A Pragmatic Measure of Immigrant Integration

Niklas Harder[a], Lucila Figueroa[a], Rachel Gillum[a], Dominik Hangartner[a,b,c], David D. Laitin[a,d,1], and Jens Hainmueller[a,d,e]

[a]Immigration Policy Lab, Stanford University, Stanford, CA 94305, and ETH Zurich, 8050 Zurich, Switzerland; [b]Center for Comparative and International Studies, ETH Zurich, 8050 Zurich, Switzerland; [c]Department of Government, London School of Economics and Political Science, WC2A 2AE, United Kingom; [d]Department of Political Science, Stanford University, Stanford, CA 94305; [e]Graduate School of Business, Stanford University, Stanford, CA 94305

This manuscript was compiled on May 16, 2018

The successful integration of immigrants into a host country's society, economy, and polity has become a major issue for policymakers in recent decades. Scientific progress in the study of immigrant integration has been hampered by the lack of a common measure of integration, which would allow the accumulation of knowledge through comparison across studies, countries, and time. To address this fundamental problem, we propose the short-form IPL-12 and long-form IPL-24 as new pragmatic measures of immigrant integration. Both measures capture six dimensions of integration—psychological, economic, political, social, linguistic, and navigational—with two or four survey items, respectively. The measures have construct validity, can be employed across countries, over time, and across different immigrant groups, and can be administered through short questionnaires available in different modes. We report on four surveys we conducted to evaluate the empirical performance of our measure. The tests reveal that the measure distinguishes between immigrant groups with different expected levels of integration and also correlates with well-established predictors of integration.

Integration | Measurement | Immigration

Many countries have experienced high levels of immigration in recent decades. Successful integration of immigrants into a host country's society, economy, and polity has therefore become a major focus for policymakers and scholars. In the policy world there are heated debates about which policies most effectively facilitate immigrant integration, and in academia there is a vigorous discourse about the factors that explain why some immigrant groups integrate while others do not (1).

In this study we address one of the fundamental obstacles to scientific progress in this field: the lack of a common empirical measure of immigrant integration. To date, research on immigrant integration has proceeded such that each study relies on its own specification and measures of what constitutes successful integration. This heterogeneity substantially reduces the possibility of informative comparison across studies, countries, and over time and has hampered the accumulation of scientific knowledge.

Justifications for the current heterogeneity of definitions and proxies are usually based on recognition that integration as a concept is "essentially contested" (2) or too complex to be captured by a single metric (3, 4). This, however, is equally true of other important and complex concepts, such as a country's level of wealth, where the literature has successfully coordinated on commonly used measures such as gross domestic product or the human development index. Other examples include the K10/K6 scale, which is widely used in public health as a measure of mental health (5), and the Rosenberg scale, which is extensively used in cross-cultural studies to measure self-esteem (6). While these scales are arguably far from perfect measures of complex concepts, scholars agree that they provide sufficient construct validity to permit well-conceived scientific analyses. This agreement facilitates the accumulation of knowledge by allowing for comparisons across studies, populations, and time.

In this study we propose the short-form IPL-12 and long-form IPL-24 scales as pragmatic, survey-based measures of immigrant integration. We developed these measures to provide scholars with a short instrument that can be implemented across survey modes, applies to different groups of immigrants (e.g. new citizens, refugees, undocumented immigrants), allows for comparisons across countries and over time, and provides construct validity in capturing the multifaceted nature of integration. The IPL-12/24 scales capture six dimensions of integration—psychological, economic, political, social, linguistic, and navigational—each associated with two or four survey items, respectively.

The instrument is versatile and allows scholars to pursue different goals. The measures can be used for descriptive analyses to map out the integration levels of different groups or generations or as outcome measures for causal analyses evaluating the effect of a program, event, or policy intervention on integration success. Scholars looking for a short but comprehensive overall measure of integration can utilize the IPL-12 scale. If more precision is required and space on the questionnaire is available, scholars may prefer the overall IPL-24 scale. Other scholars who focus on particular dimensions, say political or economic integration, might utilize only the four item sub-scales that capture integration on those dimensions. The organization in six distinct dimensions also allows researchers to characterize immigrant populations by the way the individual dimensions correlate.

It is important to emphasize that our measure does not claim to be the only, best, or perfect measure of integration.

Significance Statement

While successful integration of immigrants and refugees is a goal for European, North American and many other countries, scholarly assessment of progress on that goal is hampered by the lack of an accepted measure of integration success. This study proposes a pragmatic, survey-based measure that identifies six dimensions of integration and then, through four surveys, demonstrates the construct validity of the composite measure. The measure therefore has the potential to advance scientific progress in the study of immigrant integration.

J.H. and D.D.L. designed research. N.H., L.F., R.G., D.H., J.H., D.D.L. performed research. N.H., L.F., R.G., D.H., J.H., D.D.L. analyzed data. N.H., J.H., D.D.L. wrote the paper.

The authors declare no conflict of interest.

[1] To whom correspondence should be addressed. E-mail: dlaitin@stanford.edu

DRAFT

The purpose of our measure is to strike a practical compromise and help generate cumulative knowledge. Therefore, we designed the measure to capture key aspects of integration with a small number of questions so that it can be used at low cost and facilitate comparability.

In developing our measure, we defined integration as the degree to which immigrants have the knowledge and capacity to build a successful, fulfilling life in the host society (7, 8). This definition recognizes the dual importance of knowledge and capacity. Knowledge entails aspects such as fluency in the national language and ability to navigate the host country's labor market, political system, and social institutions. Capacity refers to the mental, social, and economic resources immigrants have to invest in their futures. Knowledge and capacity jointly enable individuals to realize their potential and achieve their vision and life goals in the host society.

Our definition distinguishes integration from assimilation, which requires immigrants to shed their home country's culture in favor of adopting the cultural practices of the host country's dominant group (9). In our view immigrants need not shed their own culture to live successful and meaningful lives in the host country. Therefore, our measures of integration capture the degree to which immigrants have acquired the knowledge and capacity to build successful lives rather than the degree to which they have shed their cultural heritage. For example, to capture linguistic integration we measure whether immigrants have acquired skills in the host country's dominant language, but not whether immigrants still use their home country's language.

Theory and Methodology

In developing our measure we built on two interlinked literatures. First, we consulted recent theoretical research that clarifies the core concepts of integration, incorporation, and assimilation (1, 4, 10). Second, we consulted an extensive set of surveys, most of them collected by researchers and governments throughout Europe and North America, that seek to measure the degree to which immigrant populations are integrating into their societies (see for example (1, 11–13)). In the Supplementary Materials (SM) we list the datasets and studies we consulted.

Given our goal of developing a short yet comprehensive scale, we first reduce the multiple domains discussed in previous research to six dimensions of integration: psychological, economic, political, social, linguistic, and navigational. To develop the questions within each dimension, we then devised a set of criteria that each question needed to fulfill.

First, a question should reflect construct validity in measuring integration. Second, a question should have clear directionality, such that higher values refer to higher levels of integration. Third, given our focus on integration, as opposed to assimilation, a question should not presuppose that immigrants shed cultural repertoires of their home country. The native population is not a point of reference for respondents; rather it is success in the host society. Fourth, a question should translate well into different national and local environments.* Fifth, a question should be answerable by all adult immigrant groups, all adult immigrants within a group, and by host country natives. This ruled out questions that would only apply to a subset of respondents (e.g. those who are refugees or those who have a job). Sixth, a question should be adjustable to different survey modes, including phone, face-to-face, and online surveys. Seventh, a question should yield variation across responses. The more a question can discern different levels of integration, the more useful it is for statistical analysis.

Based on these theoretical criteria, we developed the questionnaire through an iterative process of question writing, empirical testing, and refinement. Overall, this process involved six rounds of major revisions based on workshops with experts and eight pilot surveys of various immigrant samples administered online, by mail, and face to face surveys. Additionally, we conducted qualitative, think-aloud interviews with immigrants to examine their subjective understanding of all questions. During the entire development process, we tested over 200 questions and conducted 3,954 interviews (see SM for details; this does not include the four validation surveys we utilize here).

The final products of this process are the short-form IPL-12 and long-form IPL-24 scales that capture each dimension of integration with two or four questions, respectively. Here, we briefly summarize the core concepts of integration success that inform our questions. The SM provides the full questionnaire and also details the development process that led to the final questions.

For psychological integration, our measures capture respondents' feeling of connection with the host country, their wish to continue living there, and their sense of belonging in the host country. For economic integration, our measures capture income, employment, satisfaction with employment status, and the ability to meet different levels of unexpected expenses. For political integration, our measures capture understanding of the important political issues facing the host country and the degree to which respondents engage in discussion and political action. We also include questions that assess respondents' political knowledge. For social integration, our measures capture social ties and interactions with natives in the host country, as well as bridging social capital as evidenced by participation in organizations with natives. For linguistic integration, our measures capture respondents' assessment of their ability to read, speak, write, and understand the dominant language of their host country or region. For navigational integration, our measures capture their ability to manage some basic needs in the host country, such as seeing a doctor, addressing legal problems, and searching for jobs. The measures also test knowledge of some basic conventions in the host country: the typical way to pay income taxes, rules for driving, how to put an address on a letter, and how to appropriately seek medical help.

In addition to the questions, we also developed a scoring rule: a score between one and five points is computed for each question such that there is a maximum score of 60 across all six dimensions for the IPL-12 and 120 for the IPL-24. The measures are then rescaled to range from zero to one in increasing levels of integration (see the SM for the detailed scoring rules).

We pursued two strategies to validate the empirical performance of the IPL-12/24 scales. First, we applied a "contrasted groups approach" (14) to test whether the measures successfully distinguish between groups that are expected to have

*Note that some of our questions apply only to democratic states. Small modifications will be necessary to use our measures in non democracies.

DRAFT

different levels of the characteristic being measured. To apply this approach, we administered our survey to four samples of immigrants who we expected to differ in terms of their average levels of integration. The samples, listed in order of decreasing expected levels of integration, included a stratified sample of white, high-income immigrants in the United States (Sample A); a stratified sample of immigrants in Germany (Sample B); a sample of registrants for a naturalization program in New York that assisted low-income immigrants who are eligible for naturalization (Sample C); and a sample of mostly recent immigrants enrolled in English language classes in San Jose, California (Sample D). The surveys of samples A-C were administered through an online survey platform, while the survey for sample D was administered with paper questionnaires (see the SM for details on survey samples and expectations).

Our second validation strategy was to check if, across the four surveys, the IPL-12/24 scales correlate in the expected direction with important predictors of integration that are used in the literature on immigration. First, we expect immigrants with more years of residency in the host country to have higher levels of integration (15–17) and therefore higher IPL-12/24 scores on average. Second, we expect immigrants with more secure legal status, such as permanent residents and naturalized citizens, to have higher levels of integration (17–20). Third, we expect immigrants with higher levels of education to have higher levels of integration (15, 21–23).

Results

Construct Validity through "Contrasted Groups". Figure 1 shows the distribution of residency in the host country (left panel) and the distribution of IPL-12 scores (right panel) for each of the four contrasted samples. The average length of residency varies from about 4 years in Sample D, the recent immigrants enrolled in English language classes in San Jose, to about 35 years for Sample A, the high-income immigrants in the United States. Sample B, the immigrant sample from Germany, and Sample C, the registrants for the naturalization program in New York, fall in between with 20 and 12 years of average residency, respectively. Given that residency has been identified as one of the most important correlates of integration, these differences suggest that the *expected* level of integration is highest in sample A and lowest in sample D with samples B and C falling in between. If our IPL-12 scale is measuring integration, we would expect the average level of *measured* integration to vary from highest to lowest in Samples A-D, respectively.

The results in the right panel indicate that the IPL-12 measure does successfully distinguish between the four samples in terms of their measured integration levels. The average IPL-12 scores are 0.8 in Sample A, 0.69 in Sample B, 0.55 in Sample C, and 0.46 in Sample D, and the boxplots show the distributions of scores are well separated across the four samples. The results are very similar when we consider the long-form IPL-24 scores instead (see SM for details). These findings provide evidence that the IPL-12/24 scales are able to discriminate among groups that are expected to vary in their integration levels and thus speak to the construct validity of the measure.

Construct validity through correlation with predictors of integration. If the IPL-12 score is a reliable measure of integration we would expect it to correlate with well-established predictors of integration from the literature. To test this, we pooled the data from all four samples and regressed the IPL-12 scores on the following predictors: residency, education, immigration status, and an indicator for shared language, as well as controls for age and gender and sample fixed effects. The left panel of Figure 2 shows the estimated marginal effects from this regression. We find that the IPL-12 scores are conditionally correlated with all five predictors in the expected direction. For example, ten additional years of residency are associated with a 0.02 point increase in the IPL-12 score, controlling for the other variables (p-value$<$0.0001). Similarly, ten additional years of education are associated with a 0.03 point increase in the IPL-12 score (p-value=0.0006). We also find that compared to immigrants with temporary visas (the reference category), immigrants who are permanent residents or naturalized citizens of the host country have IPL-12 scores that are 0.06 points (p-value=0.0003) and 0.07 points (p-value$<$0.0001) higher on average, respectively. Lastly, immigrants from countries with the same dominant language as that of the host country have 0.02 points higher IPL scores on average than immigrants where home and host languages are different (p-value=0.1). We find no significant differences in IPL-12 scores based on age and gender. Taken together, these results support the construct validity of the IPL scores as a measure of integration.

The right panel of Figure 2 plots the IPL-12 score against years of residency, arguably the most reliable predictor of integration. The lines show how the percentiles of the conditional distribution of IPL-12 scores change with increased residency; the solid orange line indicates the median, and the dashed blue lines indicate the 5th, 10th, 25th, 75th, 90th, and 95th percentiles. We find that IPL-12 scores increase with longer residency across all percentiles. In addition, the increase is more pronounced at the lower percentiles, indicating that there is some degree of convergence toward higher IPL-12 scores at higher levels of residency.

We also see that for most percentiles there are decreasing marginal returns such that the rate of growth in IPL-12 scores becomes flatter with longer residency. For example, at the median, the IPL-12 scores increase from 0.5 to 0.73 when moving from 1 to 20 years of residency, but then increase only by 0.09 additional points when moving from 20 to 40 years of residency. This non-linear shape provides further validation of the construct validity of the IPL-12, because it is consistent with our intuition that the marginal integration returns of longer residency are reduced the longer immigrants live in the host country.

Correlations between and within integration dimensions. One advantage of our IPL-12/24 scales is that they also allow researchers to study the interplay of the six dimensions of immigrant integration or focus on a specific one. For each dimension there are two or four questions, which can be aggregated into a single dimension-specific scale. Here we illustrate these dimension-specific scales focusing on the long-form IPL-24, which captures each dimension with four questions, respectively. Figure 3 shows the pairwise relationships and correlations between the six dimension-specific integration scales in our pooled sample.

The marginal distributions show that our sample exhibits wide variation in terms of the levels of psychological, social, economic, political, and navigational integration. The one

DRAFT

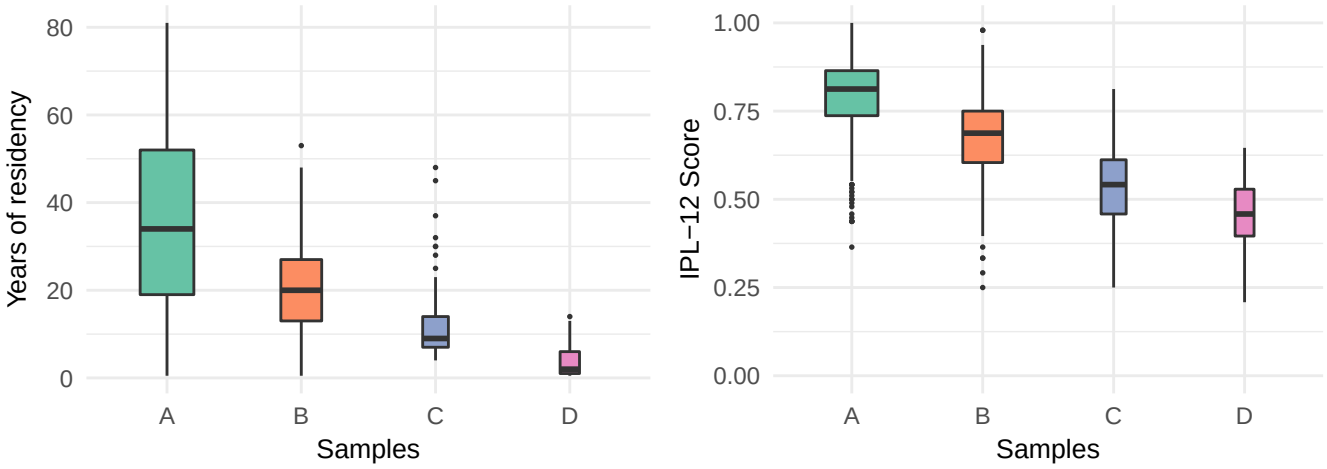
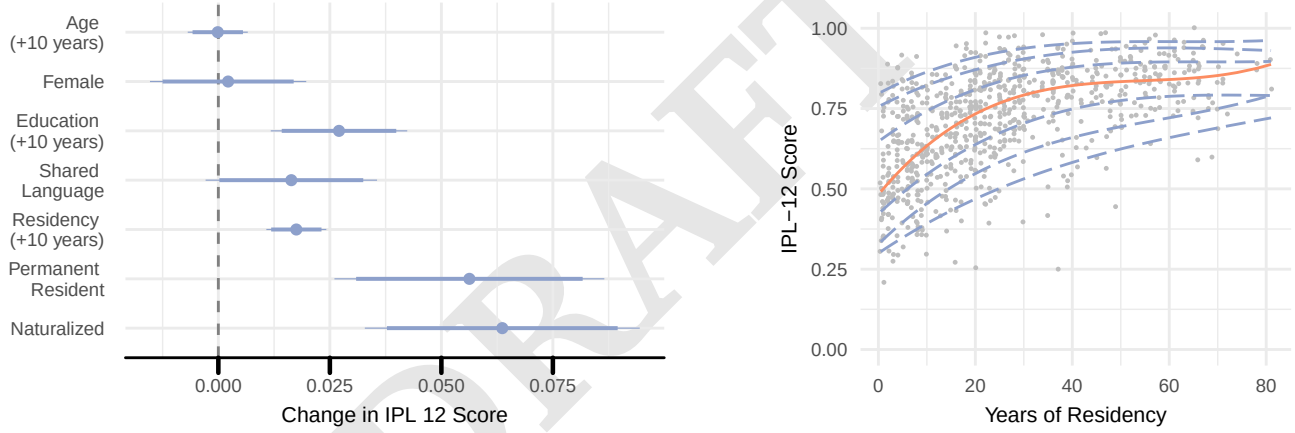


Fig. 1. Distribution of IPL-12 scores in four contrasted samples. The samples are ordered such that Samples A-D are decreasing in their expected levels of integration. The boxplots show that the measured integration levels based on the IPL-12 scale reproduce the ordering of the samples from highest to lowest expected levels of integration. Box size is proportional to sample size.



DRAFT

Fig. 2. Relationships between IPL-12 scores and well-established predictors of integration. Left panel shows marginal effects from a regression of IPL-12 scores on predictors of integration. Dots indicate point estimates and lines 95% confidence intervals. Right panel shows a scatter plot between the IPL-12 scores and years of residency; lines show how the percentiles of the IPL score distribution change with residency. Lines are drawn for the 5th, 10th, 25th, 50th (orange), 75th, 90th, and 95th percentiles.

exception is the linguistic integration dimension, where the distribution is skewed toward the top of the scale, as expected, given that our four validation surveys were mostly administered in the host country's dominant language and the average residency is 25.7 years in the host country. The skew toward higher language ability explains why our validation sample does not include many immigrants with extremely low values on the IPL-12/24 scale. The fact that our scale leaves room for lower values is a desired feature. We expect the lower part of the scale to be populated in samples of less integrated immigrants who do not speak the host country language. As we detail in the SM, we did find much larger variation in linguistic integration in two pilot surveys that we administered in New York and Switzerland to immigrants who chose to take the survey in their birth country language (see SM).

Moreover, we find that in our sample the six dimensions tend to be mostly positively correlated, indicating that immigrants who score high on one dimension of integration also tend to score high on the other dimensions. That said, we also see that some of the relationships are rather weak, as we might expect given the sample composition. For example, we find that psychological and economic integration are only weakly correlated. This is partly driven by the sample of immigrants in the language classes in San Jose, which included quite a few spouses from high-income households who had recently arrived. To what extent the different dimensions might be correlated or diverge in other samples is an important question for future research.

In the SM we provide tests that confirm that within each dimension the items are highly correlated. For example, the standardized Cronbach's alpha in the pooled sample for the six IPL-24 dimensions are 0.96 for linguistic, 0.78 for political, 0.6 for social, 0.62 for economic, 0.81 for psychological, and 0.76 for navigational integration. For samples A and B we were also able to collect response times, and the median time to complete the IPL-12 was 2-3 minutes and for the IPL-24 6-8 minutes.

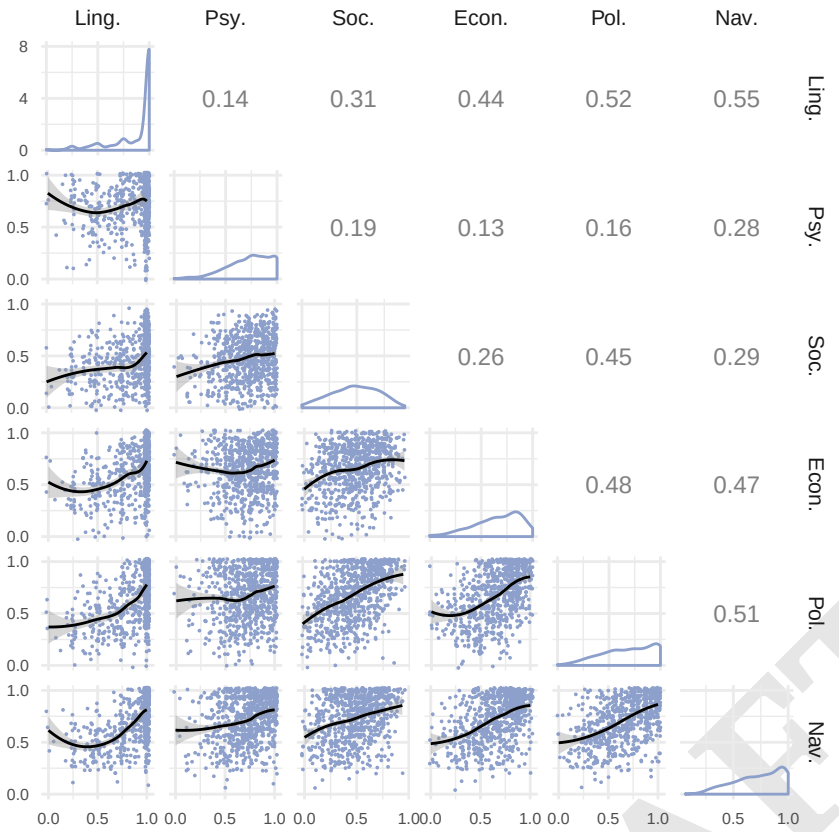


Fig. 3. Scatter-plot matrix for the six dimensions of integration as measured by the IPL-24 instrument (pooled sample, N=787). The panels in the main diagonal show the histograms of the marginal distributions, the panels above the main diagonal show the bivariate correlation coefficients, and the panel below the main diagonal show the scatter-plots with Loess lines (orange).

Conclusion

Immigrant integration has become a major policy issue in many host countries and has engendered much research in the academic community. However, scientific progress has been hampered by the lack of a common measure of integration, which would allow for cumulative knowledge. In this study we propose the short-form IPL-12 and long-form IPL-24 as new pragmatic measures of immigrant integration, i.e. the degree to which immigrants have the knowledge and the capacity to achieve success in their host society. The measure captures six dimensions of integration—psychological, economic, political, social, linguistic, and navigational—and each is measured with a set of two or four survey questions. We do not claim that this is the only or best possible measure of integration, but our goal was to strike a pragmatic compromise between construct validity and ease of use. The measure is short but comprehensive, and designed such that it can be applied across countries, immigrant groups, time, and survey modes. It allows researchers to focus on overall levels of integration or study the interplay between specific dimensions of integration.

We demonstrated the construct validity of the measures using four original surveys of different immigrant samples, which we expected to vary in terms of their integration success. The IPL-12/24 measures successfully distinguished among the four samples in the expected order. We also found that the IPL-12/24 measures correlate in the expected direction with several well-established predictors of integration, such as length of residency, shared language, education, and legal status. Finally, we illustrated how the measures can be used to study the interplay between different dimensions of integration.

Overall we foresee substantial payoffs for the study of immigrant integration if the scientific community were to coordinate on the use of a single common measure like our IPL-12/24. Our hope is that scholars will take up this proposal and put the measure to good use so that it can be further refined as more data is accumulated across multiple studies and contexts.

Materials and Methods

A. Instrument. The questionnaire for the IPL-12/24 scale was developed based on a systematic review of existing survey instruments and measures in the literature. Six criteria guided the development and selection of questions: construct validity and clear directionality, measure of integration rather than assimilation, applicability across national and local environments, applicability across immigrant groups and subsets of respondents, and yield of variation in responses. The wording of the questions is provided in the SM. To make our measures accessible to scholars and practitioners, we provide our survey instrument in different languages as well as helpful code for cleaning and displaying the date online (url: TBA).

B. Data. To evaluate the construct validity of the measure, we administered the IPL-12/24 to four samples of immigrants that we expected to vary in their integration levels. Each survey was approved by Stanford University's Institutional Review Board (protocol ID: 35163). We obtained informed consent from every survey participant. The samples, listed in order of decreasing expected levels of integration, included: a sample of high-income, white immigrants in the United States (sample A), a representative sample of immigrants in Germany (sample B), a sample of mostly recent immigrants who registered for a naturalization program in New York that assisted low income immigrants who are eligible for naturalization (sample C) and a sample of immigrants enrolled in English language classes in San Jose, California (sample D).

DRAFT

C. Statistical Methods. To compare the distributions of IPL-12 scores across the four samples we used box and whisker plots (Figure 1). To examine the correlation between the measure of integration and predictors of integration, we used linear regression analysis. In particular, we regressed the IPL-12 score on age, female, education, shared language, residency, and immigration status (temporary visa/permanent resident/naturalized). The model also includes survey fixed effects. We then computed 95% confidence intervals for the regression coefficients based on robust standard errors (figure 2, left panel). To examine the relationship between the IPL-12 scores and residency across different quantiles, we used a quantile regression where the IPL-12 score is regressed on a third order polynomial of residency (figure 2, right panel). To examine the correlations between the different dimensions of integration, we first aggregated the four IPL-24 questions in each dimension to construct scales. We then constructed a scatter-plot matrix to summarize the pairwise relationship between the scales using correlation coefficients and loess-smoothers. Replication materials have been deposited in the Harvard dataverse, https://doi.org/10.7910/DVN/MF2Q7U.

ACKNOWLEDGMENTS. The authors acknowledge seminar participants at the IRISS expert workshop on integration, Princeton University, University of California Santa Barbara, University of Michigan, Stanford Forum for Interdisciplinary Research on Migration, Wissenschaftszentrum Berlin, and panel participants at the 2017 European Political Science Association conference. Scholars who have commented on earlier versions of this paper include Daniel Hopkins, Ruud Koopmans, and Duncan Lawrence. Large parts of our data collection wouldn't have been possible without the generous help of the Alliance for Language Learners' Integration, Education and Success, the New York Office for New Americans, and the South Hayward Parish. Valuable research assistance was provided by Selina Kurer, Madelaine Musante, Valeria Rincon, Melody Rodriguez, and Stefan Schütz. The Swiss Network of International Studies contributed funding for the surveys, and the Ford Foundation provided operational support for the Immigration Policy Lab.

1. National Academies of Sciences, Engineering, Medicine, Committee on Population, , et al. (2016) *The integration of immigrants into American society*. (National Academies Press).
2. Gallie WB (1955) Essentially contested concepts in *Proceedings of the Aristotelian society*. Vol. 56, pp. 167–198.
3. Robinson V (1998) Defining and measuring successful refugee integration in *Proceedings of ECRE International conference on Integration of Refugees in Europe*.
4. Castles S, Korac M, Vasta E, Vertovec S (2002) Integration: Mapping the field. *Home Office online report* 29(03):115–118.
5. Kessler RC, et al. (2002) Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological medicine* 32(6):959–976.
6. Rosenberg M (1965) *Society and the adolescent self-image*. (Princeton university press).
7. Kymlicka W (1995) *Multicultural citizenship: A liberal theory of minority rights*. (Clarendon Press).
8. Will K (2012) Multiculturalism: success, failure, and the future. *Washington, DC: Migration Policy Institute*.
9. Huntington SP (2004) *Who are we?: The challenges to America's national identity*. (Simon and Schuster).
10. Hochschild J, Chattopadhyay J, Gay C, Jones-Correa M (2013) *Outsiders no more?: models of immigrant political incorporation*. (Oxford University Press).
11. Ager A, Strang A (2008) Understanding integration: A conceptual framework. *Journal of Refugee Studies* 21(2):166–191.
12. Puma JE, Lichtenstein G, Stein P (2018) The rise survey: Developing and implementing a valid and reliable quantitative measure of refugee integration in the united states. *Journal of Refugee Studies*.
13. Beversluis D, et al. (2016) Developing and validating the refugee integration scale in nairobi, kenya. *Journal of Refugee Studies* 30(1):106–132.
14. Waltz CF, Strickland OL, Lenz ER (1991) Reliability and validity of normreferenced measures. *Measurement in nursing research* 1991.
15. Dribe M, Lundh C (2008) Intermarriage and immigrant integration in sweden: An exploratory analysis. *Acta Sociologica* 51(4):329–354.
16. Massey DS (1986) The settlement process among mexican migrants to the united states. *American Sociological Review* pp. 670–684.
17. Borjas GJ, Tienda M (1993) The employment and wages of legalized immigrants. *International Migration Review* pp. 712–747.
18. Bratsberg B, Ragan, Jr, James F, Nasir ZM (2002) The effect of naturalization on wage growth: A panel study of young male immigrants. *Journal of Labor Economics* 20(3):568–597.
19. Hainmueller J, Hangartner D, Pietrantuono G (2015) Naturalization fosters the long-term political integration of immigrants. *Proceedings of the National Academy of Sciences* 112(41):12651–12656.
20. Hainmueller J, Hangartner D, Pietrantuono G (2017) Catalyst or crown: does naturalization promote the long-term social integration of immigrants? *American Political Science Review* 111(2):256–276.
21. Choi KH, Tienda M, Cobb-Clark D, Sinning M (2012) Immigration and status exchange in australia and the united states. *Research in social stratification and mobility* 30(1):49–62.
22. Furtado D (2012) Human capital and interethnic marriage decisions. *Economic Inquiry* 50(1):82–93.
23. Furtado D, Theodoropoulos N (2011) Interethnic marriage: A choice between ethnic and educational similarities. *Journal of Population Economics* 24(4):1257–1279.

DRAFT

PNAS
www.pnas.org

Supplementary Information for

A Pragmatic Measure of Immigrant Integration

Niklas Harder, Lucila Figueroa, Rachel Gillum, Dominik Hangartner, David D. Laitin and Jens Hainmueller

Corresponding Author David D. Laitin
E-mail: dlaitin@stanford.edu

This PDF file includes:

Supporting Information Text

Contents

1. Survey Development

A. Consulted Surveys. After consulting the theoretical literature on integration, we explored existing studies and surveys that measure integration or aspects of integration. We looked for questions that could fulfill the seven criteria outlined in our paper. Table S1 shows a list of all surveys and studies considered in this step.

Table S1. List of surveys and studies consulted

Abrams, Ando and Hinke (1998) "Psychological Attachment to the Group: Cross-Cultural Differences in Organizational Identification and Subjective Norms as Predictors of Workers' Turnover Intentions" (1).
American Council on the Teaching of Foreign Languages, "NCSSFL-ACTFL Can-Do Statements: Progress Indicators for Language Learners" (2).
American National Election Studies (3).
Bagnall (2015) "Global Identity in Multicultural and International Educational Context" (4).
Beversluis, Schoeller-Diaz, Anderson, Anderson, Slaughter, Patel (2016) "Developing and Validating the Refugee Integration Scale in Nairobi, Kenya" (5).
Bergami and Bagozzi (2000) "Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization" (6).
Brantmeier, Vanderplank, and Strube (2012) "What about me? Individual self-assessment by skill and level of language instruction" (7).
Brashears (2011) "Small networks and high isolation? A reexamination of American discussion networks" (8).
Brysbaert (2013) "LexTALE_FR a Fast, Free, and Efficient Test to Measure Language Proficiency in French" (9).
Caselli (2012) Measuring the Integration of Immigrants: Critical Notes from an Italian Experience (10).
Children of Immigrants Longitudinal Study (CILS) (11).
Delgado et al. (1999) "Self-Assessment of Linguistic Skills by Bilingual Hispanics" (12).
DIALANG Project (13).
Ethnic Diversity Survey (14).
European Quality of Life Surveys (EQLS) (15)
European Social Survey Round 8 (16).
European Union minorities and discrimination survey (17)
European Working Conditions Surveys (EWCS) (18).
Gaillard and Tremblay (2016) "Linguistic Proficiency Assessment in Second Language Acquisition Research: The Elicited Imitation Task" (19).
Gallup Poll (20).
General Social Survey (GSS) (21).
Hagerty and Patusky (1995) "Developing a measure of sense of belonging" (22).
Huddelston, Niessen, and Dag Tjaden (2013) "Using EU Indicators of Immigrant Integration" (23).
Immigrant Citizens Survey (ICS) (24)
International Social Survey Programme's (ISSP) National Identity Survey (25).
Kuo and Margalit (2012) "Measuring Individual Identity: Experimental Evidence" (26)
Latino National Survey (LNS) (27).
LeBlanc and Painchaud (1985) "Self-Assessment as a Second Language Placement Instrument" (28).
Lexical Test for Advanced Learners of English (LexTALE) (29).
Longitudinal Survey of Immigrants to Australia (LSIA) (30).
Longitudinal Survey of Immigrants to Canada (LSIC) (31).
Longitudinal Survey of the Integration of First-time Arrivals (ELIPA) (32).
Incorporating Data Quality Information in Mapping American Community Survey Data (33).
Mays and Cochran (2001) "Mental Health Correlates of Perceiv. ed Discrimination Among Lesbian, Gay, and Bisexual Adults in the United States" (34).
National Asian American Survey (NAAS) (35).
National Immigrant Survey (36).
National Survey of Midlife Development in the United States (37).
National UnDACAmented Research Project (38).
New Immigrant Survey (39).
New York City Department of Consumer Affairs Neighborhood Financial Services Study (40).
Pew Muslim American Survey (41).
Pew National Survey of Latinos (42).
Prentice and Miller (1994) "Asymmetries in Attachments to Groups and to their Members: Distinguishing between Common-Identity and Common-Bond Groups" (43).
Ross (1998) "Self-assessment in second language testing: a meta-analysis and analysis of experiential factors" (44).
Russell, Peplau, and Cutrona (1980) "The revised UCLA Loneliness Scale: concurrent and discriminant validity evidence." (45).
Science of Generosity Survey 2010 (46).
Six Country Immigrant Integration Comparative Survey (SCIICS) (47).
Social Capital Community Benchmark Survey (48).
Test of English as a Foreign Language (TOEFL) Exam (49).
UK Fourth National Survey of Ethnic Minorities (FNSEM) (50).
Wilson (1987) Urban Poverty and Family Life Survey of Chicago (51).
World Values Survey (WVS) (52).

B. Data collection. To develop the final measure, we conducted eight surveys, in addition to a round of "think-aloud" face-to-face interviews with 18 respondents. To validate the measure, we collected data through four additional surveys. Table S2 shows a list of all surveys, where each was approved by Stanford University's Institutional Review Board (protocol ID: 35163). We obtained informed consent from every survey participant.

The data presented in this paper was obtained through four different surveys, which we refer to as samples A - D. Our aim for sample A was to survey immigrants who, ex-ante, are very likely to show high levels of integration. For this, we asked the survey firm YouGov to provide an online sample of white immigrants with household incomes above the US median household income (living in the US, foreign born, white, income >= $50,000). Our focus on white immigrants with incomes above the US median for the sample was built on the assumption that their integration into the United States is less likely to be affected by discrimination than non-white immigrants and that they are less likely to face financial struggles than are those with incomes below the median.

Our aim for sample B was to get a mixed sample from outside the United States. To do this, we asked the survey firm Bilendi to provide an online panel of 250 first generation immigrants living in Germany (people born outside of Germany), 250 second generation Germans (people born in Germany with at least one immigrant parent), and 250 third and later generation Germans (people with two German-born parents). The data presented in the main paper is only from first generation immigrants.

To survey immigrants who are very likely to show low levels of integration, we followed two approaches. For sample C, we used email addresses collected in another research project on the effects of naturalization (Stanford IRB protocol ID: 34554 (53)). This project offered a lottery for naturalization fee waivers and asked immigrants interested in participating to fill out a brief survey to test their eligibility for naturalization and the lottery. Most of the interested immigrants had incomes low enough to qualify for a federal fee waiver. These immigrants were not entered into the lottery and were not included in the research project. From the remaining interested immigrants, we selected the immigrants that took the registration survey in Spanish and sent them an email invitation to English and Spanish versions of our survey. As compensation for participating in our survey, the invitations–written in English and Spanish–offered a $10 gift card. After a week of recruiting, we increased the gift card value to $20.

Sample D was possible through a cooperation with the Alliance for Language Learners' Integration, Education and Success (ALLIES), a coalition of adult schools, community colleges, and community-based organizations in the San Francisco Bay Area. Member organizations of ALLIES offer English classes to adults at various locations in the Bay Area. We visited these classrooms to field online and paper surveys, where we collected responses from 110 students (due to unfinished surveys, we only observe IPL-12/24 scores of 53 respondents). After consultations with ALLIES, the surveys were integrated into regular class hours and no incentives were offered.

Table S2. Overview of all surveys conducted

No.	Survey	Place	Mode	Time	Language	Interviews	Questions
1	MTurk survey of immigrants and natives	US	Online	08/2015	English	426	140
			First round of revisions				
2	MTurk survey of first and second generation immigrants	US	Online	03/2016	English	442	194
			Second round of revisions				
3	Survey of community college students	US, Santa Clara	Online	06 & 07/2016	English	187	163
4	Online survey of first to third generation immigrants through Sampling International	US	Online	06 & 07/2016	English	1025	163
			Third round of revisions				
5	Qualtrics online panel of first to fourth generation immigrants	US	Online	01/2017	English	1433	100
			Fourth round of revisions				
6	English as a second language students at the Office of New Americans	US, New York	In class online or paper	05/2017	Arabic, Chinese, English, French, Spanish	148	47
7	Representative survey of refugees in Switzerland	Switzerland	Mail-in or online	05/2017	Albanian, Arabic, French, German, Italian, Portuguese, Serbo-Croatian	128	47
8	MTurk survey of immigrants and natives	US	Online	07/2017	English	165	17
			Fifth round of revisions				
9	Face to face interviews with immigrants and natives at the South Hayward Parish	US, Hayward	Face to face	08/2017	English, Spanish	18	47
			Final round of revisions				
10	Online survey of first to third generation immigrants through Bilendi	Germany	Online	10/2017	German	726	60
11	Online survey of high income, white first generation immigrants through YouGov	US	Online	12/2017	English	406	60
12	Online survey of low income immigrants in New York through NaturalizeNY	US, New York	Online	12/2017	English, Spanish	111	60
12	English as a second language students through the Alliance for Language Learners' Integration, Education and Success	US, San Jose	In class online or paper	12/2017	English, Spanish	110	60

2. Survey Instrument and Scoring Rules

The short form IPL-12 consists of exactly 12 questions. In the long form IPL-24 survey, we measure 24 concepts, some of which consist of multiple questions. For political and navigational integration, we use 4-question quizzes to measure basic knowledge in these realms. To measure political participation, we use a matrix with 11 statements. To measure bridging social capital, we use two matrix questions with five items each. In all our online surveys, each question/matrix appeared on an individual page. Paper surveys were formatted with multiple questions per page.

The scoring rules presented below assign values from 1 to 5 to each answer. The assigned values are subsequently added up for each respondent. The resulting score ranges from 12 to 60 for the IPL-12 and from 24 to 120 for the IPL-24. For our analysis we rescale this score to range from 0 to 1. When rescaling the original score, it is important to consider its theoretical range. Otherwise, most statistical software will use the range in the realized data for rescaling. Rescaling in R could be done with the following code:

library(scales)

rescale(ipl24, to = c(0, 1), from = c(24, 120))

In addition to the questions outlined below, we need information on a respondent's household size to equivalize household income to household size. When we use the term "household" in this survey, we think of a group of individuals that reside at the same place and routinely share their living expenses and other financial responsibilities. The term can also apply to an individual who lives alone and is solely responsible for his or her living expenses and financial responsibilities. In the survey we describe a household as "everyone with whom you share an apartment or house **and** with whom you are also related by birth, marriage, partnership, or adoption". We choose this definition to make it applicable to many different contexts. Potential survey populations for our measure include well-settled immigrants with many years of residency as well as recent refugees in refugee camps or large shelters. Household definitions that rely solely on the place of residence, like the U.S. Census (54) or the UK Office for National Statistics (55) definition, would not be applicable in the case of refugee camps or shelters with large shared rooms. Definitions that focus on shared meals, like the Afrobarometer (56) definition, would also be problematic in cases in which food is provided by aid organizations or in cases in which work schedules make shared meals impossible. A direct referral to shared finances is problematic in circumstances in which refugees receive in-kind support or vouchers.

Below, we show individual questions and the respective codings. Questions are organized by dimension. The first two questions in each dimension are part of the IPL-12 short measure, and of the longer IPL-24. The last two questions in each dimension are only included in the IPL-24. Response values are shown in parentheses or are explained below the question. Comments and words that change depending on the country the survey is fielded in are *italicised*.

A. Psychological Integration.

1. How connected do you feel with *the United States*?

   - I feel an extremely close connection. (5)
   - I feel a very close connection. (4)
   - I feel a moderately close connection. (3)
   - I feel a weak connection. (2)
   - I do not feel a connection at all. (1)

   Source: *Inspired by question AQ51/TMQ70 "To what extent do you feel connected to [host country nationals]?" in the Six Country Immigrant Integration Comparative Survey (47).*

2. How often do you feel like an outsider in *the United States*?

   - Never (5)
   - Rarely (4)
   - Sometimes (3)
   - Often (2)
   - Always (1)

   Source: *Inspired by the item "I feel like an outsider in most situations" in Hagerty and Patusky's sense of belonging instrument (22).*

3. Thinking about your future, where do you want to live?

   - I definitely want to live in *the United States* for the rest of my life. (5)
   - I probably want to live in *the United States* for the rest of my life. (4)
   - I am unsure if I want to remain in *the United States* or if I want to move to another country. (3)
   - I probably want to move to another country. (2)
   - I definitely want to move to another country. (1)

   Source: *This question was originally influenced by research that shows how immigrants express identity and a sense of belonging in a host country through considerations on where they would like to be buried or where they would like to have their loved ones buried (57–60). The sensitivity of topics such as death and burial can vary substantially over different cultures. To avoid measurement error due to these differences, we were looking for a more general way to ask how much a respondent connects their long-term ambitions with a current host country.*

4. How often do you feel isolated from *American* society?

   - Never (5)
   - Rarely (4)
   - Sometimes (3)
   - Often (2)
   - Always (1)

   Source: *Inspired by the item "I feel isolated from others." of the revised UCLA loneliness scale (45).*

B. Linguistic Integration. *The following questions are asked in a matrix with statements as rows and answer options as columns. See Figure S1 for a screenshot of the matrix from the online questionaire. The matrix is introduced with the following text:*

Communicating in *English* has many components, like reading, listening, writing, and speaking skills. Please evaluate your own skills in *English*. How well can you do the following when reading, speaking, writing, or listening to *English*? Please mark one answer for each row.

Matrix items are:

1. I can **read** and understand the main points in simple newspaper articles on familiar subjects.
2. In a conversation, I can **speak** about familiar topics and express personal opinions.
3. I can **write** letters about my experiences, feelings, and about events.
4. I can **listen** to and understand the main points in radio or TV programs about familiar subjects.

Answer options for each item are:

- Very well (5)
- Well (4)
- Moderately well (3)
- Not well (2)
- Not well at all (1)

Source: *We consulted existing surveys and literature pertaining to language skills measurement (see table S1), and ultimately settled on "can-do" statements to quickly and comprehensively measure English language proficiency. Can-do statements are self-assessments gauging what a person "can do" in a language, like read a newspaper or listen to and understand the radio. Although we tested a variety of question formats, including questions adapted from various existing surveys and a few short quizzes, our tests and existing literature reveal that can-do statements seem to be an accurate measure that discriminates between less and more integrated immigrants (9, 19, 32). Although some may fear that individuals are not good at accurately assessing their own language abilities, studies show that people actually do a good job in this task, particularly when they are given concrete, language-related actions and asked to identify their ability to do such actions (7, 28, 44). In sum, both the literature and our own pre-tests suggest that can-do statements are the best format to reach our goals of a battery that is short, yet comprehensive and accurate.*

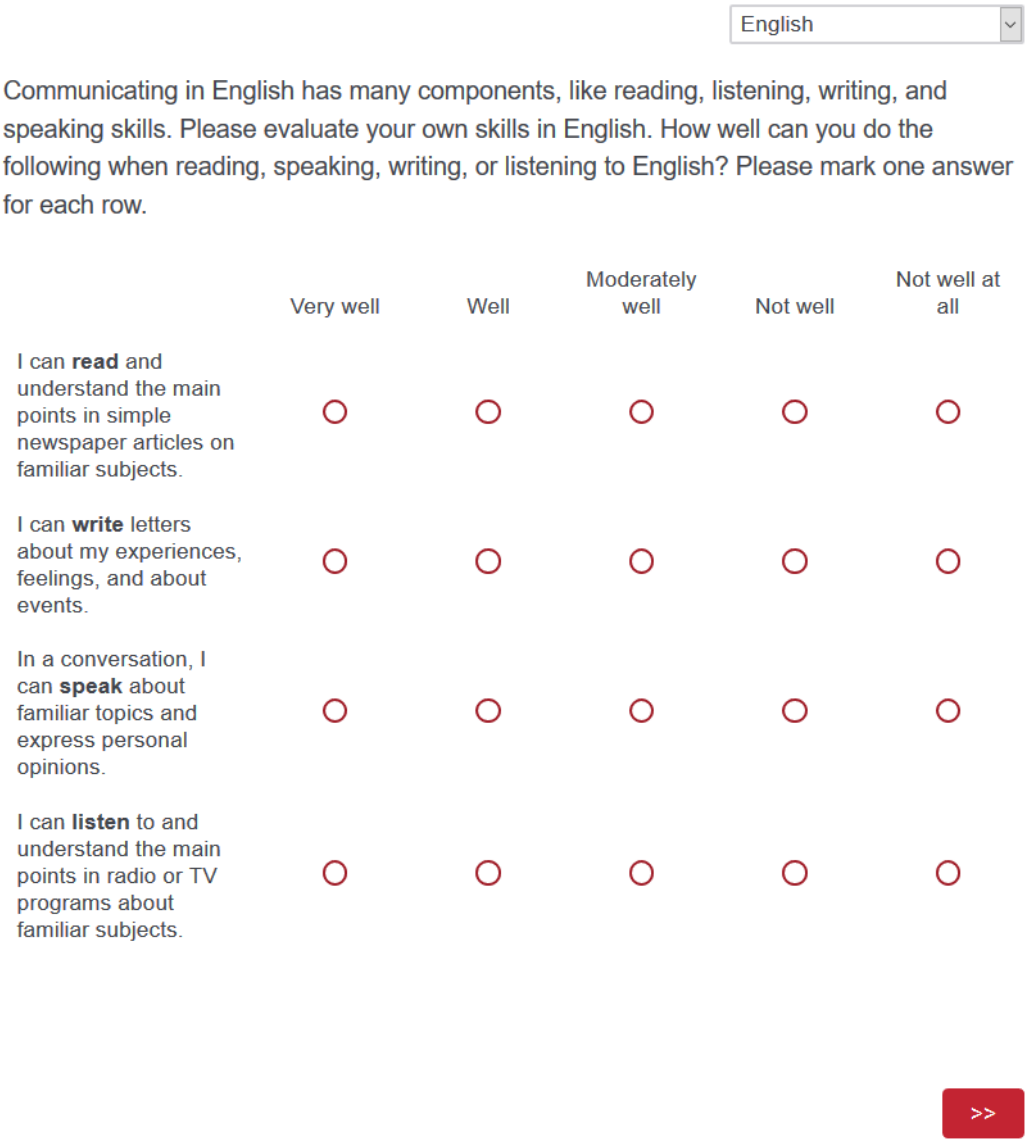


Fig. S1. All four linguistic integration questions in one matrix.

C. Economic Integration.

1. What is your **household's** total annual income (before taxes and deductions) from all sources? If you don't know the exact figure, please give an estimate.

   Your household includes everyone with whom you share an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.

   Answer options are 10 intervals defined by the deciles of the respective country's gross household income distribution. Figure S2 shows an example screenshot from the online questionaire for the United States. The answers are re-coded as follows:

   - *Income brackets are re-coded to the middle of the bracket. The lowest bracket is re-coded to the equivalent of a low monthly income (i.e.* $\$1,000$ *in the United States). The highest bracket is re-coded to the sum of the starting value of the highest bracket and the difference between the highest and the lowest value of the second highest bracket.*
   - *The new values are divided by the square root of the respondent's household size.*
   - *Using public income statistics, the country's gross median equivalized household income is used as a reference category for further re-coding. If no data on the gross median equivalized household income is available, it can be approximated from census data (or similar) using the same re-coding outlined above.*
   - *The country's gross median equivalized household (gmeh) income is then used to create 5 categories:*
     - *0 to* $gmeh/3$ *(1)*
     - $(gmeh/3) + 1$ *to* $gmeh/1.5$ *(2)*
     - $(gmeh/1.5) + 1$ *to* $gmeh$ *(3)*
     - $gmeh + 1$ *to* $gmeh + (gmeh/3)$ *(4)*
     - $gmeh + (gmeh/3) + 1$ *or above (5)*
   - *The re-coded gross household income is then assigned to one of the outlined categories.*

   Example: *If a US family of three has a household income of* $\$68,000$*, a member of this family would answer the income questions with option six,* $\$60,001$ *to* $\$75,000$*. This answer is recoded to the middle of the interval,* $\$67,500$*, and divided by the square root of three:* $\frac{67500}{\sqrt{3}} = 38,971.14$*. Using data from the 2014 American Community Survey (54), we estimate the gross median equivalized household income in the US to be* $\$42,900$*. Based on this value, the categories for the final coding are: 0 to 14,300 = 1; 14,301 to 28,600 = 2; 28,601 to 42,900 = 3; 42,901 to 57,200 = 4; 57,201 and higher = 5. With a coded equivalized household income of* $38,971.14$*, the family would fall into the third interval and the respondent would be coded accordingly.*

   To avoid missing values on this sensitive question, we also implement unfolding questions (Lavrakas 2011). If a respondent declines to answer, we follow up with a question asking if their income falls above or below the upper limit of the second quintile of the gross household income distribution (upper limit of answer option 4 in the original question). Depending on the answer we then ask if their income falls above or below the upper limit of the first/fourth quintile. In the first case, we now know whether the respondent's income falls in the first or the second quintile. In the second case we either know that the respective income falls in the fifth quintile or we continue asking whether the respondent's income falls above or below the upper limit of the third quintile. After these questions we know the income quintile of the respondent's household income. We then follow the re-coding steps outlined above.

   Source: *We ask for annual income before deductions because this income is usually used to write and discuss employment contracts. We therefore assume that this number is most easily remembered by most respondents. We also avoid measurement error due to country differences in calculating net income.*

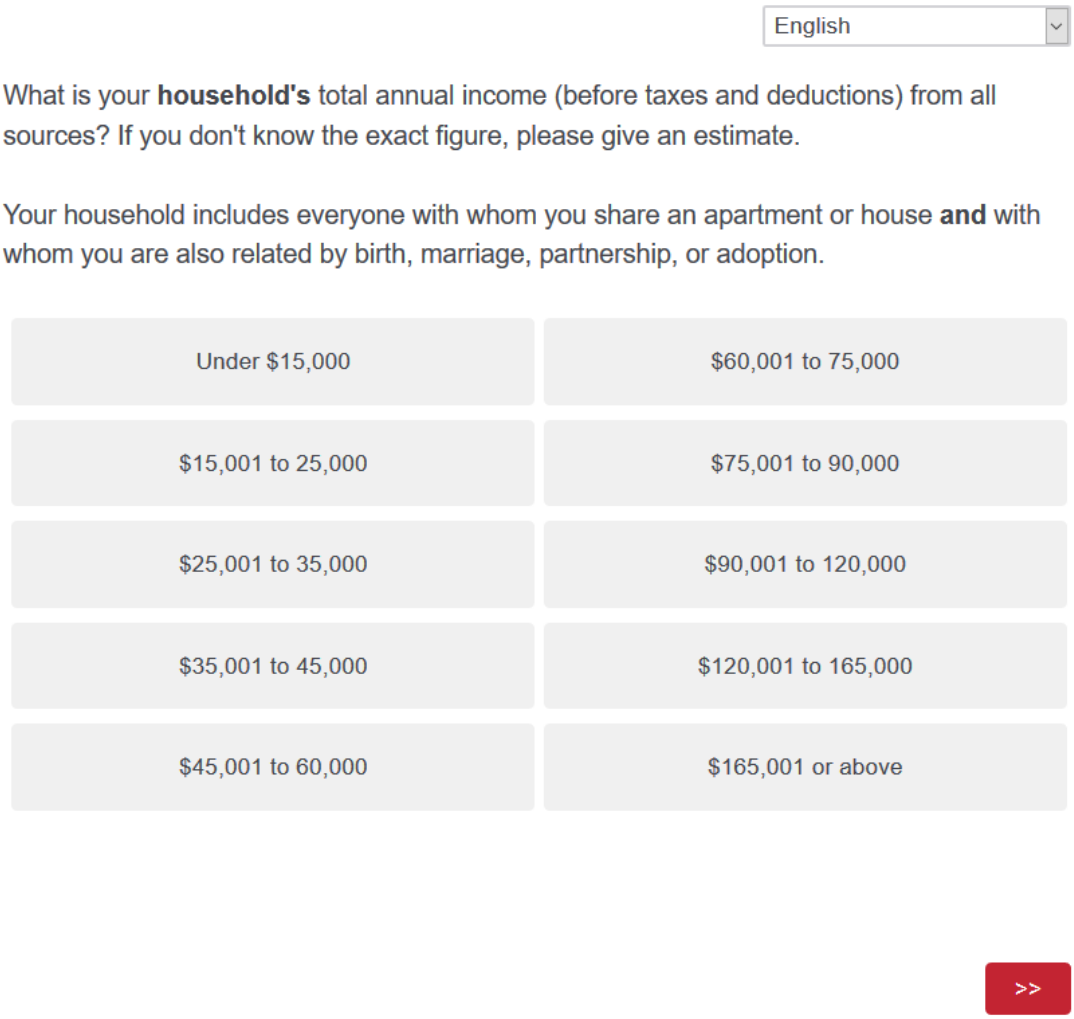


Fig. S2. Question on household income with income intervals for the US.

2. Which of these descriptions best applies to what you have been doing for the last four weeks? Please select only one.

- In paid work, even if away temporarily (employee, self-employed, working for your family business) (5)
- In school, even if on vacation (3)
- Unemployed and actively looking for a job (1)
- Unemployed and not actively looking for a job (1)
- Permanently sick or disabled (3)
- Retired (3)
- In military service (5)
- In community service (3)
- Doing unpaid housework, looking after children or other persons (3)
- Other (please specify)

Answers are coded as 1 (Unemployed and actively looking for a job; Unemployed and not actively looking for a job), 3 (In school, even if on vacation; Permanently sick or disabled; Retired; In community service; Doing unpaid housework, looking after children or other persons), and 5 (In paid work, even if away temporarily; In military service;). This re-coding in three groups roughly follows the American Community Survey coding in the three categories "Employed", "Not in Labor Force", and "Unemployed" (54).

Source: *This question is inspired by question F17a CARD 63 of the European Social Survey Round 8 (16).*

3. *This questions is asked in a matrix with statements as rows and answer options as columns. See Figure S3 for an example from the online questionaire. The matrix is introduced with the following text:*

   Please indicate whether your household currently can or cannot afford to pay an unexpected, but necessary, expense of...

   Matrix items are:

   - $500
   - $1,000
   - $10,000
   - $50,000

   Answer options for each item are:

   - Yes, can afford (1)
   - No, cannot afford (0)

   The final score is the sum of all answers plus one.

   The values shown above are values for the United States. To adopt these values to any other country, start by finding the highest value. The highest value is defined as the respective country's median household income rounded to the next 10,000. The second highest value is defined as a fifth of the highest value. The third highest value is defined as a fiftieth of the highest value. The lowest value is defined as a hundredths of the highest value.

   Source: *This question was created and tested by the research team.*

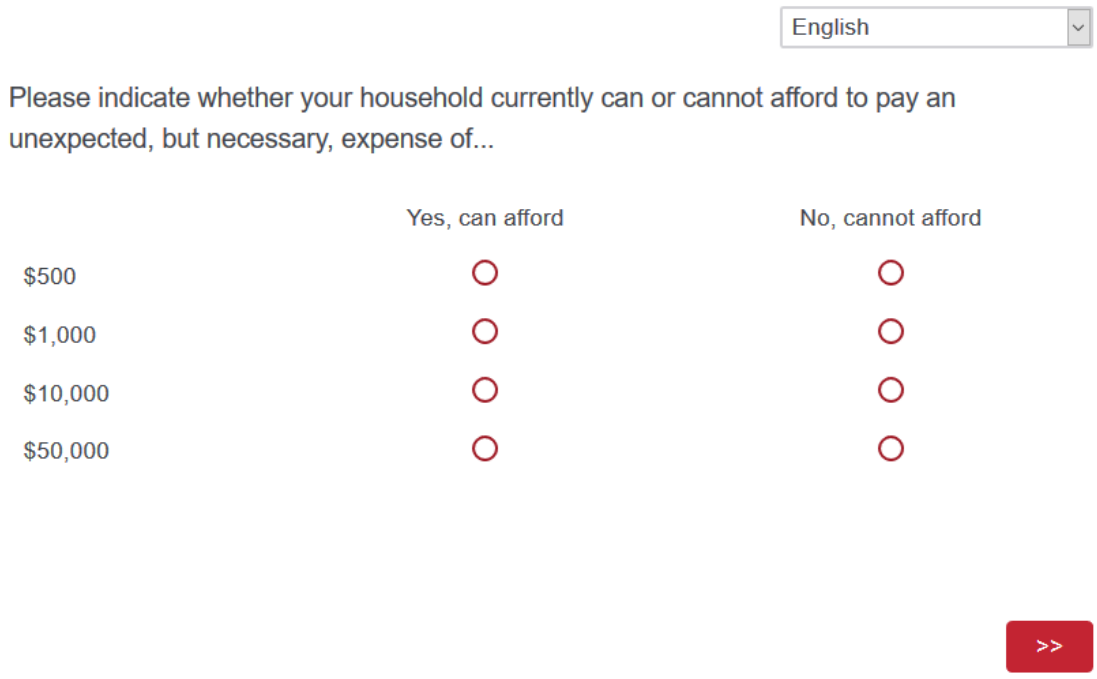


Fig. S3. Matrix with questions on unexpected, but necessary, expenses.

4. How satisfied are you with your current employment situation?

   Your employment situation refers to the answer you gave in a previous question (either in paid work, in school, unemployed, permanently sick or disabled, retired, in the military, in community service, doing unpaid housework, looking after children or other persons, or other status).

   - Very satisfied (5)

- Somewhat satisfied (4)
- Neither satisfied nor dissatisfied (3)
- Somewhat dissatisfied (2)
- Very dissatisfied (1)

Source: *This question is inspired by Q88 of the 2015 European Working Conditions Surveys (EWCS) (18).*

D. Political Integration.

1. How well do you understand the important political issues facing *the United States*?

   - Very well (5)
   - Well (4)
   - Moderately well (3)
   - Not well (2)
   - Not well at all (1)

   Source: *This question is inspired by the "Good understanding of political issues" question (effic_undstd) of the American National Election Studies in the 2012 block on efficacy and government responsiveness (3).*

2. In the last 12 months, how often did you typically discuss major political issues facing *the United States* with others?

   - Never (1)
   - Once a year (2)
   - Once a month (3)
   - Once a week (4)
   - Almost every day (5)

   Source: *This question is inspired by the "Days in past week discussed politics" question (discuss_discpstwk) of the American National Election Studies in the 2012 block on efficacy and government responsiveness (3).*

3. *Item 3 in political integration is the sum of four short quiz questions. Each right answer counts one point and the final score is the sum of all points plus one. The quiz is introduced by the following text:*

   Source: *All items of the political knowledge test were created and tested by the research team.*

   Now we would like to ask you some questions about public policy and current events. **Please answer these questions from memory, without looking up the answers or asking another person.** Not many people can answer every question correctly, and we would be very grateful if you would answer the questions to the best of your ability.

   (a) In politics, people often talk about a left-right dimension. Can you please tell us if the following sentence is true or not? *The question randomly selects one of the two sentences below:*

   - The *Republican Party* is considered to be left of the *Democratic Party*.
   - The *Republican Party* is considered to be right of the *Democratic Party*.

   Answer options are:

   - True
   - False
   - Don't know

   If a true sentence is shown, "True" is coded as 1 and "False" as 0. The coding is reversed if a wrong sentence is shown. "Don't know" is always coded as 0. Outside the United States, the party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension.

   (b) To which of the following parties does the current *President* of *the United States* belong?

   - *Republican Party*
   - *Democratic Party*
   - Other
   - Don't know

   Outside the United States, "President" should be substituted with the appropriate title for the elected head of government or the elected head of state. If in doubt, the office more visible to the average citizen should be selected. The party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension. The right answer is then coded with 1, all other answers with 0. "Other" can be the right answer. "Don't know" should never be the right answer. Directly after elections, the term "acting head of government" or "acting head of state" can be used.

   (c) Which of the following parties occupies the largest number of seats in the *Senate* of *the United States*?

- *Republican Party*
- *Democratic Party*
- Other
- Don't know

Outside the United States, "Senate" should be substituted with the legislative chamber that is usually more prominently considered in news and reporting. The party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension. The right answer is then coded with 1, all other answers with 0. "Other" can be the right answer. "Don't know" should never be the right answer.

(d) What is the minimum age that a person must be to vote in a general election in *the United States*?
Answer option are ages from 15 to 21 (or the legal voting age if older than 21), "There is no minimum age", and "Don't know". The right answer is coded as 1, all other answers as 0.

4. *The following question is presented in a matrix with statements as rows and answer options as columns. The matrix is introduced with the following text:*

There are different ways of trying to improve things in *the United States* or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you...

Statements are:

- ...tried to convince somebody to change their political opinion?
- ...tried to influence others on how to vote?
- ...made a political statement in a public setting or online regarding politics in *the United States*?
- ...engaged in public or online discussions regarding politics in *the United States*?
- ...contacted a politician, or a government official?
- ...worked in a political party or action group?
- ...worn or displayed a political badge, sticker, or sign?
- ...signed a petition?
- ...taken part in a lawful public demonstration?
- ...boycotted certain products?
- ...collected signatures for a petition?

Answer options are:

- Yes (1)
- No (0)

For the final score, the sum of all "Yes" answers is taken. This sum is then recoded in a way that all sums greater than 4 are coded as 5, a sum of 3 or 4 is coded as 4, a sum of 2 is coded as 3, a sum of 1 is coded as 2 and a sum of 0 is coded as 1.

Source: *This question is inspired by questions B15 to B22 of the European Social Survey Round 8 (16) and "MOBILPO" items in the American National Election Studies (3).*

E. Social Integration.

1. In the last 12 months, how often did you eat dinner with *Americans* who are not part of your family?

   - Never (1)
   - Once a year (2)
   - Once a month (3)
   - Once a week (4)
   - Almost every day (5)

   Source: *This question was created and tested by the research team. By directly measuring the frequency of a social interaction, the question has face validity for measuring social integration. The focus on shared meals is derived from Max Weber's concept of commensality. According to Weber, commensality signals social equivalence or acceptance in different societies and religions around the world (61).*

2. Please think about the *Americans* in your address book or your phone contacts. With how many of them did you have a conversation - either by phone, messenger chat, or text exchange - in the last 4 weeks?

   - 0 (1)
   - 1 to 2 (2)
   - 3 to 6 (3)
   - 7 to 14 (4)
   - 15 or more (5)

   Source: *This question was created and tested by the research team.*

3. *The following question is presented as two matrix questions with statements as rows and answer options as columns. See Figure S4 for a screenshot example from the online questionaire. The first matrix is introduced with the following text:*

   People sometimes participate in different kinds of groups or associations. For each group listed below, how often do you participate in a group activity?

   Statements are:

   - A group related to your **job**, like a union, business, or professional organization
   - A group related to your **religious beliefs**, like a church, mosque, synagogue, or other religious organization
   - A group related to your **hobbies**, like a sports, leisure, or cultural group
   - A group related to a **social or political cause**, such as a voluntary organization or political party
   - Another voluntary organization

   Answer options are:

   - Participate at least once per week (5)
   - Participate at least once per month (4)
   - Participate at least once per year (3)
   - Belong but do not actively participate (2)
   - Do not belong nor participate (1)

   The second matrix displays the same statements as the first matrix. In online or phone surveys statements can be dropped from the second matrix if a responded answered "Do not belong nor participate" in the first matrix. The second matrix is introduced by the following text:

   If you think about members of the groups you are participating in, how many of them are *Americans*?

   Answer options are:

   - All of them (5)
   - Most of them (4)
   - About half of them (3)

- None of them (2)
- Do not belong nor participate (0)

Before the score for this question is calculated, it is important to check the answers for consistency. If a respondent scored "1" for an item in the first matrix, the score for this item in the second matrix has to be "0" and the other way around. To calculate the final score, the product of the scores from matrix one and matrix two is calculated for each item and each respondent. Then, each respondent is assigned the highest realized product. The range of the products should be 0 to 25. The realized products are then rescaled to a range from 1 to 5. The resulting values are rounded to the next highest integer.

Source: *This question is inspired by Robert Putnam's concepts of bridging and bonding social capital (62). The question items are influenced by "ORGANIZATIONAL AND CHURCH ACTIVITY" items in the American National Election Studies (3) and the Social Capital Community Survey (48).*

4. Many people help each other with everyday favors, such as getting rides, borrowing a little money, or babysitting. In the last 12 months, how often have you provided such favors to *Americans*?

   - Never (1)
   - Once a year (2)
   - Once a month (3)
   - Once a week (4)
   - Almost every day (5)

   Source: *This question was inspired by the "depend for everyday favors" question (R5525) of the Urban Poverty and Family Life Survey of Chicago (51). In the case of integration, the directionality of the original question is unclear. We argue that in our setting, providing favors is more informative than depending on favors.*

Fig. S4. Matrix measuring group membership.

Fig. S5. Matrix measuring the share of natives for each social group.

F. Navigational Integration.

1. *The first two items are presented in a single matrix with statements as rows and answer options as columns. See Figure S6 for a screenshot example from the online questionaire. The matrix is introduced with the following text:*

   In this country, how difficult or easy would it be for you to do each of the following?

   Items are:

   - See a doctor
   - Search for a job (find proper listings)

   Answer options are:

   - Very difficult (1)
   - Somewhat difficult (2)
   - Neither difficult, nor easy (3)
   - Somewhat easy (4)
   - Very easy (5)

3. *The third question can be added to the matrix with the first two questions. The answer options remain the same. The statement reads:*

   Get help for legal problems

   Source: *All items in this matrix were created and tested by the research team.*

4. *Item 4 in navigational integration is the sum of four short quiz questions. Each right answer counts one point and the final score is the sum of all points plus one. For all quiz questions, the answer options and/or the correct answer need to be adopted to local laws and conventions. The quiz is introduced by the following text:*

   Source: *All items of the navigational integration test were created and tested by the research team.*

   Now we would like to ask you some questions about daily life in the United States. **Please answer these questions from memory, without looking up the answers or asking another person.** Not many people can answer every question correctly, and we would be very grateful if you would answer the questions to the best of your ability.

   (a) How many drinks (a can or glass of beer, a glass of wine, or a shot of liquor), in about an hour time span, can an average person have before he or she is too intoxicated to legally drive a car?
   - No alcoholic drinks at all. (0)
   - Most people can legally drive after one or two drinks. (1)
   - A maximum of five drinks, as long as the person can drive safely. (0)
   - There is no limit, as long as the person can drive safely. (0)
   - Don't know (0)

   (b) How do most people in *the United States* typically pay their income taxes?
   - Taxes are automatically deducted from paychecks, and no special filing is necessary (0)
   - Employers have the responsibility to file forms for their workers. (0)
   - People can pay their taxes at a bank or a municipal office. (0)
   - Workers must file their tax returns with the federal government. (1)
   - Don't know (0)

   (c) If you were sending a letter in *the United States*, what is the correct way to write the address on the envelope? Please select one format from the list below.
   - 101 2nd Street, Mary Smith, Albany, 12204, NY (0)
   - Mary Smith, 101 2nd Street, Albany, NY, 12204 (1)
   - Mary Smith, 2nd Street 101, Albany, NY, 12204 (0)
   - Mary Smith, 101 2nd Street, 12204, Albany, NY (0)
   - Don't know (0)

   (d) In *the United States*, how should you seek medical help for a condition like chronic back pain?
   - Call an ambulance (0)
   - Go to the emergency room (0)
   - See your general practitioner (1)
   - Ask a supervisor at work (0)
   - Don't know (0)

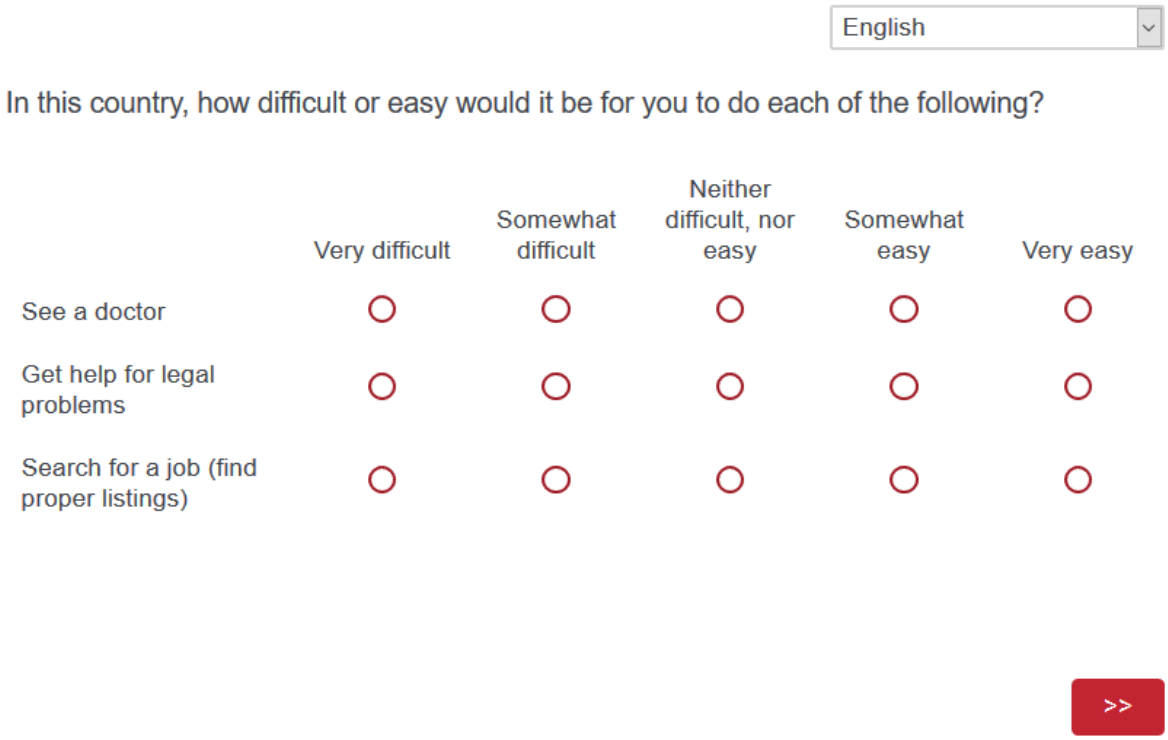


Fig. S6. Navigational integration matrix with all three statements.

3. Additional Results

A. Sample Descriptives. Below we show descriptive statistics of the data used for this paper.

Table S3. Sample Descriptives; Mean (Standard Deviation)

	Sample A, USA		Sample B, Germany		Sample C, USA, New York		Sample D, USA, San Jose	
N	406		235		93		53	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	59.36	14.72	37.98	12.69	36.38	12.78	38.68	13.31
Residency in Host Country	34.73	20.21	20.43	10.96	11.95	8.42	3.95	4.07
Household Size	2.42	1.18	2.77	1.47	3.98	1.57	3.6	2.05
% Female	35.96		63.83		76.34		92.45	

B. Survey time. For samples A & B (USA/YouGov and Germany), we recorded the time it took respondents to answer individual questions. Based on these measurements, we estimate the median response time for the full IPL-12 instrument to be between 2 and 3 minutes and the median response time for the full IPL-24 instrument to be between 7 and 8 minutes (see table S4).

Table S4. Minutes it took respondenst to answer all IPL-12/24 questions

Sample	Instrument	N	Mean	SD	Min	Median	Max
Germany	IPL-12	239	3.39	3.84	0.33	2.52	43.49
Germany	IPL-24	239	8.92	5.78	1.17	7.50	46.10
YouGov	IPL-12	406	3.40	9.81	0.42	2.13	154.97
YouGov	IPL-24	406	11.97	58.60	1.16	6.87	1,161.95

C. Similarity between IPL 12 and IPL 24 scores. In the main paper we mainly focus on the short-form IPL 12 measure. While we find that the long-form IPL 24 measure offers more precision (see smaller standard errors in Table S5) and offers a broader set of questions for further analysis, Figure S7 shows that little information is lost if the short-form measure is used instead of the long-form measure.

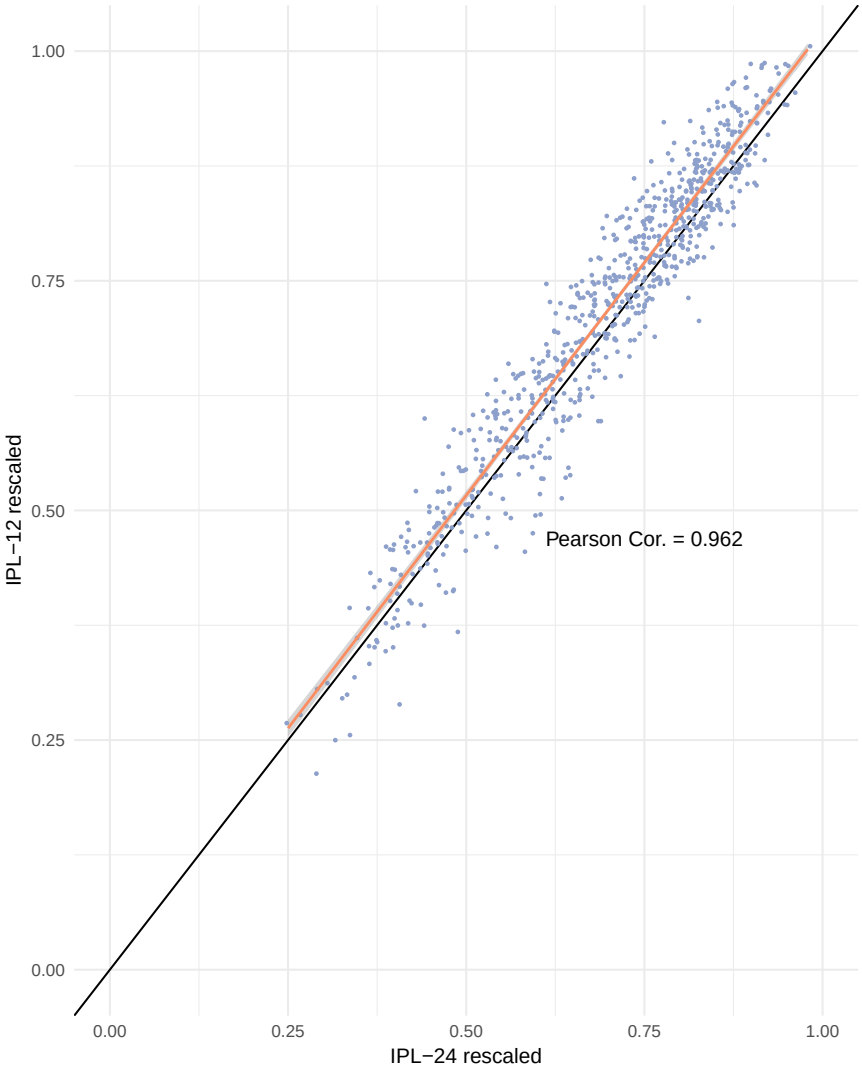


Fig. S7. Jittered scatter plot of the long and the short form measure. The orange line represents a linear fit, the black line 45 degree line.

D. Replications of main results. All results presented in the main paper are either based on the IPL-12 or the IPL-24 score. In this section, we replicate all presented findings for both measures.

D.1. Contrasted groups. Figure 1 in the paper shows the distribution of IPL-12 scores in the four different samples. Figure S8 compares these distributions to the distributions of the longer IPL-24. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

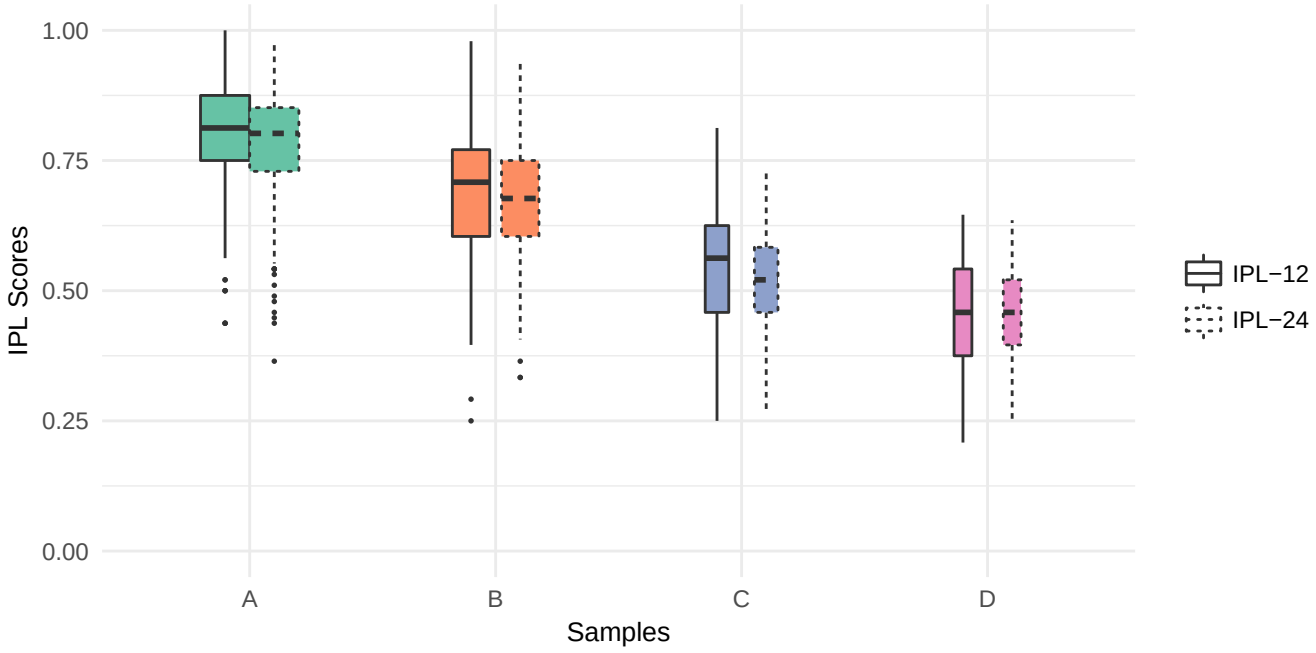


Fig. S8. Distribution of IPL-12 and IPL-24 scores in four contrasted samples.

D.2. Correlations. The left panel of Figure 2 in the paper shows the relationships between IPL-12 scores and well-established predictors of integration. The right panel shows a scatter plot between the IPL-12 scores and years of residency; lines show how the percentiles of the IPL score distribution change with residency. Table S5 shows the full output of the regression model used for the left panel of Figure 2 in the paper. The table also shows the full results of the same model run with the IPL-24 score instead of the IPL-12 score. Figure S9 replicates Figure 2 from the paper for the IPL-24 score.

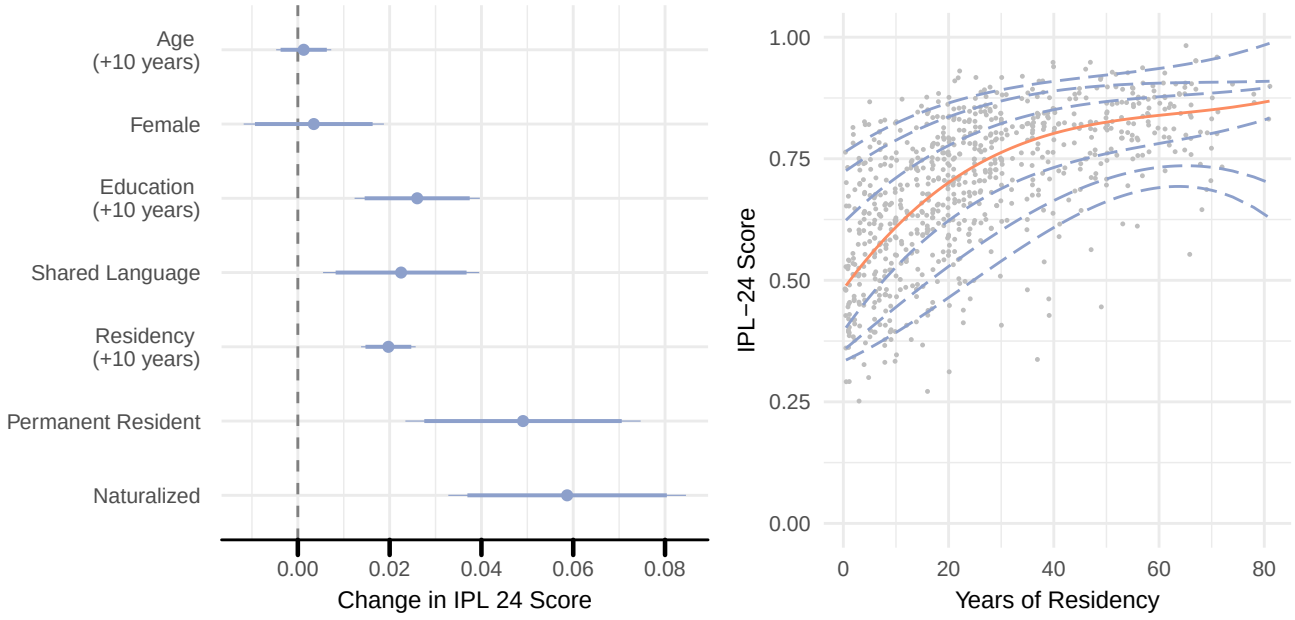


Fig. S9. Relationships between IPL-24 scores and well-established predictors of integration. Left panel shows marginal effects from a regression of IPL-24 scores on predictors of integration. Dots indicate point estimates and lines 95% confidence intervals. Right panel shows a scatter plot between the IPL-24 scores and years of residency; lines show how the percentiles of the IPL score distribution change with residency. Lines are drawn for the 5th, 10th, 25th, 50th (orange), 75th, 90th, and 95th percentile, respectively.

Table S5. Full regression output for coefficent plots

	Dependent variable:	
	IPL-12 Score rescaled	IPL-24 Score rescaled
	(1)	(2)
Sample B (Germany)	-0.062^{***}	-0.056^{***}
	(0.012)	(0.011)
Sample C (New York)	-0.196^{***}	-0.190^{***}
	(0.016)	(0.015)
Sample D (San Jose)	-0.245^{***}	-0.224^{***}
	(0.019)	(0.016)
Permanent Resident	0.056^{***}	0.049^{***}
	(0.015)	(0.013)
Naturalized	0.064^{***}	0.059^{***}
	(0.016)	(0.013)
Female	0.002	0.003
	(0.009)	(0.008)
Education (+ 10 years)	0.027^{***}	0.026^{***}
	(0.008)	(0.007)
Age (+ 10 years)	-0.0001	0.001
	(0.003)	(0.003)
Residency (+ 10 years)	0.017^{***}	0.020^{***}
	(0.003)	(0.003)
Shared Language	0.016^{*}	0.022^{***}
	(0.010)	(0.009)
Constant	0.628^{***}	0.597^{***}
	(0.026)	(0.023)
Observations	787	787
R^2	0.545	0.614
Adjusted R^2	0.539	0.609
Residual Std. Error (df = 776)	0.107	0.093
F Statistic (df = 10; 776)	92.969^{***}	123.318^{***}

Note: *p<0.1; **p<0.05; ***p<0.01
Robust standard errors in parentheses
Reference sample: sample A (U.S. high income)
Reference immigration status: temporary status

D.3. Scatter-plot matrix. Figure 3 in the paper shows a scatter-plot matrix of the IPL-24's six sub-dimensions. Figure S10 shows the same graph using the IPL-12 score instead of using the IPL-24 score.

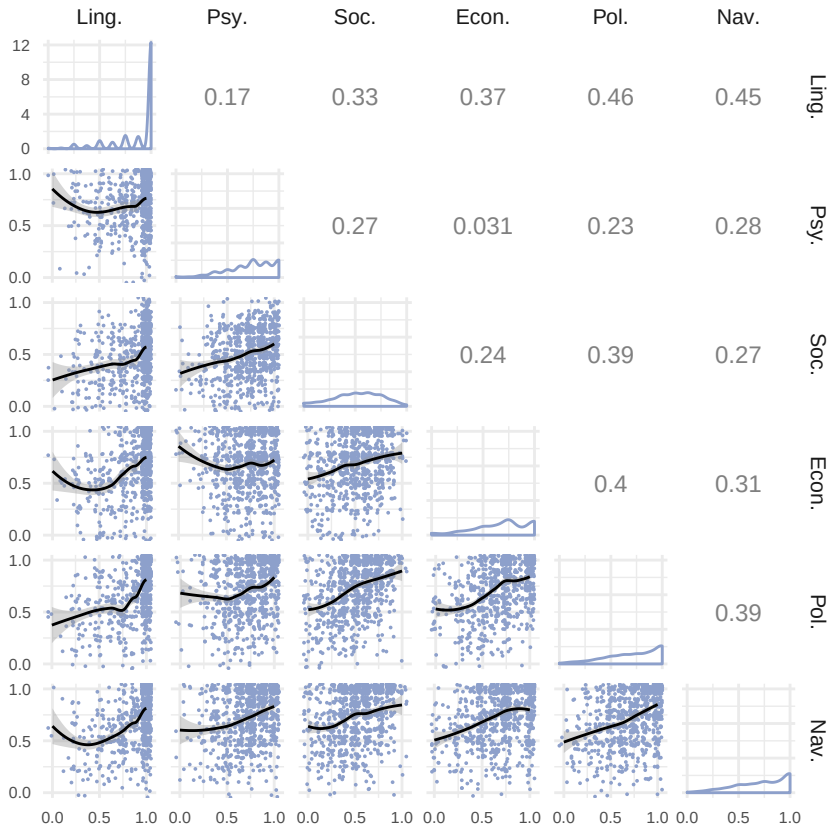


Fig. S10. Scatter-plot matrix for the six dimensions of integration as measured by the IPL-12 instrument (pooled sample, N=784). The panels in the main diagonal show the histograms of the marginal distributions, the panels above the main diagonal show the bivariate correlation coefficients, and the panels below the main diagonal show the scatter-plots with Loess lines (orange).

E. Instrument reliability. Higher scores on our six sub-dimensions do not necessarily share a common cause, but together share the effect that they increase an individual's ability to build a successful and fulfilling life in the host society. We therefore understand our measure of integration as an index or causal measure (63). The individual dimensions, however, measure consequences of underlying knowledge and capacities. They are more appropriately interpreted as effect indicators (63, 64). In this section we will present two tests that are commonly used to assess the reliability of such indicators.

E.1. Cronbach's Alpha. Cronbach's Alpha (65) is a widely used conservative lower bound estimator of instrument reliability (63). The use of Cronbach's Alpha to evaluate our economic integration scale can be questioned due to two reasons. First, two of our samples (A & C) were selected on income but not on employment. This means that the variation in income is limited by design. Second, income and employment are not necessarily effects of the same latent variable. We deliberately allowed this "weakness" because the importance of both indicators in policy debates outweighs issues arising from measurement error. Both points are more relevant for the IPL-12 than for the IPL-24.

Table S6. Cronabach's Alpha for each dimension of the IPL-12

Dimension	Raw Alpha	Alpha's SE	Std. Alpha	Guttman's Lambda 6
Linguistic	0.92	0.01	0.92	0.86
Political	0.70	0.02	0.71	0.55
Social	0.59	0.03	0.59	0.42
Economic	0.32	0.05	0.32	0.19
Psychological	0.66	0.02	0.66	0.49
Navigational	0.70	0.02	0.71	0.55

Table S7. Cronabach's Alpha for each dimension of the IPL-24

Dimension	Raw Alpha	Alpha's SE	Std. Alpha	Guttman's Lambda 6
Linguistic	0.96	0	0.96	0.95
Political	0.77	0.01	0.78	0.74
Social	0.58	0.02	0.60	0.54
Economic	0.62	0.02	0.62	0.61
Psychological	0.81	0.01	0.81	0.80
Navigational	0.77	0.01	0.76	0.74

E.2. Scree Plots. Eigenvalues and scree plots can be used to determine how many components (i.e. orthogonal linear transformations of the original items) of a principal component analysis one needs to retain in order to explain most of the original variance. For this, the Kaiser-Guttman rule (66, 67) according to which only components with eigenvalues > 1 (i.e. components that explain more variance then an average component) should be considered is well-established. In our case, it would be worrisome to see two orthogonal components explaining above average shares of the total variance. This would indicate that a single sub-dimension of our instrument measures two unrelated concepts. The scree plots in figure S11 show that on all our sub-dimensions only one component has an eigenvalue > 1. The scree plots for social integration and economic integration show that the second components just barely fall short of an eigenvalue > 1. In the case of economic integration this is most likely explained by the the two underlying concepts of employment and income. In the case of social integration, we assume that our combination of formal (i.e. organizational membership) and informal social integration (i.e. social ties) is the reason behind the strong second component.

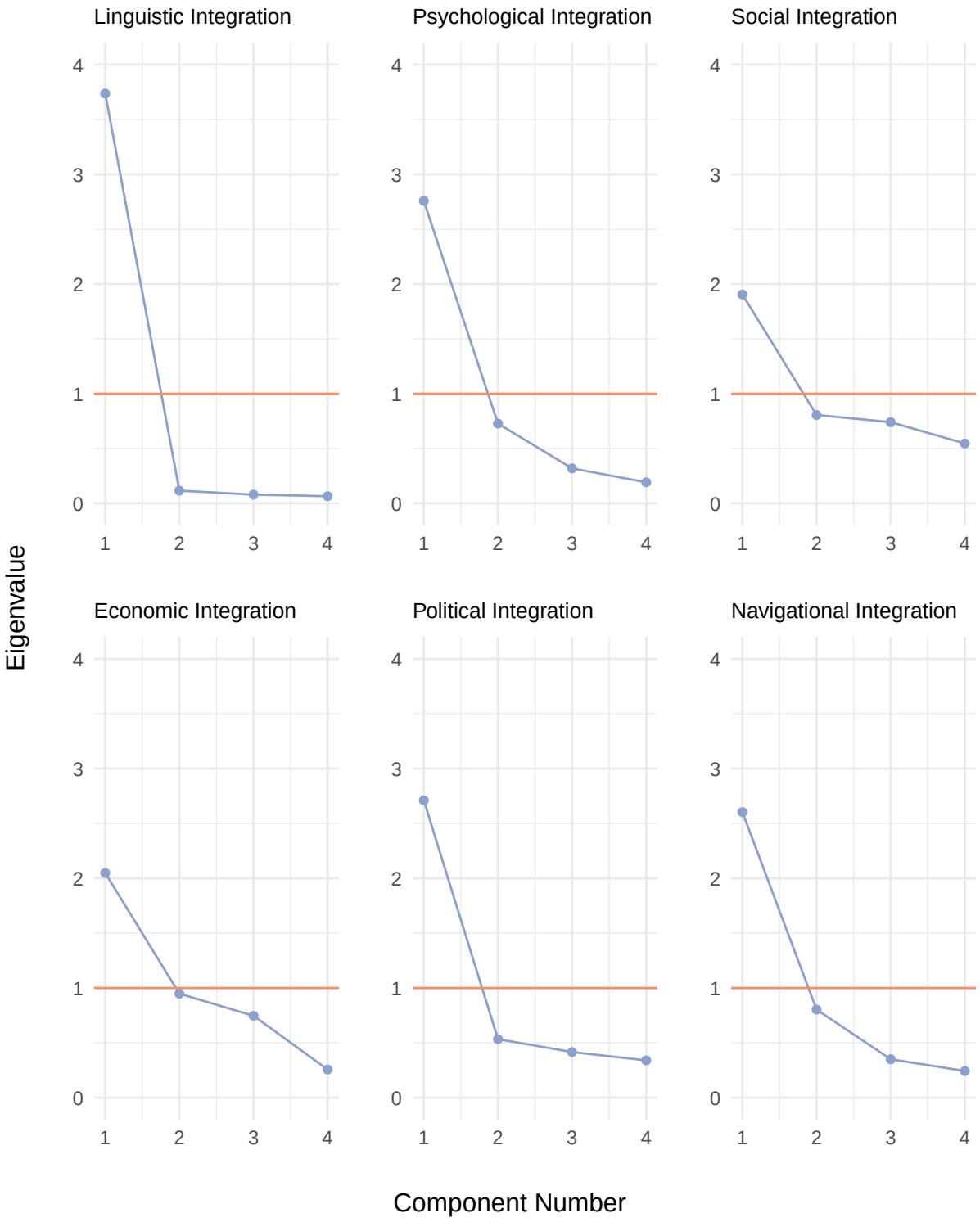


Fig. S11. Scree plots from principal component analysis of polychoric correlations for each sub-dimension of the IPL-24.

E.3. Robustness to excluding dimensions. Sample A was selected on above median household income and sample C was selected on low income and on a preference to answer previous online surveys in Spanish. Theoretically, the difference between groups could be driven solely by these two factors. Here, we present the box plot from the main paper using the re-scaled IPL-10/20 (excluding economic integration) and the re-scaled IPL-8/16 (excluding economic and linguistic integration). Figures S12 and S13 show that the order of means does not change if the two dimensions are excluded. We also use t-tests to analyze the differences in means of the four samples for the six different measures. Bonferroni corrected p-values are shown in tables S8 and S9. The p-values show that the difference in means of the the four samples is always significant. They also show that removing only economic integration from the measure does not lead to significant differences in the re-scaled score. Removing economic integration and linguistic integration, however, leads to significant differences in sample A and sample B.

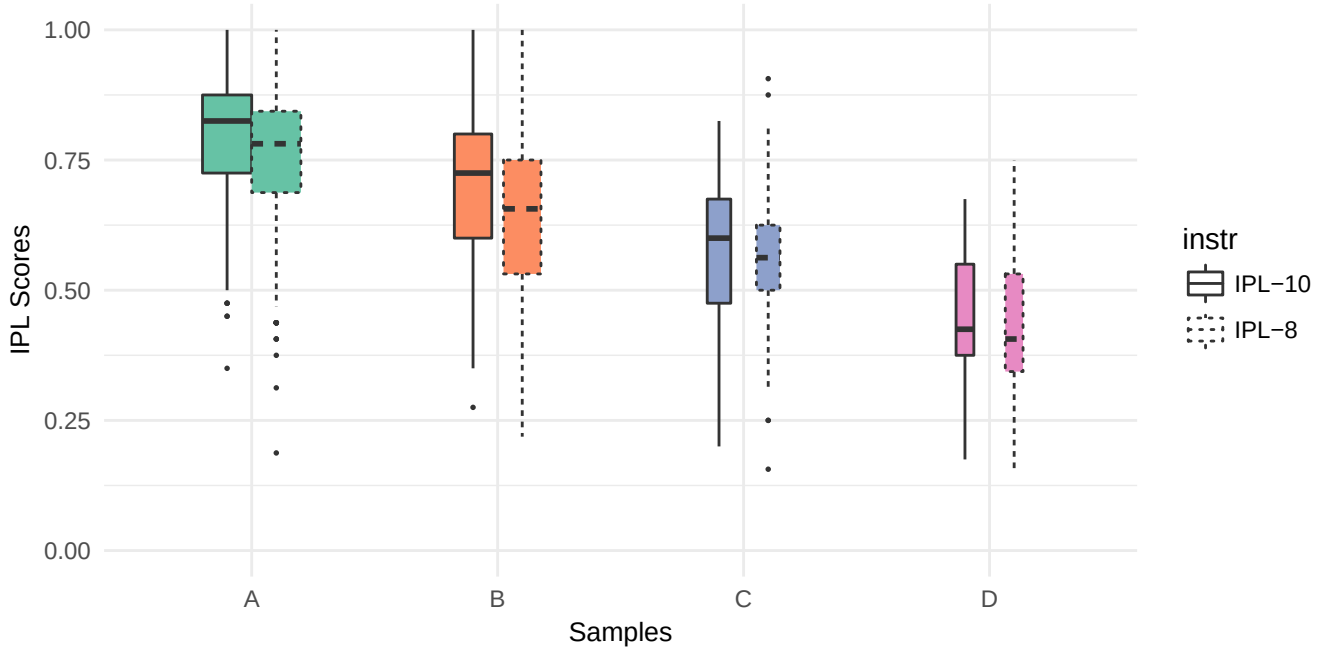


Fig. S12. Distribution of IPL-10 and IPL-8 scores in four contrasted samples. The samples are ordered such that Samples A-D are decreasing in their expected levels of integration. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

Table S8. Bonferroni corrected p-values from pairwise t-tests of short measure

	A 12	A 10	A 8	B 12	B 10	B 8	C 12	C 10	C 8	D 12	D 10
A IPL-10	1										
A IPL-8	0	0									
B IPL-12	0	0	0								
B IPL-10	0	0	0	1							
B IPL-8	0	0	0	0.035	0.001						
C IPL-12	0	0	0	0	0	0					
C IPL-10	0	0	0	0	0	0.019	1				
C IPL-8	0	0	0	0	0	0.001	1	1			
D IPL-12	0	0	0	0	0	0	0.001	0	0		
D IPL-10	0	0	0	0	0	0	0	0	0	1	
D IPL-8	0	0	0	0	0	0	0	0	0	1	1

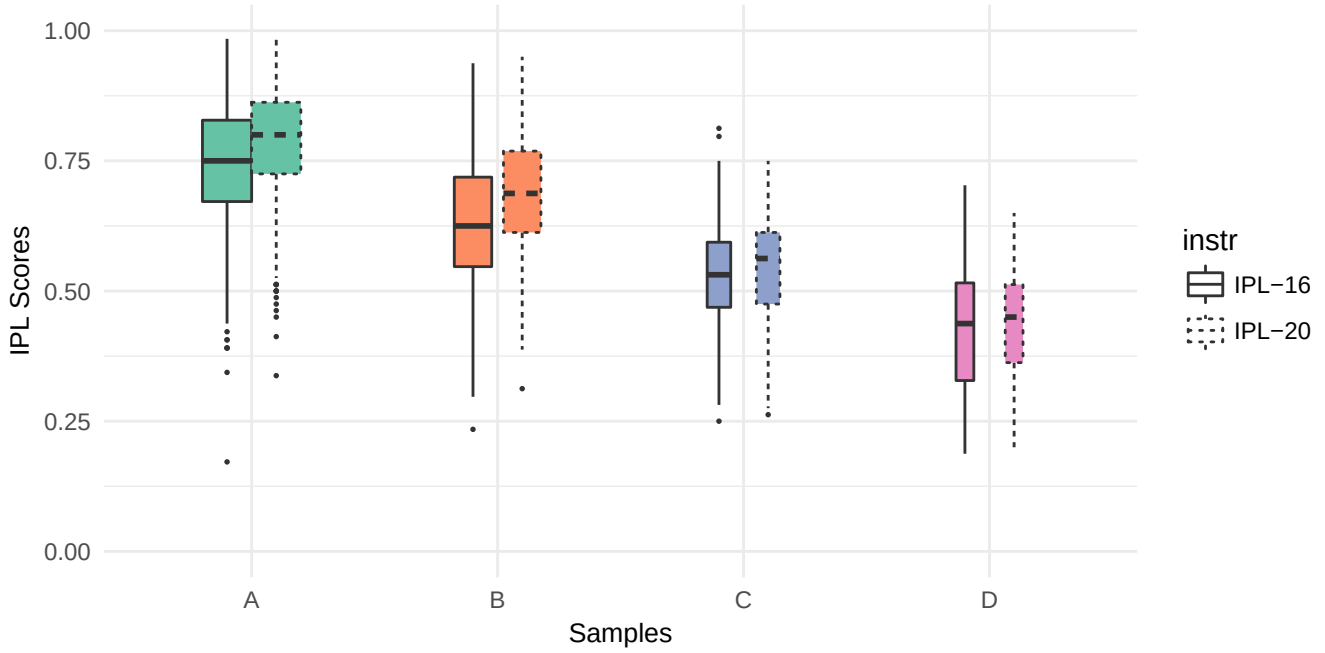


Fig. S13. Distribution of IPL-20 and IPL-16 scores in four contrasted samples. The samples are ordered such that Samples A-D are decreasing in their expected levels of integration. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

Table S9. Bonferroni corrected p-values from pairwise t-tests of long measure

	A 24	A 20	A 16	B 24	B 20	B 16	C 24	C 20	C 16	D 24	D 20
A IPL-20	1										
A IPL-16	0	0									
B IPL-24	0	0	0								
B IPL-20	0	0	0	1							
B IPL-16	0	0	0	0.004	0						
C IPL-24	0	0	0	0	0	0					
C IPL-20	0	0	0	0	0	0	1				
C IPL-16	0	0	0	0	0	0	1	1			
D IPL-24	0	0	0	0	0	0	0.003	0	0		
D IPL-20	0	0	0	0	0	0	0.001	0	0	1	
D IPL-16	0	0	0	0	0	0	0	0	0	1	1

F. Linguistic integration. In our validation data the distribution of linguistic integration is skewed towards the top of the scale. This is to be expected, given that our surveys were mostly administered in the host country's dominant language and the average residency is 25.7 years in the host country. Pilot surveys 6 and 7 (see Table S2) were administered in several languages to immigrants with shorter residency. Figure S14 shows that the distributions of lingustic integration in those samples are significantly less skewed as expected.

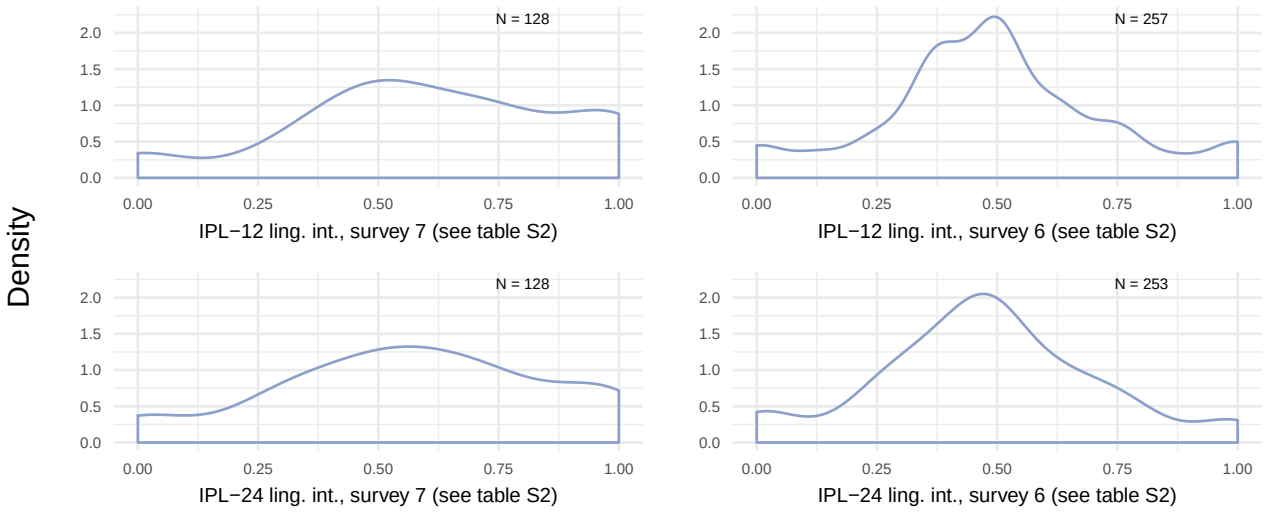


Fig. S14. Density plots of the rescaled IPL-12/24 linguistic integration elements from two pilot surveys. ys.

References

1. Abrams D, Ando K, Hinkle S (2016) Psychological attachment to the group: Cross-cultural differences in organizational identification and subjective norms as predictors of workers' turnover intentions. *Personality and Social Psychology Bulletin* 24(10):1027–1039.
2. American Council on the Teaching of Foreign Languages, National Council of State Supervisors of Foreign Language (2014) *NCSSFL-ACTFL Can-do Statements: Progress Indicators for Language Learners*.
3. American National Election Studies (2014) *User's Guide and Codebook for the ANES 2012 Time Series Study*. (the University of Michigan and Stanford University, Ann Arbor, MI and Palo Alto, CA).
4. Bagnall N (2015) *Global identity in multicultural and international educational contexts: Student identity formation in international schools*, Routledge research in international and comparative education. (Routledge, London), 1st edition.
5. Beversluis D, et al. (2016) Developing and validating the refugee integration scale in nairobi, kenya. *Journal of Refugee Studies* p. few018.
6. Bergami M, Bagozzi RP (2000) Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology* 39(4):555–577.
7. Brantmeier C, Vanderplank R, Strube M (2012) What about me? *System* 40(1):144–160.
8. Brashears ME (2011) Small networks and high isolation? a reexamination of american discussion networks. *Social Networks* 33(4):331–341.
9. Brysbaert M (2013) Lextale_fr a fast, free, and efficient test to measure language proficiency in french. *Psychologica Belgica* 53(1):23.
10. Caselli M (2015) Measuring the integration of immigrants: Critical notes from an italian experience. *International Migration* 53(4):107–119.
11. Portes A, Rumbaut RG (2012) *Children of Immigrants Longitudinal Study (CILS), 1991-2006*. (Inter-university Consortium for Political and Social Research, Ann Arbor, MI).
12. Delgado P, Guerrero G, Goggin JP, Ellis BB (2016) Self-assessment of linguistic skills by bilingual hispanics. *Hispanic Journal of Behavioral Sciences* 21(1):31–46.
13. Council of Europe, Council for Cultural Co-operation. Modern Languages Division (2001) *Common European Framework of Reference for Languages: Learning, teaching, assessment*. (Cambridge University Press, Cambridge).
14. Housing, Family and Social Statistics Division (2003) Ethnic diversity survey: Content overview.
15. European Foundation for the Improvement of Living and Working Conditions, ed. (2017) Fourth european quality of life surveys (eqls).
16. (2016) Ess round 8 source.
17. European Union Agency for Fundamental Rights, ed. (2009) Eu-midis: European union minorities and discrimination survey.
18. European Foundation for the Improvement of Living and Working Conditions, ed. (2015) Sixth european working conditions survey: 2015.
19. Gaillard S, Tremblay A (2016) Linguistic proficiency assessment in second language acquisition research: The elicited imitation task. *Language Learning* 66(2):419–447.
20. Gallup, ed. (2017) Worldwide research: Methodology and codebook.
21. Smith TW, Davern M, Freese J, Hout M (2017) *General Social Surveys, 1972-2016: Cumulative Codebook*. (National

Opinion Research Center, Chicago).
22. Hagerty BM, Patusky K (1995) Developing a measure of sense of belonging. *Nursing Research* 44(1):9–13.
23. Huddelston T, Niessen J, Tjaden JD (2013) Using eu indicators of immigrant integration: Final report for directorate-general for home affairs.
24. Huddelston T, Tjaden JD (2012) *Immigrant Citizens Survey: How immigrants experience integration in 15 European cities*. (King Baudouin Foundation and Migration Policy Group, Brussels).
25. Brien P, Kerstin B (2015) *International Social Survey Programme: ISSP 2013 - National Identity III: Variable Report*, Variable Reports. (GESIS Leibniz Institute for the Social Sciences, Köln).
26. Kuo A, Margalit Y (2012) Measuring individual identity: Experimental evidence. *Comparative Politics* 44(4):459–479.
27. Fraga LR, et al. (2013) *Latino National Survey (LNS), 2006: ICPSR Data Holdings*.
28. LeBlanc R, Painchaud G (1985) Self-assessment as a second language placement instrument. *TESOL Quarterly* 19(4):673–687.
29. Lemhöfer K, Broersma M (2012) Introducing lextale: a quick and valid lexical test for advanced learners of english. *Behavior research methods* 44(2):325–343.
30. Cobb-Clark D (2001) The longitudinal survey of immigrants to australia. *The Australian Economic Review* 34(4):467–477.
31. Statistics Canada, ed. (2007) Microdata user guide: Longitudinal survey of immigrants to canada wave 3.
32. Immigration, asile, accueil et accompagnement des étrangers en France, Ministère De L'Intérieur, ed. (2013) Elipa (longitudinal survey of the integration of first-time arrivals): What topics are broached.
33. Sun M, Wong DWS (2010) Incorporating data quality information in mapping american community survey data. *Cartography and Geographic Information Science* 37(4):285–299.
34. Mays VM, Cochran SD (2001) Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the united states. *American journal of public health* 91(11):1869–1876.
35. Ramakrishnan K, Junn J, Lee T, Wong J (2008) *National Asian American Survey*. (Inter-university Consortium for Political and Social Research, Ann Arbor, MI).
36. Instituto Nacional de Estadística, ed. (2007) National immigrant survey.
37. Brim OG, Ryff CD, Kessler RC (2005) *How healthy are we? A national study of well-being at midlife*, The John D. and Catherine T. MacArthur Foundation series on. Studies on successful adolescent development. (University of Chicago Press and University Presses Marketing [distributor], Chicago, Ill. and Bristol).
38. Gonzales RG, Terriquez V, Ruszczyk SP (2014) Becoming dacamented. *American Behavioral Scientist* 58(14):1852–1872.
39. Jasso G, Massey DS, Rosenzweig MR, Smith JP (2014) The new immigrant survey 2003 round 2 (nis-2003-2) public release data.
40. New York City Department of Consumer Affairs Office of Financial Empowerment, ed. (2008) Neighborhood financial services study: An analysis of supply and demand in two new york city neighborhoods.
41. Pew Research Center, ed. (2011) Muslim americans: No signs of growth in alienation or support for extremism.
42. Taylor P, Gonzalez-Barrera A, Passel JS, Lopez MH (2012) An awakened giant: The hispanic electorate is likely to double by 2030.
43. Prentice DA, Miller DT, Lightdale JR (1994) Asymmetries in attachments to groups and to their members: Distinguishing between common-identity and common-bond groups. *Personality and Social Psychology Bulletin* 20(5):484–493.
44. Ross S (1998) Self-assessment in second language testing: A meta-analysis and analysis of experiential factors. *Language Testing* 15(1):1–20.
45. Russell D, Peplau LA, Cutrona CE (1980) The revised ucla loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology* 39(3):472–480.
46. Smith C, Snell Herzog P, Beyerlein K (2010) *Methods Report and User's Guide to the 2010 Science of Generosity Survey*. (University of Notre Dame, Notre Dame, IN).
47. Ersanilli E, Koopmans R (2013) The six country immigrant integration comparative survey (sciics): Technical report.
48. Saguaro Seminar at the John F. Kennedy School of Government, ed. (2009) Social capital community survey, 2006.
49. Educational Testing Service, ed. (2015) Toefl ibt test questions.
50. Berthoud R, Modood T, Smith P, Prior G (1997) Fourth national survey of ethnic minorities, 1993-1994.
51. Wilson WJ (1987) *Urban Poverty and Family Life Survey of Chicago*. (Inter-university Consortium for Political and Social Research, Ann Arbor, MI).
52. Inglehart R, et al. (2014) World values survey: Round six - country-pooled datafile version.
53. Hainmueller J, et al. (2018) A randomized controlled design reveals barriers to citizenship for low-income immigrants. *Proceedings of the National Academy of Sciences of the United States of America* 115(5):939–944.
54. (2016) American community survey and puerto rico community survey 2016 subject definitions.
55. Office for National Statistics, ed. (2017) Families and households: 2017: Trends in living arrangements including families (with and without dependent children), people living alone and people in shared accommodation, broken down by size and type of household.
56. Afrobarometer Network, ed. (2014) Round 6 survey manual.
57. Ansari H (2007) 'burying the dead': Making muslim space in britain. *Historical Research* 80(210):545–566.
58. Balkan O (2015) Burial and belonging. *Studies in Ethnicity and Nationalism* 15(1):120–134.
59. Gardner K (2002) Death of a migrant: Transnational death rituals and gender among british sylhetis. *Global Networks*

2(3):191–204.
60. Oliver C (2004) Cultural influence in migrants' negotiation of death. the case of retired migrants in spain. *Mortality* 9(3):235–254.
61. Weber M (1963) *The sociology of religion.* (Beacon Press, Boston).
62. Putnam RD (2007) E pluribus unum: Diversity and community in the twenty-first century the 2006 johan skytte prize lecture. *Scandinavian Political Studies* 30(2):137–174.
63. DeVellis RF (2012) *Scale development: Theory and applications / Robert F. DeVellis*, Applied social research methods series. (SAGE, London) Vol. 26, 3rd ed. edition.
64. Bollen KA, Bauldry S (2011) Three cs in measurement models: causal indicators, composite indicators, and covariates. *Psychological methods* 16(3):265–284.
65. Cronbach LJ (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16(3):297–334.
66. Kaiser HF (1991) Coefficient alpha for a principal component and the kaiser-guttman rule. *Psychological Reports* 68(3):855–858.
67. Kaiser HF (1992) On cliff's formula, the kaiser-guttman rule, and the number of factors. *Perceptual and Motor Skills* 74(2):595–598.