

# Is Freedom Still the Lifeblood of Psychology?

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## **Abstract**

*I re-examined the relationship of freedom and national development to the well-being of psychology. Specifically, I attempted to replicate the findings of Stevens (2010) in which national development mediated the relationship of economic and political freedom on the number of psychologists and publications per population in the 92 member countries of the International Union of Psychological Science (IUPsyS). Consistent with prior research, economic and political freedom and national development were each directly related to psychologists and publications per population. However, national development as measured by the Human Development Index did not mediate the relationship of freedom to psychologists and publications per population. The failure to reaffirm the mediational model of disciplinary well-being may reflect increased global dissatisfaction with and decline of freedom and democracy. While freedom and national development may still make separate contributions to distinct elements of disciplinary health, they may no longer constitute ingredients essential to psychology's vitality.*

**Keywords:** *freedom, national development, psychologists, publications, mediation.*

Although psychology arose in diverse economic and political contexts (Brock, 2006; Kugelman & Belzen, 2009), the growth of psychology has been linked to economic and political systems that enshrine individual freedom (Jing, 2000; Stevens, 2010). Such economic and political systems typically have public institutions and a civic culture that support a demand economy and representative government. The association of such economic and political systems to the well-being of psychology reflects the expectations of government, business and industry, and the public that psychology is key to addressing national challenges and nurturing personal development (Jing, 2000; Stevens & Wedding, 2004). Under these conditions, psychology tends to be strengthened by laws and

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resources that legitimize and sustain the discipline (Stevens, 2007). Citizens of countries with free-market economies often have sufficient wealth to transition to a post-material emphasis on improving their quality of life (Sullivan & Transue, 1999). The continued global growth of psychology is evidenced by the increase in psychologists, scientific and applied specializations, and psychology journals, organizations, and training programs (Stevens, 2007; Stevens & Wedding, 2004).

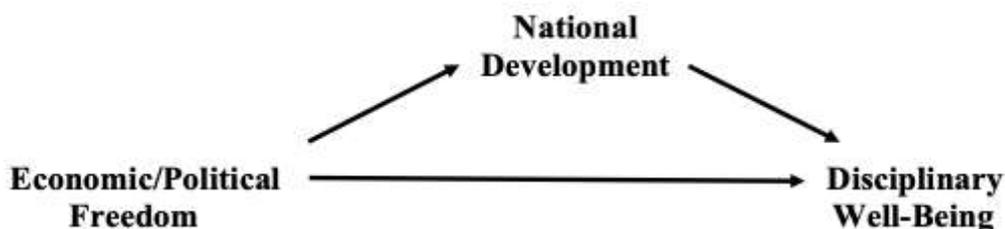
To demonstrate the relationship between freedom and the well-being of psychology, I identified the 71 member countries of the IUPsyS (Stevens, 2010). For each country, I obtained data on its level of economic freedom and political freedom. I also gathered data on each country's level of national development, the ratio of psychologists per population, and number of psychology publications abstracted in PsycINFO.

Economic and political freedom were each positively correlated with psychologists and publications per population. Significant associations between freedom and disciplinary well-being provided evidence for the first time to support the claim that a free-market economy and representative government are beneficial to psychology (Jing, 2000). National development was also correlated with psychologists and publications per population, which measured distinct domains of disciplinary health: the degree of occupational membership and research productivity (Jing, 2000).

I then examined whether national development would mediate the relationship of freedom to the disciplinary well-being of psychology. If national development was the path through which freedom influenced psychology's well-being, then the introduction of national development would weaken the direct association of economic and political freedom to psychologists and research productivity per population (see Figure 1).

**Figure 1**

*Proposed Mediation of Freedom on Disciplinary Well-being by National Development*



Conditions for mediation were met and significant Sobel tests established that national development mediated the effect of economic and political freedom on psychologists and publications per population. The discovery that national

development, as measured by literacy, longevity, and standard of living, mediated the connection between freedom and disciplinary health lent support for a causal model of how certain macro-level conditions may impact the status of scientific and applied psychology.

But does this transnational analysis still hold after more than a decade? Based on previous studies on the relationship of macro-level variables to the well-being of psychology (Fu & Jing, 1994; Jing, 2000), I sought to replicate the findings of Stevens (2010) using contemporary data. I examined whether the relationships of economic and political freedom and national development to the number of psychologists and their research productivity remained robust. I derived the following research questions:

1. Are there relationships between economic and political freedom and the number of psychologists and their research productivity?
2. Are there positive associations between national development on the number of psychologists and their research productivity?
3. Hypothesizing that national development is still the route through which freedom contributes to disciplinary well-being (see Figure 1), would the introduction of national development reduce the direct association of economic and political freedom to the number of psychologists and their research productivity?

## *METHOD*

### MEASURES

For each of the 92 member countries of the IUPsyS, I obtained the most recent data on:

- national population (World Bank, 2022);
- level of national development according to the Human Development Index (HDI; United National Development Program, 2021-2022) which integrates standard of living, life expectancy, and adult literacy, making HDI a measure of how wealth operates to improve quality of life;
- level of economic freedom determined by the average of distinct elements of economic freedom (e.g., lack of corruption, labor force mobility, property rights) (Heritage Foundation, 2022);
- level of political freedom based on the combination of political rights (e.g., electoral process, government functioning, political pluralism and participation) and civil liberties (e.g., freedom of expression and belief, organizational rights, rule of law) (Freedom House, 2021);

- ratio of psychologists per 100,000 (World Health Organization, 2022); and
- ratio of publications in psychology from 2017 through 2022 per 100,000 abstracted by the Web of Science.

Two points are worth noting. Though psychologists are involved in a wide range of activities (Stevens, 2007; Stevens & Wedding, 2004), the World Health Organization's data on psychologists per 100,000 are limited to psychologists working in health settings. Second, unlike Stevens' (2010) study that drew from publications abstracted in PsycInfo in a single year, I undertook a more comprehensive institutional search of books, book chapters, and journal articles abstracted in the Web of Science database between 2017 and 2022 in order to identify the national affiliation of authors. Web of Science taps into a broader range of literature in social science fields allied with psychology than does PsycInfo (Bramer et al., 2017).

#### PROCEDURE

Statistical analyses were performed using SPSS version 28.0. Mediation was tested using Hayes' (2022) PROCESS v4.2.

#### RESULTS

Of the 66 countries with the highest HDI in 2022, 49 (74%) had national representation in the IUPsyS, whereas 7 of 31 countries ranked low on the HDI (23%) were IUPsyS members. Tables 1-4 display data for countries with the highest and lowest ratios of psychologists and publications per 100,000, along with data on their economic and political freedom, and HDI.

**Table 1**

*Countries with the Highest Ratio of Psychologists per Population*

Country	Psychologists per 100,000	Economic Freedom	Political Freedom	HDI
Malta	294.444	71.5	89	.918
Argentina	222.572	50.1	84	.842
Costa Rica	142.018	65.4	91	.809
Netherlands	123.464	79.5	97	.941
Finland	109.486	78.3	100	.940
Australia	103.076	77.7	95	.951
Israel	88.089	83.2	76	.919
Switzerland	84.137	84.2	96	.962
Sweden	84.000	77.9	100	.947
Norway	73.522	76.9	100	.961

**Table 2**

*Countries with the Lowest Ratio of Psychologists per Population*

Country	Psychologists per 100,000	Economic Freedom	Political Freedom	HDI
Sudan	.008	32.0	10	.508
Vietnam	.030	60.6	19	.703
Zambia	.031	48.7	51	.656
Uganda	.037	54.2	34	.525
Zimbabwe	.057	33.1	28	.593
Ghana	.065	59.8	80	.632
Nigeria	.068	54.4	43	.535
India	.069	53.9	66	.633
Cameroon	.100	52.9	15	.576
Mongolia	.101	63.9	84	.739

**Table 3**

*Countries with the Highest Ratio of Publications per Population*

Country	Publications per 100,000	Economic Freedom	Political Freedom	HDI
UK	676.120	72.7	93	.929
Malta	246.300	71.5	89	.918
Macau	134.195	70.3	---	.922
Grenada	123.077	----	89	.795
Netherlands	101.143	79.5	97	.941
Norway	89.912	76.9	100	.961
Australia	85.914	77.7	95	.951
Switzerland	84.143	84.2	96	.962
Israel	78.557	83.2	76	.919
Canada	73.430	76.6	98	.936

**Table 4**

*Countries with the Lowest Ratio of Publications per Population*

Country	Publications per 100,000	Economic Freedom	Political Freedom	HDI
Yemen	.039	----	9	.455
Sudan	.044	32.0	10	.508
Cameroon	.092	52.9	15	.576
Mozambique	.129	51.3	43	.446
Morocco	.141	59.2	37	.683
India	.154	53.9	66	.633
Bangladesh	.166	52.7	39	.661
Indonesia	.183	64.4	59	.705
Venezuela	.200	24.8	14	.691
Guatemala	.206	63.2	51	.627

*Note. For Tables 1-4: Economic Freedom: 0 = least free, 100 = most free; Political Freedom: 1 = least free, 100 = most free; HDI: < 0.5 = low national development, ≥ 0.8 = high national development*

Economic freedom was positively correlated with psychologists,  $r(78) = .276, p = .013$ , and publications,  $r(86) = .286, p = .007$ , per 100,000. Political freedom was also positively correlated with psychologists,  $r(80) = .392, p < .001$ , and publications,  $r(88) = .268, p = .011$ , per 100,000. And HDI was positive correlated with psychologists,  $r(80) = .403, p < .001$ , and publications,  $r(89) = .346, p = .011$ , per 100,000.

Given the positive association between economic and political freedom,  $r(85) = .741, p < .001$ , an exploratory factor analysis was performed that yielded one factor,  $EV = 1.741$ , which explained 87.055% of the variance in the data and had a factor loading of .993. Given the strong influence of the factor, scores for economic and political freedom were converted to  $z$  scores and summed to form a composite index of freedom for each country. Composite freedom scores were used in the mediational analysis.

In testing for mediation by HDI of freedom on psychologists and publications per 100,000, the following results indicated that conditions for mediation were met:

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1. Confirmation of a direct relationship between freedom and psychologists per 100,000,  $R^2 = .126$ ,  $F(1, 77) = 11.057$ ,  $p < .001$ ,  $f^2 = .144$ , and publications per 100,000,  $R^2 = .087$ ,  $F(1, 84) = 7.952$ ,  $p = .006$ ,  $f^2 = .095$ .
2. Confirmation of a direct relationship between freedom and HDI for psychologists per 100,000,  $R^2 = .564$ ,  $F(1, 77) = 99.584$ ,  $p < .001$ ,  $f^2 = 1.294$ , and publications per 100,000,  $R^2 = .558$ ,  $F(1, 84) = 105.891$ ,  $p < .001$ ,  $f^2 = 1.262$ .
3. Confirmation of complete mediation by HDI of the relationship between freedom on psychologists per 100,000,  $R^2 = .172$ ,  $F(2, 76) = 8.099$ ,  $p < .001$ ,  $f^2 = .208$ ,  $B_{\text{HDI}} = .339$ ,  $t = 2.150$ ,  $p = .035$ . HDI did not mediate either fully or partially the relationship between freedom on publications per 100,000,  $R^2 = .118$ ,  $F(2, 83) = 5.572$ ,  $p < .01$ ,  $f^2 = .133$ ,  $B_{\text{HDI}} = .269$ ,  $t = 1.733$ ,  $p = .087$ .

A Sobel test of the strength of mediation by HDI of freedom on psychologists per 100,000 were not significant,  $z = .607$ ,  $p = .544$ .

### *Discussion*

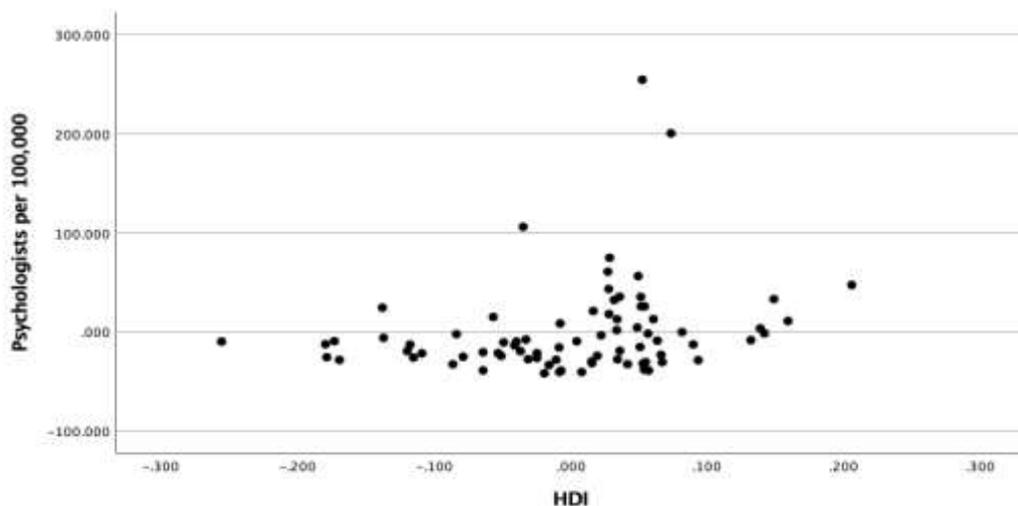
Not only is HDI seen as an indicator of national development, but it was also tied to distinct facets of disciplinary well-being: the extent of occupational membership and research productivity. These findings mirror those of Stevens (2010). In addition, the moderate associations of freedom to psychologists and publications per population correspond to those found by Stevens (2010), furnishing continued support for the benefits of free-markets and representative government for psychology (Fu & Jing, 1994; Jing, 2000; Stevens, 2010). However, while the number of countries admitted to the IUPsyS has expanded nearly 23% since Stevens (2010), the IUPsyS now includes member countries with low freedom and HDI scores, which testifies to the capacity of psychology to flourish in a macro-level environment considered inimical to its well-being.

Unlike Stevens (2010), mediation of freedom by HDI was found for psychologists per population but not for publications per population. Moreover, a Sobel test of the strength of mediation by HDI of freedom on psychologists per population did not reach significance. The failure to detect significant mediation by HDI can be attributed to the large standard errors (SE) of estimated coefficients (B). The standard error of a coefficient measures how accurately a mediation model predicts a coefficient's value. The larger the standard error relative to the coefficient, the less accurate the prediction. In terms of HDI as a mediator of freedom on psychologists per population, the unstandardized coefficient of  $B_{\text{HDI}} = 131.830$  with a  $SE_{\text{HDI}} = 61.332$  indicates that for each increase in HDI scores there

was an estimated average increase of slightly less than 132 psychologists per population. The variation around this estimate can be seen in Figure 2. Notwithstanding the slight positive slope to the scatter plot, psychologists per 100,000 did not increase at a predictable rate as HDI scores increased.

**Figure 2**

*Partial Regression Plot of HDI on Psychologists per Population*



Together, the findings of this study show that economic and political freedom and HDI contributed separately and directly to the well-being of psychology as measured by its size of occupational membership and magnitude of research productivity. Therefore, freedom and national development remain prominent underpinnings of a thriving discipline. However, the mediational model proposed by Stevens (2010), in which national development was validated as a pathway through which freedom exerts a salubrious effect on psychology, was not reaffirmed. Further research is needed to clarify how and why the mediation by national development of the relationship between freedom and disciplinary well-being has changed over time. A promising line of inquiry lies in research on the status of psychology in the Americas (Stevens, 2012). In this study, the association of freedom to research productivity was mediated by Internet usage, not by national development. Digital connectivity is becoming ever more available and sophisticated, facilitating transnational exchanges between psychologists through the formation of collaborative networks. Precise mediators, like electronic access to information and communication, may more useful than aggregate measures of national development in identifying avenues through which freedom contributes to psychology's health.

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On the other hand, perhaps the well-being of psychology is becoming less reliant on freedom. Cuba, Iran, and Venezuela, which have representation in the IUPsyS, are among the 10 countries with the lowest levels of economic and political freedom (Freedom House, 2022; Heritage Foundation, 2022). Yet, according to the World Health Organization (2022), Cuba has 31 psychologists per 100,000, higher than the ratio for Chile, Greece, Taiwan, and the United States, all robust democracies. Similarly, Iran has approximately 5 psychologists per 100,000, more than the ratio for the democratic bastions of Italy, South Korea, and Uruguay. Venezuela boasts nearly 14 psychologists per 100,000, greater than the ratio in Belgium, Panama, and Japan. Clearly, the ratios of psychologists per population in Cuba, Iran, and Venezuela challenge the beneficial role of economic and political freedom confirmed by previous research (Fu & Jing, 1994; Jing, 2000; Stevens, 2010) and the present study. The unexpected vitality of psychology in these repressive dictatorships may no longer be anomalies (Brock, 2006). That is, while economic and political freedom and national development are favorable to occupational membership in psychology, these macro-level conditions may be less necessary to this dimension of disciplinary health.

### *Conclusion*

The relationship of psychology to free-markets and representative government is intact, but no longer mediated by national development. Additional studies are needed to identify structural elements and dynamic forces that determine the status of psychology. Particularly valuable would be studies that shed light on the complex network of intermediary factors between macro-level conditions and disciplinary well-being.

History teaches that democracy is not immutable. There is growing international sentiment that democracy is not working (Moghaddam, 2016; Stevens & Eastman, 2020). A recent survey of 34 countries showed just 65% of respondents reporting that regular elections were very important, 64% that free speech and press freedom were very important, 55% that human rights groups operating freely were very important, and 54% that opposition parties operating freely were very important (Pew Research Center, 2022). Moreover, democracy around the world has been in consistent decline (Freedom House, 2021).

Sources for the decline of democracy include divisive economic and political trends, including regionalization and globalization (Stevens & Eastman, 2020). Regionalization and globalization have widened wealth disparities, triggered unprecedented migration, endangered cultures, and compromised national

sovereignty. Disillusionment the actions of transnational organizations (e.g., European Union, United Nations) have incited nationalistic fervor. Many democratic countries have backslid due to populist movements, breakdowns in the rule of law, and the influence of corporate money and power (e.g., social media). The implications of these unsettling trends on psychology remain to be seen. For now, freedom is still the lifeblood of psychology. Time will tell whether it remains so.

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