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## Introduction

The Computer Anxiety Scale, popularly known as SCALE is a psychological test. It is used by industrial and organizational psychologists to assess and measure the levels of anxiety as a result of using computers. The test can also be used to measure anxiety in people who do not interact directly with computers but spend a lot of time in computer environments. The test was designed and authored by E. R. Oetting. It was published in 1983 by the Rocky Mountain Institute of behavior Science. The publisher’s postal address is Box 1066, Fort Collins and the postal code is 80522. The publisher’s website is . The test contains ten items in its short version while the long version has about 48 items. The test is in the form of a self-report format where respondents answer the questions they are presented concerning their interaction with computers. The answer sheets that are filled by respondents have a scale of 1 to 5. The rating of 1 to 5 represents different adjectives that are in bipolar order. The manual copy contains the questions and scenarios that the employees are expected to respond to in the answer sheets. The developers of this test did not make it propriety. This means the developer of the test does allow other psychologists to use the test in their psychological tests to assess computer related anxiety.

## Purpose of the test

The Computer Anxiety Scale was designed to measure a large variety of anxieties that are related to computers. The employees or respondents in the test are given a self-report answer sheet where they record their responses on each query. They are also given a manual, which is like the question paper. It contains questions and scenarios that the respondent answers. The test taker is given several situations and scenarios that are computer related and they are asked to rate each statement using the 5 point scale, which is semantic differential in nature. The scales are usually bipolar in nature in that the rating of 1 to 5 represents answers that are extremely the opposite of one another. For instance, a compass test can have the following as the main ratings. 1. Excellent, 2. Very Good, 3. Good, 4. Bad, 5. Poor. The answers given by the test taker are analyzed and conclusions made concerning the anxiety levels.

## Versions of the test

There are two versions of the Computer Anxiety Scale test, the short version and the long versions. The short version of the COMPAS test contains ten items only while the long version of the test contains approximately 48 items. The psychologist has the option of selecting the freedom to select any of the two versions. However, for purposes of obtaining credible and accurate results, the long version is most appropriate. This is because it has 48 items from which the test takers respond. A conclusion made from a large pool of information is more accurate than one that is obtained from a small sample of information.

## The nature of the test

The Computer Anxiety Scale has seven different subscales used to assess test takers. Each of the subscales represents an action that the test taker can have with a computer or in an environment where there are computers. These subscales include; data entry, hand calculator, general attitude, trust, business operations, word processing and computer science. The trust and hand calculator subscales are not used in the final assessment of the test taker. They are used in the test simply because they are useful in training but have no direct relationship with computer anxiety.

## General attitude

It is the subscale that is used to measure anxiety levels for those individuals who use computers often. It measures the anxiety levels when test takers hear, think or see computers at their places of work. The general feeling and thoughts towards computers is analyzed and the anxiety levels established based on the response of the test taker.

## Data entry

This subscale is important in measuring anxiety levels that result from test takers performing tasks, correcting spreadsheet data entries, using and learning about entering data into computers.

## Word processing

This subscale is concerned with measuring anxiety levels that are related to entering texts, correcting, taking word processing lessons and using word processing computer packages.

## Business operations

This subscale measures anxiety levels as a result of using computers to keep business records, making budgets, figuring prospective profits or losses and trying to establish new business ideas.

## Computer science

This is the fifth subscale that contributes to the total score of the test taker’s anxiety levels. It measures the anxiety levels that are related to the interpretation of computer printouts, computer discussion with other technicians, knowing computer language such as codes, and learning to use and manage computer applications and software.

## Application

The Computer Anxiety Scale test has two parts; the manual and the answer sheet, which is used to plot the responses of the test taker. The manual, which is usually availed to the test taker, contains a profile script used to plot the subscales of the test and record the overall levels of computer anxiety of the respondent. The profile has interpretive statements alongside several scale values. The scores of the COMPAS test range between 40 and 200. As the score rises, the level of computer anxiety also increases. The designer of this test, Mr. Oetting, divided computer anxiety into five distinguishable categories:   
40 to 79 would mean the test taker is relaxed and confident   
80 to 104 means generally comfortable and relaxed   
105 to 129 means there is mild anxiety   
130 to 149 means there is tension and anxiety   
150 to 200 means the test taker is extremely anxious   
Each subscale was also divided into five 5 categories with the score range between 4 and 20. Just like in the tests, the higher the score means the levels of anxiety in that subscale is high.   
4 to 8 means very confident and relaxed   
9 to 10 means generally comfortable and relaxed   
11 to 12 means mild anxiety   
13 to 14 means there is tension and anxiety   
15 to 20 means the test taker is very anxious.

## Test reviews

After conducting the test and the results of anxiety levels determined, it is important to conduct a review of the whole measurement process. Test reviews are meant to help in evaluating the strengths and weaknesses of the test and help make conclusions on whether the test results are reliable, credible and valid. The developers of the Computer Anxiety Scale carried a comprehensive test review of this test before it was approved and recognized as a valid psychological test.

## Test validity and reliability

The validity and reliability of the test are used to indicate whether the test can be used to obtain results that are acceptable, correct and can be used to make conclusions. Studies on the Computer Anxiety Scale test showed that the test demonstrates high levels of reliability, as well as validity. During one of the tests, the COMPAS was administered to over 435 new first year students at the University of Colorado State. From this test, the psychologists wanted to determine the levels of internal consistency and the consistence levels of each of the five subscales.   
The test results revealed high levels of internal consistency as measured using the Cronbach’s alpha. The levels of internal consistency of the general test ranged between 0. 88 for the ten item version and 0. 96 for the 48 item version. This further proves that the 48 item version of the Computer Anxiety Scale is more reliable and valid than the 10 item version. More so, the levels of internal consistency of the five main subscales of the test were significantly high, implying that the test was valid and reliable. The results can be used to make generalizations. Other psychologists are also encouraged to use this psychological test because it helps obtain accurate results of computer anxiety. The average consistency of the five subscales ranged between 0. 71 and 0. 87. The parallel versions reliability approximations were estimated to be between 0. 94 and 0. 96.   
This evidence on the validity of the Computer Anxiety Scale test was established based on the contents of the test. A panel of industrial and organizational psychological experts reviewed each of the test items. The objective of this review was to establish whether each of the items in the test was appropriate and relevant with the test’s objectives of determining computer anxiety levels. The experts approved that each of the test items in the Computer Anxiety Scale test was relevant to computer anxiety. They agreed that questions of trust and hand calculator subscales had no direct correlation with the measurement of computer anxiety. A correlation test between the test scores of hand calculator and trust with the other anxiety measures revealed that validity coefficients ranged between 0. 19, 0. 40 and 0. 48. The three ranges are based on term paper anxiety, math test anxiety and science test anxiety respectively. A comparison with other anxiety measure gave a coefficient of 0. 70. The mean score of the inter-correlation of the 7 subscales was approximated to be 5. 0 since the range was between 0. 07 and 0. 71.

## Strengths and weaknesses of the test

The Computer Anxiety Scale test has several strengths. The test items are all relevant to the test objectives hence its validity is high. The test also has high internal consistency and also the consistency between the subscales. This is an indication that the test has high reliability. This means the test results can be trusted when making general conclusions on computer anxiety.   
The COMPAS is also advantageous because it is easy to use and administer. The psychologist simply needs to provide the test takers with the profile sheets and they will simply indicate their opinions on each subscale. The compilation process is easy since the psychologist simply plots the test results to establish a test taker’s level of computer anxiety.   
However, the Computer Anxiety Scale test has some disadvantages. For instance, the presence of seven subscales yet only five subscales are used in measuring computer anxiety shows that some information collected is not utilized in making conclusions. This amounts to a waste of time to collect information which at the end is unused.   
The COMPAS test is also disadvantageous because it is only restricted to measuring the levels of anxiety due to interaction with computers. A good psychological test is flexible and can be used to measure more than one psychological problem. The COMPAS test is only restricted to measuring anxiety in people who interact with computers.

## Conclusion

The Computer Anxiety Scale test is an efficient psychological test in the measurement of computer anxiety. It contains five major subscales that are used in determining the computer anxiety levels. However, two other subscales are not used; the hand calculator and trust. This test is known to have high levels of internal and inter-subscale internal consistency. This implies that the test is highly reliable. The high validity of the test is shown by the relevant of each of the seven subscales in the determination of computer anxiety. This test is simple to administer and the results are easy to interpret. However, this test is restricted to measuring computer anxiety. It cannot be used to measure any other kind of anxiety in human beings. It is important for I-O practitioners to evaluate tests because this is the only way to establish the validity and reliability of the test results.

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