



Comprehension Aptitude Range

Technical Summary



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Contents

1. Comprehension Aptitude Range Test Information
2. Norm Groups Available
3. Report
4. Practice and Preparation
5. Development
6. Languages
7. Reliability
8. Validity
9. Fairness
10. Comprehension Aptitude Range-Rx Norms Summary
 - 10.1. International Mixed Occupational Group (2016, N=2443) Norm Group Description
 - 10.2. International Apprentices (2018, N=605)
 - 10.3. International Individual Contributors (2016, N=866) Norm Group Description
 - 10.4. International Foundation Level Group (2016, N=513) Norm Group Description
 - 10.5. UK Mixed Occupational Group (2016, N=6566) Norm Group Description
 - 10.6. UK Apprentices (2018, N=2269) Norm Group Description
 - 10.7. UK Individual Contributors (2016, N=2996) Norm Group Description
11. Appendix 1: Swift Comprehension Aptitude-Rx Sample report
12. Appendix 2: Internal Consistency Reliabilities for Sub-tests in Swift
13. Appendix 3: Method for Calculating Criterion Related Validity of a Single Test from the Equivalent Sub-Test in Swift Comprehension Aptitude

1. Comprehension Aptitude Range (IA) Test Information

- Randomized versions available of all tests in the Comprehension Aptitude Range
- Available for unsupervised use online (Invited Access, IA)

| Test | Total / Sub-Test | No. of Questions | Time Limit (mins) |
|--|-------------------------|------------------|-------------------|
| Swift Comprehension Aptitude | Total | 24 | 9.5 |
| | Verbal Comprehension | 8 | 4 |
| | Numerical Comprehension | 8 | 4 |
| | Error Checking | 8 | 1.5 |
| Swift Comprehension Verbal & Numerical | Total | 24 | 12 |
| | Verbal Comprehension | 12 | 6 |
| | Numerical Comprehension | 12 | 6 |
| Verbal Comprehension Aptitude | Total | 32 | 16 |
| Numerical Comprehension Aptitude | Total | 32 | 16 |
| Error Checking Aptitude | Total | 32 | 6 |

Note: Hard-Copy (HC) and Supervised Access (SA) Comprehension Aptitude Range tests using fixed content presented in a fixed order are available for follow-up testing but are not covered in this summary document.

2. Norm Groups Available

Comprehension-Rx Tests

- International Mixed Occupational Group (2016, N=2443)
- International Apprentices (2018, N=605)
- International Individual Contributors (2016, N=866)
- International Foundation Level Group (2016, N=513)
- UK Mixed Occupational Group (2016, N=6566)
- UK Apprentices (2018, N=2269)
- UK Individual Contributors (2016, N=2996)

Please refer to Section 10 for a visual comparison of the norms and norm group descriptions.

In addition to the core norm groups listed above, a range of regional and country-specific norms are also available. Please contact Saville Assessment for the latest norm availability information.

3. Report

A sample report for Swift Comprehension Aptitude-Rx is included in Appendix 1. Sample reports for other assessments are available upon request from Saville Assessment.

4. Practice and Preparation

Online Practice Tests are available and there are individual PDF Preparation Guides for each of the Comprehension Aptitude Range areas:

- **Swift Comprehension Aptitude (online)**
- **Swift Comprehension Verbal & Numerical (online)**
- **Verbal Comprehension (online & PDF)**
- **Numerical Comprehension (online & PDF)**
- **Error Checking (online & PDF)**

These are designed to provide a realistic set of example questions in order to help familiarize the test taker with the format and style of the aptitude assessment questions, as well as additional information about the assessment process.

The online Practice Tests also provide individual feedback on the responses given, featuring realistic time limits which replicate a real assessment scenario. The Preparation Guides provide a flexible offline alternative to the online Practice Tests.

The aptitude practice and preparation materials can be found on the Saville Assessment website (www.savilleassessment.com).

5. Development

The Comprehension Aptitude Range consists of large banks of Verbal Comprehension, Numerical Comprehension and Error Checking items. Items are drawn from these banks to form the single Verbal Comprehension, Numerical Comprehension and Error Checking tests and the corresponding sub-tests of Swift Comprehension Aptitude and Swift Comprehension Verbal & Numerical.

6. Languages

We are engaged in an ongoing, active program of translation and localization for all of our aptitude assessments. For the latest availability information, please contact Saville Assessment.

7. Reliability

The internal consistency figures presented here are Separation Indices. This method produces similar figures to Cronbach's Alpha (Andrich, 1982¹) and allows for an internal consistency calculation to be made in item-banked tests, rather than fixed-form tests.

This section presents internal consistency reliability figures for each of the Comprehension Aptitude Range tests.

For Swift Comprehension Aptitude and Swift Comprehension Verbal & Numerical, it is worth noting that the greatest level of reliability is found at the total score level, which is designed to be the decision-making score. The sub-test scores provide additional test-taking information, but we would not recommend that these are used in isolation for decision making.

The mean percentage correct figures broadly reflect the design aim of giving a positive candidate experience where many candidates answer around 50% of questions correctly.

The large standard deviation values seen in these tables reflect the ability of the items to differentiate performance through a wide score range. This is required to give an accurate representation of test-takers' ability.

For details about mean performance in each of the norm groups, please refer to the 'Norms' section.

Swift Comprehension Aptitude Internal Consistency Reliabilities (N=35949)

| | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r |
|--------------|----------------|--------|----------|---------|------------|
| Total | 54.69 | 18.31 | .82 | 4.09 | .83 |

Swift Comprehension Verbal & Numerical Internal Consistency Reliabilities (N=35949)

| | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r* |
|--------------|----------------|--------|----------|---------|------------|
| Total | N/A | N/A | .88 | 4.41 | .81 |

**Based on the internal consistency reliability for the shorter Swift Comprehension Aptitude Verbal and Numerical sub-tests combined, and corrected for length with the Spearman Brown Prophecy Formula.*

Verbal Comprehension Aptitude Internal Consistency Reliabilities (N=31549)

| | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r |
|--------------|----------------|--------|----------|---------|------------|
| Total | 68.30 | 15.05 | .95 | 4.75 | .77 |

¹Andrich, D. (1982). An index of person separation in latent trait theory, the traditional KR-20 index, and the Guttman scale response pattern. *Education Research and Perspectives*, 9(1), 95-104.

Numerical Comprehension Aptitude Internal Consistency Reliabilities (N=20094)

| | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r |
|--------------|----------------|--------|----------|---------|------------|
| Total | 55.65 | 16.59 | .81 | 4.03 | .84 |

Error Checking Aptitude Internal Consistency Reliabilities (N=25801)

| | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r |
|--------------|----------------|--------|----------|---------|------------|
| Total | 60.51 | 19.00 | .64 | 3.20 | .90 |

8. Validity

This summary document includes criterion-related validity information for the total score and three sub-tests in Swift Comprehension Aptitude, based on a sample of 308 individuals for whom third-party ratings of workplace performance were collected. The criteria used here represent a priori predictions of the areas of work performance which each test was designed to predict.

The internal consistency of the summed criterion used is .74, which suggests that it is an acceptable assumption to combine the three separate workplace criteria to make a total criterion measure. Because N=263 of this sample of respondents also engaged a second rater of their workplace effectiveness, it was possible to take into account the inter-rater reliability of the criterion, which can artificially limit the validity estimate. The inter-rater reliability measure takes into account the fact that there is always going to be some degree of difference between multiple raters' judgments of effectiveness on the criteria of interest, which can force the validity coefficient down.

The greatest validity contribution comes from the Verbal Comprehension sub-test, with the least coming from the Numerical Comprehension sub-test.

For further information about the criterion-related and other forms of validity evidence for Comprehension Aptitude Range assessments, please contact Saville Assessment.

Swift Comprehension Aptitude Criterion-Related Validity (N=308)

| | Correlation with Sum of Working with Words, Numbers & Details (Rater) r (Uncorrected) | Correlation with Sum of Working with Words, Numbers & Details (Rater) r (Corrected) |
|-----------------------|---|---|
| Total | .29 | .50 |
| | Correlation with Working with Words (Rater) r (Uncorrected) | Correlation with Working with Words (Rater) r (Corrected) |
| Verbal | .24 | .43 |
| | Correlation with Working with Numbers (Rater) r (Uncorrected) | Correlation with Working with Numbers (Rater) r (Corrected) |
| Numerical | .18 | .31 |
| | Correlation with Working with Details (Rater) r (Uncorrected) | Correlation with Working with Details (Rater) r (Corrected) |
| Error Checking | .18 | .36 |

Note: Any raw correlation higher than .12 is statistically significant at the $p < .05$ level (two-tailed) and any raw correlation higher than .10 is statistically significant at the $p < .05$ level (one-tailed). $N=308$. The criterion inter-rater reliability figures from Project Epsom ($N=263$) and the corrected figures are based on the inter-rater reliability figures for each of the Working with Words, Numbers and Details criteria (.31, .34 and .25 respectively). The criterion internal consistency of ratings ($N=308$) was .74. Other than taking into account the unreliability of the criterion measure, there has been no other adjustment for any statistical artefacts applied.

Swift Comprehension Verbal & Numerical shares the same content bank as Swift Comprehension Aptitude and has four more items in each sub-test than Swift Comprehension Aptitude. Therefore, it is appropriate to assume that the validity figures for Swift Comprehension Verbal & Numerical will be aligned to those presented for Swift Comprehension Aptitude. Given the increased reliability of the longer Swift Comprehension Verbal & Numerical test, the Swift Comprehension Aptitude validities should be considered a lower-bound estimate of the validities of Swift Comprehension Verbal & Numerical.

Similarly, the Verbal Comprehension, Numerical Comprehension and Error Checking single tests are longer than the Swift Comprehension Aptitude combined assessment and cover the same areas of aptitude in greater depth. It is appropriate to assume that the Swift Comprehension Aptitude validities are a conservative and lower-bound estimate of the validity of the Comprehension Aptitude single tests, which are likely to show incremental validity over the Swift assessment (see Appendix 3).

9. Fairness

Gender Group Differences

Total Score - Swift Comprehension Aptitude & Swift Comprehension Verbal & Numerical

| Test | Male N | Male Mean | Male SD | Female N | Female Mean | Female SD | Pooled SD Difference |
|-------------|--------|-----------|---------|----------|-------------|-----------|----------------------|
| SCA Total | 13885 | -.08 | .63 | 9031 | -.09 | .63 | .02 |
| SCVN Total* | 13885 | -.03 | .64 | 9031 | -.10 | .63 | .10 |

*Estimated based on the Verbal and Numerical sub-tests in SCA

By Measure

| | Test | Male N | Male Mean | Male SD | Female N | Female Mean | Female SD | Pooled SD Difference |
|-----------|----------------------------------|--------|-----------|---------|----------|-------------|-----------|----------------------|
| Verbal | SCA Verbal sub-test | 13885 | -.06 | .75 | 9031 | -.04 | .75 | -.03 |
| | Verbal Comprehension Aptitude | 3689 | .27 | .86 | 3547 | .27 | .85 | .01 |
| Numerical | SCA Numerical sub-test | 13885 | .00 | .76 | 9031 | -.16 | .73 | .20 |
| | Numerical Comprehension Aptitude | 2153 | .01 | .14 | 1662 | .01 | .15 | .01 |
| Checking | SCA Error Checking sub-test | 13885 | -.17 | .91 | 9031 | -.08 | .92 | -.09 |
| | Error Checking Aptitude | 1496 | .39 | 1.03 | 1756 | .59 | .87 | -.21 |

The tables above present the gender group differences on the Swift Comprehension Aptitude Total Score, Swift Comprehension Verbal & Numerical estimated Total Score, and separately the relevant tests that measure each of the three aptitude areas in the Comprehension range - verbal, numerical and error checking.

Expressed in terms of raw theta (ability) scores, there was no notable difference between men and women on the Swift Comprehension Aptitude or Swift Comprehension Verbal & Numerical Total Score. There was also no notable difference between the two gender groups on the Swift version or the full-length verbal comprehension tests. In the numerical tests, there was a small difference (.20 of a standard deviation) with men tending to score slightly higher than women in the Swift sub-test, but this was not shown in the full-length version. In contrary, a small difference (.21 of a standard deviation) was found with women slightly outperforming men on the single Error Checking Aptitude test, yet the two gender groups did not differ in their performance on the corresponding Swift sub-test.

Age Group Differences

Total Score - Swift Comprehension Aptitude & Swift Comprehension Verbal & Numerical

| Test | Under 40 N | Under 40 Mean | Under 40 SD | Over 40 N | Over 40 Mean | Over 40 SD | Pooled SD Difference |
|-------------|---------------|------------------|----------------|--------------|-----------------|---------------|-------------------------|
| SCA Total | 15546 | -.04 | .64 | 5306 | -.18 | .61 | .23 |
| SCVN Total* | 15546 | -.03 | .64 | 5306 | -.13 | .61 | .16 |

*Estimated based on the Verbal and Numerical sub-tests in SCA

By Measure

| | Test | Under 40 N | Under 40 Mean | Under 40 SD | Over 40 N | Over 40 Mean | Over 40 SD | Pooled SD Difference |
|-----------|----------------------------------|---------------|------------------|----------------|--------------|-----------------|---------------|-------------------------|
| Verbal | SCA Verbal sub-test | 15546 | -.03 | .75 | 5306 | -.08 | .74 | .06 |
| | Verbal Comprehension Aptitude | 4651 | .31 | .86 | 1846 | .22 | .80 | .11 |
| Numerical | SCA Numerical sub-test | 15546 | -.02 | .76 | 5306 | -.18 | .72 | .21 |
| | Numerical Comprehension Aptitude | 2845 | .02 | .14 | 636 | -.04 | .15 | .40 |
| Checking | SCA Error Checking sub-test | 15546 | -.07 | .93 | 5306 | -.29 | .87 | .25 |
| | Error Checking Aptitude | 2217 | .65 | .90 | 628 | .29 | .85 | .41 |

The tables above present the age group differences on the Swift Comprehension Aptitude Total Score, Swift Comprehension Verbal & Numerical estimated Total Score, and separately the relevant tests that measure each of the three aptitude areas in the Comprehension range - verbal, numerical and error checking.

Expressed in terms of raw theta (ability) scores, there was a small difference (.23 of a standard deviation) between the younger group and the older group on the Swift Comprehension Aptitude Total Score. Small differences (ranged from .21 to .41 of an SD) were also found between the two groups in the tests that measure numerical comprehension and error checking. In all of these cases, the younger age group overall scored slightly higher than the older age group, which is consistent with the extant research literature. However, there was no notable difference between the young group and the older group on the estimated Swift Comprehension Verbal & Numerical Total Score or all the verbal comprehension tests.

Ethnic Group Differences

Total Score - Swift Comprehension Aptitude & Swift Comprehension Verbal & Numerical

| Test | White N | White Mean | White SD | Other Ethnicities N | Other Ethnicities Mean | Other Ethnicities SD | Pooled SD Difference |
|-------------|---------|------------|----------|---------------------|------------------------|----------------------|----------------------|
| SCA Total | 10854 | .09 | .61 | 8714 | -.28 | .60 | .62 |
| SCVN Total* | 10854 | .12 | .61 | 8714 | -.26 | .61 | .61 |

*Estimated based on the Verbal and Numerical sub-tests in SCA

By Measure

| | Test | White N | White Mean | White SD | Other Ethnicities N | Other Ethnicities Mean | Other Ethnicities SD | Pooled SD Difference |
|-----------|----------------------------------|---------|------------|----------|---------------------|------------------------|----------------------|----------------------|
| Verbal | SCA Verbal sub-test | 10854 | .17 | .71 | 8714 | -.29 | .73 | .65 |
| | Verbal Comprehension Aptitude | 3942 | .51 | .78 | 783 | -.17 | .84 | .86 |
| Numerical | SCA Numerical sub-test | 10854 | .06 | .75 | 8714 | -.22 | .73 | .38 |
| | Numerical Comprehension Aptitude | 1639 | .02 | .13 | 716 | -.02 | .18 | .24 |
| Checking | SCA Error Checking sub-test | 10854 | .04 | .91 | 8714 | -.34 | .88 | .42 |
| | Error Checking Aptitude | 1812 | .70 | .84 | 661 | .33 | 1.00 | .41 |

The tables above present the ethnic group differences on the Swift Comprehension Aptitude Total Score, Swift Comprehension Verbal & Numerical estimated Total Score, and separately the relevant tests that measure each of the three aptitude areas in the Comprehension range - verbal, numerical and error checking.

Expressed in terms of raw theta (ability) scores, there was a moderate difference between the white group and other ethnicities on the Swift Comprehension Aptitude Total Score and Swift Comprehension Verbal & Numerical Total Score (.62 and .61 of a standard deviation respectively). Moderate to large differences (.65 and .86 of an SD) were found between the two groups on tests that measure verbal comprehension, while the differences between the two groups were small (ranged from .24 to .42 of an SD) on the tests that measure numerical comprehension and error checking. In all of these cases, the white group overall scored higher than other ethnicities.

These results are consistent with ethnic group difference findings for cognitive ability tests, with the differences for Verbal Comprehension being largest.

Group Differences Summary

The data presented on the differences between the means for different groups reveal a number of group differences on the total scores. The differences here are broadly in line with the research literature and in some cases tend to be less pronounced than has been found in other studies. The differences on gender tend to be small (to almost non-existent). Small differences are seen on age with younger people, on average, achieving slightly higher overall scores. The largest differences are seen between white and other ethnicities with white groups on average performing higher.

The information presented here is from actual usage data of the Comprehension Aptitude Range and as a result the differences on some variables may reflect differences in the composition of the various groups. For example, age differences could be related to longer tenure in organizations and generational differences. Similarly, observed gender and ethnic differences could be a reflection of other biographical differences in the composition of these groups (e.g., level and type of education), rather than actual group differences.

Moreover, the performance differences reported are at the group level, rather than being reflective of specific individuals. In all cases, the average group-levels of performance represent largely overlapping performance distributions, with greater variation in performance within any group than between groups. Based on these average group-level data, it is inaccurate and inappropriate to make any predictions or decisions about any given individual's performance as a result of their membership of a particular ethnic group.

It is also important to bear in mind that each sample of individuals is different and group differences should not be generalized beyond these specifically-reported samples in an excessively broad manner. For example, the ethnic differences seen with cognitive tests are likely due, at least in part, to a difference in socioeconomic status, education and language proficiency across the specific groups of people sampled. While those group differences which do exist are interesting, it is worth noting that it is frequently difficult to isolate these variables as the sole determinant of the apparent difference.

As measures of cognitive ability, Comprehension Aptitude Range tests will occasionally reveal small to moderate differences between groups. To ensure that any group differences shown are meaningful, relevant and fair, it is important to make sure that the use of such tests can be justified. This is especially true when using a test in selection with a cut-off score. Justifying the use of any test involves making sure that the skills being assessed by the test are relevant and valid and that the level of any cut-off applied is demonstrably appropriate. The use of job analysis and, where possible, local validation studies is particularly important for demonstrating the link between a test and the job it is being used to select for.

In particular, the use of high cut-offs (e.g. above the 50th percentile) may require justification and analysis to ensure that this does not lead to adverse impact against any group. A further precaution is to use a behavioral measure, e.g. Work Strengths or Match 6.5, alongside aptitude to create a weighted overall fit score which can be expected to mitigate against the potential for adverse impact.

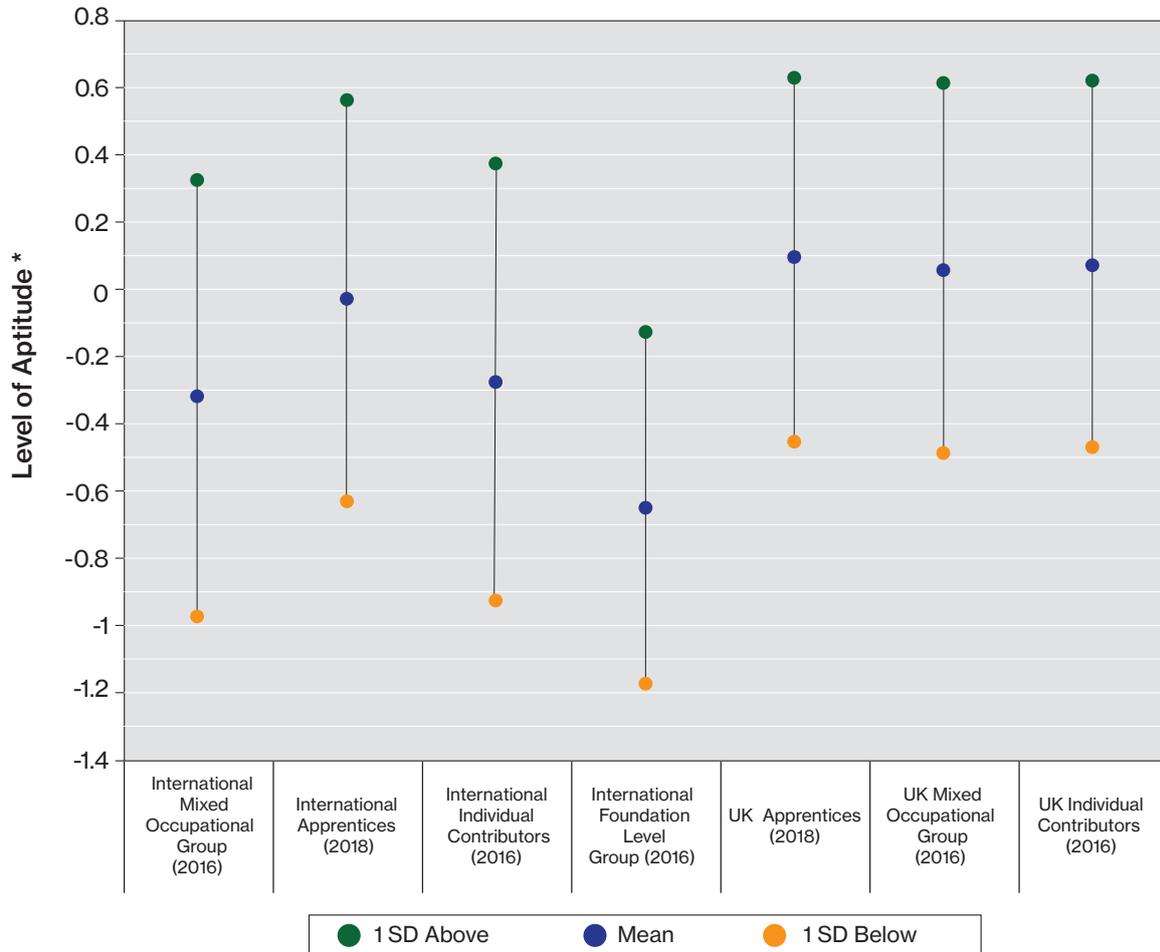
It is one thing for an assessment to be designed to be fair and valid, and another for it to be used fairly. The clearer and more consistent the structure and process presented for aligning the Comprehension Aptitude Range to a job and agreeing consistent criteria for decision making based on the test, the less likely it is that the assessments will be unfairly applied by using different standards for candidates in different groups.

In general, the differences between age, gender and ethnic groups are small or moderate and we do not therefore advise that specific differences in profile interpretation should be warranted when considering test results from different groups defined according to these variables.

We do not, unless local legal frameworks permit or mandate such an approach, recommend using separate norms for age, gender or ethnic groups. For further information, please contact Saville Assessment directly.

10. Comprehension Aptitude Range-Rx Norms Summary

In summary, the UK Apprentices are the highest performing group with a mean theta score of .09. The International Foundation Level Group are the lowest performing with a mean theta score of -.65.



*Based on average (mean) group theta values, also showing the range of one standard deviation above and below the mean.

10.1 International Mixed Occupational Group (2016, N=2443) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This group consisted of 2443 individuals employed in a range of job areas/functions. Of these, 61% of the individuals worked in the following job areas/functions: Administration, Customer Service, Sales, Finance, Human Resources, Operations, Engineering, Health, Information Technology, and Production. The remaining 39% worked in other job areas/functions including: Construction, Hospitality, Transport, Marketing, Education, Security, Distribution, Retail, Law and Purchasing.¹

43% of the sample reported having Team Leader or Managerial status, and 40% described themselves as being an individual contributor.

The breakdown of the sample is provided below (with response rates for each biographical section given in the footnotes):

Gender²

45% of the group were female and 55% were male.

Age³

The mean age of the group was 33 years.

Education (highest qualification)⁴

45% of the group had high school qualifications, 34% had a Bachelor's degree, 12% had a Doctorate, PhD, Master's degree or postgraduate qualification, 3% had college qualifications, 3% had trade qualifications, 1% had a professional qualification, and the remaining 2% had no formal qualifications.

Work Experience⁵

18% of the group had more than 20 years' work experience, 26% had 10-20 years', 20% had 6-9 years', 20% had 3-5 years', 9% had 1-2 years', and the remaining 7% had less than 12 months' work experience or answered 'Not applicable'.

¹ Based on 97% group response

² Based on 100% group response

³ Based on 93% group response

⁴ Based on 83% group response

⁵ Based on 93% group response

Cultural Background⁶

43% of the group described themselves as White (including White UK, White Australian, and White New Zealander), 26% as Black (including Black African, Black South African, and Black Caribbean), 18% as Asian (including Indian, Chinese, and Pakistani), and 13% as having other/mixed cultural background (including Arabic, Hispanic, and White and Black African).

Country of Completion⁷

20% of the group completed the test in Botswana, 19% in Australia, 19% in the UK, 8% in Saudi Arabic, 6% in New Zealand, 4% in the US, 3% in India, 3% in Hong Kong, 2% in Singapore, and 2% in the United Arab Emirates. The remaining 14% completed the test in various other countries (including France, Ireland, South Africa, Spain, Germany, the Philippines, Romania, Qatar, Egypt and Jordan)

⁶ Based on 86% group response

⁷ Based on 100% group response

10.2 International Apprentices (2018, N=605) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Comprehension Aptitude-Rx (IA)

This international group consisted of 605 apprentices and apprentice applicants. Based on a 52% group response, 74% worked in the following job areas/functions: IT and Engineering, Construction, Hospitality, Operations, Customer Service, Sales and Marketing, Transport and Education. The remaining 26% worked in other job areas/functions including: Human Resources, Executive, Consulting, Health, Administration, Design and Leisure.

The breakdown of the group is provided below (with response rates for each biographical section given in the footnotes):

Gender¹

20% of the group were female and 80% were male.

Age²

The mean age of the group was 20 years.

Education (highest qualification)³

58% of the group had school-level or some college qualifications as their highest qualification, 23% had a first/undergraduate degree, 2% had professional qualifications, 1% had a master's degree with the remaining 16% having other or no formal qualifications.

Cultural Background⁴

61% of the group described themselves as White (including British, Australian, and European), 34% as Asian (including Malaysian, Chinese and Indian) and the remaining 5% described themselves as coming from a range of other backgrounds

Country of Completion⁵

31% of the group completed the aptitude test in Australia, 31% in the United Kingdom, 26% in the Malaysia, 4% in the United States and 2% in New Zealand. The remaining 6% completed the test in various other countries.

¹ Based on 100% group response

² Based on 100% group response

³ Based on 88% group response

⁴ Based on 70% group response

⁵ Based on 100% group response

10.3 International Individual Contributors (2016, N=886) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This group consisted of 886 individuals employed in a range of job areas/functions. Of these, 72% of the individuals worked in the following job areas/functions: Administration, Finance, Customer Service, Human Resources, Sales, Operations, Health, Engineering, Public Safety, and Production. The remaining 28% worked in other job areas/functions including: Information Technology, Education, Construction, Hospitality, Marketing, Transport, Data Processing, Distribution, Purchasing and Retail. ¹

The breakdown of the sample is provided below (with response rates for each biographical section given in the footnotes):

Gender²

47% of the group were female and 53% were male.

Age³

The mean age of the group was 33 years.

Education (highest qualification)⁴

46% of the group had high school qualifications, 36% had a Bachelor's degree, 10% had a Doctorate, PhD, Master's degree or postgraduate qualification, 3% had trade qualifications, 2% had college qualifications, and the remaining 3% had other or no formal qualifications.

Work Experience⁵

19% of the group had more than 20 years' work experience, 22% had 10-20 years', 19% had 6-9 years', 22% had 3-5 years', 11% had 1-2 years', and the remaining 7% had less than 12 months' work experience or answered 'Not applicable'.

¹ Based on 98% group response

² Based on 100% group response

³ Based on 93% group response

⁴ Based on 87% group response

⁵ Based on 96% group response

Cultural Background⁶

46% of the group described themselves as White (including White UK, White Australian, and White New Zealander), 24% as Black (including Black African, Black American, and Black South African), 20% as Asian (including Indian, Chinese, and Pakistani), and 10% as having other/mixed cultural background (including Arabic, Hispanic, and White and Asian).

Country of Completion⁷

20% of the group completed the test in Australia, 20% in the UK, 19% in Botswana, 6% in Hong Kong, 6% in Saudi Arabia, 5% in New Zealand, 4% in the US, 4% in Singapore, 3% in India, and 2% in France. The remaining 11% completed the test in various other countries (including Ireland, United Arab Emirates, Denmark, Germany, Romania, South Africa, the Philippines, Spain, Qatar, and Italy).

⁶ Based on 86% group response

⁷ Based on 100% group response

10.4 International Foundation Level Group (2016, N=513) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This group consisted of 513 individuals employed in a range of job areas/functions. Of these, 74% of the individuals worked in the following job areas/functions: Sales, Health, Customer Service, Engineering, Administration, Finance, Human Resources, Operations, Marketing, and Production. The remaining 26% worked in other job areas/functions including: Information Technology, Hospitality, Law, Construction, Transport, Public Relations, Consulting, Media, Retail and Security. ¹

48% of the group reported having Team Leader or Managerial status, and 32% described themselves as being an individual contributor.

The breakdown of the group is provided below (with response rates for each biographical section given in the footnotes):

Gender²

36% of the group were female and 64% were male.

Age³

The mean age of the group was 33 years.

Education (highest qualification)⁴

43% of the group had a Bachelor's degree, 31% had high school qualifications, 15% had a Doctorate, PhD, Master's degree or postgraduate qualification, 4% had trade qualifications, 1% had a professional qualification, and the remaining 2% had no formal qualifications.

¹ Based on 98% group response

² Based on 100% group response

³ Based on 97% group response

⁴ Based on 77% group response

Work Experience⁵

11% of the group had more than 20 years' work experience, 21% had 10-20 years', 20% had 6-9 years', 22% had 3-5 years', 12% had 1-2 years', and the remaining 14% had less than 12 months' work experience or answered 'Not applicable'.

Cultural Background⁶

31% of the group described themselves as having other/mixed cultural background (including Arabic, White and Asian, and African), 29% described themselves as Asian (including Indian, Pakistani, and Bangladesh), 23% as Black (including Black African, Black South African, and Black Caribbean), and 17% as White (including White UK, White Australian, and White South American).

Country of Completion⁷

20% of the group completed the test in Botswana, 20% in Australia, 20% in Saudi Arabia, 9% in the UK, 8% in India, 7% in the United Arab Emirates, 4% in the US, 2% in Romania, 2% in Jordan, and 2% in Kuwait. The remaining 6% completed the test in various other countries (including South Africa, Oman, Egypt, Pakistan, Zimbabwe, Japan, the Philippines, Qatar, Canada, and Finland).

⁵ Based on 85% group response

⁷ Based on 99% group response

⁶ Based on 96% group response

10.5 UK Mixed Occupational Group (2016, N=6566) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This group consisted of 6566 individuals employed in a range of job areas/functions. Of these, 73% worked in the following job areas/functions: Administration, Customer Service, Finance, Sales, Hospitality, Engineering, Transport, Education, Call Centres, and Health. The remaining 27% worked in other job areas/functions including: Information Technology, Operations, Construction, Law, Human Resources, Distribution, Leisure, Production, Security and Retail. ¹

29% of the sample reported having Team Leader or Managerial status, and 42% described themselves as being an individual contributor.

The breakdown of the group is provided below (with response rates for each biographical section given in the footnotes):

Gender²

40% of the group were female and 60% were male.

Age³

The mean age of the group was 30 years.

Education (highest qualification)⁴

63% of the group had high school qualifications, 28% had a Bachelor's degree, 6% had a Doctorate, PhD, Master's degree or postgraduate qualification, 1% had college qualifications, 1% had trade qualifications, under 1% had a professional qualification, and under 1% had no formal qualifications.

Work Experience⁵

19% of the group had more than 20 years' work experience, 21% had 10-20 years', 20% had 6-9 years', 21% had 3-5 years', 11% had 1-2 years', and the remaining 8% had less than 12 months' work experience or answered 'Not applicable'.

¹ Based on 97% group response

² Based on 100% group response

³ Based on 92% group response

⁴ Based on 92% group response

⁵ Based on 99% group response

Cultural Background⁶

52% of the group described themselves as White UK (including White British, and White Irish), 28% as Other White (including White East European, White West European, and White South European), 11% as Asian (including Indian, Pakistani, and Bangladeshi), 6% as Black (including Black African, Black Caribbean, and Black American), and 3% as having other/mixed cultural background (including White and Black Caribbean, White and Asian, and White and Black African).

⁶ Based on 94% group response

10.6 UK Apprentices (2018, N=2269) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This international group consisted of 2269 apprentices and apprentice applicants in the United Kingdom. Based on a 58% group response, 76% worked in the following job areas/functions: IT and Engineering, Customer Service, Sales and Marketing, Construction, Hospitality, Operations, Education and Leisure. The remaining 24% worked in other job areas/functions including: Administration, Health, Transport, Finance and Entertainment.

The breakdown of the group is provided below (with response rates for each biographical section given in the footnotes):

Gender¹

9% of the group were female and 91% were male.

Age²

The mean age of the group was 19 years.

Education (highest qualification)³

73% of the group had school-level or some college qualifications as their highest qualification, 4% had a first/undergraduate degree, 2% had professional qualifications, 1% had a master's degree with the remaining 20% having other or no formal qualifications.

Cultural Background⁴

66% of the group described themselves as White British, 20% as White, 8% as Asian (including Indian, Pakistani and Malaysian), 3% as Black (including African and Caribbean) and the remaining 3% described themselves as coming from a range of other backgrounds.

¹ Based on 100% group response

² Based on 100% group response

³ Based on 91% group response

⁴ Based on 98% group response

10.7 UK Individual Contributors (2016, N=2996) Norm Group Description

Used for:

Swift Comprehension Aptitude-Rx (IA)

Swift Comprehension Verbal & Numerical-Rx (IA)

Verbal Comprehension Aptitude-Rx (IA)

Numerical Comprehension Aptitude-Rx (IA)

Error Checking Aptitude-Rx (IA)

This group consisted of 2996 individuals employed in a range of job areas/functions. Of these, 65% of the individuals worked in the following job areas/functions: Administration, Finance, Customer Service, Sales, Engineering, Call Centres, Hospitality, Education, Information Technology, and Transport. The remaining 35% worked in other job areas/functions including: Construction, Health, Law, Human Resources, Operations, Distribution, Production, Security, Leisure and Public Safety.¹

The breakdown of the group is provided below (with response rates for each biographical section given in the footnotes):

Gender²

38% of the group were female and 62% were male.

Age³

The mean age of the group was 29 years.

Education (highest qualification)⁴

61% of the group had high school qualifications, 31% had a Bachelor's degree, 6% had a Doctorate, PhD, Master's degree or postgraduate qualification, 1% had college qualifications, and the remaining 1% had trade, other, or no formal qualifications.

Work Experience⁵

15% of the group had more than 20 years' work experience, 20% had 10-20 years', 20% had 6-9 years', 24% had 3-5 years', 13% had 1-2 years', and the remaining 8% had less than 12 months' work experience or answered 'Not applicable'.

Cultural Background⁶

54% of the group described themselves as White UK (including White British, and White Irish), 26% as Other White (including White East European, White West European, and White North European), 11% as Asian (including Indian, Pakistani, and Bangladeshi), 5% as Black (including Black African, Black Caribbean, and Black American), and 4% as having other/mixed cultural background (including White and Asian, White and Black Caribbean, and White and Black African).

¹ Based on 98% group response

² Based on 100% group response

³ Based on 91% group response

⁴ Based on 93% group response

⁵ Based on 99% group response

⁶ Based on 93% group response

11. Appendix 1: Swift Comprehension Aptitude-Rx Sample Report



Assessment Report Sample Candidate



Swift Comprehension Aptitude-Rx



Contents

| | |
|--|---|
| Introduction to Assessment Report..... | 3 |
| Total Score..... | 4 |
| Aptitude & Pace Information..... | 5 |
| Improving Abilities..... | 6 |
| Online Test Access Summary (For Assessor Use)..... | 7 |

About this Report

This report is based upon Swift Comprehension Aptitude, an online test of the ability to reason with information presented in verbal, numerical and error checking formats.

The results are compared against an international mixed occupational group of 2,443 individuals. The results in this report are presented on a 1 to 10 Sten scale, where 1 indicates low performance and 10 indicates high performance on the test. The margin of error that should be allowed before concluding that there is a difference between scores is indicated by the diamond shape.

When reading this report, please remember that it is based on the information gained from the test completion only. It describes performance on this particular test, rather than performance at work or study. Research suggests that ability tests can be powerful predictors of successful performance in study and work activities.

The information contained in this report is confidential and every effort should be made to ensure that it is stored in a secure place.

The information contained within this report is likely to provide a valid measure of aptitude for 12 to 24 months.

The report is based on the results of the online test that the respondent was invited to complete under unsupervised conditions. The identity of the actual respondent has not been verified by a test administrator. Further testing under supervised conditions is recommended for high-stake decision making.

This report was produced using Saville Assessment software systems and has been generated electronically. Saville Assessment do not guarantee that it has not been changed or edited. We can accept no liability for the consequences of the use of this report.

The application of this test is limited to Saville Assessment employees, agents of Saville Assessment and clients authorised by Saville Assessment.

Introduction to Assessment Report

This report provides feedback on the responses of Sample Candidate to the Swift Comprehension Aptitude test.

Total Score

This test measures verbal comprehension, numerical comprehension and error checking, which are important in the world of work for a variety of roles. This section of the report provides a total test score relative to the comparison group: Mixed Occupational Group (INT; IA; 2016)

The Total Score indicates how well Sample Candidate has performed overall on the test.

Aptitude Area Sub-Scores

The sub-scores provide information on how Sample Candidate performed on each of the aptitude sub-tests. The pattern of results indicates relative strengths and weaknesses across the following areas of aptitude:

Verbal - assesses the ability to understand, interpret and evaluate written information.

Numerical - assesses the ability to understand, interpret and evaluate numerical data.

Error Checking - assesses the ability to proof read text, check figures and verify codes.

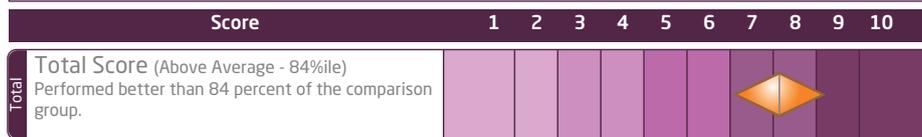
Aptitude & Pace Comparison

Aptitude and pace scores are shown for each of the areas in the test. These scores are compared in a graph using a 1 to 10 sten scale, with the sten values given in brackets. The pace score is based on the candidate's response time for the questions they completed compared to the average response time for the same questions. Pace is shown from slow at the bottom of the graph to fast at the top. Aptitude runs from low on the left of the graph to high on the right.



Total Score

This page shows the Total Score relative to the Mixed Occupational Group (INT; IA; 2016) comparison group on a 1 to 10 sten scale.



Interpretation Guidelines

Comparison Group: Mixed Occupational Group (INT; IA; 2016)

- Sten 1: higher than about 1% of the comparison group
- Sten 2: higher than about 5% of the comparison group
- Sten 3: higher than about 10% of the comparison group
- Sten 4: higher than about 25% of the comparison group
- Sten 5: higher than about 40% of the comparison group
- Sten 6: higher than about 60% of the comparison group
- Sten 7: higher than about 75% of the comparison group
- Sten 8: higher than about 90% of the comparison group
- Sten 9: higher than about 95% of the comparison group
- Sten 10: higher than about 99% of the comparison group

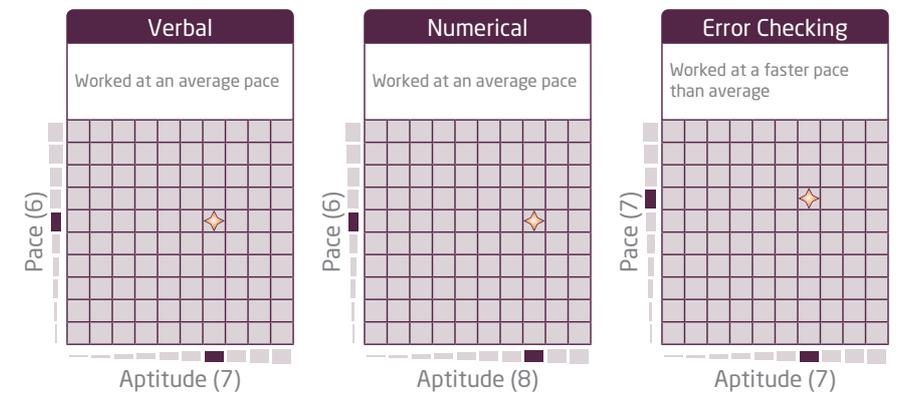
Aptitude & Pace Information

This page displays aptitude and pace information for each of the areas in the test relative to the Mixed Occupational Group (INT; IA; 2016) comparison group.

Aptitude Area Sub-Scores

| | | Scores | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------|--|--------|---|---|---|---|---|---|---|---|---|----|
| Aptitude Areas | Verbal (Above Average - 79%ile) Likely to find working with verbal information easier than other people. | | | | | | | | ◆ | | | |
| | Numerical (Above Average - 86%ile) Likely to find working with numerical information easier than other people. | | | | | | | | ◆ | | | |
| | Error Checking (Above Average - 73%ile) Likely to find checking information easier than other people. | | | | | | | | ◆ | | | |

Aptitude & Pace Comparison





Improving Abilities

Some tips for improving abilities are provided below:

Verbal

- When you read newspapers and articles, try to establish the main points.
- Look up the meaning of unfamiliar words.
- Read passages of text and pick out the key details.
- Compare written arguments, looking for similarities and differences between them.
- Look at something you have written and rewrite it more concisely.

Numerical

- When you read newspapers and reports, pay attention to numerical information.
- Complete calculations both with and without a calculator.
- Look for differences such as percentage changes in numerical trends.
- Check calculations done by others.
- Take on responsibilities which involve working with numbers.

Error Checking

- Check different types of information for errors.
- Cross reference information to identify errors.
- Double-check your work for errors.
- Check other people's work for errors.
- Proofread documents carefully.

Online Test Access Summary (For Assessor Use)

This section of the report provides additional information about the test completion.

Initial Access: 04/04/2016 (13:03 GMT)
Responses Saved: 04/04/2016 (13:35 GMT)
Language: English (United Kingdom)
Administrator Resets: 0
Candidate Aborts: 0
Time Adjustment: None

12. Appendix 2: Internal Consistency Reliabilities for Sub-Tests in Swift

The following tables show the internal consistency reliability coefficients for the sub-tests in Swift Comprehension Aptitude and Swift Comprehension Verbal & Numerical.

Swift Comprehension Aptitude Internal Consistency Reliabilities (N=35949)

| Sub-Test | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r |
|----------------|----------------|--------|----------|---------|------------|
| Verbal | 61.72 | 22.07 | 1.30 | 6.49 | .58 |
| Numerical | 52.48 | 22.59 | 1.23 | 6.17 | .62 |
| Error Checking | 49.86 | 25.49 | 1.00 | 5.01 | .75 |

Swift Comprehension Verbal & Numerical Internal Consistency Reliabilities (N=35949)

| Sub-Test | Mean % Correct | SD (%) | SEm Sten | SEm 'T' | r* |
|-----------|----------------|--------|----------|---------|------------|
| Verbal | / | / | 1.14 | 5.72 | .67 |
| Numerical | / | / | 1.08 | 5.39 | .71 |

*Based on the internal consistency reliability for the shorter Swift Comprehension Aptitude Verbal and Numerical sub-tests, and corrected for length with the Spearman Brown Prophecy Formula.

13. Appendix 3: Method for Calculating Criterion Related Validity of a Single Test from the Equivalent Sub-Test in Swift Comprehension Aptitude

It is possible to calculate the criterion-related validity of each of the full-length, single tests based on validity evidence from the equivalent Swift sub-test. The variables used to derive the validity figures presented in this document are outlined below.

| Test | Criterion Related Validity | Raw Criterion Related Validity of Equivalent Swift Sub-Test (Epsom N=308 unless specified) | Reliability of Equivalent Swift Sub-Test* | Inter-Rater Reliability of Sub-Test's Equivalent Criterion (Epsom N=308 unless specified) | Reliability of Single Tests** |
|----------------------------------|----------------------------|--|---|---|-------------------------------|
| Verbal Comprehension Aptitude | .50 | .24 | .58 | .31 | .77 |
| Numerical Comprehension Aptitude | .36 | .18 | .62 | .34 | .84 |
| Error Checking Aptitude | .39 | .18 | .75 | .25 | .90 |
| | | (r_{xy}) | (r_{xx}) | (r_{yy}) | (r_{zz}) |

*Reliability figures for the equivalent Swift sub-tests are all internal consistency figures from the largest sample size available.

**Reliability figures for the single tests are all internal consistency figures from the largest sample size available.

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