Adults' Civic Engagement in the U.S. and Germany: Evidence from the PIAAC Survey

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ABSTRACT

We examine civic engagement among immigrants and native-born adults in the United States (U.S.) and Germany—world-leading nations with different responses to immigration and assimilation. Civic engagement involves the practices and beliefs underpinning the democratic functions of citizenry, and is operationalized in this study as voluntary work or volunteerism, political efficacy, and social trust. Data for the analyses are drawn from PIAAC. Individual background factors—age, gender, education level, skills, immigrant status, and employment— serve as covariates in our regression models. Several cross-national differences were observed in the relationships among background factors and dimensions of civic engagement. Results are discussed regarding the role of adult education programs for supporting both the transitions of migrants and maintenance of democratic behaviors among native-born citizens.

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I.   **Introduction**

Over the past decade, but especially since the refugee crisis of 2015, there has been a worldwide debate about how countries should respond to varying humanitarian crises and, specifically, how the west should respond to the influx of immigrants and refugees seeking to cross their borders. These concerns have expanded the already vibrant study of ways that immigrants (including refugees) are integrated into their arrival countries. There have been many studies of this issue, including comparative examinations of the educational levels of immigrants, income or socio-economic status, and basic literacy. Most recently, research has focused on the ways that civil life has changed since 2015 (e.g. Schmid, Evers & Mildenberger, 2019; Vandevoordt & Verschraegen, 2019). Not surprisingly, as the center of immigration, Germany has also been the focus of the studies (e.g. Stock, 2019). This study compares the civic engagement as measured in PIAAC, through the variables of voluntary work, political efficacy, and social trust in two countries—the United States (U.S) and Germany. Both countries have long complex histories of immigration, integration, and arguments over social cohesion. We seek to examine the nature of civic engagement in both countries during the period before 2015. This is important in order to contextualize the integration processes that have taken place since 2015. Our study will serve as a baseline for understanding future studies of civic engagement and will have implications for policy and for our understanding of the lives of immigrants in both countries.

Definitions

Political scientists and sociologists have been studying the question of social cohesion for over one hundred years. The facets of individual engagement in society—within various associations or networks and in communities—are all seen as affecting the quality of life of individuals and of societies (National Research Council, 2014). In other words, participation in the social and political life of a country indicates the social cohesion of a society (Grotlüschen, 2017). Civic engagement is one aspect of this social cohesion. The differing definitions will be discussed below. As a preliminary step in understanding the civic engagement of immigrants in Germany and the United States, pre-2015, we employ the three PIAAC variables that are most closely related to civic engagement and aspects of social cohesion: voluntary work or volunteering, political efficacy, and social trust. Thus, proxies for civic engagement as part of social cohesion can be seen in:

- participation in voluntary work or volunteering, i.e., formal activities in trade unions, churches, welfare or grassroots organizations as well as informal help in families and neighborhoods,
- feelings of *political efficacy*, i.e. the assumption that political activities like voting would have an effect on governance; and,
- perceived *social trust,* i.e., *the feeling one can trust close friends as well as members of the society, commerce and authorities in general*; (Grotlüschen, Chachashvili-Bolotin, Heilmann & Dutz, In Press.).

For this article, we consider the three aspects described above and label them with the overarching term "civic engagement." Clearly, perceived political efficacy and perceived social trust are beliefs, while volunteering is an activity indicative of broader participation.

Consequently, the activity of voluntary work or participation is easier to measure than the beliefs of political efficacy and social trust. In fact, there is a broad literature of political participation (National Research Council, 2014). However, all aspects mentioned above– voluntary work or participation, political efficacy and social trust—belong to the so-called "social capital" of individuals and societies (Bourdieu 1983). Within this framework, Putnam (1995, pp. 664-665) states:

> By "social capital," I mean features of social life-networks, norms, and trust that enable participants to act together more effectively to pursue shared objectives…Social capital in short, refers to social connections and the attendant norms and trust. Who benefits from these connections, norms, and trust–the individual, the wider community, or some faction within the community—must be determined empirically, not definitionally.

Putnam (1995) continues that social capital includes two aspects: bridging and bonding. The three aspects of civic engagement that we have identified perform these bridging and bonding functions.

Voluntary Work or Volunteering. Voluntary work is considered an important aspect of civic engagement. The OECD describes voluntary work as "doing work without pay for charities, political parties, trade unions or other nonprofit organizations" (2011, p. 46). While volunteering (or voluntary work) is an activity indicative of broader participation, perceived political efficacy and perceived social trust are beliefs, Consequently, the activity of voluntary work as participation is easier to measure than the beliefs of political efficacy and social trust. In fact, there is a broad literature of political participation (National Research Council, 2014). Voluntary associations perform a bridging function that may transcend differences while bonding functions build connections among homogeneous groups. According to Putnam, social

capital theory presumes that the greater the sense of connection with others, the greater the trust in others. Putnam's primary concern is with his perception that civic engagement is less common than previously observed and that, as a result, social cohesion is diminishing as well.

Political Efficacy. Schugurensky (2016) refers to the ways that citizens feel they have some input in the country's functioning (i.e., political efficacy). The OECD (2011) defines political efficacy as "the extent to which people feel they understand and can affect politics" (p. 46). In the 1950s, political efficacy was seen as an important aspect of democratic life. Measures of political efficacy were seen as indicators of political stability and as reflection of government's ability to react to voter (or citizen) concerns. However, measures of political efficacy have been seen as lacking validity and reliability. Subsequent research developed the idea that political efficacy had two aspects; internal efficacy dealt with an individual's beliefs about his or her own ability to bring about change, while external efficacy indicated an individual's beliefs about government responsiveness to citizen demands (Craig, Niemi, & Silver, 1990).

Social trust. Social trust has long been seen as a core aspect of societal cohesion, and is often used by other researchers to indicate a precursor to political efficacy. The ability to trust strangers is generally considered to be a prime attribute of democratic society. The OECD (2011) indicates that its definition of social trust is derived from the work of Giddens who defines trust as 'confidence in the reliability of a person or system" (p. 46). The rationale for inclusion of social trust goes on to indicate that it "is an important social outcome. Many scholars have pointed out that trust is essential to the stable functioning of the economy and of society in general. Few transactions if any can take place solely on the basis of self-interest on the part of the transacting parties" (p. 46).

Political efficacy and social trust have long been studied as aspects of political participation (Craig, Niemi, & Silver, 1990). As a preliminary step in understanding the civic engagement of immigrants in the United States and Germany, pre-2015, we expand on these aspects to develop a more inclusive definition of civic engagement. Kesler and Bloemraad (2010) call the composite of these three constructs *collective mindedness*, meaning that individuals are able to focus on the collective rather than simply their own narrow personal interests. While collective mindedness is a helpful term, we feel that civic engagement is a more useful, broader construct.

Our purpose, then, is to begin an exploration of the ways that immigrants and non-immigrants in two countries (the United States and Germany) differ in these characteristics of collective mindedness or—more directly—civic engagement (i.e., voluntary work, political efficacy, and social trust). To begin our exploration of this issue we use the 2012 PIAAC data for analysis. We focus on the United States (U.S.) and Germany because these are two of the countries with the largest immigrant/refugee populations, with well-defined, yet differing, processes for both entry and the acquisition of citizenship. Although the present paper does not examine citizenship, per se, but rather looks at the native-born and non-native born populations, some of the research on citizenship is applicable to the populations we are examining. While in both the U.S. and Germany discussions and sometimes fierce debates about immigration and citizenship have arisen at different times and for different reasons, each country approaches the issue having quite different histories and social and educational frameworks.

As the composition of the migrant subpopulations varies between the two countries, we used socio-demographic variables (i.e., age, gender) and achievement variables (formal education, job status, skills) as control variables. Thus, our research questions are as follows:

1. Among adults in the U.S. and Germany, is immigration associated with civic engagement (i.e., voluntary work for non-profit organizations, political efficacy, and dimensions of social trust) when controlling for demographic variables (age, gender, education, work status, and number of years worked) and skill proficiency (literacy, numeracy, and PS-TRE)?

2. Do the associations of immigration status with civic engagement (i.e., voluntary work for non-profit organizations, political efficacy, and dimensions of social trust) differ between individuals in the U.S. and Germany when controlling for demographic variables (age, gender, education, work status, and number of years worked) and skill proficiency (literacy, numeracy, and problem solving in technology-rich environments (PS-TRE)?

II.   Literature Review

Civic Engagement

While voluntary work and social trust are twin aspects of social capital, political efficacy and participation in political activities are often looked at as ways to measure individuals' political engagement (e.g. Craig, Niemi, & Silver, 1990). Within this framework, political and civic engagement are different, albeit related, constructs. Political engagement involves "efforts to influence public policy," while civic engagement does not (Campbell, 2006, p. 29). Campbell goes on to state that while political engagement involves work to change society through political organizations, civic engagement involves work to change society through social and welfare-oriented organizations.

Grotlüschen, Chachashvili-Bolotin, Heilmann and Dutz (In Press) analyze what they call socio-political participation by using only two of these dimensions, voluntary work and political

efficacy. We have decided to build on Putnam's view that civic engagement is important to civic cohesion. Thus, we refer to civic engagement as a single construct because it is often quite difficult to separate the two (welfare activities can be political or social or both). Thus, we use Ehrlich's (2000) definition of civic engagement as "working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference" (p. vi). According to the Education Commission of the States (Baumann, 2015), people demonstrate civic engagement when they address public problems either individually or collaboratively and when they maintain, strengthen, and improve their communities and society. It is considered a measure of how well democratic society is functioning. Lack of civic engagement may lead to the disintegration of civic bonds (Putnam, 2007).

Civic Engagement and Social Cohesion in the U.S. and Germany

Immigration and transnational migrations have been the subject of continuous concern since the late 19th century. The latest concerns about immigration have resulted in widespread fears about the disruption of social cohesion and increases in crime, and rising inequality due to differences between immigrants and native-born populations. Since 2015, Germany has seen an increase in hate crimes and violence against immigrants (Federal Crime Statistics 2017[1]). Rindermann and Thompson (2014) state that there are fears that increasing diversity affects "social cohesion, trust and solidarity" (p. 67).

At its core, discussions about civic engagement focus on social cohesion (Grotlüschen, 2017). In the U.S., Putnam (2000, 2007) hypothesized that increased diversity negatively affects political participation and engagement. He found that as diversity increased "[t]rust (even of one's own race) is lower, altruism and community cooperation rarer, friends fewer. In the long run, however, successful immigrant societies have overcome such fragmentation by creating

new, cross-cutting forms of social solidarity and more encompassing identities" (2007, p. 137). While Putnam held out hope for integration, his work has been highly contentious because of his view that, in the short run, increasing diversity results in less trust, lower political efficacy, and fewer cooperative efforts. Many have questioned this perspective. We will be testing this view through our analysis of the measures of civic engagement as indicated by voluntary work, political efficacy and social trust.

Civic engagement and integration, cohesion, and citizenship. Morrice (2017) describes the ways that countries have limited migration, as well as the methods they have espoused for developing cohesion among citizens and non-citizens alike. These approaches revolve around cultural integration (a dominant approach in North America), rather than pluralism. In Europe, the discussion initially focused on integrating the different European countries into a singular, unified Europe. More recently, the discussion has centered on the integration of Muslim refugees— particularly in Germany, which has been grappling with a large influx of immigrants—causing scholars to raise questions about nationalism, culture, and the integration of these issues into the national discourse. For example, Dahlstedt (2017) asserted that massive immigration presents opportunities for rethinking citizenship in the twenty-first century.

Milana and Tarozzi (2013) note that citizenship is a vague concept, often predicated on the assumption that immigrants and others need to learn how to become citizens in any given country. To facilitate this process, multiple experimental programs have been initiated throughout the European Union (EU). Zepke (2013) highlights some of these, and suggests that social action is a key aspect of citizenship and citizenship education and, by extension, civic engagement. Dalton (2009) developed a framework of a "good citizen" based on social

indicators, such as education, work experience, gender roles, living standards, generational changes, and social diversity.

While it is closely connected to citizenship, civic engagement has been defined in terms of an ever-changing set of core values. Civic engagement is, in fact, not primarily concerned with citizenship, but is nonetheless seen as an important aspect of democratic life. In fact, the characteristics and behaviors of *good citizenry* correlate with civic engagement (Metzger & Smetana, 2009). Additionally, civic engagement has been linked to a number of individual characteristics, including professional interests, home ownership, marriage, and parenthood (Galston, 2003). Civic engagement has also been associated with a number of demographic (e.g., socioeconomic status, ethnicity, and gender), social (e.g., family of origin, peer group, workplace, education, and mass media), psychological (e.g., attitudes), and lifespan (e.g., early versus later adulthood) factors.

This reframing from traditional notions of civic participation moves away from views of a citizen's "duty" to that of an engaged citizen, as indicated by independence, assertiveness, and concern for others. Civic engagement—the practice of democratic participation—requires adults to identify and evaluate solutions in response to social, economic, and political problems that impact individuals' lives in their communities (Carcasson & Sprain, 2010). In contrast to the behavioral concept of civic participation—which refers to voluntary activity that facilitates change through helping others, promoting public welfare, and solving community problems (Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006)—civic engagement specifically involves having interest in, being attentive to, or having knowledge, beliefs, attitudes, preferences, and feelings about both civic and political concerns (Barrett & Brunton-Smith, 2014).

Immigration and Immigrant Characteristics in the U.S. and Germany

In this section, we present important background information on immigration in both the U.S. and Germany. We also briefly discuss the different approaches to mandatory language and cultural learning found in the U.S. and Germany. Finally, we discuss some of the theories related to integration and social cohesion that pertain to this topic.

Comparison of immigrant populations in the U.S. and Germany. Table 1 compares immigration trends in both countries in 2015. Although the situation was different in 2015 than it had been in 2012 (especially in Germany), there are still several interesting commonalities and differences between the two countries. The first is that family reunification is by far the greatest reason given for immigration to the U.S., while in Germany the greatest percentage (after the European Free Movement, or internal migration) cited is for humanitarian reasons. Of course, the number of refugees in 2015 was much greater than in 2012, but the percentages for family reunification are still worthy of notice. Additionally, even with the refugee crisis of 2015, migration to Germany was still overwhelmingly from other European countries. The U.S. does not have a similar category of "Free Movement," so no comparison can be made; however, a comparison of the countries of origin for the U.S. and Germany bear out this difference in migration patterns. Additionally, the historical data confirm that Syria replaced Bulgaria in 2015 as country of origin for most immigrants to Germany. However, until that time, the three most important countries of origin for Germany were all European. The three most important countries of origin for immigrants to the U.S. remained unchanged: Mexico, China, and India.

Table 1

Percent of Total Immigration by Reason and Nation

Type of inflow 2015 in percent of total inflow	Germany	United States
Work	4.0%	6.5%
Family	12.0	71.8
Humanitarian	20.9	14.5
Free Movement[2] within the EU	62.3	–
Others	0.9	7.2
Total	100.0	100.0
Three most important Countries of Origin (2015)	Syria, Romania, Poland	Mexico, China, India
Three most important Countries of Origin (2005-2014)	Poland, Romania, Bulgaria	Mexico, China, India
Stocks of Immigrants (foreign-born population): Percentage of the total population (2015)	14.2%	13.5%

Cited in Grotlüschen, Chachasvili-Bolotin, Heilmann & Dutz (In Press). Table: Percent of Migrants in 2015, source: OECD International Migration Outlook 2017. Re-organized from pages 171, 177, 191, 199, 243).

With differing models of civic engagement and pluralism, the U.S. and Germany offer divergent approaches to the integration and assimilation of immigrants that warrant closer examination. Our study therefore looks specifically at adults' voluntary work or volunteerism, political efficacy, and social trust as important aspects of civic engagement (as an important indicator of integration for immigrants) both within and between these two nations.

Next, we provide a brief overview of immigration to both countries and the significance of our analyses. In terms of worldwide migration trends, over half of all migrants move to one of

ten countries. In 2010, the U.S. had the largest number of immigrants or individuals living in the

country and had not been born there (45 million, or over 20% of all immigrants world-wide).

Germany was third, with 9.8 million. (Pew Research Center, 2019). As an aside, we also note

that these same relative positive positions were maintained in 2017.

U.S. immigration.[3] As noted above, the U.S. has a large number of yearly immigrants

which continued at least through 2017. Between 2011 and 2014, approximately one million

people per year became legal permanent residents (LPRs) of the U.S. Table 2 presents the

number of LPRs for each year, the median age, and the percentages of LPR by age (Department

of Homeland Security, 2017). The top three countries of origin for all four years were Mexico,

China, and India. Approximately 65% of new LPRs were able to immigrate through a family

member's sponsorship while about 15% of immigrants were sponsored by an employer.

Refugees and asylum seekers comprised approximately 13% of LPRs. The majority of new LPRs

were women, at 54%.

Table 2

Legal Permanent Residents (LPRs) 2011-2014 (Numbers acquiring status)

Year	Persons who became LPRs	Age 15-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65 & Over	Median Age
2014	1,016,518	16.7%	25.1%	19.4%	12.0%	7.5%	5.2%	32
2013	990,553	16.7%	23.7%	18.8%	11.5%	7.2%	4.9%	32
2012	1,031,631	18.4%	24.1%	18.1%	11.4%	7.7%	5.4%	31
2011	1,062,040	18.7%	23.8%	18.6%	11.4%	7.3%	5.0%	31

German immigration. Table 3 summarizes German immigration for 2013 and 2014 (earlier years were not available).

Table 3

Legal Permanent Residents, 2011-2014 (Numbers Acquiring Status)

Year	Persons who became LPRs	Age 0-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65 & Over
2014	2,931,232	301,407 10.3%	411,500 14%	694,477 23.7%	588,292 20%	404,963 13.8%	530,593 18%
2013	2,910,712	307,935 10.6%	423,616 14.6%	703,142 24.2%	560,277 19.2%	415,555 14.3%	500,187 17.2%

Note: Persons who had become LPRs in Germany by the end of the respective year, according to the table "Aufhältige Ausländer mit Niederlassungserlaubnis nach Staatsangehörigkeit, Alter und Geschlecht zum Stichtag 31.12.2013, 31.12.2014," provided by the "Ausländerzentralregister, Bundesamt für Migration und Flüchtlinge" at the German Federal Office for Migration and Refugees (March 2nd, 2018). The percentages reflect rounding error.

The Federal Statistical Office, in its classifications, splits the population into "Germans" and "Foreigners" (rising from 8% in 2012 to 11% in 2017), as well as Germans with or without "a migration background" and with or without their "own migration experience," pointing to those generations that were born in Germany. As already laid out in Fleige, Rose, and Robak (2017), the proportion of the German population that migrated after 1960 or was born as the offspring of immigrants is presently around 20% (The Federal Statistical Office, 2017).Four different forms of migration are used in numerous classifications:

- so-called "foreign workers" (i.e., working immigrants from Spain, Greece, Portugal, Yugoslavia, Turkey, Morocco, and Tunisia in the 1960s),

- subsequent immigration of family members since the 1960s,

- migration of refugees from changing countries under (civil) war, and

- World War II repatriates from Russia and Poland in the 1990s (Öztürk, 2014, pp. 18-26; see also Maehler, Massing, & Rammstedt, 2014).

Additionally, Germany at present sees considerable effects of migration within the EU, according to the principle of freedom of movement. Free movement of workers is enshrined in Article 45 of the Treaty on the Functioning of the European Union (2012).

One of the key concerns that the recent waves of immigration have raised centers on the issue of employability and skills. In the next section, we briefly discuss these.

Research on Immigration, Educational Levels, and Skills

Immigration scholars also share a common concern about the increasing disparity of knowledge levels and skills among different groups (immigrant and native-born, among others). Recent studies show that the educational levels of migrants are increasing, although they still lag behind the native-born. Specifically, Bonfanti and Xenogiani (2014) found that, within OECD countries, increasing numbers of migrants were educated, although the definition of "educated" varied considerably. Using PIAAC data, Lind and Melander (2016) found that, in most of the countries participating in PIAAC, average skill levels were statistically significantly higher when immigrants were excluded compared to a country's entire population, but the differences were "not very substantial" (p. 6). The largest difference they found was 3.5%. Additionally, they found that, with the single exception of Sweden, country rankings by skill level did not change when immigrants were excluded.

Grotlüschen's (2017) research regarding the relationship between low literacy skills and volunteering, political efficacy, and social trust reported results from all of OECD's PIAAC countries included in the first round of survey administration and focused on those countries

experiencing the rise of ultra-right political parties. She found that Germany had a greater gap in perceptions of political efficacy between those adults with low literacy skill levels and those with higher literacy than did adults in the U.S. Also, Germany had a slightly smaller gap in social trust than the U.S. In terms of volunteering, 81% of low literate adults in Germany stated that they never volunteered, while that percentage for the U.S. was 64% (still relatively high). As Grotlüschen was interested in the rise of extremism among the low literate population, she did not look specifically at immigrants. We draw insights from her analysis but focus our work only on the U.S. and Germany, as both countries have large immigrant populations. In doing so, we examine immigrants' integration into these two countries, as indicated by civic engagement.

Civic engagement and citizenship of immigrants. There is an assumption, particularly in the U.S., that immigrants are not politically or civically engaged. However, a number of recent sources have challenged these assumptions, including: Chakravorty, Kapur, and Singh (2017) who studied Indian immigrants; Tucker and Santiago (2013) and Waldinger and Duquette-Rury (2016), who looked at Latino immigrants; Brettel and Reed-Danahay (2012), who studied Vietnamese and Indian immigrants; Wong (2013), who studied Hmong immigrants; Muñoz (2009) who interviewed a small sample of Mexican immigrants; and, Stepick, Rey, and Mahler (2009), who examined various immigrant communities in the Miami-Dade, Florida area. We utilize the data collected by the Programme for the International Assessment of Adult Competencies (PIAAC) survey instrument on three areas: voluntary work, political efficacy, and social trust, in order to establish a base line for understanding civic engagement and political participation in the U.S. and Germany.

Summary. There are few studies of the ways that the recent waves of immigrants are being integrated into the broader social fabric of receiving countries. Thus, we compare the U.S. and Germany to better understand the ways immigrants integrate into the political life of their respective countries. In doing so, we specifically examine adults' civic engagement, as operationalized by volunteerism, political efficacy, and social trust among both immigrants and the native born.

III. Methodology

We used the 2012 U.S. and 2012 German Public-Use Data Files ($N = 10,475$) to address differences in civic engagement between immigrants and native-born individuals. Regression analyses using observed indicators of civic engagement were employed to address the research questions. Prior to inferential analyses, information is presented regarding immigration status (born vs. not born in the target country), as well as select control variables: participants' gender (female or male); work status (employed, unemployed, or out of labor force); years of work experience; years of education, and age (in 5-year increments). Descriptive statistics (means and standard deviations) were computed for years of work experience and for the three PIAAC skill proficiency indices (literacy, numeracy, and problem-solving in technology-rich environments). Because each of the three skill proficiencies are represented by ten plausible values, obtained descriptive statistics for these variables were pooled across results obtained using each of ten plausible values. Frequency distributions for the outcome variables of interest (voluntary work for non-profit organizations, political efficacy, and social trust) are also presented. Analyses were carried out with Mplus, and incorporated sampling weights and replicate weights[4].

To address Research Question 1, "Among adults in the U.S. and Germany, is immigration associated with civic engagement (i.e., voluntary work for non-profit organizations,

political efficacy, and dimensions of social trust), controlling for demographic variables (age, gender, education, work status, and number of years worked) and skill proficiency (literacy, numeracy, and PS-TRE)?" four regression analyses were carried out using the combined U.S./German sample, where the four corresponding ordinal outcome variables are voluntary work for non-profit organizations (coded as 0 = *Never* to 5 = *Every day*), political efficacy ("people like me don't have any say about what the government does," coded as 1 = *Strongly disagree* to 5 = *Strongly agree*), and the two social trust indicators (i.e., "There are only a few people you can trust completely," and "If you are not careful, other people will take advantage of you;" coded from 1 = *Strongly agree* to 5 = *Strongly disagree*). The predictor variables of interest for each regression included immigration status as well as the selected control variables of age, highest level of education, gender, work status, years of work experience, and the three PIAAC measures of skill proficiency (literacy, numeracy, and problem-solving in technology-rich environments). Categorical variables were dummy-coded (see Table 4).[5] Each skill proficiency measure was used as a separate control variable. Because the three measures of skill proficiency each are represented by ten plausible values, obtained parameter estimates (regression weights and standard errors) were pooled (averaged) across the replicated regression analyses. Standard errors were estimated using the replicate weights. The four civic engagement outcome variables of interest (i.e., voluntary work or volunteerism, political efficacy, and two indicators of social trust) are ordinal variables and, thus, robust weighted least squares estimation (estimator = WLSMV) was used in the regression analyses. According to Brown (2006), "WLSMV provides weighted least square parameter estimates using a diagonal weight matrix (W) and robust standard errors and mean- and variance-adjusted χ^2 test statistic" (p. 388). This estimator works well with categorical outcomes and large sample sizes (see Muthén, du Toit, &

Spisic, 1997; Rhemtulla, Brosseau-Liard, & Savalei, 2012). Proitsi et al. (2009) state that "WLSMV is a robust estimator which does not assume normally distributed variables and provides the best option for modelling categorical or ordered data" (p. 435). For all inferential tests, an alpha level of .05 was used as the a priori significance criterion for each predictor.

Table 4

Categorical Variables for Regression Analyses

Predictor	Values
Gender	0 = Male (reference)
	1 = Female
Work status (last week—paid work)	0 = No (reference)
	1 = Yes
Immigration status (born in country)	0 = No (reference)
	1 = Yes

To address Research Question 2, "Do the associations of immigration status with civic engagement (i.e., voluntary work for non-profit organizations, political efficacy, and dimensions of social trust) differ between individuals in the U.S. and Germany, controlling for demographic variables (age, gender, education, work status, and number of years worked) and skill proficiency (literacy, numeracy, and PS-TRE)?," the same ordinal regression models fitted to address Research Question 1 were fitted—again, using WLSMV estimation—but this time using a multi-group regression framework, where similar models first were fitted simultaneously to both the U.S. and German samples, with regression weights allowed to vary freely across countries, but intercepts constrained to be equal. Subsequent regression models then were fitted,

with each model constraining the regression weight for a single predictor to be equal across countries, but all other regression weights freely estimated. Chi-square difference tests between each of these models and the original "unconstrained" model were used to assess the degradation of model fit that resulted from constraining particular parameter estimates and, thus, determined whether differences existed between the two countries in the effect of each predictor on the civic engagement outcomes.

Limitations of the Study

The issue of civic engagement is larger and more complex than the parameters of the PIAAC survey. The present study is thus limited by the questions that were asked in the survey. In particular, the indicators of civic engagement include only voluntary work for non-profit organizations, political efficacy, and two measures of social trust. Other potential indicators of interest (not currently available in the PIAAC data) might include voting behavior, degree of engagement with current events or news, or involvement with and/or contributions to civic organizations. Also, in the analyses presented, immigration status was considered as the primary predictor of interest. Citizenship, which—although likely related to immigration status, is not synonymous with it—could potentially be an important predictor of civic engagement. However, questions of citizenship are not asked (for very valid reasons) on the PIAAC survey. Additionally, other potential control variables might be considered—for example, mobility or ease of access to transportation. Also, as is true for all secondary data sources, in-depth analysis of the reasons *why* individuals engage in civic engagement is inherently limited. A more comprehensive analysis would involve interviews with open-ended prompts and qualitative analysis. Lastly, an additional limitation is the fact that the available data from the U.S. and the

German Background Questionnaires differ slightly. For example, number of years of education is publicly available for the U.S. sample, but not for the German sample.

IV. Findings

In the following tables, we summarize results from the analyses. Table 5 shows frequency distributions for the categorical variables in this study. Table 6 shows correlations among the study variables. Table 7 displays the descriptive statistics for the quantitative variables in the study.

Table 5

Frequency Distributions of Study Variables

Variable		Germany		United States		Combined	
		Frequency	Percent[vi]	Frequency	Percent	Frequency	Percent
Immigration status	Native-born	659	86.1%	636	85.3%	1295	14.3%
	Not native-born	4718	13.9%	4259	14.7%	8977	85.7%
	Total	5377	100.0%	4895	100.0%	10,272	100.0%
Gender	Male	2676	50.4%	2323	49.1%	5215	49.8%
	Female	2789	49.6%	2687	50.9%	5260	50.2%
	Total	5465	100.0%	5010	100.0%	10,475	100.0%
Work status (Last week—Paid work)	No	1679	31.4%	1578	31.7%	3257	31.5%
	Yes	3700	68.6%	3318	68.3%	7018	68.5%
	Total	5379	100.0%	4896	100.0%	10275	100.0%
Highest level of education	Less than H.S.	917	17.3%	629	14.8%	1529	16.1%
	H.S.	2506	47.2%	1977	41.1%	4351	44.3%
	Above H.S	1884	35.5%	2279	44.1%	4315	39.6%
	Total	5307	100.0%	4885	100.0%	10,195	100.0%
Age	16-19 years	511	7.8%	351	7.9%	821	7.8%
	20-24 years	558	8.0%	486	10.7%	976	9.3%
	25-29 years	503	9.2%	523	10.4%	1023	9.8%
	30-34 years	491	8.6%	522	9.9%	965	9.2%
	35-39 years	476	9.8%	479	10.0%	1032	9.9%
	40-44 years	648	12.3%	499	10.1%	1179	11.3%
	45-49 years	687	12.9%	522	10.8%	1243	11.9%
	50-54 years	622	11.6%	562	11.0%	1190	11.4%
	55-59 years	489	10.1%	505	9.5%	1026	9.8%
	60-65 years	480	9.7%	561	9.8%	1021	9.7%
	Total	5465	100.0%	5010	100.0%	10475	100.0%
Voluntary work for non-profit organizations	Never	3443	65.2%	2142	44.3%	5585	55.3%
	< 1x/month	693	12.2%	1251	26.2%	1944	18.8%
	< 1x/week but at least 1x/month	519	9.4%	777	14.8%	1296	12.0%
	1x week but not every day	614	11.1%	601	12.2%	121	11.6%

	Every day	109	2.2%	124	2.5%	233	2.3%
	Total	5378	100.0%	4895	100.0%	10273	100.0%
Political efficacy—No influence on the government	Strongly agree	1163	23.0%	756	15.3%	1919	19.3%
	Agree	1052	20.5%	1020	21.2%	2072	20.8%
	Neither agree nor disagree	1749	31.8%	939	19.7%	2688	26.1%
	Disagree	1069	18.8%	1619	32.5%	2688	25.3%
	Strongly disagree	324	5.9%	552	11.3%	876	8.4%
	Total	5357	100.0%	4886	100.0%	10243	100.0%
Social trust—Ability to trust more than a few people	Strongly agree	1422	27.4%	1398	28.4%	2820	27.9%
	Agree	2043	38.7%	1954	39.9%	3997	39.3%
	Neither agree nor disagree	1063	19.0%	445	9.4%	1508	14.5%
	Disagree	717	12.8%	815	16.7%	1532	14.6%
	Strongly disagree	126	2.1%	284	5.6%	410	3.8%
	Total	53713	100.0%	4896	100.0%	10267	100.0%
Social trust—Belief that others won't take advantage	Strongly agree	1401	28.0%	1572	32.0%	2973	29.9%
	Agree	1948	36.9%	2191	45.1%	4139	40.7%
	Neither agree nor disagree	1533	26.9%	609	12.0%	2142	19.9%
	Disagree	424	7.3%	392	8.2%	816	7.7%
	Strongly disagree	61	1.0%	131	2.6%	192	1.8%
	Total	5367	100.0%	4895	100.0%	10262	100.0%

Note. Percentages have been weighted using provided sampling weights.

Table 6

Spearman/Phi Correlations Among Key Study Variables

	Native born	Female gender	Last week - Paid work	Highest level of schooling	Years of paid work	Literacy scale score	Numeracy scale score	Problem-solving scale score	Age	Voluntary work for non-profit organizations	Political efficacy	Social trust - Trust only few people	Social trust - Other people take advantage of you
Native born	1.00	.00	.00	.09	.07	.22	.17	.16	.00	.10	.04	.05	.01
Female gender	.00	1.00	-.12	.03	-.09	-.02	-.14	-.05	.04	.03	.05	.00	.03
Last week - Paid work	.00	-.12	1.00	.23	.10	.18	.21	.12	.00	.06	.04	.04	.05
Highest level of schooling	.09	.03	.23	1.00	.16	.44	.46	.30	.16	.21	.16	.16	.20
Years of paid work	.07	-.09	.10	.16	1.00	.01	.06	-.12	.84	.02	.02	.04	.07
Literacy scale score	.22	-.02	.18	.44	.01	1.00	.87	.80	-.08	.22	.20	.18	.21
Numeracy scale score	.17	-.14	.21	.46	.06	.87	1.00	.75	-.04	.22	.18	.19	.23
Problem-solving scale score	.16	-.05	.12	.30	-.12	.80	.75	1.00	-.17	.16	.16	.18	.20
Age	.00	.04	.00	.16	.84	-.08	-.04	-.17	1.00	-.01	.02	.05	.08
About yourself - Cultural engagement - Voluntary work for non-profit organizations	.10	.03	.06	.21	.02	.22	.22	.16	-.01	1.00	.15	.14	.11

Political efficacy - No influence on the government	.04	.05	.04	.16	.02	.20	.18	.16	.02	.15	1.00	.26	.23
Social trust - Trust only few people	.05	.00	.04	.16	.04	.18	.19	.18	.05	.14	.26	1.00	.54
Social trust - Other people take advantage of you	.01	.03	.05	.20	.07	.21	.23	.20	.08	.11	.23	.54	1.00

Table 7

Descriptive Statistics for Quantitative Variables in Study

Variable	*M*	*SD*	*SE(M)*	*M*	*SD*	*SE(M)*	*M*	*SD*	*SE(M)*
Years worked	17.98	13.75	0.07	18.68	13.52	0.07	18.54	13.57	0.05
Literacy skill	269.81	47.40	0.62	269.81	49.19	0.85	269.81	48.30	0.52
Numeracy skill	271.73	53.07	0.74	252.84	57.03	1.03	262.28	55.05	0.63
PS-TRE skill	282.58	43.50	0.72	277.44	43.70	0.82	280.01	43.60	0.55

Notes. Cases have been weighted using provided sampling weights. PS-TRE = Problem-Solving in Technology-Rich environments skill proficiency. Skill proficiency statistics have been averaged across the ten plausible values.

Research Question 1 asked "Among adults in the U.S. and Germany, how is immigration associated with civic engagement (i.e., voluntary work for non-profit organizations, political efficacy, and dimensions of social trust), controlling for demographic variables (age, gender, education, work status, and number of years worked) and skill proficiency (literacy, numeracy, and PS-TRE)?" Tables 8 and 9 show, for the combined sample, results for the regression of skill proficiency, age, education, gender, work status, number of years worked, and immigration status on each of the civic engagement indicators. As can be seen, being native-born positively predicted volunteerism (i.e., those who were native-born showed higher self-reported levels of volunteerism than those who were not native-born). Volunteerism also was positively associated with female gender, number of years worked, whether an individual had worked within the past week, education, and literacy skill; while volunteerism was negatively associated with age. Immigration status did not significantly predict any of the remaining three civic engagement outcomes. However, political efficacy was positively associated with female gender, education, age, and literacy skill; the ability to trust more than a few people was positively predicted by

years worked, education, age, and PS-TRE skill proficiency; and the second measure of social

trust (feeling that people won't take advantage of one) was positively associated with female

gender, education, age, and numeracy skill proficiency.

Next, a structural equation model was fitted in which the same predictors used in the

preceding analysis were used as predictors of a latent "civic engagement" variable that was

indicated by the volunteerism, political efficacy, and social trust indicators. However, the

measurement model for this latent outcome variable showed very poor model fit [$\chi^2(3) =$

2968.52, $p < .001$; CFI = .458, RMSEA = .31], and a full structural model thus was not fitted.

Research Question 2 asked whether the associations of immigration status with civic

engagement (i.e., voluntary work for non-profit organizations, political efficacy, and dimensions

of social trust) differed between individuals in the U.S. and Germany, controlling for

demographic variables (age, gender, education, work status, and number of years worked) and

skill proficiency (literacy, numeracy, and PS-TRE). To test whether differences existed between

the two countries in the relative effects of immigration status on each predictor as well as in the

effects of each control variable, chi-square difference tests were used where a baseline model

with freely-estimated regression weights was compared to a series of models where the estimated

regression weight for each predictor, in turn, was constrained to be equal between countries. For

all models, threshold estimates were constrained to be equal for the two countries.

Table 10 shows regression results and chi-square difference tests, respectively, for the

outcome of volunteerism. As these results indicate, a statistically significant difference was

apparent between Germany and the U.S. in the effect of immigration status on volunteerism

[$\chi^2(1) = 9.11$, $p = .002$]. Here, native-born individuals in Germany showed greater volunteerism

than non-native-born persons ($\beta = 0.119$, $p < .001$), while in the U.S., no difference was apparent

by immigration status (β = 0.031, p = .133). Regarding the effects of control variables on volunteerism, although a statistically significant difference was apparent between Germany and the U.S. in the effect of PS-TRE skill proficiency on volunteerism, the effects for each country considered individually were not statistically significant, suggesting no real effects for this predictor on volunteerism. No statistically significant differences between countries were evident for any of the control variables on volunteerism.

Table 8

Regression Results for the Regression of Skill Proficiency, Gender, Years Worked, Work Status, Education, Age, and Immigration Status on Volunteerism and Political Efficacy

Effect	Volunteerism ($N = 8109$)				Political Efficacy ($N = 8109$)			
	b	*SE(b)*	*β*	*z*	*b*	*SE(b)*	*β*	*z*
Native-born	0.133	0.057	0.040	2.335*	0.000	0.043	0.000	-0.004
Years worked	0.007	0.003	0.108	2.79**	-0.002	0.002	-0.030	-0.959
Worked last week	-0.009	0.003	-0.020	-3.25**	0.020	0.037	0.009	0.544
Education	0.190	0.025	0.120	7.48***	0.149	0.025	0.093	5.975***
Age	-0.036	0.012	-0.093	-2.90**	0.025	0.013	0.065	1.993
Female gender	0.090	0.038	0.044	2.399*	0.071	0.035	0.035	2.029*
Literacy skill	0.002	0.001	0.093	2.355*	0.004	0.001	0.189	4.016***
Numeracy skill	0.000	0.001	0.020	0.544	-0.002	0.001	-0.082	-1.907
PS-TRE skill	0.000	0.001	0.014	0.374	0.001	0.001	0.005	1.303

Notes. $R^2 = .033$ (Volunteerism), $R^2 = .052$ (Political Efficacy); *$p < .05$, **$p < .01$, ***$p < .001$.

Table 9

Regression Results for the Regression of Skill Proficiency, Gender, Years Worked, Work Status, Education, Age, and Immigration Status on the Ability to Trust More than a Few People and the Belief that Others Won't Take Advantage (Social Trust)

Effect	Ability to trust more than a few people (N = 8107)				Belief that others won't take advantage (N = 8105)			
	b	*SE(b)*	*β*	*z*	*b*	*SE(b)*	*β*	*z*
Native-born	0.064	0.048	0.019	1.329	-0.022	0.046	-0.006	-0.472
Years worked	-0.006	0.003	-0.078**	-2.441*	-0.004	0.002	-0.048	-1.906
Worked last week	0.004	0.039	0.002	0.114	-0.024	0.047	-0.010	-0.516
Education	0.122	0.026	0.077***	4.668***	0.177	0.023	0.109***	7.66***
Age	0.056	0.013	0.145***	4.354***	0.048	0.011	0.123***	4.382***
Female gender	0.016	0.035	0.008	0.445	0.137	0.035	0.065***	3.875***
Literacy skill	0.001	0.001	0.057	1.303	0.001	0.001	0.039	0.887
Numeracy skill	0.000	0.001	-0.003	-0.06	0.003	0.001	0.146**	2.877**
PS-TRE skill	0.003	0.001	0.136**	3.354**	0.001	0.001	0.061	1.387

Notes. R^2 = .055 (Ability to trust more than a few people), R^2 = .072 (Belief that others won't take advantage); *p < .05, **p < .01, ***p < .001.

Table 10

Multi-group Regression Results for the Regression of Skill Proficiency, Gender, Years

Worked, Work Status, Education, Age, and Immigration Status on Volunteerism

Effect	U.S. ($N = 3962$)				Germany ($N = 4147$)				Difference
	b	$SE(b)$	β	z	b	$SE(b)$	β	z	$\chi^2(1)$
Native-born	0.101	0.067	0.031	-1.502	0.402	0.079	0.119	5.075***	9.11**
Years worked	0.005	0.003	0.069	1.71	0.004	0.004	0.047	1.00	0.12
Worked last week	-0.047	0.048	-0.020	0.978	0.026	0.043	0.010	0.592	1.16
Education	0.169	0.032	0.106	5.266***	0.093	0.040	0.059	2.316*	2.39
Age	-0.022	0.015	-0.058	-1.451	-0.002	0.019	-0.005	-0.099	0.75
Female gender	0.125	0.046	0.061	2.70**	0.011	0.047	0.006	0.25	3.60
Literacy skill	0.000	0.001	-0.003	-0.058	0.002	0.001	0.089	1.627	2.46
Numeracy skill	0.002	0.001	0.104	2.079*	0.003	0.001	0.140	2.574*	0.92
PS-TRE skill	0.001	0.001	0.048	1.061	-0.002	0.001	-0.074	-1.494	6.15*

Notes. $R^2 = .047$ (U.S.), $R^2 = .065$ (Germany); *$p < .05$, **$p < .01$, ***$p < .001$. Chi-square statistics have been averaged across models fitted with each set of plausible values; a single *p*-value was computed based on the probability associated with the average chi-square statistic obtained.

Table 11 shows regression results and chi-square difference tests for the outcome of political efficacy. Here, although a statistically significant difference was apparent between Germany and the U.S. in the effect of immigration status $[\chi^2(1) = 43.76, p < .001]$ on this outcome, the effect of this predictor was not statistically significant within each country. Regarding control variables, a statistically significant difference was apparent between the U.S. and Germany in the effect of gender on political efficacy $[\chi^2(1) = 6.52, p = .011]$. Specifically, females in the U.S. showed greater political efficacy than males ($\beta = 0.05, p = .010$), while in Germany, no gender difference was evident ($\beta = -0.015, p = .452$). Additionally, a significant difference between countries was observed in the effect of literacy skill proficiency $[\chi^2(1) = 45.26, p < .001]$. Here, a positive effect of literacy was evident among German persons ($\beta = 0.17, p = .006$), while no significant effect occurred among U.S. persons ($\beta = 0.10, p = .067$). No statistically significant differences between countries were evident for the control variables in the model.

Table 11

Multi-group Regression Results for the Regression of Skill Proficiency, Gender, Years Worked, Work Status, Education, Age, and Immigration Status on Political Efficacy

Effect	U.S. ($N = 3962$)				Germany ($N = 4147$)				Difference
	b	$SE(b)$	β	z	b	$SE(b)$	β	z	$\chi^2(1)$
Native-born	0.011	0.051	0.003	0.216	0.063	0.079	0.018	0.793	43.76***
Years worked	-0.005	0.003	-0.068	-1.805	0.003	0.004	-0.041	-0.938	0.21
Worked last week	0.037	0.044	0.016	0.837	0.006	0.051	0.002	0.114	0.25
Education	0.106	0.030	0.066	3.545***	0.179	0.030	0.112	5.974***	2.29
Age	0.042	0.015	0.111	2.788**	0.019	0.018	0.047	1.047	1.07
Female gender	0.110	0.043	0.053	2.569*	-0.032	0.042	-0.015	-0.751	6.52*
Literacy skill	0.002	0.001	0.104	1.829	0.004	0.001	0.166	2.731**	45.26***
Numeracy skill	0.000	0.001	0.013	0.247	0.001	0.001	-0.033	0.604	1.16
PS-TRE skill	0.001	0.001	0.051	1.041	0.002	0.001	0.100	1.680	2.16

Notes. $R^2 = .046$ (U.S.), $R^2 = .087$ (Germany); *$p < .05$, **$p < .01$, ***$p < .001$. Chi-square statistics have been averaged across models fitted with each set of plausible values; a single *p*-value was computed based on the probability associated with the average chi-square statistic obtained.

Table 12 shows regression results and chi-square difference tests for the first indicator of social trust, the ability to trust more than a few people. For this outcome, no statistically significant difference was observed between countries in the effect of immigration status. For the control variables, a statistically significant difference was apparent between the U.S. and Germany in the effects of literacy [$\chi^2(1) = 10.33$, $p = .001$] and PS-TRE [$\chi^2(1) = 7.75$, $p = .005$]. Specifically, literacy had a stronger positive effect on the ability to trust more than a few people in Germany ($\beta = 0.12$, $p < .001$) than in the U.S. ($\beta = 0.06$, $p = .001$). Conversely, PS-TRE had a positive effect on this trust outcome among persons in the U.S. ($\beta = 0.16$, $p = .001$), but no significant effect among persons in Germany ($\beta = 0.03$, $p = .520$). Although a statistically significant difference between the two countries was evident for the effect of numeracy skill on the ability to trust more than a few people [$\chi^2(1) = 5.28$, $p = .021$], within each country the relationship was not statistically significant. No statistically significant differences between countries were evident for the other control variables.

Table 12

Multi-group Regression Results for the Regression of Skill Proficiency, Gender, Years Worked, Work Status, Education, Age, and Immigration Status on the Ability to Trust More than a Few People

	U.S. ($N = 3962$)				Germany ($N = 4147$)				Difference
Effect	b	$SE(b)$	β	z	b	$SE(b)$	β	z	$\chi^2(1)$
Native-born	0.106	0.059	0.032	1.792	-0.066	0.064	-0.020	-1.033	3.67
Years worked	0.006	0.003	0.079	2.091*	-0.010	0.003	-0.128	-3.354**	0.80
Worked last week	0.007	0.048	0.003	0.141	0.020	0.044	0.008	0.464	0.06
Education	0.103	0.031	0.064	3.347**	0.194	0.035	0.124	5.538***	3.66
Age	0.065	0.014	0.172	4.491***	0.029	0.016	0.071	1.767	2.60
Female gender	0.012	0.045	0.006	0.272	0.043	0.041	0.021	1.049	0.37
Literacy skill	0.000	0.001	0.002	0.027	0.004	0.001	0.182	3.460**	10.33**
Numeracy skill	0.001	0.001	0.044	0.730	-0.002	0.001	-0.074	-1.469	5.28*
PS-TRE skill	0.004	0.001	0.159	3.379**	0.001	0.001	0.031	0.643	7.75**

Notes. $R^2 = .061$ (U.S.), $R^2 = .059$ (Germany); *$p < .05$, **$p < .01$, ***$p < .001$. Chi-square statistics have been averaged across models fitted with each set of plausible values; a single *p*-value was computed based on the probability associated with the average chi-square statistic obtained.

Table 13 shows regression results and chi-square difference tests for the second indicator of social trust ("If you are not careful, other people will take advantage of you"). For this outcome, no statistically significant difference between German and the U.S. was observed in the effect of immigration status. When considering the control variables, a statistically significant difference was apparent between the U.S. and Germany in the effect of years worked [$\chi 2(1) =$ 4.13, $p = .042$], literacy skill proficiency [$\chi 2(1) = 62.69$, $p < .001$], and numeracy skill proficiency [$\chi 2(1) = 35.39$, $p < .001$]. Specifically, years worked had a negative effect among German individuals ($\beta = -0.11$, $p = .002$), while it had no significant effect on this social trust outcome among U.S. individuals ($\beta = 0.00$, $p = .977$). Literacy skill had a positive effect on this indicator of social trust among individuals in Germany ($\beta = 0.29$, $p < .001$), but no significant effect among persons in the U.S. ($\beta = 0.01$, $p = .893$), while numeracy skill proficiency had a positive effect on this trust outcome among persons in the U.S. ($\beta = 0.15$, $p = .024$), but no significant effect among persons in Germany ($\beta = -0.02$, $p = .725$). No statistically significant differences between countries were evident for the other control variables.

Table 13

Multi-group Regression Results for the Regression of Skill Proficiency, Gender, Years Worked, Work Status, Education, Age, and Immigration Status on the Belief that Others Won't Take Advantage (Social Trust)

Effect	U.S. ($N = 3962$)				Germany ($N = 4147$)				Difference
	b	$SE(b)$	β	z	b	$SE(b)$	β	z	$\chi^2(1)$
Native-born	-0.033	0.055	-0.010	-0.593	-0.006	0.066	-0.002	-0.093	0.12
Years worked	0.000	0.003	-0.001	-0.029	-0.009	0.003	-0.108	-3.046	4.02*
Worked last week	-0.040	0.056	-0.017	-0.725	0.009	0.046	0.003	0.193	0.61
Education	0.179	0.029	0.109	6.109***	0.246	0.038	0.150	6.540***	1.96
Age	0.040	0.014	0.105	2.914**	0.036	0.016	0.085	2.275*	0.08
Female gender	0.128	0.045	0.061	2.810**	0.176	0.044	0.081	3.977***	0.79
Literacy skill	0.000	0.001	0.008	0.134	0.007	0.001	0.286	5.200***	24.80***
Numeracy skill	0.003	0.001	0.148	2.262*	0.000	0.001	-0.019	-0.352	9.70**
PS-TRE skill	0.002	0.001	0.070	1.375	0.000	0.001	0.003	0.083	2.63

Notes. $R^2 = .090$ (U.S.), $R^2 = .141$ (Germany); *$p < .05$, **$p < .01$, ***$p < .001$. Chi-square statistics have been averaged across models fitted with each set of plausible values; a single *p*-value was computed based on the probability associated with the average chi-square statistic obtained.

V. Discussion and Conclusions

We first discuss our findings pertaining to our first research question, which asked about the association between immigration status and civic engagement (e.g., voluntary work, political efficacy, and social trust). Then, we discuss findings pertaining to our second research question, which asked about differences in these associations between the U.S. and Germany.

Association Between Immigration Status and Civic Engagement

Findings regarding the associations between immigrant status and civic engagement were mixed, depending upon the dimension examined (voluntary work, social trust) and country. They are discussed below.

Voluntary work. The findings indicate that participating in voluntary work (i.e., volunteerism) was positively associated with immigration status. Specifically, native-born persons (overall) showed greater volunteerism than non-native-born persons. However, subsequent analyses (see discussion regarding research question 2) showed that, when examined for each country, the positive association was statistically significant only for Germany, and not for the U.S. The difference in findings on immigrant status between the U.S. and Germany are interesting, insofar as the finding that immigration status was positively associated with voluntary work in Germany agrees with the general trend in research literature, while the lack of a significant relationship between volunteerism and immigrant status in the U.S. is contradictory to predominant research trends (Foster-Bey & CIRCLE, 2008; Qvist, 2018; Sundeen, Garcia, & Raskoff, 2009). Nesbit (2017) and Guo (2014) point to volunteering in the U.S. and Canada as a powerful source of informal learning and means of acquisition of social capital for immigrants. Qvist (2018) suggests that social integration into informal networks is both a prerequisite and a consequence of volunteering, noting that differences in the quality and strength of informal social networks alone explain approximately 20% of the gap in volunteerism between non-

Western immigrants and natives. He suggests that this finding is not surprising, given studies

indicating that being asked to volunteer is the most important determinant of actually

volunteering.

Political efficacy. In the combined sample, political efficacy was not significantly

associated with immigration status. That is, immigrants and non-immigrants showed similar

levels of this aspect of political efficacy. However, when examined separately, Germany and the

U.S. differed. In Germany, the native population reported higher political efficacy than the non-

native, while this difference was not seen in the U.S. This is not a surprising finding for

Germany, although the comparison with the U.S. is interesting. The difference may be due to

language learning or it may be due to the prevalence of stronger ethnic organizations which

provide a voice for immigrants. At this point, we are not certain about the causes, but our

findings point to a tantalizing issue for further study.

Social trust. Neither of the measures of social trust was significantly predicted by

immigration status. Both immigrants and non-immigrants showed similar levels of this construct.

In essence, this appears to be an encouraging finding, and suggests support for the notion of

successful acculturation/assimilation, at least in terms of social relationships and social

beliefs/expectations.

Discussion

Considering the overall findings, it appears that, in both the U.S. and Germany, there

were very few differences between immigrants and non-immigrants at the time of the 2012

survey. This leads to some interesting thoughts about the nature of civic engagement as currently

configured. The first aspect of civic engagement, and the most important aspect of the PIAAC

construction of civic engagement, is volunteerism or voluntary work. In Germany, native-born

individuals were more likely to engage in voluntary work than immigrants. This finding conforms to the general literature in this area. However, this was not true in the U.S. where immigrant levels of volunteering were not significantly different from those of the native-born, although the literature reports that immigrants often choose to volunteer for ethnic-oriented organizations including religious organizations, and limited research suggests immigrants tend to participate in either mainstream organizations or ethnic organizations, rather than both.

A similar difference between the U.S. and Germany was seen in the analysis of political efficacy. In Germany, the native-born population reported higher levels of political efficacy than the non-native-born, while this difference was not seen in the U.S. Only in the area of social trust did immigrants and native-born not differ in either country, although there were differences between the two countries.

Thorkelson (2017) points to the potential negative consequences of anti-immigration rhetoric, which has more recently increased in the U.S., but was not as pronounced at the time PIAAC data were originally collected. Quantitative and qualitative findings from his cross-national study of political participation by young adults in the U.S. and 24 European countries suggest that countries where foreign nationals are allowed more rights have higher rates of minority political participation, while migrant minorities who become alienated from mainstream politics are more likely to demonstrate civic engagement within ethnic or religious organizations or through neighborhood volunteering. While our study does not include a comparison of immigration laws, it seems apparent that civic engagement is affected by several variables, most importantly education, but immigrants for the most part mirror the participation patterns of their respective countries.

Implications and Conclusions

Our findings have implications for thinking about immigration and for approaches to civic education, as well as for adult education in general. There are still many aspects of PIAAC that could be explored further. These include: What factors influence the differences between the U.S. and Germany regarding which skills are associated with civic engagement; the relationship between numeracy proficiency and volunteerism and social trust; or the relationship between gender and political efficacy.

With respect to the control variables, volunteerism or voluntary work was positively associated with education in both countries, and the two countries did not differ from one another in this effect. A positive effect of numeracy on voluntary work was observed in both countries. Given the dearth of literature examining the relationship between numeracy and voluntary work, explanations for this finding would be rather speculative, suggesting this as an area for future research. On the other hand, a significant and strong relationship between educational level and volunteerism is supported by existing literature (Foster-Bey & CIRCLE, 2008; Gil-Lacruz, Marcuello, & Saz-Gill, 2017). The research literature does not provide a clear explanation for the large difference in effect size between the U.S. and Germany, although Gesthuizen, van der Meer, and Scheepers' (2008) analysis of education and dimensions of social capital across 28 nations suggests that the strength of relationship between education and participation in voluntary work may vary based on national characteristics, including social security expenditure (with higher levels of voluntary organization membership in countries where the state spends more on social security).

The difference in findings on immigrant status between volunteering in the U.S. and in Germany illustrate the complexity of these types of comparisons. In particular, the U.S. data

showing a significant relationship between immigrant status and volunteering could potentially

corroborate the view that volunteering is a significant source of learning and may serve as both a

source and a consequence of social integration. However, more research is needed.

In terms of immigration, our findings show that for the most part, immigrants and non-

immigrants participate in civic life to similar degrees. The implication would seem to be that the

U.S. and Germany should embrace immigration and move quickly to assist immigrants in

becoming acclimated and a part of their communities, remove obstacles to attaining citizenship,

and encourage civic participation whenever possible. Supports for immigrants in the U.S. are

uneven, relying heavily on non-profit and community organizations. While Germany is arguably

more effective at assisting immigrants, both nations struggle with negative public perceptions of

using government funding for non-citizen legal residents.

Although policy changes may serve to provide needed resources for immigrants and

simplify pathways to citizenship, a shift in public opinion is necessary before relevant programs

are likely to be implemented. As such, policy makers should begin by addressing the

misinformation about immigrants and the corresponding resources and educational opportunities.

Contrary to some of the hyperbolic statements about immigrants, our findings indicate that

immigrants show little difference with the native-born regarding their civic engagement. This is

encouraging news and should assuage those who believe that immigrants do little to contribute to

the welfare of the nation.

Although civic education was not addressed in PIAAC, it is clear that immigrants are

involved both in their own organizations and increasingly in the broader arena (although national

and local involvements were not delineated). The research on the three component parts:

participation in voluntary work, and feelings of political efficacy and of social trust does not

indicate a connection to civic education, although the association with education, more broadly defined, is evident. This was true for our study as well. Recent research on political efficacy indicates, for example, that as women become more involved in politics their political efficacy increases (Dassonneville & McAllister, 2018). In general, however, it is clear that increased educational opportunity is a key to greater civic engagement and civic mindedness. Immigration status in both the U.S. and Germany is not a factor in overall civic engagement as operationalized in our investigation.

Since civic engagement or civic mindedness are considered to be essential ingredients for democratic health, it seems imperative to reconceptualize the education of adults to include these concerns. However, it is also important to think about the educational pipeline and educational opportunity since education level is the most important predictor of civic engagement.

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Appendix

Items on the PIAAC Survey of Adult Skills Background Questionnaire Related to Civic Engagement

Item	Label	Description	Response options
I_Q05f	Volunteerism	In the last 12 months, how often, if at all, did you do voluntary work, including unpaid work for a charity, political party, trade union or other non-profit organisation?	1=*Never,* 2=*Less than once a month,* 3=*Less than once a week but at least once a month,* 4=*At least once a week but not every day,* 5=*Every day*
		To what extent do you agree or disagree with the following statements?	
I_Q06a	Political Efficacy	People like me don't have any say about what the government does	1=*Strongly agree,* 2=*Agree,* 3=*Neither agree nor disagree,* 4=*Disagree,* 5=*Strongly disagree*
I_Q07a	Social Trust 1	There are only a few people you can trust completely	1=*Strongly agree,* 2=*Agree,* 3=*Neither agree nor disagree,* 4=*Disagree,* 5=*Strongly disagree*
I_Q07b	Social Trust 2	If you are not careful, other people will take advantage of you	1=*Strongly agree,* 2=*Agree,* 3=*Neither agree nor disagree,* 4=*Disagree,* 5=*Strongly disagree*

Notes

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[1] https://www.bmi.bund.de/SharedDocs/downloads/DE/veroeffentlichungen/2018/pmk-2017.pd

[2] "Free Movement" is a category used within the European Union to refer to movement among the E.U member countries. While it is not applicable to the U.S., we have left it in because it makes up such a larger part of the immigration pattern within Germany and the numbers would make no sense if it were to be deleted.

[3] We used the OECD 2017 data on migrants, they are comparable.

[4] We used the Type=Imputation command to obtain parameter estimates for the regression weights and standard errors. However, using Type = Imputation + replicate weights in Mplus does not provide chi-square statistics. That is why we had to separately run the models. This involved manually running 10 (plausible values) * 4 (dependent variables) * 10 (full and reduced models) = 400 models. Then comparing each of the 360 reduced models to the 40 full models using weighted chi-square difference tests, then aggregating chi-square statistics, then manually computing a p-value.

[5] We wanted to preserve the order information in these variables (which we would lose by dummy-coding them), so we treated age and education as ordinal variables (age in 5-year intervals actually is interval-level). Thus, these predictors were not dummy-coded. The resulting regression coefficients are then interpretable as the change in the cumulative log-odds for each category unit increase in education (or age).

The reference category, as with any regressing using 0/1 dummy variables, is the category coded as zero. We've indicated these below.

[vi] These frequencies and percentages are weighted. We used normalized (i.e., relative) sampling weights; i.e., normalized weight = (final weight * N) / sum of final weights or, equivalently, normalized weight = final weight / mean of final weights. Normalized sampling weights are commonly used in large-scale survey analysis because they retain the original sample size, rather than weighting up to the population N. See, for example:

http://www.juanbattle.com/files/2012/04/Hahs-Vaughn_2005_Using-weights-with-national-datasets.pdf

If we use the final (i.e., population) weights rather than normalized weights, the weighted frequencies will be in the tens or hundreds of millions, as they then represent population frequencies. The population-weighted percentages will be the same as those shown in this table.