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Variations in belonging across 22 countries in the Global Flourishing Study

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ABSTRACT

A sense of belonging is essential for well-being, yet its patterns differ across cultures and demographic groups. We analyzed data from 202,898 individuals across 22 countries to examine how age, gender, employment, marital status, religious service attendance, education, and immigration status relate to belonging. Older adults, employed individuals, and frequent religious service attendees report higher belonging. However, country-specific patterns reveal substantial variation. In Japan, belonging increases sharply after 50, while in India and Tanzania, it declines with age. Gender differences are inconsistent; while men generally report lower belonging, non-binary individuals feel the least connected in Sweden and Germany. Employment status strongly correlates with belonging, though the impact varies – unemployment is linked to lower belonging in Brazil but not in Mexico. Migrants often report lower belonging, except in Egypt and Indonesia. Findings highlight the complexity of belonging, suggesting that interventions should be sensitive to national and demographic contexts.

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In an increasingly interconnected world marked by global mobility and geopolitical tensions, understanding cross-national differences in belonging has never been more important. By belonging we mean feeling accepted, respected, and valued, grounded in our basic human motivation to form social bonds where one's relational value is recognised and sustained (see Allen et al., 2022; Counted et al., 2025).

Belonging is a fundamental psychosocial need that supports individual well-being and societal cohesion (Baumeister & Leary, 2017; Haslam et al., 2020). Self-determination theory identifies autonomy, competence, and relatedness as core psychological needs essential for human flourishing (Deci & Ryan, 2000). Relatedness reflects the need to feel connected and valued in groups. As a practical expression of relatedness, belonging shapes subjective well-being and contributes to social stability.

An important point to note is that a sense of belonging is often framed as belonging to a specific group or setting and transcends mere social contacts or connection in a particular setting (Allen et al., 2021). Belonging, therefore, is about feeling fit and being an integral part of a wider system or environment. Common examples in the literature include belonging to school, the workplace, a neighbourhood, community or country (Counted et al., 2025).

A single setting offers multiple opportunities to belong, for example a school can provide class-level, friendship-group, or extracurricular belonging. In other words, *belonging in* a particular place or context allows for a broader understanding of how individuals may feel like they belong. To use school belonging as an example, a student might belong *to* school, but at the same time they might also experience belonging *in* school through their class group, year level, friendship group, or extracurricular activities. So, one school may offer multiple opportunities to belong within that school. Similarly, a person might experience belonging in multiple ways within their country. This could include the groups, places, relationships, workplaces, school or culture. *Belonging in* their country should be considered distinct from *belonging to* their country, which might have more of a nationalistic underpinning. In this study, we intentionally refer to this as general opportunities for belonging *within a* country context.

Another important point is that the extent to which individuals experience belonging is influenced by

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factors such as race, gender, culture and socioeconomic status (Counted et al., 2025). For example, migrants may struggle to feel a sense of belonging in a new country due to language barriers or cultural differences. Marginalized groups in society often face exclusion in workplaces or schools, affecting their mental health and opportunities. These complexities present challenges for researchers and policymakers seeking to foster inclusive communities. Recent studies show that socio-demographic factors like age, gender, marital status and employment substantially influence a person's sense of belonging (Ahn & Davis, 2023; Crawford et al., 2024).

Most of this research has taken place in culturally homogenous settings (Jetten et al., 2012). As a result, there is limited understanding of how cultural diversity and demographic factors shape belonging across global contexts. This gap has implications for positive psychology, as belonging is closely linked to psychological well-being, life satisfaction, and social resilience (Baumeister & Leary, 2017). Addressing this gap through global-focused research can inform evidence-based interventions that enhance social integration, promote mental health, and foster human flourishing in different societies.

To build on these insights, this study conducts a cross-national analysis of individuals' subjective experiences of belonging across 22 culturally diverse countries. We focus on key demographic factors – age, gender, marital status, employment status, religious service attendance, education and immigration status – to explore their relationship with self-reported feelings of belonging. This approach is grounded in the hypothesis that demographic characteristics influence how individuals experience and interpret their sense of belonging (Crenshaw, 2013; Tajfel et al., 1979), with variations that reflect the diverse cultural and societal norms present in our international sample. For example, studies show that age is associated with belonging across the lifespan (Ahn & Davis, 2023; Morgan et al., 2021), influencing social connections and community engagement. As a psychological need, an individual's sense of belonging can manifest through familial ties in childhood, peer relationships in adolescence, professional and familial networks in adulthood, and, in older age, familial and community ties. This is supported by several studies, suggesting that older adults often report a strong sense of belonging tied to long-standing relationships and community ties (Seeman, 2000), though they also face challenges like social isolation (Golden et al., 2009). On the other hand, young people navigating transitions such as starting university or new careers, may experience fluctuations in their sense of belonging, with these transitions offering both opportunities for establishing new connections as well as challenges in maintaining them (Settersten & Ray, 2010).

Gender is also associated with belonging, with societal norms and expectations influencing how individuals engage with their social environments. Research indicates that women often report higher levels of social support and connectedness than men, which may contribute to a stronger sense of belonging (Taylor, 2016). However, this can also subject women to greater vulnerability when social networks are disrupted, potentially reflecting broader, unmet gender-specific needs. For instance, relationships focusing on reliable alliances rather than guidance enhance social connectedness for women (Lee & Robbins, 2000). In contrast, for men, the sense of connectedness is more associated with relationships that affirm their value without necessarily emphasizing reliable alliances or opportunities for nurturance (Taylor, 2016). Therefore gender-based differences may potentially play an important role in shaping individuals' overall sense of belonging.

Marital status is linked to belonging, with married individuals often reporting higher levels of social support and emotional well-being compared to their single counterparts (Waite & Gallagher, 2001). Marriage may provide a foundational sense of belonging, though the quality of the marital relationship may potentially play a substantial role. For example, couples who engaged in regular, meaningful conversations reported a stronger emotional connection and higher marital satisfaction (Lawrence et al., 2019; Waite & Gallagher, 2001). This illustrates, to an extent, how the depth and quality of interactions within a marriage are fundamental to fostering a sense of belonging and well-being, surpassing the mere status of being married.

Employment status is also associated with belonging, not only through workplace relationships but also through the social identity and status conferred by professional roles (Ashforth & Mael, 1989; Sheng & Zhou, 2023). Unemployment can erode the sense of belonging by diminishing these social and identity-affirming benefits, especially when one has a disability (Fuentes et al., 2024). This is well-documented in the social identity theory, which proposes that individuals derive a sense of identity and belonging from their group memberships (Haslam et al., 2020). Being employed or unemployed can potentially contribute to one's social identity through affiliation with a professional group that contributes to their social status and belonging.

This is often the case within religious communities. For example, religious service attendance offers a clear example of how structured social activities can foster a sense of belonging (Dunbar, 2021; Michaels et al., 2022). Regular participation in

religious services builds social networks and norms of reciprocity, enhancing social ties and community belonging, which, in turn, contribute to individual well-being (Putnam, 2001). In other words, this 'social capital' contributes to how the individual sees themselves flourishing within their immediate environments, reinforcing their sense of identity and enhancing overall life satisfaction through community integration and mutual support.

Another example of such environments are education institutions. Education serves as a crucial avenue for socialization, impacting belonging both through the cultivation of social networks and the development of social capital (Rogošić & Baranović, 2016; Schneider, 2000). Higher education institutions can expand individuals' social horizons, though it may also introduce challenges in maintaining a sense of belonging within increasingly diverse environments.

Immigration status is another key factor that influences individuals' social identity and group affiliations (Berry, 1997). For example, non-natives or migrants often face unique challenges in establishing a sense of belonging in new cultural contexts. While the pursuit of integration can lead to new social connections (e.g. via acculturation), it can also entail experiences of marginalization and exclusion (Renzaho et al., 2022).

To explore the unique ways demographic factors may associate with sense of belonging across diverse global contexts, we first seek to delineate the distribution and descriptive statistics of key demographic factors within a broad international cohort, laying the groundwork for a global understanding of the populations under examination. Second, we explore how mean levels of belonging vary across different countries, reflecting how geographical and cultural contexts potentially contribute to this essential human need. Third, this study probes the variability of belonging across diverse demographic categories to shed light on the ways these factors vary. Correspondingly, our hypotheses posit that demographic features will reveal diverse patterns across the international sample, mean levels of belonging will meaningfully vary by country, and sense of belonging will exhibit considerable variations across different demographic categories – each nuanced by specific cultural and societal norms.

Methods

The description of the methods below has been adapted from VanderWeele et al. (2024). Further methodological detail is available elsewhere (Crabtree et al., 2021; Johnson et al., 2024; Lomas et al., 2024; Padgett et al., 2024a, 2024b; Padgett, Cowden, et al., 2024).

Data

The Global Flourishing Study (GFS) is a study of 202,898 participants from 22 geographically and culturally diverse countries, with nationally representative sampling within each country, concerning the distribution of determinants of well-being. Wave 1 of the data included the following countries and territories: Argentina, Australia, Brazil, Egypt, Germany, Hong Kong (S.A.R. of China, with mainland China included from 2024 onwards), India, Indonesia, Israel, Japan, Kenya, Mexico, Nigeria, the Philippines, Poland, South Africa, Spain, Sweden, Tanzania, Turkey, United Kingdom and the United States. The countries were selected to (a) maximize coverage of the world's population, (b) ensure geographic, cultural, and religious diversity, and (c) prioritize feasibility and existing data collection infrastructure.

Data collection was carried out by Gallup Inc. Data for Wave 1 were collected principally during 2023, with some countries beginning data collection in 2022 and exact dates varying by country (Ritter et al., 2024). Four additional waves of panel data on the participants will be collected annually from 2024–2027. The precise sampling design to ensure nationally representative samples varied by country and further details are available in Ritter et al. (2024). Survey items included aspects of well-being such as happiness, health, meaning, character, relationships, and financial stability (VanderWeele, 2017), along with other demographic, social, economic, political, religious, personality, childhood, community, health and well-being variables. The data are publicly available through the Center for Open Science (COS) (https://www.cos.io/gfs). During the translation process, Gallup adhered to TRAPD model (translation, review, adjudication, pretesting and documentation) for cross-cultural survey research (ccsg.isr.umich.edu/chapters/translation/overview).

Measures

Demographics Variables: Continuous age was classified as 18–24, 25–29, 30–39, 40–49, 50–59, 60–69, 70–79, and 80 or older. We used the term 'Gender', with response options male, female, or other. This wording may feel more accommodating to some respondents than a 'sex' item. Consequently, we report results as collected and acknowledge potential wording effects in the Limitations section. Marital status was assessed as single/never married, married, separated, divorced,

widowed, and domestic partner. Employment was assessed as employed, self-employed, retired, student, homemaker, unemployed and searching, and other. Education was assessed as up to 8 years, 9–15 years, and 16+ years. Service attendance was assessed as more than once/week, once/week, one-to-three times/months, a few times/years, or never. Immigration status was dichotomously assessed with: 'Were you born in this country, or not?' Religious tradition/affiliation with categories of Christianity, Islam, Hinduism, Buddhism, Judaism, Sikhism, Baha'i, Jainism, Shinto, Taoism, Confucianism, Primal/Animist/Folk religion, Spiritism, African-Derived, some other religion, or no religion/atheist/agnostic; precise response categories varied by country (Johnson et al., 2023). Racial/ethnic identity was assessed in some, but not all, countries, with response categories varying by country. For additional details on the assessments see the COS GFS codebook (https://osf.io/y3t6m) or Crabtree et al. (2021).

Outcome Variable(s): One item was used to measure the sense of belonging in one's country: 'How would you describe your sense of belonging in your country?' (Ross, 2002, adapted). The response was rated on a Likert scale ranging from 0 (very weak) to 10 (very strong). The response was analyzed as a continuous score, with a higher score indicating a stronger sense of belonging. The original item was adapted from Ross (2002) *'to your local community'* was modified to *'in your country'*. The intention of this change was to allow participants to reflect their broad and general experiences of belonging within their country context. The phrasing *belonging in* was chosen deliberately to allow for this.

Analytical strategy

Descriptive statistics for the full sample, weighted to be nationally representative within each country, were estimated for each of the demographic variables. Nationally representative means for belonging were estimated separately for each country and ordered from highest to lowest along with 95% confidence intervals, standard deviations, and Gini coefficients. Variation in means for belonging across demographic categories was estimated, with all analyses initially conducted by country (online supplement). Primary results consisted of random effects meta-analyses of country-specific means of belonging in each specific demographic category (Borenstein et al., 2010; Hunter & Schmidt, 2000) along with 95% confidence intervals, standard errors, upper and upper limits of a 95% prediction interval across countries, heterogeneity (τ), and I^2 for evidence concerning variation within a particular demographic variable across countries (Mathur & VanderWeele, 2020; VanderWeele & Ding, 2017). Forest plots of estimates are available in the online supplement. All meta-analyses were conducted in R (2024) using the metafor package (Viechtbauer, 2010). Within each country, a global test of variation of outcome across levels of each particular demographic variable was conducted and a pooled p-value (Wilson, 2019) across countries reported concerning evidence for variation within any country. Bonferroni corrected p-value thresholds are provided based on the number of demographic variables (Abdi, 2007; VanderWeele & Mathur, 2019). Religious affiliation/tradition and race/ethnicity were used, when available, as control variables within country, but were not included in the meta-analyses since the availability of these response categories varied by country. As a supplementary analysis, population weighted meta-analyses were also conducted. All analyses were pre-registered with COS prior to data access (https://osf.io/4bdp7); all code to reproduce analyses are openly available in an online repository (Padgett et al., 2024b).

Missing data

Missing data on all variables was imputed using multivariate imputation by chained equations, and five imputed datasets were used (Acock, 2005; Rubin, 1996; Sterne et al., 2009; Van Burren, 2023). To account for variation in the assessment of certain variables across countries (e.g. religious affiliation/tradition and race/ethnicity), the imputation process was conducted separately in each country. This within-country imputation approach ensured that the imputation models accurately reflected country-specific contexts and assessment methods. Sampling weights were included in the imputation models to account for specific-variable missingness that may have been related to probability of inclusion in the study.

Accounting for complex sampling design

The GFS used different sampling schemes across countries based on availability of existing panels and recruitment needs (Ritter et al., 2024). All analyses accounted for the complex survey design components by including weights, primary sampling units, and strata. Additional methodological detail, including accounting for the complex sampling design, is provided elsewhere (Padgett et al., 2024a; Padgett, Cowden, et al., 2024).

Results

Descriptive analyses

In the overall sample combined across countries, there are relatively similar proportions of people in the

Table 1. Nationally representative descriptive statistics of the observed sample.

Characteristic	N = 202,898[a]
Age group	
18–24	27,007 (13%)
25–29	20,700 (10%)
30–39	40,256 (20%)
40–49	34,464 (17%)
50–59	31,793 (16%)
60–69	27,763 (14%)
70–79	16,776 (8.3%)
80 or older	4,119 (2.0%)
Missing	20 (<0.1%)
Gender	
Male	98,411 (49%)
Female	103,488 (51%)
Other	602 (0.3%)
Missing	397 (0.2%)
Marital status	
Married	107,354 (53%)
Separated	5,195 (2.6%)
Divorced	11,654 (5.7%)
Widowed	9,823 (4.8%)
Never	52,115 (26%)
Domestic Partner	14,931 (7.4%)
Missing	1,826 (0.9%)
Employment	
Employed for an employer	78,815 (39%)
Self-employed	36,362 (18%)
Retired	29,303 (14%)
Student	10,726 (5.3%)
Homemaker	21,677 (11%)
Unemployed and looking for a job	16,790 (8.3%)
None of these/other	8,431 (4.2%)
Missing	793 (0.4%)
Religious service attendance	
>1/week	26,537 (13%)
1/week	39,157 (19%)
1–3/month	19,749 (9.7%)
A few times a year	41,436 (20%)
Never	75,297 (37%)
Missing	722 (0.4%)
Education	
up to 8 years	45,078 (22%)
9–15 years	115,097 (57%)
16+years	42,578 (21%)
Missing	146 (< 0.1%)
Immigration	
Born in this country	190,998 (94%)
Born in another country	9,791 (4.8%)
Missing	2,110 (1.0%)
COUNTRY	
Argentina	6,724 (3.3%)
Australia	3,844 (1.9%)
Brazil	13,204 (6.5%)
Egypt	4,729 (2.3%)
Germany	9,506 (4.7%)
India	12,765 (6.3%)
Indonesia	6,992 (3.4%)
Israel	3,669 (1.8%)
Japan	20,543 (10%)
Kenya	11,389 (5.6%)
Mexico	5,776 (2.8%)
Nigeria	6,827 (3.4%)
Philippines	5,292 (2.6%)
Poland	10,389 (5.1%)
South Africa	2,651 (1.3%)
Spain	6,290 (3.1%)
Tanzania	9,075 (4.5%)
Turkey	1,473 (0.7%)
United Kingdom	5,368 (2.6%)
United States	38,312 (19%)
Sweden	15,068 (7.4%)
Hong Kong	3,012 (1.5%)

[a]n (%).

different age groups, except fewer participants were older than 80+ years (Table 1). The sample has a balanced representation of female (51%) and male (49%) participants, with a small proportion who identified as other gender (0.3%). Higher proportions of participants were married (53%), employed (57%), had 9–15 years of education (57%), and were native-born (94%), with a smaller proportion reporting they never attended religious services (37%). Sample sizes in each country ranged from 1,473 (Türkiye) to 38,312 (United States). Participant characteristics for each country are shown in Supplementary Table S1A to S22A.

Ordered mean level of belonging by country

Population mean scores of belonging are highest in Egypt (8.86 on a scale from 0 to 10, 95% CI: 8.78, 8.94) and Indonesia (8.78, 95% CI: 8.72, 8.84), and lowest in Japan (6.03, 95% CI: 5.99, 6.07) and Turkey (6.86, 95% CI: 6.66, 7.07) (Table 2). Overall, the higher-ranking countries prominently include those with collectivist cultures (e.g. Egypt, Indonesia, Mexico), whereas many high-income and individualistic countries are featured prominently in the lower-ranking countries (e.g. Japan, Germany, United Kingdom). Variation within country in responses to the belonging item is highest in Turkey (SD = 3.35) and lowest in Indonesia (SD = 1.81). Further, countries with a lower ranking on mean belonging also tend to have greater inequality in population distribution of belonging, as indicated by a larger Gini coefficient (Table 2).

Sociodemographic variation in belonging levels: pooled estimates across countries

The random effect meta-analysis that pooled results from country-specific analyses shows mean belonging is patterned by all demographic factors in the total sample (Table 3, all global p-values are below the Bonferroni corrected significance level of $p < .007$). For instance, older vs. younger participants reported incrementally higher levels of belonging (e.g. mean belonging age 80+ = 8.21 [95% CI: 7.86, 8.56] vs. mean age 18–24 = 7.47 [95% CI: 7.08, 7.85]). Belonging among females ($M = 7.77$, 95% CI: 7.48, 8.06) is slightly higher than in males ($M = 7.71$, 95% CI: 7.42, 8.01), and substantially higher than among individuals of other gender identities ($M = 6.40$, 95% CI: 5.59, 7.21). Further, those who are married ($M = 7.91$, 95% CI: 7.63, 8.18) reported higher belonging than divorced ($M = 7.61$, 95% CI: 7.24, 7.97) or single/never married ($M = 7.40$, 95% CI: 7.03, 7.77) participants. While those who are retired reported the highest belonging rating ($M = 8.09$, 95% CI: 7.81, 8.36), the unemployed ($M = 7.28$, 95% CI: 6.85, 7.71)

Table 2. Ordered means of belonging with standard deviations and Gini coefficients.

Country	Mean	95% CI	Standard Deviation	Gini Coefficient
Egypt	8.86	(8.78, 8.94)	2.30	0.10
Indonesia	8.78	(8.72, 8.84)	1.81	0.10
Sweden	8.58	(8.54, 8.62)	2.00	0.11
Mexico	8.50	(8.43, 8.56)	2.00	0.11
India	8.41	(8.33, 8.48)	2.86	0.15
Tanzania	8.23	(8.12, 8.34)	2.76	0.16
Philippines	8.14	(8.07, 8.21)	2.21	0.14
Argentina	8.08	(7.99, 8.17)	2.52	0.15
Australia	7.80	(7.70, 7.89)	2.27	0.15
Brazil	7.79	(7.73, 7.85)	2.56	0.17
Kenya	7.77	(7.68, 7.86)	3.07	0.20
Israel	7.72	(7.55, 7.89)	2.49	0.17
Poland	7.72	(7.59, 7.86)	2.17	0.15
South Africa	7.65	(7.50, 7.79)	2.71	0.19
Spain	7.51	(7.43, 7.59)	2.47	0.18
Hong Kong	7.40	(7.30, 7.51)	2.19	0.16
Nigeria	7.24	(7.12, 7.36)	2.81	0.21
United Kingdom	7.13	(7.03, 7.22)	2.54	0.19
United States	7.08	(7.01, 7.15)	2.65	0.20
Germany	6.98	(6.91, 7.04)	2.39	0.19
Turkey	6.86	(6.66, 7.07)	3.35	0.27
Japan	6.03	(5.99, 6.07)	2.30	0.21

reported substantially lower belonging than those who are employed for an employer ($M = 7.70$, 95% CI: 7.39, 8.02) or self-employed (mean = 7.71, 95% CI: 7.41, 8.01); these reports are consistent with the population weighted meta-analysis (see Table S23). In the random effects meta-analysis, those with 16+ years of education reported lower belonging ($M = 7.68$, 95% CI: 7.37, 8.00), compared to those up to 8 years of education ($M = 7.77$, 95% CI: 7.44, 8.11). However, belonging tended to increase with education in the population-weighted meta-analysis (Table S23), with the highest levels observed among those with 16+ years of education ($M = 8.13$, 95% CI: 7.99, 8.27), compared to those with up to 8 years ($M = 7.95$, 95% CI: 7.85, 8.05), in part reflecting the weight given to India in that supplementary analysis. In the random effects meta-analysis (Table 3), participants who attend religious services frequently (meaning those > 1/week attendance = 8.13, 95% CI: 7.92, 8.34) also reported higher belonging than those never attending services (e.g. never attendance: $M = 7.36$, 95% CI: 7.01, 7.71). Lastly, the mean for belonging is slightly higher among the native-born ($M = 7.76$, 95% CI: 7.47, 8.05) compared to migrants ($M = 7.38$, 95% CI: 7.02, 7.74).

The heterogeneity analysis across the demographic categories reveals substantial variability in belonging within each sociodemographic factor (Table 3). The τ values, which estimate the standard deviation of underlying effects across countries, were consistently high, particularly for variables such as employment status (e.g. $\tau = 1.00$ for 'Unemployed and looking for a job') and marital status (e.g. $\tau = 0.88$ for 'Single, never married'). The I^2 statistics suggest that the observed differences in belonging across demographic categories are not solely due to random variation but reflect genuine differences influenced by demographic factors that vary significantly across populations. For instance, age group and religious service attendance showed moderately robust heterogeneity (e.g. $\tau = 0.91$ for the '18–24' group and $\tau = 0.83$ for 'Never' attending religious services), indicating considerable cross-national variation in the impact of these factors on belonging.

Sociodemographic variation in belonging levels: country-specific estimates

In country-specific analyses (also see Figure 1 - forest plots), it is worth noting that immigration status does show considerable associations ($p < .05$) in several countries, including Australia, Brazil, Hong Kong, India, Kenya, Mexico, Spain, Sweden, and the UK. Age-related patterns of belonging varied across regions and countries. In North America, as represented by the US, belonging consistently increased with age. In South America, exemplified by Brazil, belonging generally increased with age, though the pattern was not as linear as in the US. Most European countries also showed an increase in belonging with age. African and Asian countries displayed diverse patterns, with some showing increases, others decrease, and some exhibiting non-linear relationships between age and belonging. For example, belonging generally decreased with age in India, while it clearly increased with age in Japan. For example, individuals aged 18–24 reported a mean belonging score of 5.59 (95% CI: 5.45, 5.74), and belonging remained relatively stable across the 25–49 age groups in Japan. However, a noticeable increase occurred from age 50 onwards, with those aged 50–59 reporting a mean score of 5.82 (95% CI: 5.73, 5.90), which rose sharply in the 60–69 age group ($M = 6.37$, 95% CI: 6.30, 6.45) and continued to increase among

Table 3. Random effects meta-analysis of belonging means by demographic category.

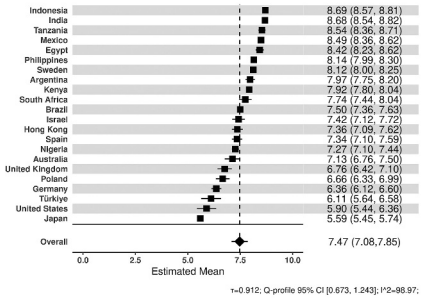
					Prediction Interval				
Variable	Category	Est	95% CI	SE	LL	UL	Heterogeneity (τ)	I^2	Global p-value
Age group									<.001**
	18–24	7.47	(7.08,7.85)	0.20	5.60	8.69	0.91	99.0	
	25–29	7.46	(7.10,7.82)	0.18	5.40	8.62	0.85	98.3	
	30–39	7.50	(7.13,7.86)	0.19	5.40	8.87	0.87	99.2	
	40–49	7.65	(7.30,8.00)	0.18	5.48	9.21	0.84	99.1	
	50–59	7.85	(7.55,8.14)	0.15	5.82	9.30	0.70	98.5	
	60–69	7.99	(7.73,8.25)	0.13	6.38	9.06	0.60	98.0	
	70–79	8.09	(7.83,8.35)	0.13	7.03	9.24	0.56	97.0	
	80 or older	8.21	(7.86,8.56)	0.18	6.46	9.28	0.69	90.6	
Gender									<.001**
	Male	7.71	(7.42,8.01)	0.15	5.96	8.84	0.70	99.4	
	Female	7.77	(7.48,8.06)	0.15	6.10	8.92	0.69	99.5	
	Other	6.40	(5.59,7.21)	0.41	2.78	8.47	1.49	87.3	
Marital status									< .001**
	Married	7.91	(7.63,8.18)	0.14	6.28	8.97	0.65	99.4	
	Separated	7.48	(7.13,7.82)	0.17	5.94	8.81	0.76	92.6	
	Divorced	7.61	(7.24,7.97)	0.19	5.94	9.10	0.81	96.7	
	Widowed	8.10	(7.82,8.39)	0.14	6.87	9.21	0.63	94.0	
	Domestic partner	7.51	(7.08,7.95)	0.22	5.01	9.17	0.95	98.6	
	Single, never married	7.40	(7.03,7.77)	0.19	5.31	8.73	0.88	99.3	
Employment status									<.001**
	Employed for an employer	7.70	(7.39,8.02)	0.16	5.78	8.78	0.75	99.4	
	Self-employed	7.71	(7.41,8.01)	0.15	6.25	8.83	0.70	98.4	
	Retired	8.09	(7.81,8.36)	0.14	6.77	9.27	0.64	98.2	
	Student	7.46	(7.06,7.86)	0.20	5.67	9.00	0.94	98.0	
	Homemaker	7.70	(7.40,8.00)	0.15	6.43	9.00	0.70	98.0	
	Unemployed and looking for a job	7.28	(6.85,7.71)	0.22	4.80	8.67	1.00	98.2	
	None of these/other	7.62	(7.22,8.02)	0.21	6.05	9.89	0.91	97.0	
Education									<.001**
	Up to 8 years	7.77	(7.44,8.11)	0.17	5.47	8.85	0.78	98.5	
	9–15 years	7.75	(7.44,8.06)	0.16	5.97	8.85	0.74	99.6	
	16+ years	7.68	(7.37,8.00)	0.16	6.28	8.94	0.75	99.2	
Religious service attendance									<.001**
	> 1/week	8.13	(7.92,8.34)	0.11	7.27	9.07	0.48	95.7	
	1/week	8.04	(7.83,8.26)	0.11	7.01	9.04	0.51	97.3	
	1–3/month	7.79	(7.55,8.04)	0.12	6.27	8.54	0.56	96.2	
	A few times a year	7.74	(7.45,8.03)	0.15	6.27	8.88	0.69	98.8	
	Never	7.36	(7.01,7.71)	0.18	5.88	8.97	0.83	99.5	
Immigration status									<.001**
	Born in this country	7.76	(7.47,8.05)	0.15	6.03	8.86	0.69	99.7	
	Born in another country	7.38	(7.02,7.74)	0.18	5.97	9.40	0.79	95.2	

Note. *$p < .05$; **$p < .007$ (Bonferroni corrected threshold).

those 70–79 ($M = 7.02$, 95% CI: 6.95, 7.10) and 80 or older ($M = 7.49$, 95% CI: 7.27, 7.72). This trend indicates that belonging strengthens considerably with age in Japan, particularly after 50. In Kenya, there was a considerable age effect, with belonging showing a non-linear pattern across age groups. In Tanzania, belonging tended to decrease with age, similar to India. These diverse patterns highlight the importance of considering cultural and societal contexts when examining age-related trends in belonging.

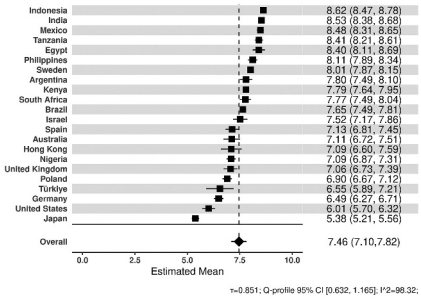
In most countries, mean belonging is slightly higher in females vs. males; however, compared to both females and males, individuals identifying as other gender reported substantially lower belonging in many countries, even in countries with generally high social acceptance of gender minority populations (e.g. Sweden, UK, Australia, Germany); however, this estimate should be interpreted with caution as the imprecision with estimating these means is substantial because the within-country sample size tended to be a very small proportion of the sample (≤1% in all countries). The differences in belonging based on marital status varied across countries, revealing interesting patterns that don't always align with expected trends. For instance, in Sweden, a country with a prominent culture of singlehood, married individuals reported higher mean belonging (8.90) than both divorced (8.67) and never married (8.01) individuals. However, in India, a country with low national divorce rates (about 1%), never married individuals reported higher belonging (8.73) than married individuals (8.38), with divorced individuals reporting the lowest (7.31). Spain, known for higher divorce rates (about 50%), showed a different pattern, with widowed individuals reporting the highest belonging (8.06), followed by divorced individuals (7.80), married (7.63) and then never married (7.22) individuals.

Figure S1. Forest plot for `Age group`-`18-24`



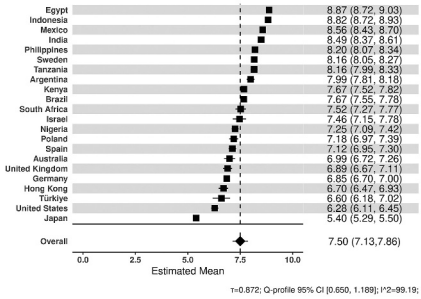
τ=0.912; Q-profile 95% CI [0.673, 1.243]; I^2=98.97;

Figure S2. Forest plot for `Age group`-`25-29`



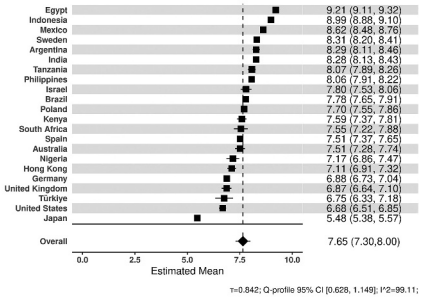
τ=0.851; Q-profile 95% CI [0.632, 1.165]; I^2=98.32;

Figure S3. Forest plot for `Age group`-`30-39`



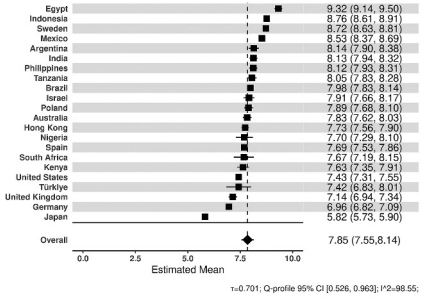
τ=0.872; Q-profile 95% CI [0.650, 1.189]; I^2=99.19;

Figure S4. Forest plot for `Age group`-`40-49`



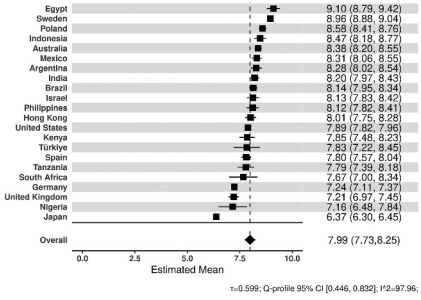
τ=0.842; Q-profile 95% CI [0.628, 1.149]; I^2=99.11;

Figure S5. Forest plot for `Age group`-`50-59`



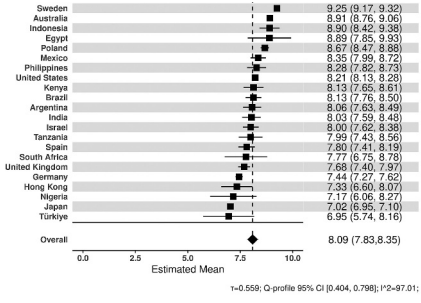
τ=0.701; Q-profile 95% CI [0.526, 0.963]; I^2=98.55;

Figure S6. Forest plot for `Age group`-`60-69`



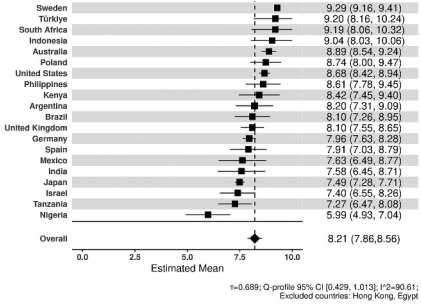
τ=0.599; Q-profile 95% CI [0.446, 0.832]; I^2=97.96;

Figure S7. Forest plot for `Age group`-`70-79`



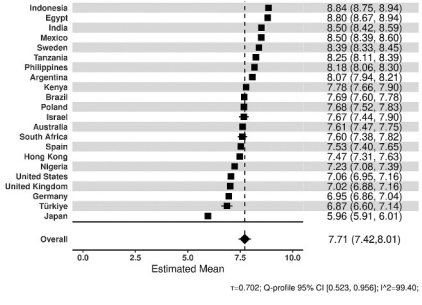
τ=0.559; Q-profile 95% CI [0.404, 0.798]; I^2=97.01;

Figure S8. Forest plot for `Age group`-`80 or older`



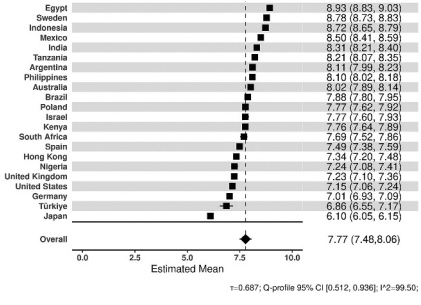
τ=0.689; Q-profile 95% CI [0.429, 1.013]; I^2=90.61;
Excluded countries: Hong Kong, Egypt

Figure S9. Forest plot for `Gender`-`Male`



τ=0.702; Q-profile 95% CI [0.523, 0.956]; I^2=99.40;

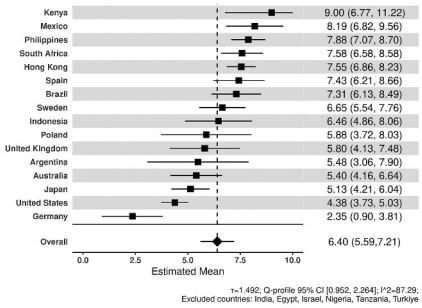
Figure S10. Forest plot for `Gender`-`Female`



τ=0.687; Q-profile 95% CI [0.512, 0.936]; I^2=99.50;

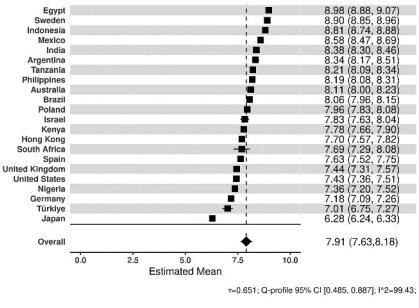
Figure 1. Forest plots.

Figure S11. Forest plot for `Gender`-`Other`



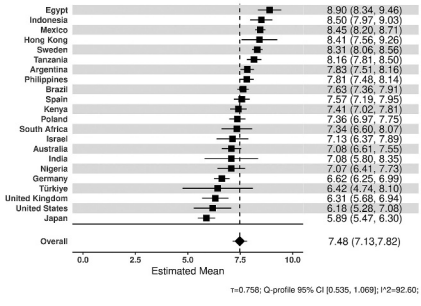
τ=1.492; Q-profile 95% CI [0.952, 2.264]; I^2=87.29;
Excluded countries: India, Egypt, Israel, Nigeria, Tanzania, Turkiye

Figure S12. Forest plot for `Marital status`-`Married`



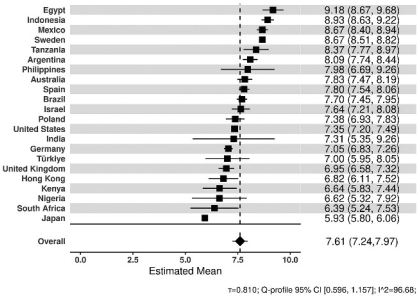
τ=0.651; Q-profile 95% CI [0.485, 0.887]; I^2=99.43;

Figure S13. Forest plot for `Marital status`-`Separated`



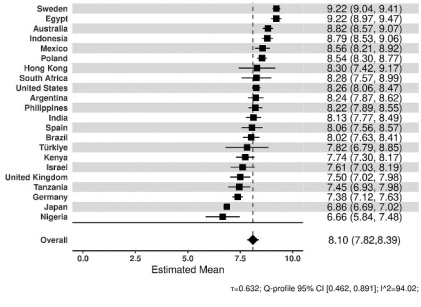
τ=0.756; Q-profile 95% CI [0.535, 1.069]; I^2=92.60;

Figure S14. Forest plot for `Marital status`-`Divorced`



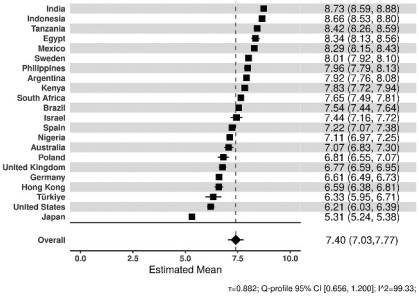
τ=0.810; Q-profile 95% CI [0.596, 1.157]; I^2=96.68;

Figure S15. Forest plot for `Marital status`-`Widowed`



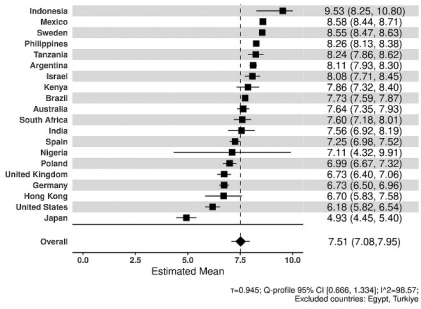
τ=0.632; Q-profile 95% CI [0.462, 0.891]; I^2=94.02;

Figure S16. Forest plot for `Marital status`-`Single, never married`



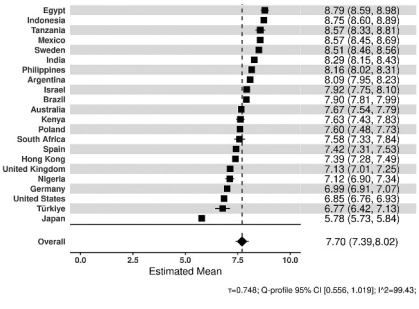
τ=0.882; Q-profile 95% CI [0.656, 1.200]; I^2=99.33;

Figure S17. Forest plot for `Marital status`-`Domestic partner`



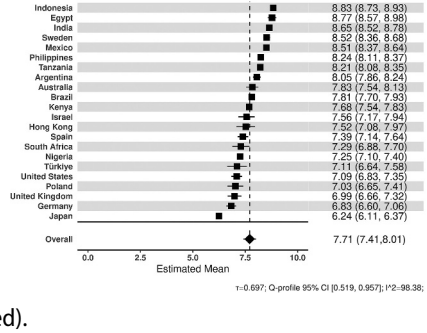
τ=0.945; Q-profile 95% CI [0.666, 1.334]; I^2=98.57;
Excluded countries: Egypt, Turkiye

Figure S18. Forest plot for `Employment status`-`Employed for an employer`



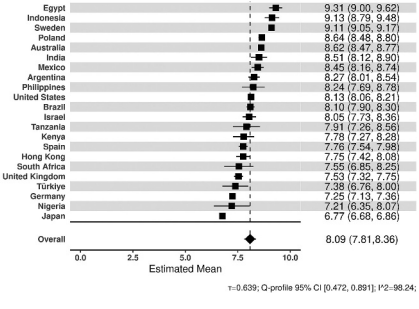
τ=0.748; Q-profile 95% CI [0.556, 1.019]; I^2=99.43;

Figure S19. Forest plot for `Employment status`-`Self-employed`



τ=0.697; Q-profile 95% CI [0.519, 0.957]; I^2=98.38;

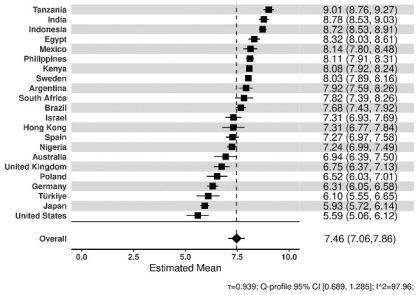
Figure S20. Forest plot for `Employment status`-`Retired`



τ=0.639; Q-profile 95% CI [0.472, 0.891]; I^2=98.24;

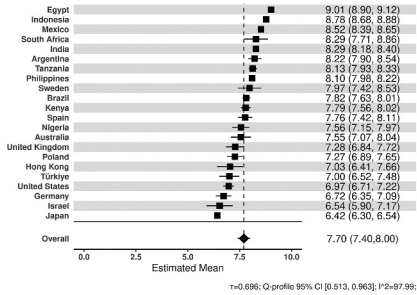
Figure 1. (continued).

Figure S21. Forest plot for `Employment status`-`Student`



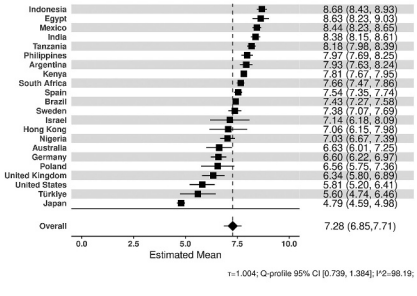
τ=0.939; Q-profile 95% CI [0.689, 1.285]; I^2=97.96;

Figure S22. Forest plot for `Employment status`-`Homemaker`



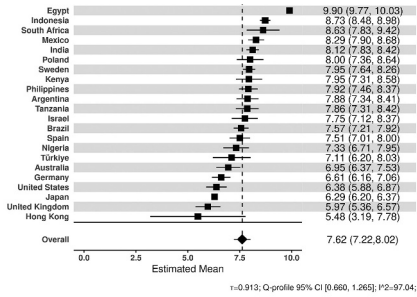
τ=0.696; Q-profile 95% CI [0.513, 0.963]; I^2=97.99;

Figure S23. Forest plot for `Employment status`-`Unemployed and looking for a job`



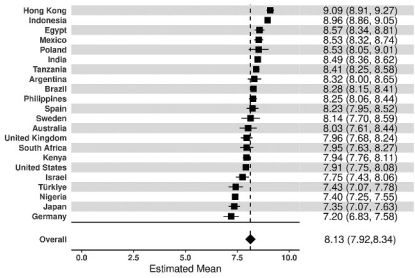
τ=1.004; Q-profile 95% CI [0.739, 1.384]; I^2=98.19;

Figure S24. Forest plot for `Employment status`-`None of these/other`



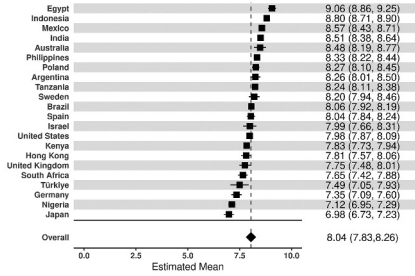
τ=0.913; Q-profile 95% CI [0.660, 1.265]; I^2=97.04;

Figure S25. Forest plot for `Religious service attendance`-`>1/week`



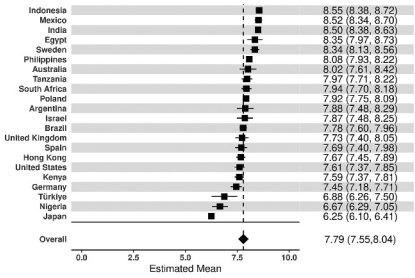
τ=0.480; Q-profile 95% CI [0.350, 0.666]; I^2=95.67;

Figure S26. Forest plot for `Religious service attendance`-`1/week`



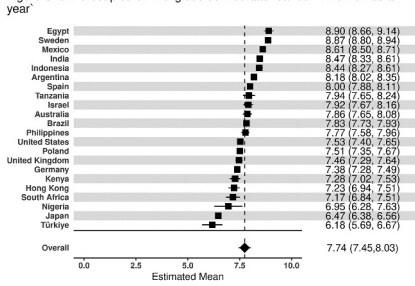
τ=0.506; Q-profile 95% CI [0.371, 0.694]; I^2=97.35;

Figure S27. Forest plot for `Religious service attendance`-`1-3/month`



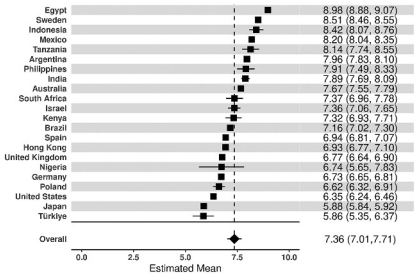
τ=0.563; Q-profile 95% CI [0.410, 0.776]; I^2=96.20;

Figure S28. Forest plot for `Religious service attendance`-`A few times a year`



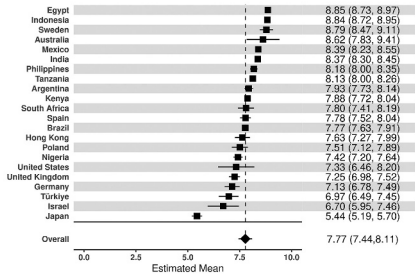
τ=0.690; Q-profile 95% CI [0.501, 0.940]; I^2=98.85;

Figure S29. Forest plot for `Religious service attendance`-`Never`



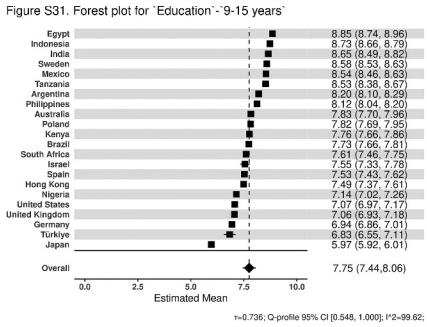
τ=0.830; Q-profile 95% CI [0.615, 1.139]; I^2=99.47;

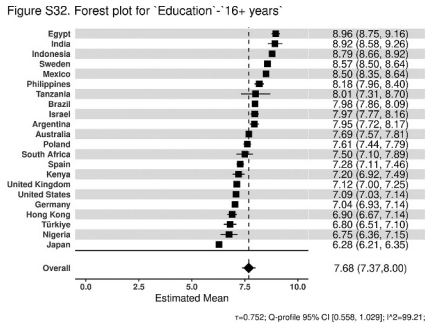
Figure S30. Forest plot for `Education`-`Up to 8 years`

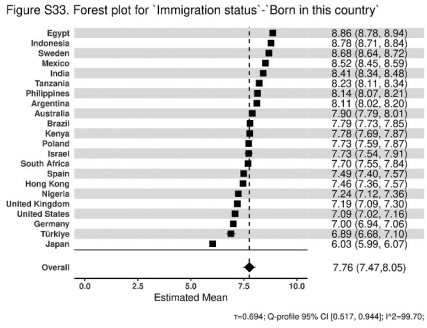


τ=0.778; Q-profile 95% CI [0.571, 1.071]; I^2=98.50;

Figure 1. (continued).







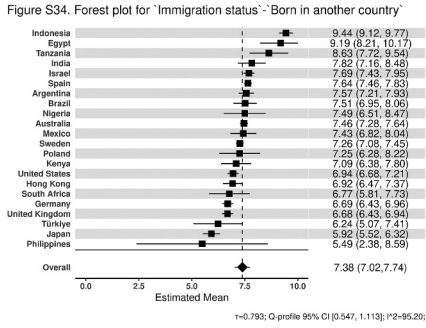


Figure 1. (continued).

Moreover, participants with higher socioeconomic status also reported higher belonging levels in most countries. Specifically, mean belonging was higher among people who are employed vs. unemployed, even in countries with a good social welfare system (e.g. Sweden, Germany, UK). Similarly, higher belonging levels are correlated with having more years of education in most countries. However, we observed substantial heterogeneity in the correlation between unemployment and belonging across countries. Overall, belonging varied by unemployment levels across countries. For example, in Mexico, a middle-income country, the mean belonging among unemployed people ($M = 8.44$) was relatively high and close to the overall country mean (8.50). In Brazil, another middle-income country, the unemployed reported lower belonging ($M = 7.43$) compared to the country's overall mean (7.79). In contrast, some high-income countries showed considerably lower mean belonging among the unemployed, such as Japan ($M = 4.79$) and Australia ($M = 6.63$). These variations highlight the unique ways employment status and economic context contribute to the variability of belonging across different nations. Also, individuals who reported attending religious services frequently (e.g. > 1/week) tended to have higher belonging than those who never attend services, and this association was evident even in some of the most secular countries/territories (e.g. Hong Kong, Germany).

Belonging differs by immigration status in several countries, with patterns varying across nations. In most cases, native-born individuals reported higher levels of belonging than migrants. For instance, in Australia ($M = 7.90$), Sweden ($M = 8.68$), and the UK ($M = 7/19$), native-born individuals reported substantially higher belonging than migrants (7.46, 7.26, and 6.68, respectively). The difference was particularly pronounced in Sweden (roughly 19.57%). In Spain ($M = 7.64$), Egypt ($M = 9.19$), and Indonesia ($M = 9.44$), migrants tended to report higher belonging compared to native-borns (7.52%): 7.49, 8.86, and 8.78, respectively. In the US and Brazil, native-born individuals reported higher belonging, but the differences were not substantial. The magnitude of these differences varies across countries, highlighting the complex relationship between immigration status and sense of belonging.

Additional findings for belonging by religious affiliation and race/ethnicity (response categories for these two demographic factors varied across countries) are also presented with the country-specific analyses and reported in the supplement (Supplementary Table S1B to S22B; see https://osf.io/np56q). The population weighted meta-analysis that pooled results from country-specific analyses considering population sizes in each country yielded largely similar results as the random effects meta-analysis, except that the mean belonging score in the oldest age groups was lower than that in the random effect meta-analyses (Supplementary Table S23). This is likely due to the substantial size of the

India sample in the population weighted meta-analysis, where older people reported a low mean score of belonging.

Discussion

This study bridges the gap in understanding how demographic factors associate with individuals' sense of belonging across different global contexts. We examined self-rated belonging in 22 countries ($N = 202,898$), with results showing substantial variations in belonging levels by demographic factors such as age, gender, marital status, employment status, religious service attendance, education, and immigration status. While certain demographic patterns – such as older age and frequent religious attendance – generally correlate with higher belonging, these associations do not hold uniformly across all countries. For example, belonging tends to decrease with age in India, shows a mixed pattern in Nigeria with some fluctuations across age groups, and increases steadily with age in Japan, illustrating the diverse age-related trends across countries. Gender differences in belonging also vary, with men typically reporting lower belonging than women, but in countries like Sweden and Germany, individuals with other gender identities report notably lower belonging. In some cases, specific subpopulations, such as unemployed individuals in Brazil and Mexico or immigrants in Sweden and the UK, show lower belonging levels compared to other groups within their countries. These findings reveal the complexity of belonging, as a fundamental human need and highlight the important role that demographic and cultural contexts play in shaping this experience. Importantly, they suggest that strategies aimed at improving belonging should be tailored to the specific demographic and national contexts, as the factors influencing belonging can vary substantially across different global settings.

The first hypothesis posited that demographic characteristics would reveal diverse patterns across the international sample. This was supported by findings that all demographic factors varied across levels of belonging in some countries. For instance, older participants consistently reported higher levels of belonging compared to younger participants, except perhaps in places like India where older groups had lesser belonging. This finding aligns with previous research indicating stronger community ties and social connections among older adults (Morgan et al., 2021; Seeman, 2000); however, the results in India (less belonging with age) might also signal other country-level factors. Gender differences also emerged, with females reporting slightly higher levels of belonging than males, reflecting the higher levels of social support and connectedness found among women (Lee & Robbins, 2000).The second hypothesis suggested that mean levels of belonging would vary considerably by country. This was confirmed, as belonging scores were highest in collectivist cultures such as Egypt and Indonesia, and lowest in more individualistic countries like Japan and Turkey. These results support previous research indicating that collectivist cultures often emphasize community and social cohesion, thereby enhancing individuals' sense of belonging (Baumeister & Leary, 2017). The lower scores in individualistic cultures may reflect the prioritization of personal goals over community integration (Jetten et al., 2012).

The third hypothesis posited substantial variations in belonging across different demographic categories, potentially influenced by specific cultural and societal norms. This hypothesis was also supported. For example, married individuals reported higher levels of belonging compared to their single or divorced counterparts. This is consistent with research highlighting the psychological benefits of marital support in sustaining happier marriages (Waite & Gallagher, 2001). Employment status also indicated considerable variability on belonging, with employed individuals reporting higher levels of belonging than those unemployed, supporting the social identity theory which posits that professional roles contribute to social identity and belonging (Ashforth & Mael, 1989).

The trends observed in this study can be conceptually understood through the lens of Self-Determination Theory (SDT), which identifies belonging (or relatedness) as a fundamental psychological need critical for well-being (Deci & Ryan, 2000). SDT suggests that individuals inherently seek connection and meaningful relationships, and the satisfaction of this need is pivotal for psychological growth and flourishing. Our findings across 22 countries reinforce this idea by demonstrating how individuals' sense of belonging is tethered to their demographic and cultural realities. For instance, countries like Egypt and Indonesia, which have strong collectivist cultures, show higher levels of belonging, supporting the notion that environments emphasizing community and social cohesion foster this essential human need. In these settings, individuals are likely to experience stronger social ties and communal support, which can enhance their sense of belonging. This suggests that in collectivist cultures, social structures may naturally align with the psychological need for belonging. Conversely, in more individualistic countries like Japan, the lower levels of belonging reported could be attributed to cultural norms that prioritize personal independence over community ties. Classic work characterizes Japan as more interdependent than North

America, which shapes how group ties and obligations are experienced (Markus & Kitayama, 1991). At the same time, Japan is a relatively tight society with strong social norms and low tolerance for deviance; tightness can foster order while narrowing the forms that belonging takes at a broad national level (Gelfand et al. (2011). These patterns can be understood through the vertical – horizontal refinement of individualism – collectivism (Singelis et al., 1995). In vertical collectivist contexts, belonging is often anchored in roles and status hierarchies; in horizontal collectivist contexts, it is anchored in egalitarian in-groups and mutual support. Japan's mix of interdependence with tighter norms may channel belonging toward specific in-groups rather than toward a generalized sense of belonging in one's country, which helps contextualize its lower national mean in our data.

In more individualistic societies, where personal achievements and independence are prioritized, social group identities may also be less salient, leading to a weaker sense of belonging. This could explain why individuals in these countries report lower levels of belonging – there may be fewer opportunities or incentives to derive self-worth and connection from group memberships, thus affecting their overall sense of belonging. In such contexts, individuals might find it more challenging to satisfy their need for relatedness. This indicates that cultural values play a substantial role in how the need for belonging is met, and in more individualistic societies, the pathways to fulfilling this need may be less straightforward or may require different forms of social engagement.

Furthermore, the variations in belonging across demographic factors may also reflect different levels of access to social support and community engagement. For instance, the trend of older individuals generally reporting higher belonging could be related to the increased likelihood of having established social networks and stable community roles over time, which may help fulfill their need for relatedness. However, the reversal of this trend in countries like India and Nigeria, where belonging decreases with age, might be influenced by social and economic factors that could lead to marginalization or reduced social engagement for older populations, potentially affecting their sense of belonging. Gender differences in belonging, particularly the lower scores reported by individuals with other gender identities in some countries, may reflect societal attitudes and levels of acceptance towards gender diversity. Individuals with other gender identities who report lower belonging in certain countries might experience identity conflict or discrimination due to their marginalized status within the dominant social groups. This intersectional approach emphasizes how multiple identities (e.g. gender, nationality, occupation) intersect to influence an individual's sense of belonging (Crenshaw, 2013), with some identities being more valued or accepted in certain cultural contexts than others. In countries where gender nonconformity is less accepted, individuals with other gender identities may face exclusion or discrimination, which can negatively impact their sense of belonging (Herța & Corpădean, 2018). The higher belonging levels observed among subpopulations such as unemployed individuals in Egypt or migrants in both Indonesia and Egypt suggest that belonging is not solely determined by employment status or native-born status. Instead, it might reflect the presence of strong community support systems or social integration efforts that help these groups feel connected and valued. While the data generally shows lower belonging scores for migrants across countries, the reasons for this are likely complex and multifaceted. Further research is needed to understand the specific challenges migrants face in developing a sense of belonging, as well as any potential coping mechanisms or support systems they may develop. The variation in belonging scores among migrant populations across different countries suggests that cultural, social, and policy factors may play important roles in shaping migrants' experiences of belonging. On the other hand, lower belonging among unemployed individuals in some high-income countries could be linked to being part of an out-group that is stigmatized or devalued in those societies, potentially leading to feelings of exclusion and lower self-esteem. Countries and subpopulations that emphasize social cohesion, community support, and acceptance may be more likely to fulfil individuals' psychological need for belonging, while environments that exhibit exclusionary attitudes might hinder the fulfilment of this need, possibly resulting in lower levels of belonging.

Practical implications

The findings from this study have several theoretical implications. First, they emphasize the importance of integrating cultural context into theories of well-being. The variations in belonging scores across different countries suggest that belonging is not a universal experience but is shaped by cultural norms, values, and societal structures. This reinforces the need for positive psychology to move beyond Western-centric models and adopt a more pluralistic framework that acknowledges different pathways to well-being (Haslam et al., 2020). Second, the demographic variations in belonging observed in the study suggest that intersectional identities should be considered in belonging research. For instance, the lower belonging scores among individuals

identifying as other genders, even in countries with high social acceptance of gender minorities, indicate a potential connection between gender identity and cultural context. This finding is consistent with Crenshaw's (2013) concept of intersectionality, which explores how social categorizations such as race, gender, and class intersect to shape experiences of marginalization. From an applied perspective, these insights highlight the necessity of context-sensitive interventions to foster belonging and social connectedness – both of which are central to human flourishing. In individualistic cultures, initiatives that prioritize creating opportunities for social connections and networks may be beneficial. In collectivist cultures, enhancing belonging might involve reinforcing existing community structures and communal bonds. Educational institutions, workplaces, and community organizations can support belonging by fostering inclusive environments that recognize and celebrate diversity, which is essential for human flourishing. Addressing the challenges and strengths faced by underrepresented groups, such as gender minorities and migrants, is important for ensuring that everyone has the opportunity to feel a sense of belonging.

Limitations and future research

While offering valuable insights into the dynamics of belonging across various demographic and national categories and cultural contexts, this study is still subject to several limitations that merit consideration. One primary limitation is the single-item measure of belonging. While single-item measures can provide a straightforward and efficient way to capture a concept globally, they lack the depth and nuance necessary to fully capture the complexity of belonging. For the present study, the item was intentionally designed to be broad, allowing respondents to reflect upon the myriad belonging experiences they might encounter in their country context. However, this item may have introduced ambiguity between the nuance of belonging *in* their country and belonging *to* their country, the latter potentially inferring national pride, identity, or national belonging. While the item enabled large-scale comparison, it is important to note that it may not have been understood in the same way across country contexts or even between participants, particularly when considering the translation of the word *belonging* into other languages. While language interpretation presents a challenge in cross-national research, this study, with responses from over 22 countries, offers a preliminary and unprecedented opportunity to examine how belonging is experienced at a national level, providing a foundation for future research and theory building concerned with belonging. It also highlights a critical need for culturally responsive work in this space.

Another limitation stems from our cross-sectional design, which captures data at a single point in time, though effort is currently ongoing to collect a second wave of the GFS data. Perhaps future efforts would make it possible to infer causality or track changes in sense of belonging over time. As belonging is a dynamic construct that can fluctuate with life events, longitudinal studies (as currently exemplified with the GFS study) are needed to understand how sense of belonging evolves across different life stages or in response to societal changes. These limitations highlight a need for caution in interpreting the findings but offer a strong direction for future research. When interpreting cross-national differences, it is important to do so with caution, as these differences may be influenced by factors like translation challenges, varying assessment methods, cultural norms, how respondents perceive items and response scales, and the timing of data collection, which may vary seasonally across countries. Although the study aims to be cross-national, the conceptualization of belonging might vary considerably across different cultures and countries, potentially influencing how participants interpret and respond to survey questions. While the study examines belonging across several demographic categories, it may not fully account for the intersectionality of these identities. The intersecting relations of race, ethnicity, sexuality, and disability, among others, on an individual's sense of belonging are not deeply explored. An intersectional approach could provide a broader understanding of how overlapping identities are tethered to the variability of belonging outcomes, especially in culturally diverse contexts. The generalizability of the study's findings to countries or cultures not included in the sample may be limited since the unique contexts (e.g. cultural, political, social) of the included countries may have played a vital role in shaping the global patterns of belonging, and these findings may not apply to nations with potentially different contexts.

We also note that the use of 'gender' rather than 'sex' and the three response options may influence how respondents self-classify, particularly for gender-diverse populations. Although the share selecting 'other' was small in most countries, wording could shape both selection and downstream associations. These limitations suggest the need for future research to adopt longitudinal designs, develop culturally sensitive measures of belonging, and incorporate an intersectional perspective in the study of global belonging trends going forward.

Conclusion

As societies continue to evolve, marked by increasing diversity and complexity, understanding the patterns of belonging – with its implications for individual well-being and social cohesion – remains ever pressing. This study contributes to a growing body of research exploring these trends, providing a foundation for future inquiries and interventions that may potentially foster a sense of belonging. Our findings suggest that belonging is not just a psychological need but also a social construct that is tethered to group identities and the broader social context. The bigger message here is that fostering a strong sense of belonging involves creating inclusive social environments where different identities are recognized, valued, and integrated into the collective whole. While our cross-sectional design and reliance on self-reported data present certain limitations, the findings offer valuable insights into the complex nature of belonging. They highlight the importance of considering a wide range of demographic variables when studying belonging and emphasize the need for policies and practices that promote belonging in increasingly diverse societies. Future research should build on these insights by employing longitudinal designs and mixed methods to better capture the dynamic and multifaceted factors contributing to a sense of belonging. As the world becomes more interconnected yet culturally diverse, the pursuit of belonging remains a critical human drive and challenge, with considerable implications for individual well-being and the fabric of global flourishing.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

The methodological framework and objectives of our study have been outlined in a pre-registration document available on the Open Science Framework (OSF). This document, which can be accessed https://osf.io/x6qgf, details our investigative approach into the demographic variation in sense of belonging across 22 countries. In addition, the datasets analysed during the current study are available in the pre-registration of the Global Flourishing Study on OSF (see here: https://osf.io/3jtz8). This procedural step is important for maintaining the data's integrity and confidentiality while ensuring our research upholds the highest standards of scientific inquiry and ethical considerations.

Open scholarship statement

This article has earned the Center for Open Science badges for Open Data, Open Materials and Preregistered. The data and materials are openly accessible at https://doi.org/10.17605/OSF.IO/X6QGF

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