

# **EXECUTIVE SUMMARY**



# **VALIDATION REPORT**

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# TELLER TEST

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## Purpose of the Executive Summary

This summary of the validation research supporting the TELLER TEST provides an overview, in non-technical terms, of the research, development and validation of the TELLER TEST. Every effort has been made to present this material free from the specialized jargon of statistics and research. The purpose of such jargon is to increase the precision of language used to describe technical work. Therefore, avoiding it will, at times, result in our making more general statements than would otherwise be the case. We accept this limitation in order to clarify the research findings for the non-technical reader. A more technically precise explanation of the issues presented here is available in the full validation report of the TELLER TEST (technical report # 1520).

### Description of the TELLER TEST

The TELLER TEST is a timed, multiple-choice test. It is an analog of the task of calculating the correct amount of money due to a customer during typical teller transactions and then translating that figure into the correct combination of coins and currency. The assumptions that underlie the TELLER TEST are:

- a critical part of a teller's job is to be able to handle money accurately under time pressure;
- translating a dollar and cents figure into the correct combination of coins and currency is a specific skill that varies among individuals and involves reasoning ability as well as arithmetic skills;
- in general, the better the reasoning ability in a person handling money, the better the money-handling skills of that person.

### Development

The TELLER TEST was constructed by developing multiple choice test questions that are expressed in terms of typical teller transactions. To avoid penalizing test takers who might not be experienced with bank-specific equipment or procedures, the test questions do not assume any such knowledge or experience. The test questions are arranged from easier to more difficult. The number of test items in the TELLER TEST was held to thirty in order to meet the statistical requirements of test reliability without unduly fatiguing the test taker.

A preliminary study was conducted to determine how to time the TELLER TEST in order to simulate the time pressure imposed by a line of impatient customers. Readability level was kept at the fifth grade level in order to make the test easy to read and understand. Doing so avoided having reading difficulty become an unwanted influence on how well a person was able

to perform the calculations required by the test.

### **Study Design and Data Collection**

The research study was designed to address issues of content-related, construct, and criterion validity. The study was designed and conducted according to the American Psychological Association's Standards for Educational and Psychological Testing.

The TELLER TEST was administered to over 700 subjects in six banks that are located in the northeastern and southwestern United States. The TELLER TEST was administered to both incumbents already working as tellers and to applicants for teller positions. Criterion data were collected for 90 days of employment for each participant. After eliminating subjects with incomplete, incorrect, or questionable data, 566 were included in statistical analyses.

TELLER TEST results and criterion measurement data showed no unacceptable restriction of range. There was wide dispersion of number correct on the TELLER TEST, as well as for each of the criterion measures.

A scoring procedure was developed and tested that expresses results of the individual's TELLER TEST score in terms of his or her ability to handle money accurately.

### **Validity**

#### ***Content Validity***

Content validity is the extent to which a sample of the items, tasks or questions are representative of some

defined domain of content. The TELLER TEST was developed specifically to focus on a critical aspect of the teller's job – that is, the ability to handle money accurately and to translate dollars and cents figures into correct combinations of coins and currency. Thus, the TELLER TEST meets the requirement of content validity.

#### ***Construct Validity***

Construct validity is a way of determining how well a tool, or test, measures the construct, or psychological characteristic, it has been designed to measure. The TELLER TEST measures the construct of ability to handle money accurately. The dispersion of number of correct answers for the 566 subjects who participated in the validity study closely resembles the bell-shaped (Gaussian) curve, supporting its construct validity. In addition, comparisons of the TELLER TEST with other validated, standardized tests of general cognitive ability and arithmetic skills showed strong correlations.

#### ***Criterion Validity***

Criterion validity is a way of comparing the results of the test with other, independently gathered measures of performance. Criterion data were gathered for the first 90 days of each subject's employment tenure after administration of the TELLER TEST, and included cash overs and shorts by day, number of customer complaints about errors, and direct supervisor's rating of ability to handle money accurately. The data gathered on 566 subjects supported the relationship between performance on the TELLER TEST and the criteria of cash overs and

cash shorts and supervisor's rating of individual's ability to make change.

### **Reliability**

A split half reliability test yielded a Cronbach's alpha of .87, which indicates a very strong degree of internal consistency within the TELLER TEST. This means that the TELLER TEST appears to be consistent in the way it measures the ability to handle money accurately.

### **EEOC Concerns**

The scoring procedure for the TELLER TEST does not adjust scores on the basis of race, color, religion, sex, or national origin, in compliance with U.S. employment law as amended by Section 106 of the Civil Rights Act of 1991.

### **Summary of Results**

The TELLER TEST is a psychometric instrument that measures the ability to compute correct dollars and cents figures in answer to specific problems and then translate those figures into the correct combination of coins and currency. The skill measured by the TELLER TEST correlates significantly with behavior on the job of teller, establishing the TELLER TEST as an instrument with valid predictive power.

The TELLER TEST is designed to be used as one part, and only one part, of the evaluation of prospective applicants and incumbents for jobs that require the accurate handling or counting of money in financial institutions. It is intended to give an employer an indication of an applicant's ability to handle money accurately under time pressure. It may be used with applicants or incumbents (for example in training programs) to identify individuals whose level of ability may lead to costly mistakes, so that remedial measures, such as training or reassignment, can be taken. When it is used with job applicants, the TELLER TEST is intended to be used as only one part of a process that should also include interviews, background checks, reference checks and other relevant pre-employment screening procedures.

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