

Records Study Comparison Report

U.S. Citizenship and Immigration Services' Records Study on Pass/Fail Rates for Naturalization Applicants



RFQ/Project No. HSSCCG-09-Q-00228

DHS Professional and Program Management Support
Services (PPMSS) BPA # GS-10F-06-LP-A-0007

Submitted to:

U.S. Citizenship and Immigration Services
Department of Homeland Security
Washington, DC 20529

Disclaimer

The *U.S. Citizenship and Immigration Services' Records Study on Pass/Fail Rates for Naturalization Applicants* was funded with federal funds from the U.S. Department of Homeland Security and developed by ICF International. The content of this report does not necessarily reflect the views or policies of the U.S. Department of Homeland Security nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government. Replication or reproduction of this report, by any manner in whole or part, is permitted only with the written consent of the U.S. Department of Homeland Security.

The *U.S. Citizenship and Immigration Services' Records Study on Pass/Fail Rates for Naturalization Applicants* and all information related to this report are funded by the U.S. Department of Homeland Security/U.S. Citizenship and Immigration Services under RFQ/Project No. HSSCCG-09-Q-00228.

Submitted by:

ICF Incorporated L.L.C.
9300 Lee Highway
Fairfax, VA 22031 USA

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	2
METHOD	3
Sample	3
Collection Methodology	5
Comparing Findings	5
FINDINGS	8
Pass Rates across Studies	8
Pass Rates across Key Demographic Variables	9
Pass Rates on the Overall Test	10
Pass Rates on the English Component	11
Pass Rates on the Civics Component	13
CONCLUSIONS	15
Appendix A: Statistical Tests between Pass Rates	A-1
Appendix B: Pass Rates for the Components of the English Test by Key Demographic Groups	B-1

LIST OF TABLES

Table 1. Pass Rates for First-Time Test Takers on the Naturalization Test	9
Table 2. Pass Rates for the Overall Test by Key Demographic Groups.....	10
Table 3. Pass Rates for the English Component by Key Demographic Groups	12
Table 4. Pass Rates for the Civics Component by Key Demographic Groups.....	14

EXECUTIVE SUMMARY

The United States Citizenship and Immigration Services (USCIS) Office of Citizenship (OoC) commissioned the current study to provide an evaluation of the U.S. naturalization test and to determine whether pass rates on the U.S. naturalization test have changed over time.

Specifically, this report examines pass/fail rates from three previous studies - two studies that examined pass/fail rates prior to the test’s redesign and one study that examined pass/fail rates after the redesigned test was phased-in during fiscal year (FY) 2009 and implemented for FY 2010. The first study prior to redesign was conducted using data on applicant records (A-Files) from fiscal years 2003 and 2004. The second study prior to redesign was conducted on A-files from FY 2008. The third study, conducted after the test was redesigned and fully implemented, examined A-files from FY 2010.

Findings in this report indicate that pass rates on the naturalization test were highest for applicants taking the redesigned or “new” naturalization test. Specifically, statistical comparisons were made between the pass rates of applicants taking the old and the new test, and the pass rates of applicants taking the new test were found to be significantly higher than the pass rates of applicants taking the old test.

Pass Rates	Redesigned Test	Old Test	
	FY 2010	FY 2008	FY 2003-04
Overall Test	95.8%	93.8%	87.1%
English component	97.0%	94.1%	90.0%
Civics component	97.5%	93.3%	94.2%

Comparisons were also examined for the three applicant demographic characteristics of Gender, Age, and Nationality. Findings across the demographic comparisons indicated that nearly all pass rates for the various gender, age, and nationality applicant subgroups on the naturalization test were significantly higher for FY 2010 applicants when compared to applicants from FY 2008 and FY 2003 – 2004. This finding indicated that the higher pass rate of applicants after the test redesign was generally found across all subgroups regardless of gender, age, or nationality.

INTRODUCTION

The purpose of this report is to determine whether pass/fail rates of the U.S. naturalization test for the redesigned test differ from pass/fail rates reported prior to the test's redesign. Data included in this report is derived from three records studies - two studies conducted on applicants who took the naturalization test prior to it being redesigned and one study conducted after the redesigned test was phased-in during FY 2009 and implemented for FY 2010. The first study examined pass rates from fiscal years 2003 and 2004 A-files.¹ The second study examined pass rates for FY 2008 A-files.² The third study, which determined the pass rates for applicants taking the new naturalization test, examined FY 2010 A-files.³

Monitoring the pass/fail rates on the naturalization test has been an important part of the redesign process. This examination provides USCIS with the ability to determine if there have been changes in the pass rates across the different test components as well as with the overall test. Furthermore, a comparison of scores from those who took the test prior to the redesign with scores from those who took the test after the redesign allows USCIS to assess the degree to which the new test's pass/fail characteristics differ from the old test.

This report is comprised of three main sections: Method, Findings, and Conclusions. The Method section summarizes the research team's approach for identifying pass/fail rates from the prior records studies and the process for comparing findings across the studies. The Findings section documents the pass rate for the overall naturalization test and for each component of the test (i.e., English [reading, writing, and speaking] and U.S. history and government – hereafter referred to as "civics") for the three studies examined (i.e., FY 2010, FY 2008, and FY 2003-04). Where applicable, pass rates for the overall test and each component

¹ MetriTech (2005) and American Institute for Research (2006) examined and reported pass/fail rates for FY 2003-2004 applicants.

² ICF International (2010) examined and reported pass/fail rates for FY 2008 applicants.

³ ICF International (2011) examined and reported pass/fail rates for FY 2010 applicants.

are reported for key demographic subpopulations. The Conclusions section provides a summary of the key findings of this report.

METHOD

This section provides an abbreviated review of the sampling and data collection methodologies used to collect pass/fail rates for the FY 2003-04 study, FY 2008 study, and the FY 2010 study. All studies were conducted using a thorough in-person review of A-files for completed cases.⁴ This section also identifies the reported pass/fail rates from each study included in this report. These pass/fail rates are subsequently used to determine the degree to which pass rates have changed over time. Finally, the statistical approaches used to compare pass rates among studies are discussed.

Sample

The FY 2003-04 study combined completed A-files from applicants in FY 2003 and in FY 2004 into one large population. The details of the sampling plan for the FY 2003-04 study provided little information regarding how the sampling was designed and carried out. Specifically, the sampling plan failed to discuss whether considerations were taken to draw a sample that was proportionately representative across specific strata (e.g., field office locations). It is assumed that the researchers randomly sampled from this combined population of FY 2003 and FY 2004 A-files to create the sample used to report pass/fail rates. Though specifics were not provided, the researchers from this study were able to demonstrate that the sample collected was representative of the population being studied. For example, the researchers indicated that a total of 3,074 A-files were collected and analyzed for applicants who filed for and completed

⁴ For the purpose of this report, completed cases refers to applications (A-files) that were granted (i.e. approved and/or oathed), denied, administratively closed, or withdrawn.

the naturalization process during fiscal years 2003 and 2004, producing a +/- 2% sampling margin of error.⁵

The sampling plan for both the FY 2008 and FY 2010 studies utilized a proportionate stratified random sample. For both studies, the strata which dictated the proportion sampled was the field office where applicants completed the naturalization process. Also in these studies, the population of applicants who completed the naturalization process was calculated across all USCIS Field Offices to ensure a proportionate number of A-files were included in the sample. This approach allowed the sample to be (proportionately) representative across field offices. A total of 2,400 A-files were collected during the FY 2008 study. This number of files allowed the research team to be confident that the margin of error around the observed pass/fail rates for the overall test and each component was +/- 2%.⁶

The number of A-files comprising the FY 2010 study sample was increased to provide a +/- 5% margin of error at the individual test item-level (i.e., 10 unique civics test items distributed across 10 unique test forms). This approach required a total of 3,830 A-files to be reviewed. Due to the increased sample necessary to meet the 5% margin of error at the item-level, the margin of error at the test-level was less than 5%.⁷ Specifically, the margin of error at the test-level for the FY 2010 study was +/- 1.5%. The research team for both the FY 2008 study and FY 2010 study demonstrated that the sample drawn for each respective study was representative of their respective populations.

⁵ See FY 2003-2004 Record Study Final Report (American Institutes for Research, 2006; MetriTech, 2005) for specific details regarding the sampling strategies for the FY 2003-04 study.

⁶ See FY 2008 Record Study Final Report (ICF International, 2010) for specific details regarding the sampling strategies for the FY 2008 study.

⁷ See FY 2010 Findings Final Report (ICF International, 2011) for specific details regarding sampling strategies.

Collection Methodology

All three studies required data collection to be synthesized from an archival data set. Each research team worked at the National Records Center in Lee's Summit, Missouri to collect naturalization test information from applicant A-files. The teams developed and followed specific data collection protocols and quality control procedures to ensure the accuracy of the data collected.⁸ During the data collection process, each research team collected relevant test information (i.e., pass/fail rates) as well as demographic information (e.g., gender, age, and nationality) for each study's required number of A-files. Throughout the data collection process all research teams utilized a quality control procedure to review coded A-files to ensure coder accuracy and to correct any coding errors.

Comparing Findings

This report presents and reviews pass/fail rates only on those taking the test for the first time. Examination of the pass rates for the first time that applicants take the naturalization test provides the best indication of the true difficulty of the naturalization test. Also, using first-time test takers to compare pass/fail rates across studies provides the best foundation to determine whether pass/fail rates changed after the redesigned test was phased-in during FY 2009 and implemented for FY 2010.

Identification of first-time test takers from the FY 2003-04 study required a thorough review of the American Institutes for Research Final Report (2006) and their data analysis files. When FY 2008 findings were compared to FY 2003-04 findings, it was apparent that the naming convention used in the FY 2003-04 report was unclear in terms of identifying which applicants were primarily first-time test takers.⁹ The FY 2003-04 study reported pass/fail rates for applicants classified as "First Application" and "Current Application." Based on this naming convention, it appeared that "First Application" test applicants consisted of first-time test

⁸ Refer to each study's final report for specifics pertaining to data collection protocols, training, and quality control methods.

⁹ See FY 2008 Comparative Analysis Final Report (ICF International, 2010).

takers. However, it was found that “First Application” test applicants comprised only applicants who submitted multiple applications within the 2003-04 fiscal years. Thus, “First Application” provided pass/fail rates for a small subset of first-time test applicants (N = 345) from the FY 2003-04 study. It was found that applicants who made up “Current Application” pass/fail rates actually comprised the majority of first-time test takers. In fact, American Institutes for Research (2006) reported that the majority (i.e., 91%) of current applications were first applications (i.e., first-time test takers). This was confirmed when the number of current application test takers was examined in their dataset. A large number of test takers classified as “Current Application” (N = 2,539) were first-time test takers. Given these findings, the current report examines the pass/fail rates reported from the FY 2003-04 study classified as “Current Application, First Exam.”

Pass rates for first-time test takers from the FY 2008 study were derived from the applicant’s “First Application, First Exam.” Pass rates documented from this applicant set represent all first-time test takers from FY 2008. However, a modification to the scoring of applicants from FY 2008 was required to more accurately compare the pass rates of FY 2008 applicants to the applicants of the other studies. During the FY 2008 study, the research team initially scored applicants who were deemed unable to understand English (UUE) and not given the naturalization test as “not applicable” on each component of the naturalization test. However, to conform to USCIS scoring protocols, all applicants deemed UUE and assigned a “not applicable” score were re-interpreted as a “fail” on the naturalization test. Pass rates reflecting this modification are reported in the FY 2008 Comparison Report (ICF International, 2010).

The pass rates for the FY 2010 study were based upon the applicants’ first exam for their first application. Pass rates for this set of applicants represent all first-time test takers from FY 2010. No modifications were required to compare reported FY 2010 pass rates to the pass rates reported for the two prior studies.

This report compares FY 2010 applicants to FY 2008 applicants and FY 2010 applicants to FY 2003-04 applicants. Pass rates from FY 2003-04 and FY 2008 were not combined to develop a “singular” pass rate on the old test for several reasons. The primary reason is that the homogeneity (similarity) between the two samples could not be assumed. For example, the process by which the samples were drawn for the FY 2003-04 and the FY 2008 studies differed. Additionally, it is unknown what factors associated with the naturalization process may have changed or differed between the two studies. For example:

- How the test was administered and scored may have varied between studies (e.g., were all applicants provided the opportunity to take one or both components of the test even if they were unable to complete the interview process?).
- How applicants prepared for the test may have varied between studies (e.g., did differences in preparation create differences in test performance?).
- Did the amount of information about the test and testing process change between studies (e.g., was there more information available online or in an easily accessible manner for FY 2008 applicants than for FY 2003-04 applicants?)?

Finally, the comparison report that contrasted FY 2008 pass rates with FY 2003-04 pass rates demonstrated significantly higher pass rates in FY 2008.¹⁰ This finding suggests that there may be factors influencing test-taker performance that varied between FY 2003-04 and FY 2008. Consequently, the separate comparisons between FY 2003-04 and FY 2010 reports and between FY 2008 and FY 2010 reports are more appropriate and scientifically sound.

Statistical analyses were employed to investigate the differences in the pass rates between the studies. A z-test for proportions was used to determine whether pass rates between FY 2010 findings and the two prior studies showed statistically significant¹¹ differences. This test

¹⁰ For full results of comparisons between FY 2008 and FY 2003-04 see FY 2008 Comparison Report (ICF International, 2010).

¹¹ See Appendix A for an explanation of statistical significance. The significant differences that are discussed should be construed as statistically significant when not clearly specified.

compares proportions (i.e., the percentage who pass) between two independent samples (i.e., between FY 2010 and FY 2003-04 and between FY 2010 and FY 2008) to determine whether the proportion of applicants who pass is significantly larger for one sample compared to the other. In other words, this test allows the research team to determine whether the percentage that passed the test in one year is significantly higher or lower than the percentage that passed the test in a different year. The equation for the z-test is included in Appendix A.

As is the case with most statistical tests, the number of applicants comprising the study samples that are compared directly influences the “power” to the statistical test. For example, the larger the sample size, the greater the “power” of the test, and the greater the likelihood that small differences between pass rates will be found to be statistically significant. Therefore, it is important to also note the numerical difference between observed pass rates to get a sense of practical significance rather than statistical significance. .

FINDINGS

This section documents the pass rates on the naturalization test for each study. In addition to reporting the pass rates for the overall test and each component, differences in the pass rate are discussed. The section concludes with an examination of the pass rates for key demographic groups across the studies. Any differences in pass rates across the studies are discussed.

Pass Rates across Studies

Table 1 provides the pass rates for the overall naturalization test and for each component of the test across the three records studies. Pass rates for the overall test and each component were found to be highest for the FY 2010 study. The FY 2010 pass rates for the overall test were 95.8%, with 97.0% of applicants passing the English component and 97.5% passing the civics component. The lowest pass rates reported on the naturalization test were from the FY 2003-04 study. The percentage of applicants passing the naturalization test in FY 2003-04

ranged from 87.1% for the overall test to 90.0% for the English component and 94.2% for the civics component.

Table 1. Pass Rates for First-Time Test Takers on the Naturalization Test

	FY 2010		FY 2008		FY 2003-04	
	Total N ¹	% Passed	Total N	% Passed	Total N	% Passed
Overall	3,459	95.8	2,046	93.8	2,694	87.1
English	3,452	97.0	2,110	94.1	2,692	90.0
Reading	3,455	99.4	2,094	95.7	2,693	92.4
Writing	3,462	98.2	2,094	94.2	2,693	90.7
Speaking	3,551	98.0	2,092	97.1	2,709	92.2
Civics	3,700	97.5	2,335	93.3	2,695	94.2

¹The total number of applicants taking one or more components of the naturalization test varies due to exemptions and waivers for one or both components of the test.

The findings demonstrate that applicants from FY 2010 passed the overall naturalization test and each component of the test more frequently than applicants from the FY 2008 study and applicants from the FY 2003-04 study (See Appendix A for statistics). Although results of the z-tests indicated that all comparisons between FY 2010 and FY 2008 and between FY 2010 and FY 2003-04 were statistically significant, the difference between pass rates was generally small (i.e., less than 5.0%) between FY 2010 and FY 2008, but tended to be greater between FY 2010 and FY 2003-04.

Pass Rates across Key Demographic Variables

Pass rates on the overall test and each component of the test are documented for three key demographic variables: gender, age, and nationality. Pass rates are reported for subgroups within each of these key demographic variables for each research study. Statistical differences between FY 2010 and FY 2008 and FY 2003-04 are discussed. Due to the small number of applicants identifying themselves as from North America or Oceania, these subgroups were excluded from statistical comparisons. Table 2 documents the pass rate for demographic groups on the overall naturalization test. Table 3 documents the pass rate for demographic

groups on the English component and Table 4 documents pass rates for demographic groups on the civics component.

Pass Rates on the Overall Test

Table 2 presents pass rates for the overall naturalization test by demographic groups across each study. Pass rates on the overall test were significantly higher in FY 2010 than in FY 2008 and FY 2003-04 for nearly all demographic groups. Applicants who reported their nationality as African or Caribbean were found to have higher pass rates on the overall naturalization test in FY 2008 than in FY 2010. However, this difference was small (2.1% for African and .3% for Caribbean) and not statistically significant. All of the other comparisons between the FY 2010 pass rates and pass rates reported in FY 2008 and FY 2003-04 pass rates revealed significantly higher pass rates for FY 2010 applicants. Statistical results of the comparisons are reported in Appendix A.

Table 2. Pass Rates for the Overall Test by Key Demographic Groups

	Pass Rates for Overall Test					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1576	96.2%	941	94.4%	1252	88.7%
Female	1883	95.4%	1105	93.4%	1418	86.0%
Age						
18-24	392	97.7%	238	96.6%	339	95.9%
25-39	1663	97.6%	931	96.1%	1144	91.9%
40-49	865	96.0%	543	93.2%	630	90.0%
50-64	442	89.4%	270	88.5%	427	74.5%
65 or older	95	83.2%	64	78.1%	147	53.1%
Nationality						
Africa	327	95.1%	176	97.2%	136	87.5%
Asia	1404	96.3%	827	93.8%	1032	88.0%
Europe	484	97.3%	275	94.2%	392	93.6%
Caribbean	322	92.9%	176	93.2%	237	81.0%
Central America	462	93.7%	351	92.0%	477	82.6%
South America	349	96.8%	183	93.4%	238	90.3%
North America ¹	77	98.7%	41	100.0%	33	97.0%
Oceania ¹	26	92.3%	17	88.2%	6	100.0%

¹Too few applicants across studies to make statistical comparisons.

Gender comparisons between FY 2010 and FY 2008 found FY 2010 overall test pass rates to be significantly higher for both male and female applicants (1.8% and 2.0%, respectively).

Similarly, comparisons between FY 2010 and FY 2003-04 found FY 2010 overall test pass rates to be significantly higher for both male and female applicants (7.5% and 9.4%, respectively).

Age group comparisons between FY 2010 and FY 2008 found FY 2010 overall test pass rates to be significantly higher for applicants in the 25-39 and 40-49 age groups (1.5% and 2.8%, respectively). Comparisons between FY 2010 and FY 2003-04 found FY 2010 overall test pass rates to be significantly higher for all age groups except for applicants 18-24 years of age.

Nationality comparisons between FY 2010 and FY 2008 found FY 2010 overall test pass rates to be significantly higher for Asian and European applicants (2.5% and 3.1%, respectively). No other nationality subgroup demonstrated significant differences between FY 2010 and FY 2008. Comparisons between FY 2010 and FY 2003-04 found FY 2010 overall test pass rates to be significantly higher for all nationality subgroups.

Pass Rates on the English Component

Table 3 displays the pass rates on the English component by demographic groups. Pass rates on the English component of the naturalization test were higher for FY 2010 applicants for nearly all demographic groups when comparing FY 2010 applicants to FY 2008 and FY 2003-04 applicants. Statistical results between the comparisons are reported in Appendix A. The pass rates for each subcomponent of the English test (i.e., speaking, reading, and writing) are presented in Appendix B. Comparisons across each subcomponent of the English test demonstrated similar findings as those reported for the English component as a whole.

Table 3. Pass Rates for the English Component by Key Demographic Groups

	Pass Rates for English Component					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1576	97.5%	971	94.9%	1254	91.9%
Female	1876	96.6%	1139	93.5%	1414	88.6%
Age						
18-24	393	99.7%	240	97.9%	339	98.5%
25-39	1663	98.1%	944	97.0%	1146	94.7%
40-49	866	96.8%	556	93.7%	631	91.9%
50-64	438	92.5%	289	88.2%	422	79.9%
65 or older	90	90.0%	81	72.8%	147	55.1%
Nationality						
Africa	326	96.3%	178	98.3%	136	90.4%
Asia	1401	97.3%	852	93.7%	1030	90.5%
Europe	484	97.9%	283	95.8%	393	94.9%
Caribbean	321	95.3%	187	93.0%	239	84.9%
Central America	461	95.7%	365	91.8%	476	86.8%
South America	347	98.3%	187	94.1%	237	92.4%
North America ¹	77	100.0%	41	100.0%	33	100.0%
Oceania ¹	26	96.2%	17	94.1%	6	100.0%

¹Too few applicants to make statistical comparisons across studies.

Gender comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the English component of the naturalization test to be significantly higher for both male and female applicants (2.6% and 3.1%, respectively). Similarly, comparisons between FY 2010 and FY 2003-04 found FY 2010 pass rates on the English component of the naturalization test to be significantly higher for both male and female applicants (5.6% and 8.0%, respectively).

Age group comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the English component of the naturalization test to be significantly higher for applicants in the 18-24, 40-49, and 65 and older age categories. Comparisons between FY 2010 and FY 2003-04 found FY 2010 pass rates on the English component of the naturalization test to be significantly higher for all age categories with the exception of 18-24 year olds.

Nationality comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the English component of the naturalization test to be significantly higher for Asian, Central American, and South American applicants (3.6%, 3.9%, and 4.2%, respectively). Applicants who reported being from Africa in FY 2010 demonstrated lower pass rates compared to those applicants in FY 2008, though the difference (2.0%) was not found to be significant. Comparisons between FY 2010 and FY 2003-04 found FY 2010 pass rates on the English component of the naturalization test were significantly higher for all nationality subgroups examined.

Pass Rates on the Civics Component

Table 4 displays the pass rates on the civics component by demographic groups. Pass rates on the civics component were significantly higher in FY 2010 than in FY 2008 and FY 2003-04 for nearly all demographic groups. There were no instances where FY 2010 pass rates for the civics component were lower than FY 2008 or FY 2003-04 pass rates.

Gender comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the civics component of the naturalization test to be significantly higher for both male and female applicants (4.4% and 4.0%, respectively). Similarly, comparison between FY 2010 and FY 2003-04 found FY 2010 pass rates on the civics component of the naturalization test to be higher for both male and female applicants (3.4% and 3.1%, respectively).

Age group comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the civics component of the naturalization test to be significantly higher for all age categories except for 18-24 year olds. Comparisons between FY 2010 and FY 2003-04 found FY 2010 pass rates on the civics component of the naturalization test to be significantly higher pass rates for all age categories except for the 18-24 year olds and 65 or older applicants.

Nationality comparisons between FY 2010 and FY 2008 found FY 2010 pass rates on the civics component of the naturalization test to be significantly higher for all subgroups except for applicants from Africa. Comparisons between FY 2010 and FY 2003-04 found FY 2010 pass rates on the civics component of the naturalization test to be significantly higher for applicants from Asia and Central America.

Table 4. Pass Rates for the Civics Component by Key Demographic Groups

	Pass Rates for Civics Component					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1695	97.8%	1084	93.5%	1260	94.4%
Female	2005	97.2%	1251	93.2%	1412	94.1%
Age						
18-24	393	98.0%	240	97.1%	337	96.7%
25-39	1674	98.3%	943	95.9%	1130	95.2%
40-49	868	98.3%	556	93.5%	610	95.6%
50-64	590	94.9%	448	90.0%	453	89.6%
65 or older	173	92.5%	148	80.4%	156	89.1%
Nationality						
Africa	331	96.4%	179	96.1%	127	94.5%
Asia	1467	98.0%	922	93.6%	1025	95.3%
Europe	517	98.3%	302	94.0%	398	97.2%
Caribbean	354	95.5%	214	89.7%	252	93.3%
Central America	548	96.7%	458	91.7%	472	90.7%
South America	362	98.3%	194	94.3%	237	96.2%
North America ¹	87	98.9%	49	100.0%	38	97.4%
Oceania ¹	26	92.3%	17	94.1%	6	100.0%

¹Too few applicants to make statistical comparisons across studies.

CONCLUSIONS

This report compared the pass/fail rates for the U.S. naturalization test from three prior records studies. Data were examined from two studies that included applicants who took the naturalization test prior to being redesigned (FY 2003-04 and FY 2008) as well as applicants from the first full fiscal year the new test was administered (FY 2010). This report identified pass/fail rates for first-time test takers from each study year and examined whether pass/fail rates differed between studies conducted prior to the naturalization test's redesign and the pass/fail rate for the new test.

The reported pass rates were generally found to be highest for applicants who took the newly redesigned naturalization test. Comparisons between applicants who took the new test and applicants who took the previous version of the test found that pass rates on the new test (FY 2010) tended to be significantly higher than pass rates on the previous version (FY 2003-04 and FY 2008), with the largest differences tending to be between the pass rates of the FY 2010 and FY 2003-04 applicants. Comparisons in pass rates across applicants' gender, age, and nationality also revealed that pass rates on the new test (FY 2010) tended to be significantly higher than pass rates on the previous version of the test (FY 2003-04 and FY 2008).

Appendix A:
Statistical Tests between Pass Rates

Z-test for Proportions

The equation for this test is presented below:

$$z = \frac{p_1 - p_2}{SE_{p_1 - p_2}}$$

where

$$SE_{p_1 - p_2} = \sqrt{(\hat{p} - \hat{q}) \left(\frac{n_1 + n_2}{n_1 \times n_2} \right)}$$

and

$$\hat{p} = \frac{n_1 \times p_1 + n_2 \times p_2}{n_1 + n_2}$$

and

$$\hat{q} = (1 - \hat{p})$$

This test produces a value, the z-score, which allows conclusions to be drawn regarding the difference between two proportions.

P-Value

The p-value can be interpreted as a probability that the test statistic (in this case the z-score) is greater than what was hypothesized (in this case $p_1 = p_2$). The smaller the p-value, the greater the confidence can be assumed that the results of the statistical test are not due to chance.

Statistical Significance

Criteria must be established regarding the evidence desired to conclude that a difference does exist. A predetermined p-value, or “significance level,” represents the criteria that must be met or exceeded in order to accept the difference as “significant.” “Significant” in the statistical sense does not mean “important.” It means that there is sufficient evidence to reach a conclusion regarding any difference between the proportions. If the p-value of the z-score is equal to or less than the predetermined p-value, the difference is considered “statistically significant.” A .05 significance level was applied to all z-tests performed in this study.

Statistical Comparisons on the Naturalization Test

	FY 2010 and FY 2008 Comparison			FY 2010 and FY 2003-04 Comparison		
	Pass Rate Difference ¹	z-score	p-value ²	Pass Rate Difference ¹	z-score	p-value ²
Overall Test	2.0%	3.30	0.001	8.7%	12.47	0.001
English Component	3.1%	5.14	0.001	7.0%	11.40	0.001
Reading Test	3.7%	9.55	0.001	3.3%	4.71	0.001
Writing Test	4.0%	8.08	0.001	3.5%	4.49	0.001
Speaking Test	0.9%	2.16	0.031	4.9%	7.28	0.001
Civics Component	4.2%	7.99	0.001	3.3%	6.74	0.001

¹Negative differences indicate FY 2010 pass rate is lower.

²Bold indicates statistical significance.

Demographic Comparisons on the Overall Naturalization Test

	FY 2010 and FY 2008 Comparison			FY 2010 and FY 2003-04 Comparison		
	Pass Rate Difference ¹	z-score	p-value ²	Pass Rate Difference ¹	z-score	p-value ²
Gender						
Male	1.8%	2.14	0.032	7.5%	7.73	0.001
Female	2.0%	2.33	0.020	9.4%	9.52	0.001
Age						
18-24	1.1%	0.80	0.424	1.8%	1.42	0.156
25-39	1.5%	2.12	0.034	5.7%	7.01	0.001
40-49	2.8%	2.29	0.021	6.0%	4.59	0.001
50-64	0.8%	0.35	0.726	14.9%	5.72	0.001
65 or older	5.0%	0.80	0.424	30.1%	4.79	0.001
Nationality						
Africa	-2.1%	-1.12	0.262	7.6%	2.89	0.004
Asia	2.5%	2.72	0.006	8.3%	7.85	0.001
Europe	3.1%	2.14	0.032	3.7%	2.65	0.008
Caribbean	-0.3%	-0.14	0.888	11.8%	4.23	0.001
Central America	1.7%	0.95	0.342	11.1%	5.26	0.001
South America	3.4%	1.85	0.064	6.5%	3.30	0.001
North America ³			---		---	---
Oceania ³			---		---	---

¹Negative differences indicate FY 2010 pass rate is lower.

²Bold indicates statistical significance.

³Too few applicants to make statistical comparisons across studies.

Demographic Comparisons for the English Component of the Naturalization Test

	FY 2010 and FY 2008 Comparison			FY 2010 and FY 2003-04 Comparison		
	Pass Rate Difference	z-score	p-value ²	Pass Rate Difference	z-score	p-value ²
Gender						
Male	2.7%	3.57	0.001	5.6%	6.80	0.001
Female	3.1%	4.01	0.001	8.0%	9.05	0.001
Age						
18-24	1.8%	2.30	0.022	1.2%	1.83	0.068
25-39	1.1%	1.82	0.068	3.5%	5.06	0.001
40-49	3.1%	2.74	0.006	4.8%	4.14	0.001
50-64	4.2%	1.93	0.054	12.6%	5.37	0.001
65 or older	17.2%	2.91	0.004	34.9%	5.61	0.001
Nationality						
Africa	-2.0%	-1.26	0.208	5.9%	2.53	0.010
Asia	3.6%	4.20	0.001	6.8%	7.23	0.001
Europe	2.1%	1.68	0.092	3.0%	2.42	0.020
Caribbean	2.3%	1.11	0.266	10.4%	4.23	0.001
Central America	3.9%	2.31	0.020	8.9%	4.79	0.001
South America	4.2%	2.62	0.008	5.9%	3.51	0.001
North America ³			---		---	---
Oceania ³			---		---	---

¹Negative differences indicate FY 2010 pass rate is lower.

²Bold indicates statistical significance.

³Too few applicants to make statistical comparisons across studies.

Demographic Comparisons for the Civics Component of the Naturalization Test

	FY 2010 and FY 2008 Comparison			FY 2010 and FY 2003-04 Comparison		
	Pass Rate Difference	z-score	p-value ²	Pass Rate Difference	z-score	p-value ²
Gender						
Male	4.4%	5.81	0.001	3.4%	4.85	0.001
Female	4.0%	5.37	0.001	3.1%	4.50	0.001
Age						
18-24	0.9%	0.71	0.478	1.2%	1.04	0.298
25-39	2.5%	3.83	0.001	3.1%	4.79	0.001
40-49	4.7%	4.70	0.001	2.7%	3.07	0.002
50-64	5.0%	3.06	0.002	5.3%	3.24	0.001
65 or older	12.1%	3.20	0.001	3.4%	1.06	0.290
Nationality						
Africa	0.3%	0.17	0.866	1.9%	0.92	0.358
Asia	4.4%	5.55	0.001	2.7%	3.80	0.001
Europe	4.3%	3.33	0.001	1.1%	1.10	0.271
Caribbean	5.8%	2.67	0.008	2.2%	1.19	0.234
Central America	5.0%	3.45	0.001	6.0%	4.02	0.001
South America	4.0%	2.63	0.008	2.1%	1.64	0.101
North America ³			---		---	---
Oceania ³			---		---	---

¹Negative differences indicate FY 2010 pass rate is lower.

²Bold indicates statistical significance.

³Too few applicants to make statistical comparisons across studies.

Appendix B:
Pass Rates for the Components of the English Test by Key Demographic Groups

Pass Rates for the Reading Component of the English Test by Key Demographic Groups

	Reading Test Pass Rates					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1740	99.5%	964	96.1%	1253	93.9%
Female	2080	99.3%	1130	95.5%	1416	91.1%
Age						
18-24	435	100.0%	240	98.3%	339	99.1%
25-39	1847	99.7%	942	98.1%	1148	97.2%
40-49	952	99.5%	554	96.6%	631	93.3%
50-64	486	98.6%	284	91.2%	422	83.4%
65 and older	98	94.9%	74	68.9%	146	58.9%
Nationality						
Africa	366	99.2%	182	98.4%	136	91.9%
Asia	1559	99.6%	861	95.5%	1029	92.8%
Europe	527	99.4%	270	95.6%	393	95.4%
Caribbean	359	98.6%	191	92.7%	241	89.6%
Central America	506	99.6%	362	95.3%	475	89.7%
South America	393	99.2%	188	97.9%	238	94.1%
North America ¹	80	100.0%	26	100.0%	33	100.0%
Oceania ¹	27	96.3%	14	100.0%	6	100.0%

¹Too few cases to make statistical comparisons.

- Gender comparisons on the reading test demonstrated significantly higher pass rates for both males and females in FY 2010 compared to FY 2008 and FY 2003-04.
- Age comparisons on the reading test demonstrated significantly higher pass rates for all age groups in FY 2010 compared to FY 2008 and FY 2003-04.
- Nationality comparisons on the reading test demonstrated significantly higher pass rates for all subgroups (with exception to North America and Oceania, which were excluded from analyses) in FY 2010 with expectation to applicants from Africa or South America compared to FY 2008 applicants. All nationality subgroups (with exception to North America and Oceania, which were excluded from analyses) demonstrated significantly higher pass rates in FY 2010 when compared to FY 2003-04 applicants.

Pass Rates for the Writing Component of the English Test by Key Demographic Groups

	Writing Test Pass Rates					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1745	98.5%	964	94.8%	1253	92.3%
Female	2083	98.3%	1130	93.6%	1415	89.5%
Age						
18 to 24	437	100.0%	240	97.9%	339	98.5%
25 to 39	1848	98.7%	942	97.1%	1149	95.2%
40 to 49	955	98.5%	554	94.2%	631	92.1%
50 to 64	487	96.1%	284	87.7%	421	81.7%
65 and older	99	93.9%	74	68.9%	146	56.2%
Nationality						
Africa	366	97.5%	182	98.4%	136	90.4%
Asia	1563	98.7%	861	93.6%	1030	91.6%
Europe	530	98.7%	270	94.4%	393	95.4%
Caribbean	359	96.9%	191	92.7%	240	85.0%
Central America	507	98.0%	362	92.5%	475	87.6%
South America	386	99.0%	188	95.7%	238	92.4%
North America ¹	81	100.0%	26	100.0%	33	100.0%
Oceania ¹	27	96.3%	14	100.0%	6	100.0%

¹Too few cases to make statistical comparisons.

- Gender comparisons on the writing test demonstrated significantly higher pass rates for both males and females in FY 2010 compared to FY 2008 and FY 2003-04.
- Age comparisons on the writing test demonstrated significantly higher pass rates for all age groups in FY 2010 compared to FY 2008 and FY 2003-04.
- Nationality comparisons on the writing test demonstrated significantly higher pass rates for all subgroups in FY 2010 with expectation to applicants from Africa compared to FY 2008 applicants. All nationality subgroups (with exception to North America and Oceania, which were excluded from analyses) demonstrated significantly higher pass rates in FY 2010 when compared to FY 2003-04 applicants.

Pass Rates for the Speaking Component of the English Test by Key Demographic Groups

	Speaking Test Pass Rates					
	FY 2010		FY 2008		FY 2003-04	
	Total N	% Passed	Total N	% Passed	Total N	% Passed
Gender						
Male	1793	98.5%	967	97.5%	1263	94.0%
Female	2133	97.6%	1125	96.7%	1422	90.8%
Age						
18-24	437	99.8%	239	99.6%	339	99.1%
25-39	1852	99.0%	941	98.5%	1149	96.9%
40-49	956	97.9%	551	97.5%	631	94.5%
50-64	542	94.6%	286	93.4%	428	82.5%
65 or older	137	93.4%	75	82.7%	155	60.0%
Nationality						
Africa	367	98.4%	181	99.4%	136	92.6%
Asia	1591	98.2%	858	97.4%	1033	92.3%
Europe	546	98.7%	271	97.0%	395	95.4%
Caribbean	374	96.3%	192	96.4%	244	91.0%
Central America	536	97.0%	363	95.3%	479	89.4%
South America	393	98.7%	187	96.8%	239	93.7%
North America ¹	83	100.0%	26	100.0%	35	100.0%
Oceania ¹	27	96.3%	14	100.0%	6	100.0%

¹Too few cases to make statistical comparisons.

- Gender comparisons on the speaking test demonstrated significantly higher pass rates for both males and females in FY 2010 only when compared to FY 2003-04 applicants.
- Age comparisons on the speaking test demonstrated significantly higher pass rates for only 65 or older applicants in FY 2010 compared to FY 2008 applicants. Comparisons between FY 2010 and FY 2003-04 applicants demonstrated significantly higher pass rates in FY 2010 for all age subgroups with the exception of 18-24 year olds.
- Nationality comparisons on the speaking test demonstrated significantly higher pass rates for all subgroups (with exception to North America and Oceania, which were excluded from analyses) in FY 2010 only when compared to FY 2003-04 applicants.