 |
| Q68 | 0.121 | 0.053 | 0.023 |
| Q70 | 0.119 | 0.054 | 0.026 |
| Q71 | -0.155 | 0.054 | 0.004 |
| Q72 | 0.126 | 0.045 | 0.005 |
| Q73 | 0.033 | 0.052 | 0.530 |
| Q75 | 0.032 | 0.055 | 0.559 |
| Q76 | 0.061 | 0.051 | 0.238 |
| Q77 | 0.244 | 0.050 | 0.000 |
| Q78 | -0.157 | 0.057 | 0.006 |
| Q79 | 0.139 | 0.056 | 0.012 |
| Q80 | 0.029 | 0.051 | 0.572 |
| Q82 | -0.030 | 0.055 | 0.589 |
| Q83 | -0.010 | 0.057 | 0.864 |
| Q84 | 0.420 | 0.059 | 0.000 |
| Q85 | 0.143 | 0.049 | 0.003 |
| Q87 | 0.056 | 0.055 | 0.305 |
| Q88 | 0.189 | 0.052 | 0.000 |
| Q89 | 0.046 | 0.055 | 0.408 |
| Q91 | 0.104 | 0.055 | 0.058 |
| Q93 | 0.087 | 0.051 | 0.088 |
| Q94 | 0.146 | 0.045 | 0.001 |
| Q95 | 0.055 | 0.056 | 0.328 |
| Q96 | 0.063 | 0.057 | 0.271 |
| Q98 | 0.027 | 0.048 | 0.576 |
| Q99 | -0.041 | 0.054 | 0.446 |
| Q101 | -0.119 | 0.054 | 0.027 |
| Q102 | 0.126 | 0.053 | 0.018 |

(continued)

*Table B-19. Standardized Factor Loading - Bifactor Model – Marketing (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q103 | 0.102 | 0.056 | 0.070 |
| Q104 | 0.015 | 0.050 | 0.761 |
| Q105 | -0.099 | 0.054 | 0.068 |
| Q106 | 0.190 | 0.052 | 0.000 |
| Q107 | -0.022 | 0.055 | 0.692 |
| Q108 | -0.011 | 0.054 | 0.833 |
| Q109 | 0.217 | 0.044 | 0.000 |
| Q110 | 0.163 | 0.053 | 0.002 |
| Q112 | 0.059 | 0.054 | 0.275 |
| Q113 | 0.393 | 0.069 | 0.000 |
| Q114 | 0.026 | 0.059 | 0.655 |
| Q115 | 0.103 | 0.056 | 0.066 |
| Q116 | 0.092 | 0.058 | 0.116 |
| Q117 | 0.318 | 0.053 | 0.000 |
| Q119 | 0.301 | 0.050 | 0.000 |
| Q120 | -0.010 | 0.053 | 0.847 |
| Transition Readiness | | | |
| Q1 | 0.567 | 0.046 | 0.000 |
| Q2 | 0.412 | 0.033 | 0.000 |
| Q4 | 0.573 | 0.036 | 0.000 |
| Q5 | 0.464 | 0.041 | 0.000 |
| Q14 | 0.410 | 0.052 | 0.000 |
| Q16 | 0.583 | 0.034 | 0.000 |
| Q20 | 0.434 | 0.033 | 0.000 |
| Q21 | 0.574 | 0.047 | 0.000 |
| Q22 | 0.517 | 0.046 | 0.000 |
| Q24 | 0.545 | 0.044 | 0.000 |
| Q25 | 0.545 | 0.038 | 0.000 |
| Q26 | 0.186 | 0.036 | 0.000 |
| Q27 | 0.357 | 0.039 | 0.000 |
| Q28 | 0.419 | 0.057 | 0.000 |
| Q29 | 0.531 | 0.034 | 0.000 |
| Q30 | 0.501 | 0.035 | 0.000 |
| Q32 | 0.507 | 0.032 | 0.000 |
| Q33 | 0.665 | 0.026 | 0.000 |
| Q46 | 0.352 | 0.037 | 0.000 |
| Q47 | 0.147 | 0.037 | 0.000 |
| Q48 | 0.434 | 0.036 | 0.000 |
| Q49 | 0.504 | 0.033 | 0.000 |
| Q51 | 0.367 | 0.035 | 0.000 |
| Q56 | 0.368 | 0.035 | 0.000 |
| Q60 | 0.357 | 0.033 | 0.000 |
| Q6 | 0.606 | 0.036 | 0.000 |

(continued)

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q7 | 0.476 | 0.042 | 0.000 |
| Q8 | 0.427 | 0.032 | 0.000 |
| Q10 | 0.672 | 0.027 | 0.000 |
| Q13 | 0.353 | 0.039 | 0.000 |
| Q15 | 0.404 | 0.034 | 0.000 |
| Q18 | 0.509 | 0.031 | 0.000 |
| Q19 | 0.596 | 0.029 | 0.000 |
| Q34 | 0.313 | 0.033 | 0.000 |
| Q35 | 0.552 | 0.037 | 0.000 |
| Q36 | 0.581 | 0.033 | 0.000 |
| Q37 | 0.543 | 0.030 | 0.000 |
| Q39 | 0.678 | 0.043 | 0.000 |
| Q40 | 0.458 | 0.037 | 0.000 |
| Q41 | 0.378 | 0.034 | 0.000 |
| Q42 | 0.414 | 0.043 | 0.000 |
| Q43 | 0.780 | 0.034 | 0.000 |
| Q44 | 0.770 | 0.026 | 0.000 |
| Q45 | 0.475 | 0.035 | 0.000 |
| Q52 | 0.215 | 0.044 | 0.000 |
| Q53 | 0.581 | 0.047 | 0.000 |
| Q55 | 0.524 | 0.043 | 0.000 |
| Q58 | 0.580 | 0.037 | 0.000 |
| Q59 | 0.418 | 0.043 | 0.000 |
| Q61 | 0.363 | 0.037 | 0.000 |
| Q62 | 0.453 | 0.032 | 0.000 |
| Q63 | 0.430 | 0.032 | 0.000 |
| Q64 | 0.397 | 0.034 | 0.000 |
| Q65 | 0.717 | 0.028 | 0.000 |
| Q66 | 0.442 | 0.034 | 0.000 |
| Q67 | 0.433 | 0.038 | 0.000 |
| Q68 | 0.231 | 0.036 | 0.000 |
| Q70 | 0.445 | 0.037 | 0.000 |
| Q71 | 0.604 | 0.034 | 0.000 |
| Q72 | 0.702 | 0.025 | 0.000 |
| Q73 | 0.651 | 0.031 | 0.000 |
| Q75 | 0.663 | 0.030 | 0.000 |
| Q76 | 0.322 | 0.034 | 0.000 |
| Q77 | 0.504 | 0.031 | 0.000 |
| Q78 | 0.565 | 0.038 | 0.000 |
| Q79 | 0.523 | 0.033 | 0.000 |
| Q80 | 0.378 | 0.034 | 0.000 |
| Q82 | 0.382 | 0.036 | 0.000 |

(continued)

*Table B-19. Standardized Factor Loading - Bifactor Model – Marketing (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q83 | 0.686 | 0.035 | 0.000 |
| Q84 | 0.223 | 0.045 | 0.000 |
| Q85 | 0.416 | 0.032 | 0.000 |
| Q87 | 0.397 | 0.035 | 0.000 |
| Q88 | 0.215 | 0.036 | 0.000 |
| Q89 | 0.446 | 0.036 | 0.000 |
| Q91 | 0.720 | 0.031 | 0.000 |
| Q93 | 0.664 | 0.030 | 0.000 |
| Q94 | 0.603 | 0.029 | 0.000 |
| Q95 | 0.347 | 0.037 | 0.000 |
| Q96 | 0.642 | 0.033 | 0.000 |
| Q98 | 0.587 | 0.031 | 0.000 |
| Q99 | 0.492 | 0.038 | 0.000 |
| Q101 | 0.593 | 0.037 | 0.000 |
| Q102 | 0.334 | 0.035 | 0.000 |
| Q103 | 0.240 | 0.037 | 0.000 |
| Q104 | 0.421 | 0.032 | 0.000 |
| Q105 | 0.429 | 0.034 | 0.000 |
| Q106 | 0.265 | 0.035 | 0.000 |
| Q107 | 0.269 | 0.037 | 0.000 |
| Q108 | 0.641 | 0.033 | 0.000 |
| Q109 | 0.549 | 0.028 | 0.000 |
| Q110 | 0.155 | 0.036 | 0.000 |
| Q112 | 0.278 | 0.038 | 0.000 |
| Q113 | 0.180 | 0.055 | 0.001 |
| Q114 | 0.597 | 0.037 | 0.000 |
| Q115 | 0.452 | 0.037 | 0.000 |
| Q116 | 0.615 | 0.037 | 0.000 |
| Q117 | 0.399 | 0.035 | 0.000 |
| Q119 | 0.611 | 0.031 | 0.000 |
| Q120 | 0.360 | 0.034 | 0.000 |

**Table B-20. Standardized Factor Loading - Bifactor Model - Network Administration**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.051 | 0.132 | 0.701 |
| Q2 | -0.109 | 0.104 | 0.296 |
| Q4 | -0.039 | 0.121 | 0.748 |
| Q5 | 0.096 | 0.124 | 0.438 |
| Q14 | 0.360 | 0.125 | 0.004 |
| Q16 | 0.003 | 0.111 | 0.982 |
| Q20 | -0.193 | 0.104 | 0.065 |
| Q21 | 0.001 | 0.118 | 0.991 |
| Q22 | -0.015 | 0.135 | 0.913 |
| Q24 | -0.055 | 0.168 | 0.741 |
| Q25 | -0.675 | 0.135 | 0.000 |
| Q26 | -0.368 | 0.102 | 0.000 |
| Q27 | 0.154 | 0.119 | 0.197 |
| Q28 | 0.313 | 0.136 | 0.021 |
| Q29 | -0.153 | 0.119 | 0.199 |
| Q30 | 0.014 | 0.105 | 0.892 |
| Q32 | -0.123 | 0.102 | 0.228 |
| Q33 | 0.022 | 0.100 | 0.826 |
| Q46 | 0.079 | 0.117 | 0.497 |
| Q47 | 0.103 | 0.106 | 0.330 |
| Q48 | 0.068 | 0.109 | 0.535 |
| Q49 | -0.077 | 0.102 | 0.449 |
| Q51 | 0.622 | 0.114 | 0.000 |
| Q56 | -0.174 | 0.111 | 0.119 |
| Q60 | 0.518 | 0.108 | 0.000 |
| Employability | | | |
| Q6 | -0.182 | 0.138 | 0.188 |
| Q7 | 0.724 | 0.126 | 0.000 |
| Q8 | -0.231 | 0.116 | 0.047 |
| Q10 | -0.078 | 0.104 | 0.454 |
| Q13 | 0.212 | 0.120 | 0.077 |
| Q15 | 0.214 | 0.120 | 0.074 |
| Q18 | -0.196 | 0.138 | 0.155 |
| Q19 | -0.449 | 0.146 | 0.002 |
| Q34 | -0.113 | 0.106 | 0.285 |
| Q35 | 0.324 | 0.186 | 0.082 |
| Q36 | 0.016 | 0.101 | 0.872 |
| Q37 | 0.364 | 0.100 | 0.000 |
| Q39 | 0.129 | 0.197 | 0.513 |
| Q40 | 0.307 | 0.107 | 0.004 |
| Q41 | -0.135 | 0.117 | 0.247 |
| Q42 | 0.166 | 0.129 | 0.198 |

(continued)

***Table B-20. Standardized Factor Loading - Bifactor Model - Network Administration (continued)***

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | 0.292 | 0.130 | 0.025 |
| Q44 | 0.203 | 0.103 | 0.050 |
| Q45 | 0.003 | 0.144 | 0.982 |
| Q52 | 0.422 | 0.103 | 0.000 |
| Q53 | 0.223 | 0.144 | 0.123 |
| Q55 | 0.148 | 0.134 | 0.268 |
| Q58 | 0.078 | 0.158 | 0.622 |
| Q59 | 0.429 | 0.136 | 0.002 |
| Occupational | | | |
| Q61 | 0.055 | 0.089 | 0.537 |
| Q62 | 0.005 | 0.106 | 0.964 |
| Q63 | -0.142 | 0.089 | 0.108 |
| Q64 | 0.094 | 0.088 | 0.290 |
| Q65 | 0.250 | 0.084 | 0.003 |
| Q66 | 0.075 | 0.105 | 0.475 |
| Q67 | 0.385 | 0.098 | 0.000 |
| Q68 | -0.037 | 0.085 | 0.661 |
| Q69 | -0.018 | 0.090 | 0.842 |
| Q70 | -0.246 | 0.094 | 0.009 |
| Q71 | 0.087 | 0.093 | 0.350 |
| Q72 | 0.160 | 0.100 | 0.109 |
| Q73 | 0.447 | 0.083 | 0.000 |
| Q75 | 0.254 | 0.087 | 0.004 |
| Q76 | 0.407 | 0.085 | 0.000 |
| Q77 | -0.152 | 0.099 | 0.123 |
| Q78 | 0.215 | 0.096 | 0.025 |
| Q80 | 0.090 | 0.090 | 0.319 |
| Q81 | 0.438 | 0.088 | 0.000 |
| Q82 | 0.529 | 0.080 | 0.000 |
| Q83 | 0.087 | 0.101 | 0.386 |
| Q84 | -0.092 | 0.098 | 0.344 |
| Q85 | -0.065 | 0.098 | 0.508 |
| Q86 | 0.205 | 0.081 | 0.011 |
| Q87 | 0.033 | 0.110 | 0.765 |
| Q88 | 0.104 | 0.094 | 0.265 |
| Q89 | 0.276 | 0.087 | 0.002 |
| Q91 | 0.384 | 0.079 | 0.000 |
| Q92 | 0.046 | 0.093 | 0.622 |
| Q93 | 0.097 | 0.095 | 0.308 |
| Q94 | -0.135 | 0.114 | 0.239 |
| Q95 | 0.174 | 0.095 | 0.066 |

(continued)

**Table B-20. Standardized Factor Loading - Bifactor Model - Network Administration (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q96 | 0.040 | 0.097 | 0.683 |
| Q97 | 0.160 | 0.108 | 0.140 |
| Q101 | 0.297 | 0.090 | 0.001 |
| Q102 | 0.199 | 0.095 | 0.036 |
| Q103 | 0.251 | 0.104 | 0.016 |
| Q105 | 0.280 | 0.087 | 0.001 |
| Q106 | 0.531 | 0.117 | 0.000 |
| Q108 | 0.107 | 0.095 | 0.259 |
| Q109 | 0.371 | 0.087 | 0.000 |
| Q110 | 0.404 | 0.086 | 0.000 |
| Q111 | 0.242 | 0.095 | 0.011 |
| Q112 | 0.469 | 0.087 | 0.000 |
| Q113 | -0.073 | 0.098 | 0.459 |
| Q114 | -0.008 | 0.095 | 0.932 |
| Q115 | -0.157 | 0.099 | 0.111 |
| Q116 | -0.022 | 0.090 | 0.807 |
| Q117 | 0.111 | 0.096 | 0.249 |
| Q118 | 0.194 | 0.095 | 0.042 |
| Transition Readiness | | | |
| Q1 | 0.488 | 0.123 | 0.000 |
| Q2 | 0.416 | 0.082 | 0.000 |
| Q4 | 0.600 | 0.085 | 0.000 |
| Q5 | 0.551 | 0.088 | 0.000 |
| Q14 | 0.251 | 0.157 | 0.111 |
| Q16 | 0.617 | 0.074 | 0.000 |
| Q20 | 0.483 | 0.061 | 0.000 |
| Q21 | 0.484 | 0.120 | 0.000 |
| Q22 | 0.511 | 0.120 | 0.000 |
| Q24 | 0.296 | 0.133 | 0.026 |
| Q25 | 0.509 | 0.101 | 0.000 |
| Q26 | 0.173 | 0.083 | 0.037 |
| Q27 | 0.398 | 0.105 | 0.000 |
| Q28 | 0.394 | 0.139 | 0.005 |
| Q29 | 0.527 | 0.086 | 0.000 |
| Q30 | 0.555 | 0.083 | 0.000 |
| Q32 | 0.529 | 0.077 | 0.000 |
| Q33 | 0.629 | 0.063 | 0.000 |
| Q46 | 0.451 | 0.091 | 0.000 |
| Q47 | 0.016 | 0.086 | 0.848 |
| Q48 | 0.300 | 0.095 | 0.002 |
| Q49 | 0.515 | 0.076 | 0.000 |

(continued)

**Table B-20. Standardized Factor Loading - Bifactor Model - Network Administration (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q51 | 0.451 | 0.073 | 0.000 |
| Q56 | 0.417 | 0.084 | 0.000 |
| Q60 | 0.327 | 0.070 | 0.000 |
| Q6 | 0.544 | 0.086 | 0.000 |
| Q7 | 0.362 | 0.146 | 0.013 |
| Q8 | 0.418 | 0.079 | 0.000 |
| Q10 | 0.748 | 0.062 | 0.000 |
| Q13 | 0.341 | 0.095 | 0.000 |
| Q15 | 0.322 | 0.083 | 0.000 |
| Q18 | 0.497 | 0.077 | 0.000 |
| Q19 | 0.531 | 0.077 | 0.000 |
| Q34 | 0.300 | 0.072 | 0.000 |
| Q35 | 0.356 | 0.135 | 0.008 |
| Q36 | 0.647 | 0.082 | 0.000 |
| Q37 | 0.467 | 0.079 | 0.000 |
| Q39 | 0.783 | 0.129 | 0.000 |
| Q40 | 0.527 | 0.090 | 0.000 |
| Q41 | 0.454 | 0.081 | 0.000 |
| Q42 | 0.313 | 0.102 | 0.002 |
| Q43 | 0.832 | 0.090 | 0.000 |
| Q44 | 0.693 | 0.079 | 0.000 |
| Q45 | 0.628 | 0.117 | 0.000 |
| Q52 | 0.368 | 0.098 | 0.000 |
| Q53 | 0.660 | 0.102 | 0.000 |
| Q55 | 0.683 | 0.087 | 0.000 |
| Q58 | 0.388 | 0.106 | 0.000 |
| Q59 | 0.297 | 0.125 | 0.017 |
| Q61 | 0.332 | 0.085 | 0.000 |
| Q62 | 0.382 | 0.097 | 0.000 |
| Q63 | 0.580 | 0.080 | 0.000 |
| Q64 | 0.732 | 0.077 | 0.000 |
| Q65 | 0.670 | 0.081 | 0.000 |
| Q66 | 0.503 | 0.095 | 0.000 |
| Q67 | -0.034 | 0.092 | 0.710 |
| Q68 | 0.567 | 0.061 | 0.000 |
| Q69 | 0.457 | 0.070 | 0.000 |
| Q70 | 0.307 | 0.081 | 0.000 |
| Q71 | 0.384 | 0.068 | 0.000 |
| Q72 | 0.370 | 0.088 | 0.000 |
| Q73 | 0.444 | 0.087 | 0.000 |

(continued)

**Table B-20. Standardized Factor Loading - Bifactor Model - Network Administration (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q75 | 0.631 | 0.061 | 0.000 |
| Q76 | 0.409 | 0.083 | 0.000 |
| Q77 | 0.171 | 0.083 | 0.040 |
| Q78 | 0.026 | 0.085 | 0.759 |
| Q80 | 0.407 | 0.077 | 0.000 |
| Q81 | 0.289 | 0.093 | 0.002 |
| Q82 | 0.341 | 0.076 | 0.000 |
| Q83 | 0.174 | 0.089 | 0.050 |
| Q84 | 0.368 | 0.082 | 0.000 |
| Q85 | 0.319 | 0.095 | 0.001 |
| Q86 | 0.647 | 0.075 | 0.000 |
| Q87 | 0.726 | 0.066 | 0.000 |
| Q88 | 0.182 | 0.086 | 0.034 |
| Q89 | 0.368 | 0.085 | 0.000 |
| Q91 | 0.395 | 0.084 | 0.000 |
| Q92 | 0.131 | 0.084 | 0.119 |
| Q93 | 0.310 | 0.073 | 0.000 |
| Q94 | 0.671 | 0.082 | 0.000 |
| Q95 | 0.535 | 0.076 | 0.000 |
| Q96 | 0.181 | 0.084 | 0.031 |
| Q97 | 0.031 | 0.090 | 0.734 |
| Q101 | 0.072 | 0.093 | 0.437 |
| Q102 | 0.445 | 0.063 | 0.000 |
| Q103 | 0.434 | 0.096 | 0.000 |
| Q105 | 0.236 | 0.080 | 0.003 |
| Q106 | -0.024 | 0.092 | 0.797 |
| Q108 | -0.010 | 0.085 | 0.902 |
| Q109 | 0.288 | 0.073 | 0.000 |
| Q110 | 0.175 | 0.096 | 0.069 |
| Q111 | 0.135 | 0.082 | 0.098 |
| Q112 | 0.418 | 0.063 | 0.000 |
| Q113 | 0.522 | 0.100 | 0.000 |
| Q114 | 0.403 | 0.077 | 0.000 |
| Q115 | 0.091 | 0.086 | 0.286 |
| Q116 | 0.549 | 0.087 | 0.000 |
| Q117 | 0.200 | 0.075 | 0.008 |
| Q118 | 0.147 | 0.084 | 0.081 |

**Table B-21. Standardized Factor Loading – Bifactor - Web Development**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | 0.156 | 0.120 | 0.191 |
| Q2 | 0.268 | 0.093 | 0.004 |
| Q4 | -0.069 | 0.106 | 0.516 |
| Q5 | 0.115 | 0.103 | 0.263 |
| Q14 | 0.249 | 0.125 | 0.046 |
| Q16 | -0.006 | 0.100 | 0.952 |
| Q20 | -0.230 | 0.096 | 0.016 |
| Q21 | -0.013 | 0.137 | 0.924 |
| Q22 | 0.038 | 0.129 | 0.767 |
| Q24 | 0.054 | 0.124 | 0.665 |
| Q25 | 0.062 | 0.105 | 0.553 |
| Q26 | 0.210 | 0.096 | 0.028 |
| Q27 | 0.052 | 0.093 | 0.575 |
| Q28 | 0.144 | 0.154 | 0.350 |
| Q29 | -0.114 | 0.098 | 0.244 |
| Q30 | -0.015 | 0.101 | 0.884 |
| Q32 | -0.116 | 0.096 | 0.226 |
| Q33 | 0.006 | 0.089 | 0.948 |
| Q46 | -0.366 | 0.107 | 0.001 |
| Q47 | 0.197 | 0.095 | 0.038 |
| Q48 | 0.149 | 0.100 | 0.136 |
| Q49 | -0.065 | 0.090 | 0.471 |
| Q51 | 0.829 | 0.105 | 0.000 |
| Q56 | -0.087 | 0.098 | 0.374 |
| Q60 | 0.590 | 0.091 | 0.000 |
| Employability | | | |
| Q6 | -0.122 | 0.148 | 0.408 |
| Q7 | -0.212 | 0.145 | 0.142 |
| Q8 | -0.066 | 0.125 | 0.599 |
| Q10 | 0.058 | 0.101 | 0.565 |
| Q13 | -0.241 | 0.136 | 0.076 |
| Q15 | 0.278 | 0.120 | 0.020 |
| Q18 | -0.094 | 0.124 | 0.450 |
| Q19 | 0.065 | 0.102 | 0.523 |
| Q34 | -0.030 | 0.121 | 0.802 |
| Q35 | -0.079 | 0.148 | 0.593 |
| Q36 | 0.023 | 0.134 | 0.864 |
| Q37 | -0.148 | 0.118 | 0.208 |
| Q39 | 0.181 | 0.137 | 0.189 |
| Q40 | 0.168 | 0.123 | 0.171 |
| Q41 | 0.036 | 0.117 | 0.757 |
| Q42 | 0.040 | 0.147 | 0.787 |

(continued)

*Table B-21. Standardized Factor Loading – Bifactor - Web Development (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q43 | 0.591 | 0.134 | 0.000 |
| Q44 | -0.128 | 0.151 | 0.395 |
| Q45 | 0.007 | 0.117 | 0.953 |
| Q52 | 0.106 | 0.143 | 0.456 |
| Q53 | 0.554 | 0.091 | 0.000 |
| Q54 | 0.508 | 0.149 | 0.001 |
| Q55 | 0.673 | 0.097 | 0.000 |
| Q58 | -0.177 | 0.150 | 0.238 |
| Q59 | 0.104 | 0.129 | 0.417 |
| Occupational | | | |
| Q61 | 0.176 | 0.089 | 0.047 |
| Q62 | -0.258 | 0.091 | 0.005 |
| Q63 | 0.112 | 0.092 | 0.224 |
| Q64 | 0.207 | 0.095 | 0.029 |
| Q65 | 0.440 | 0.082 | 0.000 |
| Q66 | 0.270 | 0.098 | 0.006 |
| Q67 | 0.180 | 0.100 | 0.074 |
| Q68 | 0.179 | 0.084 | 0.034 |
| Q69 | 0.210 | 0.088 | 0.017 |
| Q70 | -0.014 | 0.092 | 0.876 |
| Q71 | 0.221 | 0.093 | 0.017 |
| Q72 | 0.563 | 0.080 | 0.000 |
| Q73 | 0.013 | 0.099 | 0.897 |
| Q74 | 0.250 | 0.098 | 0.011 |
| Q77 | 0.125 | 0.093 | 0.177 |
| Q78 | 0.174 | 0.092 | 0.058 |
| Q79 | 0.103 | 0.094 | 0.273 |
| Q81 | 0.518 | 0.112 | 0.000 |
| Q82 | 0.156 | 0.093 | 0.095 |
| Q83 | 0.387 | 0.084 | 0.000 |
| Q84 | -0.070 | 0.099 | 0.480 |
| Q85 | 0.256 | 0.105 | 0.014 |
| Q86 | 0.379 | 0.080 | 0.000 |
| Q87 | 0.246 | 0.115 | 0.032 |
| Q89 | 0.075 | 0.089 | 0.399 |
| Q90 | 0.346 | 0.084 | 0.000 |
| Q91 | 0.231 | 0.095 | 0.015 |
| Q93 | 0.300 | 0.085 | 0.000 |
| Q94 | 0.333 | 0.090 | 0.000 |
| Q96 | -0.004 | 0.095 | 0.964 |
| Q97 | 0.224 | 0.098 | 0.022 |
| Q98 | 0.001 | 0.099 | 0.995 |

(continued)

*Table B-21. Standardized Factor Loading – Bifactor - Web Development (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q99 | 0.220 | 0.091 | 0.016 |
| Q100 | 0.420 | 0.087 | 0.000 |
| Q101 | 0.421 | 0.085 | 0.000 |
| Q103 | -0.210 | 0.100 | 0.037 |
| Q104 | -0.018 | 0.096 | 0.851 |
| Q105 | 0.043 | 0.093 | 0.642 |
| Q106 | 0.231 | 0.102 | 0.023 |
| Q107 | 0.338 | 0.097 | 0.000 |
| Q108 | 0.045 | 0.113 | 0.690 |
| Q109 | 0.326 | 0.089 | 0.000 |
| Q110 | 0.083 | 0.115 | 0.470 |
| Q113 | -0.039 | 0.091 | 0.672 |
| Q114 | 0.362 | 0.085 | 0.000 |
| Q115 | -0.179 | 0.104 | 0.086 |
| Q116 | 0.015 | 0.097 | 0.873 |
| Q117 | 0.221 | 0.091 | 0.015 |
| Q118 | 0.446 | 0.081 | 0.000 |
| Q119 | 0.030 | 0.088 | 0.736 |
| Transition Readiness | | | |
| Q1 | 0.535 | 0.100 | 0.000 |
| Q2 | 0.384 | 0.074 | 0.000 |
| Q4 | 0.480 | 0.083 | 0.000 |
| Q5 | 0.532 | 0.088 | 0.000 |
| Q14 | 0.277 | 0.110 | 0.012 |
| Q16 | 0.561 | 0.076 | 0.000 |
| Q20 | 0.361 | 0.078 | 0.000 |
| Q21 | 0.411 | 0.132 | 0.002 |
| Q22 | 0.627 | 0.095 | 0.000 |
| Q24 | 0.518 | 0.096 | 0.000 |
| Q25 | 0.628 | 0.086 | 0.000 |
| Q26 | 0.231 | 0.079 | 0.003 |
| Q27 | 0.563 | 0.084 | 0.000 |
| Q28 | 0.397 | 0.151 | 0.008 |
| Q29 | 0.379 | 0.076 | 0.000 |
| Q30 | 0.579 | 0.074 | 0.000 |
| Q32 | 0.556 | 0.063 | 0.000 |
| Q33 | 0.713 | 0.057 | 0.000 |
| Q46 | 0.442 | 0.089 | 0.000 |
| Q47 | 0.209 | 0.081 | 0.010 |
| Q48 | 0.488 | 0.075 | 0.000 |
| Q49 | 0.504 | 0.068 | 0.000 |
| Q51 | 0.359 | 0.074 | 0.000 |
| Q56 | 0.356 | 0.078 | 0.000 |

(continued)

**Table B-21. Standardized Factor Loading – Bifactor - Web Development (continued)**

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q60 | 0.281 | 0.080 | 0.000 |
| Q6 | 0.438 | 0.091 | 0.000 |
| Q7 | 0.564 | 0.092 | 0.000 |
| Q8 | 0.323 | 0.077 | 0.000 |
| Q10 | 0.652 | 0.065 | 0.000 |
| Q13 | 0.374 | 0.087 | 0.000 |
| Q15 | 0.337 | 0.078 | 0.000 |
| Q18 | 0.435 | 0.073 | 0.000 |
| Q19 | 0.542 | 0.067 | 0.000 |
| Q34 | 0.295 | 0.074 | 0.000 |
| Q35 | 0.464 | 0.096 | 0.000 |
| Q36 | 0.376 | 0.089 | 0.000 |
| Q37 | 0.516 | 0.071 | 0.000 |
| Q39 | 0.573 | 0.117 | 0.000 |
| Q40 | 0.401 | 0.084 | 0.000 |
| Q41 | 0.404 | 0.072 | 0.000 |
| Q42 | 0.077 | 0.100 | 0.440 |
| Q43 | 0.695 | 0.120 | 0.000 |
| Q44 | 0.558 | 0.084 | 0.000 |
| Q45 | 0.712 | 0.082 | 0.000 |
| Q52 | 0.252 | 0.092 | 0.006 |
| Q53 | 0.397 | 0.123 | 0.001 |
| Q54 | 0.802 | 0.092 | 0.000 |
| Q55 | 0.497 | 0.090 | 0.000 |
| Q58 | 0.370 | 0.092 | 0.000 |
| Q59 | 0.501 | 0.095 | 0.000 |
| Q61 | 0.442 | 0.074 | 0.000 |
| Q62 | 0.553 | 0.075 | 0.000 |
| Q63 | 0.416 | 0.079 | 0.000 |
| Q64 | 0.550 | 0.082 | 0.000 |
| Q65 | 0.392 | 0.077 | 0.000 |
| Q66 | 0.388 | 0.081 | 0.000 |
| Q67 | 0.155 | 0.086 | 0.071 |
| Q68 | 0.455 | 0.067 | 0.000 |
| Q69 | 0.299 | 0.073 | 0.000 |
| Q70 | 0.367 | 0.076 | 0.000 |
| Q71 | 0.094 | 0.078 | 0.227 |
| Q72 | 0.250 | 0.084 | 0.003 |
| Q73 | 0.513 | 0.080 | 0.000 |
| Q74 | 0.419 | 0.083 | 0.000 |
| Q77 | 0.304 | 0.071 | 0.000 |
| Q78 | 0.507 | 0.074 | 0.000 |

(continued)

*Table B-21. Standardized Factor Loading – Bifactor - Web Development (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q79 | 0.014 | 0.083 | 0.870 |
| Q81 | 0.414 | 0.106 | 0.000 |
| Q82 | 0.503 | 0.077 | 0.000 |
| Q83 | 0.349 | 0.084 | 0.000 |
| Q84 | 0.092 | 0.080 | 0.251 |
| Q85 | 0.068 | 0.094 | 0.468 |
| Q86 | 0.444 | 0.069 | 0.000 |
| Q87 | 0.425 | 0.091 | 0.000 |
| Q89 | 0.478 | 0.071 | 0.000 |
| Q90 | 0.397 | 0.069 | 0.000 |
| Q91 | 0.272 | 0.081 | 0.001 |
| Q93 | 0.528 | 0.079 | 0.000 |
| Q94 | 0.234 | 0.079 | 0.003 |
| Q96 | 0.170 | 0.080 | 0.032 |
| Q97 | 0.228 | 0.073 | 0.002 |
| Q98 | 0.125 | 0.082 | 0.128 |
| Q99 | 0.094 | 0.083 | 0.260 |
| Q100 | 0.238 | 0.081 | 0.003 |
| Q101 | 0.306 | 0.075 | 0.000 |
| Q103 | 0.329 | 0.091 | 0.000 |
| Q104 | 0.393 | 0.080 | 0.000 |
| Q105 | 0.342 | 0.072 | 0.000 |
| Q106 | 0.203 | 0.081 | 0.013 |
| Q107 | 0.091 | 0.084 | 0.283 |
| Q108 | 0.602 | 0.086 | 0.000 |
| Q109 | 0.238 | 0.079 | 0.003 |
| Q110 | 0.273 | 0.118 | 0.021 |
| Q113 | 0.302 | 0.074 | 0.000 |
| Q114 | 0.362 | 0.089 | 0.000 |
| Q115 | 0.162 | 0.095 | 0.087 |
| Q116 | 0.197 | 0.084 | 0.019 |
| Q117 | -0.125 | 0.080 | 0.119 |
| Q118 | 0.235 | 0.079 | 0.003 |
| Q119 | 0.321 | 0.071 | 0.000 |

## Table B-22. Standardized Factor Loading - Bifactor - Welding

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Academic | | | |
| Q1 | -0.066 | 0.067 | 0.323 |
| Q2 | 0.101 | 0.055 | 0.065 |
| Q4 | -0.062 | 0.060 | 0.298 |
| Q5 | 0.054 | 0.059 | 0.358 |
| Q14 | 0.052 | 0.076 | 0.494 |
| Q16 | 0.005 | 0.054 | 0.932 |
| Q69 | 0.094 | 0.059 | 0.114 |
| Q70 | 0.057 | 0.059 | 0.337 |
| Q71 | -0.066 | 0.069 | 0.345 |
| Q73 | 0.107 | 0.061 | 0.076 |
| Q74 | 0.097 | 0.059 | 0.098 |
| Q75 | 0.101 | 0.056 | 0.073 |
| Q76 | 0.003 | 0.057 | 0.957 |
| Q77 | -0.032 | 0.071 | 0.649 |
| Q78 | 0.171 | 0.054 | 0.002 |
| Q79 | 0.033 | 0.056 | 0.561 |
| Q81 | 0.184 | 0.056 | 0.001 |
| Q82 | -0.016 | 0.054 | 0.767 |
| Q95 | 0.069 | 0.056 | 0.219 |
| Q96 | -0.048 | 0.057 | 0.403 |
| Q97 | -0.017 | 0.057 | 0.771 |
| Q98 | 0.088 | 0.054 | 0.100 |
| Q100 | 0.751 | 0.093 | 0.000 |
| Q105 | -0.009 | 0.057 | 0.875 |
| Q109 | 0.726 | 0.092 | 0.000 |
| Employability | | | |
| Q6 | 0.250 | 0.076 | 0.001 |
| Q7 | -0.066 | 0.075 | 0.380 |
| Q8 | 0.129 | 0.072 | 0.071 |
| Q10 | 0.374 | 0.075 | 0.000 |
| Q13 | -0.068 | 0.073 | 0.350 |
| Q15 | 0.179 | 0.073 | 0.014 |
| Q18 | 0.184 | 0.075 | 0.014 |
| Q19 | 0.191 | 0.066 | 0.004 |
| Q83 | 0.158 | 0.074 | 0.033 |
| Q84 | 0.064 | 0.076 | 0.397 |
| Q85 | 0.208 | 0.077 | 0.007 |
| Q86 | 0.225 | 0.068 | 0.001 |
| Q88 | -0.145 | 0.077 | 0.058 |
| Q89 | -0.098 | 0.070 | 0.163 |
| Q90 | 0.248 | 0.073 | 0.001 |
| Q91 | -0.119 | 0.079 | 0.135 |

(continued)

*Table B-22. Standardized Factor Loading - Bifactor – Welding (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Employability (cont'd) | | | |
| Q92 | -0.079 | 0.071 | 0.266 |
| Q93 | 0.282 | 0.072 | 0.000 |
| Q94 | 0.002 | 0.075 | 0.978 |
| Q101 | -0.177 | 0.076 | 0.021 |
| Q102 | -0.094 | 0.078 | 0.226 |
| Q103 | -0.195 | 0.098 | 0.047 |
| Q104 | 0.065 | 0.079 | 0.409 |
| Q107 | 0.144 | 0.071 | 0.043 |
| Q108 | -0.177 | 0.079 | 0.025 |
| Occupational | | | |
| Q22 | 0.463 | 0.059 | 0.000 |
| Q24 | 0.480 | 0.054 | 0.000 |
| Q25 | 0.332 | 0.045 | 0.000 |
| Q26 | 0.169 | 0.050 | 0.001 |
| Q27 | 0.078 | 0.051 | 0.130 |
| Q28 | 0.405 | 0.051 | 0.000 |
| Q29 | 0.139 | 0.050 | 0.005 |
| Q30 | 0.218 | 0.047 | 0.000 |
| Q31 | 0.301 | 0.051 | 0.000 |
| Q33 | 0.154 | 0.054 | 0.004 |
| Q34 | 0.233 | 0.051 | 0.000 |
| Q35 | 0.098 | 0.050 | 0.051 |
| Q36 | 0.258 | 0.055 | 0.000 |
| Q37 | 0.456 | 0.045 | 0.000 |
| Q38 | 0.433 | 0.045 | 0.000 |
| Q39 | 0.232 | 0.049 | 0.000 |
| Q40 | 0.394 | 0.048 | 0.000 |
| Q41 | 0.208 | 0.060 | 0.001 |
| Q42 | 0.257 | 0.048 | 0.000 |
| Q43 | 0.237 | 0.051 | 0.000 |
| Q44 | 0.385 | 0.045 | 0.000 |
| Q45 | 0.138 | 0.049 | 0.005 |
| Q46 | 0.246 | 0.048 | 0.000 |
| Q48 | 0.186 | 0.049 | 0.000 |
| Q49 | 0.053 | 0.053 | 0.317 |
| Q50 | 0.360 | 0.046 | 0.000 |
| Q51 | 0.239 | 0.048 | 0.000 |
| Q52 | 0.298 | 0.051 | 0.000 |
| Q53 | 0.227 | 0.050 | 0.000 |
| Q54 | 0.351 | 0.046 | 0.000 |
| Q55 | 0.346 | 0.049 | 0.000 |
| Q56 | 0.277 | 0.048 | 0.000 |

(continued)

*Table B-22. Standardized Factor Loading - Bifactor – Welding (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Occupational (cont'd) | | | |
| Q57 | 0.145 | 0.050 | 0.004 |
| Q58 | 0.359 | 0.050 | 0.000 |
| Q60 | 0.287 | 0.047 | 0.000 |
| Q62 | 0.144 | 0.051 | 0.005 |
| Q63 | 0.332 | 0.056 | 0.000 |
| Q65 | 0.225 | 0.049 | 0.000 |
| Q66 | 0.363 | 0.050 | 0.000 |
| Q67 | 0.272 | 0.056 | 0.000 |
| Q68 | -0.017 | 0.053 | 0.749 |
| Q110 | 0.235 | 0.047 | 0.000 |
| Q111 | 0.204 | 0.058 | 0.000 |
| Q112 | 0.525 | 0.042 | 0.000 |
| Q113 | 0.076 | 0.053 | 0.157 |
| Q115 | 0.201 | 0.052 | 0.000 |
| Q116 | 0.170 | 0.046 | 0.000 |
| Q118 | 0.362 | 0.053 | 0.000 |
| Q119 | 0.271 | 0.049 | 0.000 |
| Q120 | 0.124 | 0.051 | 0.014 |
| Transition Readiness | | | |
| Q1 | 0.670 | 0.051 | 0.000 |
| Q2 | 0.389 | 0.040 | 0.000 |
| Q4 | 0.532 | 0.044 | 0.000 |
| Q5 | 0.515 | 0.045 | 0.000 |
| Q14 | 0.316 | 0.065 | 0.000 |
| Q16 | 0.494 | 0.039 | 0.000 |
| Q69 | 0.380 | 0.046 | 0.000 |
| Q70 | 0.769 | 0.043 | 0.000 |
| Q71 | 0.547 | 0.052 | 0.000 |
| Q73 | 0.534 | 0.047 | 0.000 |
| Q74 | 0.652 | 0.040 | 0.000 |
| Q75 | 0.211 | 0.045 | 0.000 |
| Q76 | 0.480 | 0.047 | 0.000 |
| Q77 | 0.489 | 0.067 | 0.000 |
| Q78 | 0.461 | 0.041 | 0.000 |
| Q79 | 0.441 | 0.041 | 0.000 |
| Q81 | 0.421 | 0.042 | 0.000 |
| Q82 | 0.478 | 0.038 | 0.000 |
| Q95 | 0.495 | 0.042 | 0.000 |
| Q96 | 0.263 | 0.044 | 0.000 |
| Q97 | 0.501 | 0.043 | 0.000 |
| Q98 | 0.417 | 0.040 | 0.000 |
| Q100 | 0.321 | 0.044 | 0.000 |
| Q105 | 0.342 | 0.043 | 0.000 |

(continued)

*Table B-22. Standardized Factor Loading - Bifactor – Welding (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q109 | 0.260 | 0.046 | 0.000 |
| Q6 | 0.484 | 0.045 | 0.000 |
| Q7 | 0.431 | 0.049 | 0.000 |
| Q8 | 0.417 | 0.040 | 0.000 |
| Q10 | 0.456 | 0.041 | 0.000 |
| Q13 | 0.319 | 0.046 | 0.000 |
| Q15 | 0.373 | 0.042 | 0.000 |
| Q18 | 0.320 | 0.043 | 0.000 |
| Q19 | 0.556 | 0.035 | 0.000 |
| Q83 | 0.241 | 0.044 | 0.000 |
| Q84 | 0.436 | 0.045 | 0.000 |
| Q85 | 0.436 | 0.045 | 0.000 |
| Q86 | 0.433 | 0.038 | 0.000 |
| Q88 | 0.798 | 0.044 | 0.000 |
| Q89 | 0.452 | 0.043 | 0.000 |
| Q90 | 0.330 | 0.043 | 0.000 |
| Q91 | 0.424 | 0.050 | 0.000 |
| Q92 | 0.757 | 0.040 | 0.000 |
| Q93 | 0.619 | 0.040 | 0.000 |
| Q94 | 0.601 | 0.053 | 0.000 |
| Q101 | 0.284 | 0.056 | 0.000 |
| Q102 | 0.592 | 0.047 | 0.000 |
| Q103 | 0.755 | 0.057 | 0.000 |
| Q104 | 0.412 | 0.048 | 0.000 |
| Q107 | 0.518 | 0.043 | 0.000 |
| Q108 | 0.461 | 0.053 | 0.000 |
| Q22 | 0.417 | 0.061 | 0.000 |
| Q24 | 0.374 | 0.056 | 0.000 |
| Q25 | 0.390 | 0.041 | 0.000 |
| Q26 | 0.227 | 0.044 | 0.000 |
| Q27 | 0.346 | 0.046 | 0.000 |
| Q28 | 0.417 | 0.048 | 0.000 |
| Q29 | 0.353 | 0.042 | 0.000 |
| Q30 | 0.495 | 0.042 | 0.000 |
| Q31 | 0.127 | 0.045 | 0.005 |
| Q33 | 0.114 | 0.049 | 0.021 |
| Q34 | 0.138 | 0.047 | 0.004 |
| Q35 | 0.316 | 0.046 | 0.000 |
| Q36 | 0.609 | 0.055 | 0.000 |
| Q37 | 0.254 | 0.046 | 0.000 |
| Q38 | 0.286 | 0.044 | 0.000 |
| Q39 | 0.043 | 0.046 | 0.351 |

(continued)

*Table B-22. Standardized Factor Loading - Bifactor – Welding (continued)*

| Factor/Item | Standardized Factor Loading | Standard Error | Two-tailed P-value |
|---|---|---|---|
| Transition Readiness (cont'd) | | | |
| Q40 | 0.400 | 0.050 | 0.000 |
| Q41 | 0.035 | 0.053 | 0.500 |
| Q42 | 0.263 | 0.043 | 0.000 |
| Q43 | 0.123 | 0.046 | 0.007 |
| Q44 | 0.289 | 0.046 | 0.000 |
| Q45 | 0.359 | 0.042 | 0.000 |
| Q46 | 0.253 | 0.045 | 0.000 |
| Q48 | 0.287 | 0.042 | 0.000 |
| Q49 | 0.091 | 0.045 | 0.045 |
| Q50 | 0.246 | 0.043 | 0.000 |
| Q51 | 0.291 | 0.042 | 0.000 |
| Q52 | 0.283 | 0.047 | 0.000 |
| Q53 | 0.072 | 0.046 | 0.116 |
| Q54 | 0.313 | 0.044 | 0.000 |
| Q55 | 0.137 | 0.048 | 0.004 |
| Q56 | 0.266 | 0.043 | 0.000 |
| Q57 | 0.503 | 0.042 | 0.000 |
| Q58 | 0.312 | 0.044 | 0.000 |
| Q60 | 0.443 | 0.042 | 0.000 |
| Q62 | 0.144 | 0.046 | 0.002 |
| Q63 | 0.501 | 0.050 | 0.000 |
| Q65 | 0.165 | 0.045 | 0.000 |
| Q66 | 0.240 | 0.051 | 0.000 |
| Q67 | 0.227 | 0.048 | 0.000 |
| Q68 | 0.199 | 0.046 | 0.000 |
| Q110 | 0.472 | 0.041 | 0.000 |
| Q111 | -0.001 | 0.049 | 0.987 |
| Q112 | 0.337 | 0.043 | 0.000 |
| Q113 | 0.597 | 0.050 | 0.000 |
| Q115 | 0.179 | 0.044 | 0.000 |
| Q116 | 0.440 | 0.044 | 0.000 |
| Q118 | 0.265 | 0.050 | 0.000 |
| Q119 | 0.192 | 0.045 | 0.000 |
| Q120 | 0.136 | 0.044 | 0.002 |