ORIGINAL ARTICLE

Predicting the Emergence of Community Psychology and Community Development in 91 Countries with Brief Case Studies of Chile and Ghana

Felicia Hanitio (b) and Douglas D. Perkins

Highlights

- Findings support a new model to explain the global development of applied community studies.
- Global community psychology (CP) and development (CD) provided preliminary support for the model.
- Grassroots activism helps predict CP and CD, beyond civil liberties, HDI, and population size.
- CP is strongest in wealthier (HDI) countries, but undeveloped in many low-income, high- need nations.
- Case studies of Chile and Ghana show varying influences and patterns on development of CP and CD.

© Society for Community Research and Action 2017

Abstract Using a mixed-method analysis, we propose and test a framework for predicting the international development of community psychology (CP) and community development (CD) as two examples of applied community-based research (CBR) disciplines aiming to link local knowledge generation with social change. Multiple regressions on an international sample of 91 countries were used to determine the relative influences of preexisting grassroots activism, population size, social and economic development, and civil liberties on estimates of the current strength of CP and CD based on Internet search and review of training courses and programs, published articles and journals, professional organizations and conferences in these countries. Our results provide support for the proposed model and suggest that grassroots activism positively accounts for the development of CP and CD, above and beyond the influences of the other predictors. Brief qualitative case-study analyses of Chile (high CP, low CD) and Ghana (high CD, low CP) explore the limitations of our quantitative model and the importance of considering other historical, sociopolitical, cultural, and geographic factors for explaining the development of CP, CD, and other applied community studies.

Felicia.hanitio@vanderbilt.edu

Department of Human and Organizational Development, Vanderbilt University, Nashville, TN, USA

Keywords Community-based research · Community psychology · Community development · Grassroots activism · Social change

Introduction

In view of the complex and persistent challenges that individuals, communities, and societies face in the twenty-first century, particularly severe in less-developed and developing nations, there is an increasing need for local, culturally and politically relevant forms of knowledge production to facilitate effective policy action and wider sociopolitical change (Rhodes, 2007). Yet, the contextual applicability and diversity of the social sciences have until now been hindered by their continued "academic dependency" on hegemonic Northern (or Western) nations such as the United States, the United Kingdom, and several Western European countries, from which the bulk of social science publications, academic training programs, professional associations, and research funding originate (Atalas, 2003, p. 599). As such, Northern and Southern researchers alike have advocated for the expansion of social science knowledge creation to include a greater number and depth of local, alternative, autonomous processes and expressions (Atalas, 2003; Flicker, Savan, McGrath, Kolenda & Mildenberger, 2008).

Meanwhile, the principles and practices of applied community-based research (CBR) have emerged from influences across the globe, and many Southern countries and regions have developed their own distinct expressions of community psychology (e.g., Reich, Riemer, Prilleltensky & Montero, 2007) and development. Even more, indigenous community theories and grassroots social activism often exist long before, and in absence of, formalized community research processes. The experiences of countries in which formalized CBR disciplines have developed suggest that formalization may bring increased resources along with obstacles toward grassroots community change processes (Reich et al., 2007). One possible obstacle is that "invited" community participation and empowerment facilitated by external actors in the research process may lead to institutional cooptation of "autonomous" participation in grassroots community organizing or people power movements—organic processes which individuals and community groups have initiated in campaigns for justice and social change throughout history, in the absence of any facilitated CBR (Cornwall, 2008). The existing literature is unclear about the extent to which the presence of grassroots activism is positively or negatively associated with the development of formalized CBR disciplines across the world, and how these informal and formalized change processes, once established, may serve to complement or impede one another.

Thus, in this study, we will examine the theoretical and practical links between grassroots, nonformalized activism and the global development of two disciplines that share an aim of linking knowledge generation with community development and social change goals: community psychology (CP) and community development (CD). We propose a framework to predict the development of formalized CBR in a given country in relation to preexisting grassroots activism, and in the context of social and economic development, population size, civil liberties, and other country-level and international influences. Using a combination of multiple regression analysis and qualitative case studies, we explore both common and divergent themes in the international development of CP and CD in relation to this larger framework. Consequently, we will be able to better understand the current and potential role CBR can play, and the form it may take, in extending and informing broader social, economic, environmental, and political change goals in the twenty-first century.

A Brief Global History of Community Research, Psychology, and Development

The international development of CBR in the social sciences can be traced to a diverse range of historical influences in the global North and South. The beginnings of the Northern tradition can also be traced to the work of American land-grant universities during the 1920s to

connect scientific research with social needs and civic ideals, as well as to Western European social movements led by university students and faculty in the 1970s advocating for the democratization of science (Munck, 2014). In the global South, CBR, especially the Community-Based Participatory Research (CBPR) variant, is associated with the popular education movement led by Brazilian educator Paulo Freire (1972) and the "participatory research" or "participatory action research" paradigm developed by Colombian sociologist Orlando Fals-Borda (1987). In contrast to the problem-solving focus of Northern CBR, the Southern tradition emerged as a direct reaction to colonization, underdevelopment, and social inequality in the global South and challenges mainstream "top-down" development strategies that place the poor as objects of study and international aid. Instead, Southern CBR brings research and community action closer together in prioritizing the active, "bottom-up" participation and empowerment of local communities, particularly poor and oppressed groups (Munck, 2014). Most CBR today in the social sciences falls on a spectrum between these two traditions (Wallerstein & Duran, 2008).

International Community Psychology

In its emphasis on ecological thinking, prevention, individual and community competencies, diverse perspectives and methodologies, and the interlinkage research and action to promote quality of life at the individual, community, and societal levels (Levine, Perkins & Perkins, 2005), CP exemplifies many of the shared goals and values of CBR and CBPR. Unlike other sub-disciplines of psychology, CP explicitly moves beyond an individual focus and critically considers the community contexts and social-environmental systems that shape an individual's behavior and wellbeing (Levine et al., 2005). Formalized CP first emerged in 1965 at the Swampscott conference in the United States as a result of growing dissatisfaction among clinical psychologists over individual-focused approaches to mental health treatment and psychology, coupled with the momentum of wider social change movements in the post-WWII era (Angelique & Culley, 2007).

Yet, the ideas and practices embedded within CP have far-reaching historical roots internationally—from influential thinkers such as Aristotle, Dewey, Lewin, Jahoda, Fals Borda, and Friere (Perkins & Schensul, 2016), to indigenous theories and practices in Africa and Australasia, to liberation theology and emancipatory movements in Latin America (Reich et al., 2007). Moreover, the field of CP has recently seen quicker and greater growth in other parts of the world than in the U.S., where CP seems to be declining as a distinct academic field and

is instead being incorporated into other fields such as education, interdisciplinary studies, or nonacademic practice (Perkins, 2009). Currently, other countries with distinct, formalized CP fields include Canada, Germany, Italy, Poland, Portugal, Spain, the United Kingdom, South Africa, Australia, New Zealand, India, Japan, Hong Kong, and many Latin American countries (Perkins, 2009; Reich et al., 2007), with CP programs recently started also in Egypt, Greece, Indonesia, Malawi, Malaysia, Palestine, Philippines, Thailand, and Zimbabwe. Countries where CP is practiced by informally or by researchers in other related social science disciplines and psychology sub-disciplines include Israel, Norway, and Turkey (Reich et al., 2007). Although there is no truly global organization of CP (there are several with international membership, but concentrated in North and Latin America and Europe), since 2006, there has been a biennial International Conference in CP held, and with attendance from, around the globe.

Comparing the initial establishment of CP in the U.S. and its separate emergence in a very different Latin American context ten years later, Montero (1996) notes that in both cases, CP developed within a liberalizing social climate, and in response to the limitations of traditional scientific methods and applied psychology for addressing the root causes of social problems. However, the main difference is that the initial development of Latin American CP was both hindered and accelerated by the repressive dictatorships and military regimes that characterized many Latin American countries' governance during the time (Montero, 1996). One result is that CP in Latin America and in much of the global South heavily emphasizes emancipatory social change and politicized action, whereas formalized CP in the global North has retained more of the positivistic problem-solving lens characteristic of mainstream social sciences. In addition to the role of social movements and the political environment in facilitating the development of CP, Reich et al. (2007) also cite population density, the development of related fields such as social psychology and social work, intellectual colonization by North American CP, and existing indigenous theories and practices as further conditions or forces that have affected the development of formalized and nonformalized CP worldwide. They note that formalization can bring both benefits, such as increased legitimacy and awareness of CP among community practitioners and psychologists in Italy (Santinello, Martini & Perkins, 2010), and hindrances, such as increased institutional pressures that have restricted the flexibility, diversity, and critical nature of Australian and British CP (Reich et al., 2007). Moreover, contributing an Afrocentric perspective, Nsamenang, Fru and Browne (2007) suggest that despite its social change goals, CP is essentially still an "ivory

tower professionalism" with "social Darwinian" goals (p. 393).

International Community Development

Community development, like CP, is a field with diverse influences and expressions; however, CD has developed much more ubiquitously than CP across the developed and developing worlds. The International Association for Community Development's (IACD) membership, for instance, includes CD practitioners and organizations in over 70 countries across seven global regions (IACD, 2015). International CD is an eclectic field that has emerged from a diverse range of practices and players rather than a common theoretical or empirical foundation, and as such, there are varying definitions and conceptualizations of CD worldwide. Christenson (1989) suggests that most definitions of CD involve people initiating a social action process to achieve common interests of improving their economic, social, cultural, and environmental situation. He also found that international CD practices have historically reflected three main themes or models: technical assistance, which draws on the technical expertise and intervention of external agents such as government agencies and international foundations; self-help, which emphasizes local capacity-building to define and solve community problems; and conflict or confrontation, which emphasizes power analyses and the political empowerment of marginalized groups. Historically, technical assistance approaches have dominated the majority of large-scale international, national, and regional CD interventions; however, in recent decades the international community of CD practitioners and organizations has increasingly championed local participation, empowerment, and strengths-based models that correspond more closely with self-help and conflict approaches (Friedmann, 1992). Yet, more than one of these approaches (i.e., technical assistance, self-help, and conflict) may be at work in any given CD process, and depending on the context, they can work either in tandem or tension with one another (Robinson & Green, 2011).

The development of international CD as a professional and academic discipline can be tied to a number of historical origins. Some theorists argue that CD originated from a colonial legacy: specifically, the efforts of the British Colonial Office in the 1940s and 1950s to improve social welfare in its African and Asian colonies through technical assistance and self-help approaches designed to accelerate industrialization and economic productivity and keep anti-colonialist and nationalistic forces under control (Robinson & Green, 2011; Smyth, 2004; Wallis, 1976). The beginnings of CD might also be traced to the North American and Western European field of rural community

organization which emerged in the early 1900s, whereby local action and resources were employed in the administration of welfare programs, and, later, the burgeoning field of economic development amidst post-WWII recovery and rebuilding (Sanders, 1970). Others suggest that the growth of international CD reflects a double movement to promote industrialization goals and to ameliorate its consequences at the community level (Sheikheldin & Devlin, 2015; Warren, 1970). This plurality of perspectives on CD's contextual origins is also reflected in the diverse conceptions, theories, and practices that comprise modern CD.

While CD is its own formal field with its own body of theory and practices, professional associations, and publications, it is also an interdisciplinary endeavor. CD draws upon specialized knowledge from sociology, economics, education, social work, public health, geography, political science, and anthropology, among others. Moreover, many key players in professional CD remain outside of academia, including various government branches and agencies, national intermediaries, CD-focused financial institutions, CD corporations and nonprofit organizations, community-based development organizations, forprofit organizations, private foundations, and professional associations (Robinson & Green, 2011). For example, since the post-WWII era, large aid funders such as the World Bank, International Monetary Fund, United Nations, Inter-American Bank, and USAID have provided significant financial and technical assistance for development throughout the global South, inherently shaping the theories, models and practices of CD and other expressions of development intervention in these countries.

Informal Grassroots Activism and Formalized Community-Based Research and Action: Two Intersecting Paths to Social Change

Reich et al.'s (2007) finding that various social movements represented the "first signs" of the development of CP in many countries and established the initial foundation for the field's growth is consistent with a larger body of literature validating complementary linkages between grassroots or people power movements and institutional mechanisms of change. With greater awareness of, and urgency around, popular mobilization and grassroots action, there arises a need for new forms of knowledge generation in regard to local realities: a need that comes to shape the agenda of social science researchers within the academy, especially through those students and faculty who happen to be activists or supporters of social causes (Brandão, 2005). Consequently, the beginnings of CBR

emerge in service of these larger popular social movement goals.

In the reverse direction, institutional actors and processes, including those within the academic community, can also play an important role in the success of social movements. Social movement theorists McCarthy and Zald (1988) suggest that neither the microlevel, psychological aspects of social movement emergence nor the macro-level, institutional-political enablers of social movements are by themselves sufficient to explain social movement emergence and maintenance. Instead, social movement activities emerge through the combined effect of the following macro and micro factors: the structure of political opportunities available to movement actors, the organizational readiness of these actors, and a cognitive-psychological consciousness of insurgence. Each of these factors can be enhanced by community-university partnerships and by academic professional action-researchers functioning as social movement entrepreneurs. As social movements mature, their sustainability depends not only on the continuation of these enablers but also on the formation of social movement organizations (SMOs) in order to continue mobilizing members around the defined cause and successfully navigate the larger political and organizational environment, which may include partnerships with government agencies, businesses, universities, and other civil society organizations (McAdam, 1999; McAdam et al., 1988). Thus, a certain degree of formalization in organized social action marks not the absence of true people power but rather long-term success and sustainability in grassroots mobilization.

The Relation of Civil Liberties to Grassroots Activism and Community-Based Research

Civil liberties, which are closely related to political freedom and rights, can be defined as the "freedoms to develop views, institutions, and personal autonomy apart from the state" (Freedom House, 2001, para. 4). As briefly addressed earlier, the political oppression and suppression of civil liberties have alternatively ignited and hindered the growth of social movements and also community-based practices throughout history. On the one hand, classical social movement theories assert that individuals and groups organize for social change in response to sudden increases in deprivations and grievances that impede their civil liberties and lead to a certain level of societal strain (McAdam, 1999). For example, in South Africa, British colonial rule, the subsequent oppressive apartheid regime, and ongoing racial tensions created conditions ripe for social movements, while also catalyzing interest in CBR and action as a mechanism for addressing

some of these issues (Reich et al., 2007). In addition, once a movement is underway, the tactics of nonviolent action may alter power relationships in such a manner that repression by the state actually mobilizes further support for movement actors and contributes to further movement growth (McAdam, 1999; Sharp, 1973; Smithey & Kurtz, 1999).

However, a certain level of civil liberties may also be necessary for the emergence and maintenance of social movements and particularly formalized CBR as well as community action. For a social movement to emerge, there must be a crucial change in the structure of political opportunities and thus "an increased receptivity or vulnerability of the political system to organized protest by a given challenging group" (McAdam et al., 1988, p. 699). In addition, except in cases where there arises a paradox of repression as noted above, social movements tend to arise and gain traction when there is no or little repression from movement opponents, including the state (McAdam et al., 1988). In countries where citizens experience extremely low civil liberties, then, grassroots social movements and community-based action may be suppressed. Researchers too are unlikely to have the sort of intellectual and political freedom to engage in research with a critical or emancipatory nature (Reich et al., 2007). For instance, in countries such as Cameroon, Portugal, and Spain, only when colonial rule or military dictatorships ended did social and community action, including initial expressions of CP, begins to grow and thrive (Reich et al., 2007). Finally, social movements and communitybased action should be expected to relate positively to civil liberties in the sense that success in achieving the goals of social and community mobilization would lead to a rise in civil liberties.

Other Macro Country-Level Conditions Influencing Civil Liberties and the Proliferation of Social and Community Action

National Wealth and Prosperity (Social and Economic Development)

The nature of political processes and popular action in a given country is highly dependent on prevailing economic and social conditions. Although one might expect that social movements and community action arise in response to low economic and social development, it seems that as a general trend, national prosperity is often positively associated with more social and community action. At the micro level, McAdam et al. (1988) note that individuals experiencing the most extreme levels of deprivation are unlikely to have sufficient resources and opportunities to sustain more than brief efforts at insurgence. At the macro level,

wealthier societies are more likely to experience a rise in social movement activity due to the development of communication technologies that facilitate collective organization processes, a growth in the intellectual classes and liberal modes of thinking, and an increase in resources available to support movement activity and sophisticated social marketing techniques (McAdam et al., 1988). Likewise, societal prosperity may also directly facilitate the development of CBR, above and beyond its influence on social movement activity, by increasing the number of universities, the quality of their research and training programs, and the funding and other resources opportunities available to academic researchers to conduct CBR. Yet, as the field of CD has been largely characterized by the technical assistance approaches of external international development "experts" working in less-developed countries, CD may have a more ambiguous relationship with societal prosperity compared to CP (Christenson, 1989).

New social movements (NSM) theory explicitly deals with a new type of social movement that has proliferated since the 1960s in various post-industrial, capitalist Western societies (e.g., Buechler, 1995). In contrast to traditional social movements, in which the primary actors were those in the lower classes and the primary concerns materialistic or political, new social movements involve middle-class intellectuals organizing around human rights issues. Many of the social movements that sparked the development of CBR, such as the deinstitutionalization movement in mental health, nongovernmental organization (NGO) activities throughout the developing world, and the relatively recent legacy of student activism around numerous social and cultural issues worldwide, would fall under this category of NSMs (Buechler, 1995). Various scholars have also cited modernization and industrial capitalism as macroeconomic trends that have contributed to a greater need and desire for community-building, social solidarity, and mutual help to combat the negative influences of industrialization and urbanization in the postindustrial age (e.g., McAdam et al., 1988; Warren, 1970).

Population Size, Density, and Growth

Generally, larger countries with a greater population size are expected to have a higher likelihood of individual actors and groups organizing for social change and advocating for community-based forms of knowledge production; with a greater number of universities, there is also a higher likelihood that any one of them has an established, formalized CBR discipline. Thus, population size operates as an important control variable in many studies of social movements at the country level (e.g., Ball, 2000). In addition to absolute population size, high population density,

growth, and urbanization also increase the "density of interactions" between possible movement actors and consequently the "structural potential for collective action" (McAdam et al., 1988, p. 703).

Conceptualizing a Model to Predict the Strength of Community-Based Research and Action in Relation to Past Grassroots Activism

In this study, we propose and test a theoretical model (depicted in Fig. 1) to predict the strength of formalized CBR disciplines—specifically, CP and CD—in a given country based on (a) the strength of prior grassroots activism and (b) controlling for the independent influences of civil liberties, national economic and social development, and population size on the development of CBR. The first set of variables deals with country-level characteristics that tend to be relatively stable over time and which, as outlined in the literature review above, are important contributors to grassroots activism and the establishment of CP and CD as distinct fields (e.g., McAdam et al., 1988; Reich et al., 2007). Next, the main antecedent of CBR highlighted in this model is grassroots activism, acting as a precursor to more formalized fields of CBR. For some of these bivariate relationships (for example, between social and economic development and CBR, particularly CD), the relationship might be curvilinear rather than linear. Our theoretical framework also identifies several other important antecedent variables, examined in our case studies but not our statistical model, that have played an important role in the historical development of CP and CD: namely, influences from other professional fields such as social work, sociology, and popular education, and

from neighboring or colonizing countries (Christenson, 1989; Reich et al., 2007; Smyth, 2004).

Figure 1 depicts various bidirectional interrelationships and feedback loops between several of the factors in our model. For example, increased civil liberties and social and economic development may spark more grassroots social activism and interest in community-based research, which in turn may help increase civil liberties and social and economic development. Social movements and community-based practices in one country may be affected by other developments in related fields or intellectual and economic influences from other countries, but these influences can also happen reciprocally. This study did not attempt to test every possible relationship in this model, which in itself is a simplified depiction of more complex national and international processes and historical influences. Instead, we focused on how these variables help to predict the development and practice of CD, CP, and by extension other CBR disciplines in a diverse set of countries across all major regions of the world.

Research Questions and Hypotheses

Our aim was to investigate the extent to which formalized community-based research emerges as an extension and necessary contribution to grassroots social activism in the context of other country-level and international influences. Using CP and CD as examples, we employed a mixed-method approach to investigate the ways in which the international development of these disciplines can be explained by the proposed model, as well as the ways in which different predictors in the model may operate with greater or lesser significance for each of these disciplines.

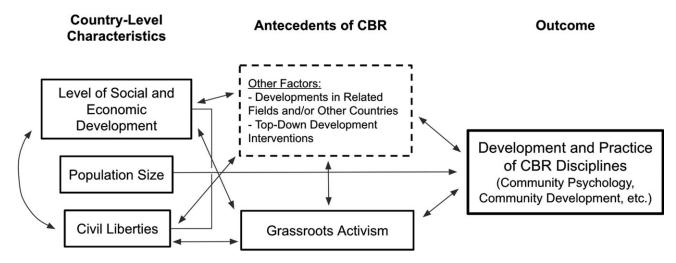


Fig. 1 A theoretical framework for the development of community-based research (CBR) disciplines

Based on the existing literature and our proposed conceptual framework, we tested two hypotheses quantitatively and explored an additional qualitative research question using two country case-study comparisons (see methodology below):

Quantitative Research Question (1): Does a country's levels of civil liberties, social and economic development (Human Development Index: HDI), population size and, controlling for those, strength of prior grassroots activism predict the country's current strength of CP and CD?

Hypothesis 1: In an international sample of countries, civil liberties, HDI, population size, and the strength of previous grassroots activism will each have significant positive relationships with the current strength of CP and CD in a given country.

Hypothesis 2: Grassroots activism helps to predict the strength of both disciplines (CP and CD), even when controlling for the influences of civil liberties, HDI, and population size.

Qualitative Research Question (2): To contextualize and better understand these quantitative predictors, especially where they may yield different results for CP and CD, what other historical or other influences not tested in our regression model (such as top-down international development efforts, developments in other disciplines, or ideological influences from neighboring or hegemonic countries) might help to explain the differences?

Part I: A Multiple Regression Analysis of Country-Level CBR Predictors

Sample and Design

The sample for this study was a diverse set of 97 countries for which country-level data have been collected, as part of the Global Development of Applied Community Studies Project—a larger research endeavor led by the second author, to document and predict the current development of 12 global community research and action disciplines¹ (see Appendix S1 for the part of the dataset used in this study). The sampling method for selecting countries to include in the dataset was nonrandom and

occurred in two main stages: the first 30 countries were included in the dataset regardless of population size because they were known to have an established field and/or distinct practices in CP—initially the primary field of interest for the study. Next, to be sure the largest countries with enough human and institutional resources to develop each field and sufficient need for them were included, those exceeding 10 million in population were selected (excluding those for which valid information was difficult to obtain, such as North Korea). Originally, the sample consisted of 95 countries, but a decision was made to separate Israel and Palestine, as they differ significantly on various sociopolitical and economic indicators including HDI. Paraguay was also added later as an additional example of a small Latin American country with recent growth in the CP field. Of the resulting sample of 97 countries, 91 had valid values for all variables used in the regression models (n for bivariate correlations ranged from 91 to 97).

Data to measure the "strength" of these community research and action disciplines were collected through a review of existing publically accessible Internet and published materials, and the predictors consisted of secondary data collected from sources such as the Global Nonviolent Action Database (GNAD), Freedom House, the United Nations Development Programme, and the CIA World Factbook (see below).

Measures and Instruments

Estimated Strength of Formalized Community Psychology (CP) and Community Development (CD)

The outcome variable in each of our regression models (alternatively predicting for CP and for CD) was the formalized strength, on a scale of 1-10, of the given discipline. The "strength" of these disciplines was rated on a 10-point scale based on a diverse range of evidence, obtained mostly through web searches conducted in various languages and using existing reviews describing international CP and CD (e.g., Hautekeur, 2005; Perkins, 2009; Reich et al., 2007). The following component elements were used to construct the overall score out of 10: (a) one point for any clearly relevant professional organization or conference, (b) one point for any undergraduate courses found, (c) one point for any graduate courses found, (d) one point for any undergraduate programs, (e) two points for one graduate program or three points for multiple programs (with the rationale that graduate programs are especially important for the training and development of professionals and researchers), and (f) one point for one-to-five publications with clear relevance authored by someone based in the country, two points for

¹Community psychology, community development, community sociology, community social work, applied/development anthropology, development economics, public health, urban/regional planning/geography, public administration/policy studies, popular/adult education/literacy for community development, liberation theology/religious studies in community action, interdisciplinary community research and action.

six or more publications but no journal, or three points for a journal explicitly focused on the given communitybased discipline.

At the start of the rating process, inter-rater reliability was established between different members of the research team, and the raters also included explanatory notes in the coding for each country in order to make explicit the evidence used in the ratings. Evidence of an element was included only if the course, program, publication, organization, or conference was explicitly community-focused. Although any given piece of evidence may be relevant for multiple CBR disciplines in our database, we tried to minimize double-counting of evidence by counting it under the most relevant discipline. For example, if the organization, course, program, or publication title or content explicitly cited "community psychology" or "social-community psychology" (or appropriate translations of these terms in other languages), we counted the evidence under CP. CD was more difficult to define as it is by nature interdisciplinary, and in many countries CD research and practice falls under other disciplines. Additionally, much of the "community development" field uses the term to describe regional or national-level development strategies, whereas we included only clear examples of local, community-based and community-level social, economic, physical-environmental, and political development and change processes.

Cumulative Strength of Nonviolent Action (Grassroots Activism)

In this study, we operationalize grassroots activism as the cumulative success of previous nonviolent action campaigns recorded in the Global Nonviolent Action Database (GNAD; Swarthmore College, 2015). This is a free access online database with over 1000 nonviolent action cases from more than 200 countries with searchable fields and narrative descriptions, compiled by students at Swarthmore College and several other universities for the purposes of promoting learning, citizen action, and research around the topic of global nonviolent action. It defines nonviolent action as "a technique of struggle that goes beyond institutionalized conflict procedures" and as including "the methods of protest, noncooperation, and intervention that typically heighten a conflict... without the threat or use of injurious force to others" (Lakey, 2011b, para. 2).

The cases that were included in the database represent completed campaigns and were selected to be as widely variable as possible. While the majority of the cases in the database occurred in the last 50–60 years, the earliest cases included extend back over 2000 years. In order to preserve as full of a dataset as possible and capture any historical culture of political resistance, however, all relevant cases

were included in our analysis. Additionally, it is important to note that the GNAD researchers were limited to mostly English-language secondary sources, and the database also reflects a disproportionate emphasis on U.S. cases (about one-third of all cases) as these were of primary interest to students studying people power movements from a U.S. context (Lakey, 2011a). Despite the biases and limitations of the GNAD, it is the most comprehensive collection of information about noninstitutional, grassroots social mobilization that we found and represents a large range of countries (including 95 of our full sample of 97 countries), issue clusters, and change methodologies.

The specific predictor variable for nonviolent action that we used in the regression model was a product score combining the number of recorded cases for a given country and the average success rating of all cases in that country (this is equivalent to the sum of the success scores for all nonviolent action campaigns recorded in a given country). Success scores were obtained through ratings given out of 10 on the GNAD for each nonviolent action campaign: up to six points for the success in achieving specific demands or goals of the campaign, up to one point for the survival of the nonviolent action infrastructure, and up to three points for the campaign's growth in size and participation (Lakey, 2011c). Frequency scores were simply the number of total cases included in the database for a specific country (campaigns involving participants in more than one country were counted once under the tallies of each country). Finally, we also calculated simple cross-products between the average success and number of nonviolent action cases to create a measure that reflected the sum of both frequency of noninstitutional social mobilization, captured in an elementary sense (although the recording of cases was based on nonstatistical sampling methods, we assume that GNAD researchers captured a large proportion of the most major social action campaigns in recent international history), and the success of such efforts. Preliminary analyses revealed that this cumulative strength measure, compared to either the frequency or success scores alone, had the best overall predictive value for four disciplines we tested: CP, CD, community sociology, and public health (however, we chose to focus the current analysis on the first two disciplines, for which we had more complete data at the time of the study). Thus, we chose to operationalize nonviolent grassroots activism in our study as the cumulative strength of nonviolent action cases and additionally performed a base-10 logarithmic transformation on this measure in order to adjust for positive skewness (extreme values for the U.S. and a few other large countries) in the distribution of these scores (see Table 1 for descriptive statistics of the nonviolent action measures and of all final variables used for our multiple regression analysis).

Table 1 Descriptive statistics: estimated strength of formalized community psychology (CP) and community development (CD), nonviolent action measures, civil liberties, HDI, and population size in 97 countries

Measure	n^{a}	Range	Mean	SD
Strength of CP (/10)	97	0–10	3.23	3.36
Strength of CD (/10)	97	0-10	4.38	3.19
Nonviolent action				
Case count (no. of cases)	97	0-360	10.20	36.71
Mean success score (/10)	95	2-10	6.92	1.60
Cumulative strength:	95	2-2483	73.44	256.10
no. of cases * mean success				
Adjusted cumulative strength	95	0.69 - 7.82	3.40	1.15
Civil Liberties	93	1–7	4.38	1.89
HDI	96	0.34-0.94	0.68	0.17
Population size (in 10 millions)	97	0.29-135.57	6.97	18.72

^aNumber of countries for which data on all variables was available.

Civil Liberties Ratings

The civil liberties ratings used for this study were adapted from Freedom House's (2015a) annual Freedom in the World report, which included survey-based numerical ratings for political rights and civil liberties from 195 countries and 15 related and disputed territories in 2014. The civil liberties measure, which is used for the present analysis, is comprised of 15 indicators covering four subcategories: Freedom of Expression and Belief, Associational and Organizational Rights, Rule of Law, and Personal Autonomy and Individual Rights (Freedom House, 2015b). Based on a broad range of secondary sources, a team of in-house and external analysts and advisors answered questions for each of these indicators to produce an overall country score. The score was then used to assign ratings on a scale of 1 (most free) to 7 (least free) for each country (Freedom House, 2015b). We reversed the scale so that 1 represented the lowest level of civil liberties and 7 the highest.

Social and Economic Development

We used the United Nations Development Programme 2013 Human Development Index (HDI) scores, which ranks most countries of the world into various tiers of human development based on a composite measure comprised of three indicators of human economic and social development: life expectancy, average educational attainment, and gross national income per capita (UNDP, 2013).

Population Size

The main source of national population data was the 2015 CIA World Factbook population estimates (CIA, 2015).

Palestine's population estimate was retrieved from the World Population Review (2015).

Approach to Data Analysis

Based on the model in Fig. 1 (excluding the factors in the dashed-line box), we tested hypotheses 1 and 2 through correlation and regression analyses predicting the strength of CP and CD in our set of 97 countries. Hypothesis 1 was tested through bivariate correlations between the independent variables (population size, HDI, civil liberties, and grassroots activism) and our two dependent variables. Hypothesis 2 was tested using a hierarchical multiple regression analysis whereby the predictive value of grassroots activism (captured in the R^2 increment and standardized regression coefficient) was evaluated for both the models predicting CP and CD in context of the other independent variables. Variables were entered sequentially into the regression equation based on the conceptual pathways depicted in the theoretical model and our focus on evaluating the value of grassroots activism (nonviolent action) as a predictor controlling for the other independent variables. Population size and HDI were separately entered first into the model as contextual control variables influencing both civil liberties and grassroots activism; then, civil liberties was entered, followed by nonviolent action. Countries with missing values for certain variables were excluded from corresponding analyses using these variables.

Results

Table 2 displays the simple bivariate Pearson correlation matrix for all factors in our model: country population, social/economic wellness (HDI), civil liberties, and adjusted nonviolent action with our outcome variables: the strength of formalized CP and CD, respectively. As

Table 2 Zero-order pearson correlations^a between various country-level predictors and the strength of formalized community psychology (CP) and community development (CD)

	1	2	3	4	5	6
1. Strength of CP	_	.52	.20	.52	.54	.50
2. Strength of CD		_	.20	.16	.30	.38
3. Population size			_	.004	07	.35
4. HDI				_	.61	.37
5. Civil liberties					_	.43
6. Nonviolent						_
action cumulative						
strength (adjusted)						

^an of countries ranged from 91 to 97 depending on missing values (see Table 1 for details); significance levels for 2-tailed tests are as follows: r = .14 (p < .10); r = .18 (p < .05); r = .25 (p < .01).

expected, the strength of CP and CD were correlated (r=.52, p=<.001) with each other across the 97 countries in our sample. Also, as hypothesized, population size (r=.20, n=97, p<.05), HDI (r=.52, n=96, p<.0001), civil liberties (r=.54, n=93, p<.0001), and adjusted nonviolent action (r=.50, n=95, p<.0001) were all significantly and positively correlated to CP. Additionally, population size (r=.20, n=97, p<.05), civil liberties (r=.30, n=93, p=<.005), and adjusted nonviolent action (r=.38, n=95, p<.001) were all also significantly and positively correlated to CD. However, HDI was only slightly related to CD in our sample (r=.16, n=96, p<.10).

Due to HDI's modest linear correlation with CD, we conducted an exploratory test for curvilinearity of the relationship based on literature referenced above indicating that CBR may have a negative or positive relationship to HDI at different levels of HDI. We grouped countries into four groups as defined by the UNDP (2013) HDI quartiles —Very High (HDI of 0.800 or above), High (0.600–0.799), Medium (0.550–0.559), and Low (0.549 or below) —and conducted an ANOVA test of CD strength differences by quartile. Our results (see Fig. 2) were significant (F[3, 92] = 3.02, p < .05) and suggest, not a simple curvilinear relationship, but a sine-shaped cubic function curve in which average CD scores were significantly higher in the Medium and Very High Human Development groups compared to the Low and (moderately) High HDI groups.

Next, we conducted hierarchical multiple regression analyses for separate models predicting CP and CD. Table 3 displays the results of these analyses. As expected, our primary independent variable of interest—

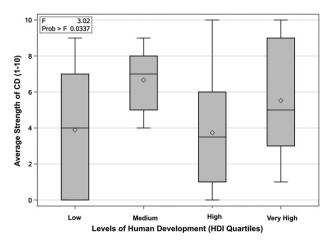


Fig. 2 Distribution of Community Development (CD) Strength ratings across Human Development Index Quartiles. This figure illustrates a possible cubic relationship between HDI and the current strength, on a scale of 1–10, of formalized CD. Quartiles (Low = 0.549 or below, Medium = 0.550–0.599, High = 0.600–0.799, Very High = 0.800 or above) were obtained from the UNDP (2013) HDI tables

the adjusted cumulative strength of nonviolent action—positively and significantly predicted the strength of both CP and CD in our sample of countries, even when controlling for other country-level contextual factors: namely population size, HDI, and civil liberties. In Equation 1, the four independent variables together predicted 40.6% of the variance in CP, with adjusted nonviolent action contributing 4.1% (p < .025) additional variance after controlling for the influences of population size, HDI, and civil liberties, which explained the highest amount of unique variance (b = .31, p < .005) on CP.

In Equation 2, these same independent variables were less predictive (13.7%) of the variance in CD, with adjusted nonviolent action contributing 4.4% (p < .05) additional variance after controlling for the influences of the other independent variables. In Equation 3, HDI was removed from the model predicting CD because it had a nonsignificant simple correlation with CD, and the resulting model predicted 14.4% of the variance in CD, with adjusted nonviolent action adding 4.1% (p < .05) to the explained variance. Interestingly, in the final regression equations predicting CD, only adjusted nonviolent action retained a significant standardized beta coefficient in both cases ($\beta = .263$, p < .05 in Equation 2; $\beta = .249$, p < .05 in Equation 3). Although nonviolent action has a greater

Table 3 Hierarchical multiple regressions $^{\rm a}$ predicting strength of community psychology (CP) and community development (CD) across 91 $^{\rm b}$ countries

		Final						
Variable	R ² increment	beta	Final t value					
Equation 1 (Predicting	g CP)							
Population size	$.044 \ (p < .05)$.145	1.61 (ns)					
HDI	$.247 \ (p < .0001)$.211	2.05 (p < .05)					
Civil liberties	$.101 \ (p < .0005)$.310	$2.89 \ (p < .005)$					
Adjusted	$.041 \ (p < .025)$.252	$2.48 \ (p < .025)$					
nonviolent action	•							
Adjusted $R^2 = .406$, $F(4, 86) = 16.36$, $p < .0001$								
Equation 2 (Predicting	g CD)							
Population size	$.039 (p < .10^{\circ})$.124	1.14 (ns)					
HDI	.027 (ns)	075	61 (ns)					
Civil liberties	.065 (p < .025)	.228	$1.76 \ (p < .10^{\circ})$					
Adjusted	$.044 \ (p < .05)$.263	$2.15 \ (p < .05)$					
nonviolent action								
Adjusted $R^2 = .137$, F	F(4, 86) = 4.58, p < .00)25						
Equation 3 (Predicting	g CD, no HDI)							
Population size	$.039 (p < .10^{\circ})$.126	1.16 (ns)					
Civil liberties	$.092 \ (p < .005)$.190	$1.69 \ (p < .10^{\circ})$					
Adjusted	$.041 \ (p < .05)$.249	$2.08 \ (p < .05)$					
nonviolent action	-							
Adjusted $R^2 = .144$, F	F(3, 87) = 6.03, p < .00)1						

^aAll regression terms were linear.

bSix countries had missing values in one or more of the measures included; thus, the adjusted n for our regression analysis was 91.

^cThese are nonsignificant at a strictly $\alpha = .05$ level, but α can be relaxed slightly here to .10 in order to increase the predictive value of the entire model and to decrease bias in the primary predictor of interest, nonviolent action (grassroots activism).

bivariate correlation with CP than with CD, their multiple regression standardized beta coefficients were similar in magnitude, as the other independent variables were less predictive of CD than of CP.

In summary, population size, HDI (social and economic development), civil liberties, and the adjusted cumulative strength of nonviolent action (grassroots activism) all positively and significantly related to the strength of formalized CP in our sample of countries; all but HDI also positively and significantly related to the strength of formalized CD. Moreover, nonviolent action exerted independent, significant predictive influences on both disciplines (CP and CD) above and beyond the influences of the three other country-level factors in our model (population size, HDI, and civil liberties).

Part II: Brief Case Studies of Chile and Ghana

While the quantitative predictors tested above predicted the international development of CP and CD to a certain extent, there was a larger proportion of variance in both disciplines, especially CD, not accounted for by these predictors. Additionally, countries with high CP did not necessarily have high CD and vice versa. Thus, a brief case-study approach was used to contextualize the development of CP and CD in two specific countries and provide insight into the role of top-down development planning, intellectual developments in other disciplines, postcolonial influences from hegemonic countries, and other cultural, historical, and political factors on the differential development of CD and CP in these countries (research question 1).

Selection and Features of Interest

The two case-study countries described below, Chile and Ghana, were selected based on the following features of interest: they had contrasting patterns in regard to having either low CP and high CD, or high CP and low CD; they represented different responses to Northern (or Western) hegemonic influences; and there was a considerable amount of literature regarding the development (or lack of development) of CP and CD within these countries. A brief outline of indicators used in our study for each of these countries is depicted in Table 4.

Chile

Brief Sociopolitical and Economic History

Chile, a Latin American country of about 17 million people, is governed by a representative democracy and has one of the highest levels of human development in the

Table 4 Population size, HDI, civil liberties, nonviolent action, and estimated strength of CP and CD in Chile and Ghana

Measure	Chile	Ghana	
Population size	17,363,894	25,758,108	
HDI	0.822	0.573	
Civil liberties rating (1 lowest, 7 highest)	7	6	
Nonviolent action			
Case count (no. of cases)	11	5	
Mean success score (/10)	6.9	6.9	
Strength of CP (/10)	9	2	
Strength of CD (/10)	2	8	

region, with a HDI rating of 0.822 (United Nations Development Programme [UNDP], 2013). However, like many other countries in the region, it has high levels of economic and social inequality and a turbulent recent political history. For most of its first 150 years of independence from Spain since the 1820s, Chile was governed by a series of stable, democratically elected, though arguably elitist governments. In 1970, amidst growing class tensions, popular dissatisfaction, and political polarization, a Marxist government led by president Salvador Allende was elected to govern the nation (Collier & Sater, 2004). However, 3 years later, with the assistance of the United States Central Intelligence Agency, General Augusto Pinochet overthrew Allende in a military coup and established a 17-year authoritarian regime characterized by brutal political repression and numerous human rights violations. Starting in the 1980s, Pinochet's government also introduced market-based economic reforms which set into motion Chile's rapid, steady economic growth for the next few decades, though at the expense of cuts in welfare policies and exacerbated economic inequality (Martinez & Rodriguez, 1997). During this time, grassroots movements began to adopt the language of rights in direct resistance to state repression (Foweraker, 2001). Since Chile returned to democratic governance in 1990, subsequent governments have adopted more inclusive economic and social policies aimed at reducing poverty and inequality while maintaining growth, often partnering with civil society organizations to implement these policies (Barton, 1999; Foweraker, 2001).

Community Psychology in Chile

Similar to the U.S. experience, early roots of Chilean CP practice were first developed in the 1950s and early 1960s within a community mental health framework, and as a critical reaction to the limitations of traditional psychiatric practices for addressing the growing psychosocial needs of the population (Alfaro, 2000; Krause, 2002). The community interventions of this time were often carried out

with state funding and the assistance of university-based researchers (Krause, 2002). However, it was in the 1980s during Pinochet's dictatorship that Chilean CP began to take on a politically and socially conscious nature, as various foreign-funded NGOs intervened in communities in order to maintain the people's political consciousness and help them defend themselves against state repression and human rights violations (Montero & Díaz, 2007). Meanwhile, several public and private universities, including Universidad de Chile, Universidad Católica de Chile, and Universidad Diego Portales, had begun establishing CPrelated courses at the undergraduate and graduate levels. Thus, a distinct Chilean CP emerged as one characterized by "social commitment, quality of life, and parallelism between practice and academia" and influenced by the Southern tradition of participatory research (Montero & Díaz, 2007, p. 77). After Chile's transition back to democracy in 1990, CP was institutionalized as a sub-discipline of psychology and widely adopted by government agencies as a normative form of psychosocial assistance; as a result, Chilean CP has lost some of its previously strong emphasis on extra-institutional social change (Krause, 2002) in favor of community mental health (Fernández, Vicencio, Vallejos & Jiménez, 2016).

Community Development in Chile

The seemingly slow growth of CD as an academic and professional field in Chile can be largely attributed to political reasons. In Chile, CD-oriented policies as well as the professional practice of CD have been negatively perceived by the public and associated with U.S. hegemonic policy toward Latin America ever since the Kennedy administration's introduction of the Alliance for Progress aid program in 1961, which established funds to assist underdeveloped areas among other economic and social development strategies designed to improve relations between the U.S. and Latin America and counteract Soviet and Cuban influences within the region (Martinez & Rodriguez, 1997). Additionally, for most of Chile's history as an independent nation, it has been a highly centralized state, and only in the last few decades with the onslaught of neoliberal policies and the increasing decentralization of state control has there been a growing interest and support for participatory, grassroots development initiatives at the local level (Martinez & Rodriguez, 1997; Foweraker, 2001). Yet, a quick review of Chilean CD literature reveals that CD-like practices and academic research have for the most part continued to avoid the name of "community development" and instead manifest as local economic development, community social work, community health, and other related disciplines. This points to the difficulty of defining an international CBR

discipline across varying sociocultural contexts and constructs and why our larger project has included all 12 applied community studies disciplines listed in footnote 1.

Ghana

Brief Sociopolitical and Economic History

Ghana is a West African country with over 25 million people and a HDI of 0.573: lower than Chile but moderate for sub-Saharan Africa. It has been described as the "paradigmatic African country" because its experiments and ensuing struggles with political and economic reforms have encapsulated the experiences of numerous other Sub-Saharan African countries (Ayee, Lofchie & Wieland, 1999, p. 1). When Ghana became the first black African nation to achieve independence from colonial rule (by Great Britain) in 1957 under the leadership of Kwame Nkrumah and the Convention People's Party (CPP), it quickly became an international symbol of African empowerment and development. At the time of its independence, Ghana was one of Africa's wealthiest and most socially advanced countries, with a cohesive society, respected civil service, and a welldeveloped economic infrastructure (Ayee et al., 1999). However, Nkrumah gradually introduced authoritarian rule and declared Ghana a one-party state in 1964 to curb growing resistance to his Marxist reforms and rapid industrialization policies, which led to disastrous economic consequences and deep national debt (McLaughlin & Owutsu-Ansah, 1995). After a military coup ended the Nkrumah regime in 1966, Ghana was subsequently governed by an alternating series of military and civilian governments, leading up to the current Fourth Republic (from 1993). During the period of 1983–1992, the People's National Democratic Congress (PNDC) began to institute neoliberal structural adjustment reforms with the aid of the International Monetary Fund, which previous administrations had been wary of (Ayee et al., 1999). Although Ghana has seen considerable economic growth since then, the wellbeing of most Ghanaians in the lower classes has not improved significantly, and poverty remains widespread (Ayelazuno, 2013).

Community Psychology in Ghana

Akotia and Barimah (2007), who are among the very small number of community psychologists in Ghana, note that the field is currently relatively underdeveloped within Ghana but has a promising future. At its early stages, CP practices emerged within the activities of NGOs to address social and economic welfare issues, exacerbated by the sociopolitical and economic crises of the 1970s and 1980s, and the breakdown of traditional extended

family structures stemming from mass industrialization and urbanization. These NGO initiatives mainly focused on "advocacy, empowerment, self-help projects, poverty reduction, health, capacity-building, environmental degradation, and research with a bias toward the rural areas" (Akotia & Barimah, 2007, p. 408). Akotia and Barimah, who both received their Master's degrees in CP from Wilfrid Laurier University in Canada, established Ghana's first and only CP university course in 1996 at the University of Ghana, in consultation with faculty from their alma mater. They note that this North American expression of CP has been a "natural" fit with Ghana's indigenous family and community values, which emphasize social support and collective action, while the focus on prevention and empowerment is relevant and important for addressing Ghana's health and development challenges (p. 410). To date, CP has not yet been professionalized in Ghana or expanded in formal academia beyond the single undergraduate course at the University of Ghana, and due to the scarcity of CP practitioners, remains for the most part constrained to classroom and theoretical research settings. However, graduates of the CP course often work in related fields, namely CD and social work. Despite this relatively slow development, the authors are optimistic that CP will gain increasing traction as a formalized field to tackle the growing psychosocial needs in the country, for which government health programs are currently unequipped to address (Akotia & Barimah, 2007).

Community Development in Ghana

On the other hand, the formalized field of CD has a much longer and practice-based history in Ghana. One of the earliest forms of organized CD was carried out by the Department of Social Welfare and Community Development, instituted by the British colonial government in 1948, in the form of mass literacy education and self-help initiatives aimed at facilitating modernization (Abloh & Ameyaw, 1997; Baffoe & Dako-Gyeke, 2014). These policies built upon earlier expressions of informal CD carried out by religious missionaries as well as indigenous resources and traditions of mutual aid and bottom-up action (Abloh & Ameyaw, 1997). Since independence, CD implementation by the state has been affected by changing ideologies and numerous departmental reorganizations, but CD practice has, at its core, remained driven by both top-down and bottom-up efforts (Bonye, Aasoglenang & Owusu-Sekyere, 2013). The academic concentration of CD is also growing rapidly as part of the broader field of development studies in the Universities of Ghana and Cape Coast and the Ghana Institute of Management and Public Administration among others, with influences from various social sciences (Baffoe & Dako-Gyeke, 2014). Moreover, in 1992, a fifth public

university fully dedicated to expanding the field—the University of Development Studies—was established, including specific Associate's and Master's programs dedicated to CD sciences (Baffoe & Dako-Gyeke, 2014; UDS, 2014; UDS, 2015). In 2004, UDS also founded the interdisciplinary Ghana Journal of Development Studies, which regularly publishes CD-focused articles from researchers and practitioners (UDS, 2013).

Summary and Case-study Comparison

From the narratives describing differential the development of CP and CD in Chile and Ghana, it becomes clear that these differences can be largely explained by the complex interplay of sociopolitical, historical, and cultural factors by which these disciplines were practiced and, in some cases, formalized. In Chile, the strong and pervasive development of CP was, at least in its incipient forms, tied to a popular, endogenous consciousness of social change and a willingness to critically question and resist the state in the context of extreme political repression. CD, on the other hand, was viewed with less enthusiasm because it was perceived as an exogenous force, associated with the hegemonic meddling of the United States. Grassroots activity, then, helps to explain much of the development of Chilean CP but not CD. Ghana, which is a more recently independent nation with a lower level of social and economic development, exhibits a slightly different pattern. Both CD and CP have been introduced by colonial forces of various forms— CD by the policies of the British colonial administration, and CP through a more limited and recent intellectual influence through North American training of Ghanaian graduate students. However, the Ghanaian public has been more willing to collaborate with the state and other institutional actors for the purposes of CD, poverty reduction, and nation-building. Across both countries, CD as an interdisciplinary, practice-based field is more closely linked to government policy than is CP. Moreover, in cases where a strong CBR discipline (CD or CP) developed, grassroots social activity and civil society organizations played an important role for establishing norms of collective community action and providing continued platforms for CP and CD activity to push back on repressive state policies.

Discussion

This mixed-method study explored the role of past nonviolent action (grassroots activism) in facilitating the global development of formalized community psychology (CP) and community development (CD): two examples of

community-based research (CBR) disciplines aiming to foster social and community change. We constructed and tested a conceptual model (Fig. 1) positively predicting the current strength of formalized CBR disciplines in a given country from the antecedent of grassroots activism and three other country-level social and demographic characteristics: population size, HDI, and civil liberties. Country-level correlational and multiple regression analyses provided support for this model. With the exception of HDI (which was highly related to CP but only slightly related to CD), each of the predictors in this model was significantly and positively associated with current strength of CP and CD across a diverse sample of 97 countries (as predicted in Hypothesis 1). Moreover, grassroots activism, the primary predictor variable of interest in this study, was significantly and positively associated with the current strength of both CP and CD even after controlling for the influences of country population, HDI, and civil liberties (confirming Hypothesis 2).

Our exploratory ANOVA revealed a curvilinear relationship of social and economic development with indigenous CD with the highest levels occurring, not at the lowest levels of development, but at medium and very high levels, suggesting either that, like CP, CD has not developed in those countries that need it the most, or that where it exists in formerly less-developed countries, it has been successful in raising those countries to a moderate level of development. The lower level of CD in moderately high-HDI countries may be due to its relative lack of need in those countries and/or fewer academic resources than in the highest-HDI countries and less help by those wealthiest countries to develop CD training and research than where it is more urgently needed. Further historical case studies of specific countries are needed to test and better understand those competing explanations.

While we explored CP and CD as two specific examples within a larger category of CBR disciplines, and their strength was highly correlated across countries whereby both fields tended to be either strongly established or weakly established, many countries had very different scores between the two fields. Our suggested model also predicted more than twice as much variance in CP strength scores across countries than in CD scores. Thus, the second, case-study section of our analysis (answering research question 2) attempted to address some limitations in the quantitative model by presenting a more detailed exploration of contextual antecedents, enablers, and obstacles to CP and CD in two countries that demonstrated divergent results in levels of formal CP and CD discipline development: Chile (high CP, low CD) and Ghana (high CD, low CP). These case studies indicated that the nature and processes by which CP and CD emerged or stagnated within each country depended on a complex combination

of factors including the forces of political and intellectual colonialism by Northern nations (viewed suspiciously in Chile but more accepted for the sake of development and progress in Ghana), whether or not top-down government policies were integrated with traditions of bottom-up action (e.g., CD in Ghana and CP in Chile), and developments in related social science disciplines.

The finding that socioeconomic development (HDI) was a strong, positive linear predictor for the development of CP but had a more complex influence on the development of CD is not surprising given the divergent historical roots and influences for each of these disciplines. While CP represents a small sub-discipline of psychology and evolved largely out of psychologists' dissatisfaction with mainstream social science methods for addressing the roots of social problems—and wealthier countries might be expected to have more resources to fund academic research programs and publications—the professional field of CD has been shaped by a diverse set of international practices and players, most of them outside of academia. Particularly in lower income countries like Ghana, CD has often been implemented as a part of a regional or national poverty reduction strategy by government agencies and international NGOs, which tend to favor large-scale technological and infrastructure interventions and include community participation almost as an afterthought. As we observed in the case studies, this trend created general resistance in Chile against CD policies and CD as a professionalized practice because they were seen as an expression of hegemonic U.S. international economic development policy; in Ghana, however, top-down development strategies have also encouraged and been complemented by local community-driven development initiatives. Moreover, it is important to note that CD as conceptualized in our study specifically referred to the formalized academic and professional field of CD (including university course offerings and programs, publications, and professional organizations) which, compared to informal practices of CD such as those practiced by local community groups and NGOs, would be expected to establish itself more easily in countries with greater resources for academic and professional research—hence the positive, though small, relationship between HDI and CD in our study.

Interestingly, our case-study countries Chile and Ghana serve as archetypes of their respective regions to a certain degree, in regard to socio-historical trends as well as the nature of their fields of CD and CP. Like Chile, many other countries in the Latin American region are also characterized by high economic and social inequality and in their recent history have experienced much political and social turmoil, which have alternatively facilitated and repressed the development of politically and socially

conscious forms of community practice (Montero, 1996). Moreover, there has been pushback against Northern forms of development and colonial dependency throughout the region. In our quantitative analysis, Chile, Brazil, Argentina, Uruguay, Paraguay, Venezuela, Bolivia, Peru, and Puerto Rico all received CP ratings at least two higher than their CD ratings; however, the other nine out of 17 total Latin American countries in our sample had closer ratings between the two disciplines, or higher CD ratings. Similarly, Ghana is representative of many Sub-Saharan African countries in that though rich in natural resources, it has struggled throughout in the past century with colonial and postcolonial dependency while undergoing many experimental political and economic reforms (Ayee et al., 1999). Consequently, CD, often initiated by external development actors and widespread across lowincome countries, has become much more prominent across the region than the much smaller and more specific field of CP which emerges out of established mainstream psychology. A CP program, professional association or journal requires a critical mass of interest to develop first. As expected, with the exception of some of the Latin American countries above, CD tends to be more formalized and established as a discipline than CP across the global South including Sub-Saharan Africa. Yet, the experiences of these two countries cannot reflect the large variability among countries in our sample, even within the same regions, for both predictive and outcome variable values, even within the same regions. We note also that two countries may have limited representability for countries in other regions or continents including North America, Europe, and Asia Pacific.

Contributions to Theory and Practice in Community-Based Research

While previous reviews and studies have investigated and outlined various factors promoting and hindering the development of CP, CD, and other community-based research disciplines (e.g., Montero, 1996; Reich et al., 2007; Sheikheldin & Devlin, 2015; Warren, 1970), this mixed-method study is the first to attempt to measure and quantify the strength of various CBR disciplines internationally and to construct and test a model for predicting the development of these disciplines. Many of our findings confirmed trends described by previous literature. For example, greater civil liberties often allow for socially conscious community-based disciplines like CP to grow and establish themselves as formalized fields of practice (Montero, 1996; Reich et al., 2007) and social movements, whether among psychologists (in the case of CP's antecedent) and other intellectual elites, or among those in disadvantaged communities, emerge and grow often

because of increasing societal prosperity and resources (if not their equal distribution) which then lead to higher expectations about what society should be like (McAdam et al., 1988). Other trends, such as the historical role of periods of political repression in encouraging the development of politically conscious, critical forms of CBR, were described in our case studies, but not in our quantitative model (see Directions for Future Research, below).

Moreover, our finding that countries with higher levels of past nonviolent grassroots activism were also more likely to have established CP and CD disciplines, regardless of population size, social and economic development, and the strength of civil liberties, has important implications for conceptualizing CBR's role as a product of and mechanism for social change efforts. While a possible criticism against formalized CBR may be that the involvement of academics and professional practitioners of social change efforts is unnecessary in countries where individuals and communities are already active in initiating bottom-up, grassroots change, this study suggests that it is in those countries where grassroots activity is already strong that CBR practices, particularly CP, emerge as a knowledge generation tool to inform social change efforts and share insights gained from local experiences. For instance, while the ideals of participation, empowerment, and bottom-up change pervade the rhetoric of public agencies and other development and social change organizations, the effectiveness of so-called participatory initiatives is hindered by divergent understandings and lack of systematic analysis of what such ideals entail in theory and practice (Cornwall, 2008; Mansuri & Rao, 2012; Oakley, 1995). CBR has the potential to foster the sort of critical theoretical and practical analysis currently lacking in the majority of participatory development initiatives, providing the "clarity through specificity" that is needed for participatory practices to foster truly democratizing social change (Cohen & Uphoff, 1980, p. 213). Yet, CBR practitioners and researchers must also be self-reflective and critical about both the benefits and hindrances that formalization of CP and CD practices, for example, may bring about, and the tensions between "invited" and "autonomous" forms of participation (Cornwall, 2008, p. 282).

Another important finding of this study supported by previous literature is that there are multiple pathways (including both bottom-up and top-down processes) to the development of various CBR disciplines, including CP and CD. In some countries, CP and CD grew naturally out of indigenous practices and noninstitutional social and political movements; in others, they were a product of colonial or postcolonial influences from North American and Western European nations. In addition to political colonization, Reich et al. (2007) note that "intellectual

colonization" has also been significant for the development of CP in many non-Western countries: specifically, the education of many foreign researchers in Western institutions, the disproportionate number of Western publications, and Western funding of research and community action in non-Western countries (Reich et al., 2007, p. 424). For example, our case studies suggest that one of the largest reasons the regression model was less predictive of CD than CP is that CD as a field has had closer relationships to top-down development interventions from colonial or hegemonic actors, whether it be British colonial policy in Ghana or American diplomatic policy in Chile. Thus, while researchers and institutions from countries with more established CBR fields may play a valuable role in helping to introduce and develop CBR disciplines in other countries with low levels of formalized community practices, it is crucial that these countries ultimately develop their own expressions of CBR that are sensitive to and tailored to the local social and cultural context.

Limitations and Directions for Future Research

This study had a number of methodological limitations that necessitate a cautious interpretation of these results. While our sample of countries was quite large, encompassing almost all countries with populations of 10 million or larger and several smaller countries, nonrandom sampling likely led to some bias in our results. For example, our estimates of the overall strength of CP across countries were biased upward because all known countries with strong CP were included in the sample, regardless of population size, for the purpose of exploring the development of this relatively small sub-discipline of psychology. Additionally, the scale used to rate the strength of CP and CD across countries has not been evaluated for its internal and external validity, and it is unclear how accurately the evidence directly accessible to and interpretable by our research team reflected the actual state of various CBR disciplines across our set of countries. Definitions and classifications of various forms of community research and practice may also differ across countries, so that one country which appears to have a low presence of CD on our rating scale, for example, may actually have a strong CD presence but practiced within other fields such as community social work, community education, and public administration.

Even assuming that CP and CD have each been captured accurately in their own right, we recognize that they may not be the most robust representations of international CBR. As briefly noted in the "Measures and Instruments" section of our quantitative study, we selected the fields of CP and CD as we had more

complete data for them compared to other CBR fields at the time of this study and also because of the contrasting historical influences on their development as disciplines. While the focus of the present analyses is on the international development of CP and CD, future research must consider the global growth of other CBR fields. For example, public health is a much larger field internationally and has been one of the pioneering fields for CBR processes that have been adopted in CP and other disciplines (e.g., Israel, Eng, Schulz & Parker, 2005; Israel, Schulz, Parker & Becker, 1998). One challenge with studying CBR in larger fields such as public health or development economics is that much of it occurs at the societal and other population levels rather than just the community or local level. We would hypothesize that, similar to community psychology, CBR that is part of traditional scientific disciplines such as community sociology, applied/development anthropology, and development economics is more likely to be found in larger and wealthier countries whereas the more applied fields (community development, public health, community social work, public administration, urban/regional planning, popular education/adult literacy for community development, and religious studies for community action) are needed in every country and so are less dependent on national wealth. Future analyses from the larger Global Development of Applied Community Studies Project will provide a fuller understanding of how CP and CD fit into the larger global development of CBR and the replicability of this study's findings for other disciplines. Future research should also continue to develop and test reliable methods to assess the current development of CBR disciplines across countries and perhaps add a composite scale of CBR across disciplines, recognizing that CBR by its nature is often interdisciplinary.

Similar issues of representativeness and generalization are present with our past nonviolent action (grassroots activism) variable. Nonviolent action, which includes a specific element of political resistance and noncooperation, represents only one type of grassroots activism and autonomous participation. Moreover, as noted by the creators of the Global Nonviolent Action Database, their sampling methods were also nonrandom, limited by language barriers and information available to researchers on the Internet and other secondary sources, and disproportionally focused on the U.S. experience. Thus, a reliable and internationally representative measure for grassroots activism needs to be conceptualized and developed in order to more accurately test the relationships between these autonomous participation processes and related social change phenomena, including CBR.

Lastly, many possible predictors of CBR were not tested in this study for the sake of model parsimony (due

to limited statistical power at the country level) and clarity. Further studies are needed to evaluate and test other factors that predict the global development of CBR, including the impact of civil liberties at earlier points of time in history on current CBR (using the annual civil liberties survey conducted by Freedom House and other sources), possible curvilinear relationships between HDI and CBR (or between other variables) not detected in our analysis, the quantitative influence of neighboring or colonizing countries' CBR practices, and other regional and socio-historical trends related to the development and practice of CBR. A particularly important variable that has not been captured in our quantitative analysis, which seems to account for the lower predictability of our regression model for CD than for CP, and which merits further exploration is the role of top-down technological, economic and social interventions led by multilateral and bilateral development funders in shaping research and practice in CD and other CBR disciplines—whether encouraging other professionalized development efforts including CBR or creating aversion to the field such as in Chilean CD. One reason the influence of foreign assistance from developed nations and multi-lateral organizations was excluded from this study is that we defined and operationalized community development as development interventions organized, and research focused, at the local level and the vast majority of multi-lateral structural assistance is given at the country level; in fact by charter the World Bank, IMF, and most government sources are required to only channel aid through national governments, not locally. Future research, with a larger sample of countries, will analyze the influence of all forms of foreign aid from Organization for Economic Cooperation and Development (OECD) countries on all fields of applied community studies in less-developed countries, and may also take advantage of more sophisticated and comprehensive modeling strategies, such as path analysis and structural equation modeling.

Concluding Comments

Community-based research holds enormous potential for addressing the complex challenges faced by individuals, communities, and entire societies in the twenty-first century. Domestically and internationally, there remain great, unmet needs for socially engaged, locally relevant research targeting social problems and closing the theory-practice divide (e.g., Rhodes, 2007). Whether such community-based knowledge generation activities are informally or formally practiced under the label of CBR, they can benefit from greater dialogue and collaboration between various researchers and practitioners involved in such endeavors

worldwide, with non-Western researchers and practitioners particularly playing a larger role in contributing to the theoretical and practical foundations of CBR as a global phenomenon. In doing so, CBR can realize its promise as an emerging global force to complement and strengthen autonomous participation and grassroots initiatives that have historically shaped social change and development.

Acknowledgment We thank Briana Cox, Sara Eccleston, Rose Gittell, Dominique Lyew, Nikolay Mihaylov, Valeriya Mihaylova, and Zhang Yong for their help researching and compiling the quantitative data used here. This study was supported in part by the Schwab Fund for Human & Organizational Development at Vanderbilt University.

References

- Abloh, F., & Ameyaw, S. (1997). Ghana. In H. Campfens (Ed.), Community development around the world: Practice, theory, research, training (pp. 275–291). Canada: University of Toronto Press.
- Akotia, C.S., & Barimah, K.B. (2007). History of community psychology in Ghana. In S.M. Reich, M. Riemer, I. Prilleltensky & M. Montero (Eds.), *International community psychology: History and theories* (pp. 407–414). New York: Springer.
- Alfaro, J. (2000). Discusiones en Psicología Comunitaria. Santiago, Chile: Universidad Diego Portales.
- Angelique, H.L., & Culley, M.R. (2007). History and theory of community psychology: An international perspective of community psychology in the United States: Returning to political, critical, and ecological roots. In S.M. Reich, M. Riemer, L. Prilleltensky & M. Montero (Eds.), *International commu*nity psychology: History and theories (pp. 37–62). New York: Springer.
- Atalas, S.F. (2003). Academic dependency and the global division of labour in the social sciences. *Sociology*, *51*, 599–613.
- Ayee, J., Lofchie, M., & Wieland, C. (1999). Government-business relations in Ghana: The experience with consultative mechanisms (Private Sector Development Occasional Paper No. 36). Washington, DC: World Bank.
- Ayelazuno, J.A. (2013). Neoliberalism and growth without development in Ghana: A case for state-led industrialization. *Journal of Asian and African Studies*, 49, 80–99.
- Baffoe, M., & Dako-Gyeke, M. (2014). Social work practice in Ghana: Changing dynamics, challenges and opportunities. In S. Agyei-Mensah, J.A. Ayee & A.D. Oduro (Eds.), Changing perspectives on the social sciences in Ghana (pp. 113–134). New York: Springer.
- Ball, P. (2000). State terror, constitutional traditions, and national human rights movements: A cross-national quantitative comparison. In J.A. Guidry, M.D. Kennedy & M.N. Zald (Eds.), Globalizations and social movements: Culture, power, and the transnational public sphere (pp. 54–75). Ann Arbor, MI: University of Michigan Press.
- Barton, J.R. (1999). Chile. In J. Buxton & N. Phillips (Eds.), *Case studies in Latin American political economy* (pp. 62–81). New York: Manchester University Press.
- Bonye, S.Z., Aasoglenang, A.T., & Owusu-Sekyere, E. (2013). Community development in Ghana: Theory and practice. *European Scientific Journal*, 9, 79–101.
- Brandão, C.R. (2005). Participatory research and participation in research. A look between times and spaces from Latin America. *International Journal of Action Research*, 1, 43–68.

- Buechler, S.M. (1995). New social movement theories. *The Sociological Quarterly*, 36, 441–464.
- Central Intelligence Agency (CIA). (2015). Country comparison: Population. The World Factbook. Available from: https:// www.cia.gov/library/publications/the-world- factbook/rankorder/ 2119rank.html [last accessed November 30 2015].
- Christenson, J. (1989). Themes of community development. In J. Christenson & J.W. Robinson (Eds.), Community development in perspective (pp. 26–47). Aimes, IA: Iowa State University Press.
- Cohen, J.M., & Uphoff, N.T. (1980). Participation's place in rural development: Seeking clarity through specificity. World Development, 8, 213–235.
- Collier, S., & Sater, W.F. (2004). *A history of Chile, 1808–2002*. New York: Cambridge University Press.
- Cornwall, A. (2008). Unpacking "participation": Models, meanings and practices. Community Development Journal, 43, 269–283.
- Fals-Borda, O. (1987). The application of participatory actionresearch in Latin America. *International Sociology*, 2, 329–347.
- Fernández, P.G., Vicencio, R.D., Vallejos, M.S., & Jiménez, P.V. (2016). Prácticas Anti-estigma como Eje Articulador del Trabajo Comunitario en Salud Mental/Anti-stigma Practices as the Linchpin of Community Work in Mental Health. Global Journal of Community Psychology Practice, 7(1S), 1–15.
- Flicker, S., Savan, B., McGrath, M., Kolenda, B., & Mildenberger, M. (2008). "If you could change one thing." What communitybased researchers wish they could have done differently. Community Development Journal, 43, 239–253.
- Foweraker, J., (2001). Grassroots movements, political activism and social development in Latin America: A comparison of Chile and Brazil (UNRISD Programme Papers on Civil Society and Social Movements No. 4). Geneva, Switzerland: United Nations Research Institute for Social Development.
- Freedom House. (2001). Methodology and checklist questions. *Freedom in the World 2001*. Available from: https://freedomhouse.org/report/freedom-world-2001/methodology-and-checklist-questions [last accessed November 30 2015].
- Freedom House. (2015a). Freedom in the World country ratings, 1972-2014 [Data set]. Available from: https://freedomhouse.org/report-types/freedom-world [last accessed November 30 2015].
- Freedom House. (2015b). Methodology. Freedom in the World 2015. Available from: https://freedomhouse.org/report/freedomworld-2015/methodology [last accessed November 30 2015].
- Freire, P. (1972). *Pedagogy of the oppressed*. New York: Herder and Herder.
- Friedmann, J. (1992). Empowerment: The politics of alternative development. Cambridge, MA: Blackwell.
- Hautekeur, G. (2005). Community development in Europe. *Community Development Journal*, 40, 385–398.
- International Association for Community Development (IACD). (2015). IACD members. IACD. Available from: http://www.iacdglobal.org/about/our-members [last accessed November 18 2015].
- Israel, B.A., Eng, E., Schulz, A.J., & Parker, E.A. (2005). Methods in community-based participatory research for health. San Francisco: Jossey-Bass.
- Israel, B.A., Schulz, A.J., Parker, E.A., & Becker, A.B. (1998).
 Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, 19, 173–202.
- Krause, M. (2002). The institutionalization of community interventions in Chile: Characteristics and contradictions. *American Journal of Community Psychology*, 30, 547–570.
- Lakey, G. (2011a, August 10). Limitations of the database. Global Nonviolent Action Database. Available from: http://nvdatabase. swarthmore.edu/content/limitations-database [last accessed December 19 2015].

- Lakey, G. (2011b, August 18). Nonviolent action defined. Global Nonviolent Action Database. Available from: http://nvdatabase. swarthmore.edu/content/nonviolent-action-defined [last accessed December 19 2015].
- Lakey, G. (2011c, August 19). Coding definitions. Global Nonviolent Action Database. Available from: http://nvdatabase.swarth more.edu/content/coding-definitions-0 [last accessed December 19 2015].
- Levine, M., Perkins, D.D., & Perkins, D.V. (2005). Principles of community psychology: Perspectives and applications. New York: Oxford University Press.
- Mansuri, G., & Rao, V. (2012). Localizing development: Does participation work? A World Bank policy report. Washington, DC: World Bank.
- Martinez, T.Q., & Rodriguez, D.P. (1997). Chile. In H. Campfens (Ed.), Community development around the world: Practice, theory, research, training. Toronto, Canada: University of Toronto Press.
- McAdam, D. (1999). Political process and the development of black insurgency, 1930–1970 (2nd edn). Chicago: University of Chicago Press.
- McAdam, D., McCarthy, J.D., & Zald, M.N. (1988). Social movements. In N. Smelser (Ed.), *Handbook of sociology* (pp. 695–738). Newsbury Park, CA: Sage.
- McLaughlin, J.L., & Owutsu-Ansah, D. (1995). Historical setting. In L. Berry (Ed.), Ghana: A country study (3rd edn). (pp. 1–58). Washington, DC: Federal Research Division, Library of Congress.
- Montero, M. (1996). Parallel lives: Community psychology in Latin America and the United States. American Journal of Community Psychology, 24, 589–605.
- Montero, M., & Díaz, N.V. (2007). Latin American community psychology: Development, implications, and challenges within a social change agenda. In S.M. Reich, M. Riemer, I. Prilleltensky & M. Montero (Eds.), *International community psychology: History and theories* (pp. 63–98). New York: Springer.
- Munck, R. (2014). Community-based research: Genealogy and prospects. In R. Munck, L. McIlrath, B. Hall & R. Tandon (Eds.), Higher education and community-based research: Creating a global vision (pp. 11–26). New York: Palgrave Macmillan.
- Nsamenang, A.B., Fru, F.N., & Browne, M.A. (2007). The roots of community psychology in Cameroon. In S.M. Reich, M. Riemer, I. Prilleltensky & M. Montero (Eds.), *International community psychology: History and theories* (pp. 392–406). New York: Springer.
- Oakley, P. (1995). People's participation in development projects: A critical review of current theory and practice. Oxford, U.K.: International NGO Training and Research Center (INTRAC). Available from: INTRAC website: http://www.intrac.org/data/files/resources/128/OPS-7-Peoples-Participation-in-Development-Projects.pdf [last accessed November 17 2015].
- Perkins, D.D. (2009). International community psychology: Development and challenges. American Journal of Community Psychology, 44, 76–79.
- Perkins, D.D., & Schensul, J.J. (2016). Interdisciplinary contributions to community psychology and transdisciplinary potentials. In M.A. Bond, C.B. Keys & I. Serrano-García (Eds.), *Handbook of community psychology* (2nd edn). (pp. 189–209). Washington, DC: American Psychological Association.
- Reich, S.M., Riemer, M., Prilleltensky, I., & Montero, M. (2007). Conclusion: History and theories of community psychology around the globe. In S.M. Reich, M. Riemer, L. Prilleltensky & M. Montero (Eds.), *International community psychology: His*tory and theories (pp. 415–436). New York: Springer.
- Rhodes, D.L. (2007). Social research and social change: Meeting the challenge of gender inequality and sexual abuse. *Harvard Journal of Law and Gender*, 30, 11–24.

- Robinson, J.W. Jr, & Green, G.P. (2011). Introduction to community development: Theory, practice and service-learning. Thousand Oaks, CA: SAGE.
- Sanders, I. (1970). The concept of community development. In L.J. Carey (Ed.), Community development as a process (pp. 9–31). Columbia, NY: University of Missouri.
- Santinello, M., Martini, E.R., & Perkins, D.D. (2010). Community psychology in Italy: Introduction and prospects. *Journal of Prevention and Intervention in the Community*, 38, 1–7.
- Sharp, G. (1973). The politics of nonviolent action. Boston: Porter Sargent.
- Sheikheldin, G.H., & Devlin, J.F. (2015). Community development as a double movement. *International Journal of Community Development*, 3, 1–16.
- Smithey, L., & Kurtz, L.R. (1999). We have bare hands: Nonviolent social movements in the Soviet Bloc. In S. Zunes, L. Kurtz & S.B. Asher (Eds.), Nonviolent social movements: A geographical perspective (pp. 96–124). Malden, MA: Blackwell.
- Smyth, R. (2004). The roots of community development in Colonial Office policy and practice in Africa. Social Policy and Administration, 38, 418–436.
- Swarthmore College. (2015). *Global Nonviolent Action Database*. Available from: http://nvdatabase.swarthmore.edu/ [last accessed November 2 2015].
- United Nations Development Programme (UNDP). (2013). Table 1: Human Development Index trends, 1980-2013. Human Development Report 2014 Statistical Tables [Data set]. Available from: http://hdr.undp.org/en/content/table-2-human-development-index-trends-1980-2013 [last accessed October 2 2015].
- University for Development Studies (UDS). (2013, July 23). Ghana Journal of Development Studies (GJDS). *University for Development Studies* (GJDS).

- opment Studies. Available from: http://www.uds.edu.gh/research/gjds [last accessed December 11 2015].
- University for Development Studies (UDS). (2014, January 10). Post-graduate degree programmes in university for development studies. *University for Development Studies*. Available from: http://www.uds.edu.gh/academics/programmes-offered/post-grad uate-degree-programmes [last accessed December 11 2015].
- University for Development Studies (UDS). (2015, January 12). Diploma admissions. *University for Development Studies*. Available from: http://www.uds.edu.gh/academics/programmes-offered/diploma-programmes [last accessed December 11 2015].
- Wallerstein, N., & Duran, B. (2008). The theoretical, historical, and practice roots of CBPR. In M. Minkler, N. Wallerstein (Eds.), Community-based participatory research from health: From process to outcomes (2nd edn). (pp. 25–46). San Francisco: Jossey-Bass.
- Wallis, M. (1976). Community development in Kenya: Some current issues. Community Development Journal, 11, 192–198.
- Warren, R. (1970). The context of community development. In L.J. Carey (Ed.), Community development as a process (pp. 32–52). Columbia, NY: University of Missouri Press.
- World Population Review. (2015). Country populations 2015. World Population Review. Available from: http://worldpopulationrevie w.com/countries/ [last accessed November 30 2015].

Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site.

Appendix: Data Set Used for Quantitative Analysis

Afghanistan 26,023,100 0.468 2 4.5 2 0 0 1 Algeria 38,700,000 0.717 3 7.7 3 0 1 Angela 24,383,301 0.526 10 1 0 1 Argertlina 43,024,374 0.808 6 8.3 6 7 5 5 5 5 5 9 9 9 Bangladesh 157,305,000 0.558 4 6.3 6 0 6 6 8.0 14 8 5 8 15 9 9 9 8 8 15 9 9 9 9 8 6 8 3 6 0 6 6 0 6 6 0 6 6 0 0 6 8 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th>Country</th> <th>Population (CIA, 2015)</th> <th>Human Development Index (UNDP, 2013)</th> <th>Civil Liberties (Adapted from Freedom House, 2015) (1 lowest, 7 highest)</th> <th>Nonviolent Action Mean Success Score (Swarthmore College, 2015) (0-10)</th> <th>Nonviolent Action Cases (Swarthmore College, 2015)</th> <th>Strength of Community Psychology (0-10)</th> <th>Strength of Community Development (0-10)</th>	Country	Population (CIA, 2015)	Human Development Index (UNDP, 2013)	Civil Liberties (Adapted from Freedom House, 2015) (1 lowest, 7 highest)	Nonviolent Action Mean Success Score (Swarthmore College, 2015) (0-10)	Nonviolent Action Cases (Swarthmore College, 2015)	Strength of Community Psychology (0-10)	Strength of Community Development (0-10)
Algeria 38,700,000 0.717 3 7,7 3 0 1 Angola 24,383,301 0.526 10 1 0 1 Angrentina 43,024,374 0.808 6 8.3 6 7 5 Australia 125,076,17 0.933 7 7.8 15 9 9 Bangladesh 157,306,000 0.558 4 6.3 6 0 6 6 Bolivia 10,027,254 0.667 5 7.2 15 7 5 Burlan Faso 17,322,796 0.388 5 6.8 2 0 0 Burlan Faso 17,322,796 0.524 2 6.0 4 0 5 Gambodia 15,184,16 0.584 3 6.0 5 1 8 Cambodia 15,184,116 0.584 3 6.0 5 1 8 Cambodia 15,184,116 0.584 3	Afghanistan	26.023.100	0.468			2	0	0
Angola	=							
Argentlina 43,024,374 0,808 6 8.3 6 7 9 9 Australia 22,507,617 0,933 7 7.8 15 9 9 Bangladesh 157,306,000 0,558 4 6.3 6 0 0 6 Bolivia 10,027,254 0,667 5 7.2 15 7 7 Brazil 202,656,788 0,744 6 8.0 14 8 5 Bulgaria 6,924,716 0,777 6 7.7 7 0 0 Burkina Faso 17,322,796 0,388 5 6.8 2 0 0 Burma/ Myanmar 15,1419,420 0,524 2 6.0 4 0 5 Cambodia 15,184,116 0,584 3 6.0 5 1 8 Cambodia 15,184,116 0,584 3 6.0 5 1 8 Cameroon 23,130,708 0,504 2 6.8 4 1 8 Canada 34,834,841 0,902 7 7.1 55 10 10 Chida 13,211,000 0,372 2 2.55 1 0 0 0 Chile 17,363,894 0,822 7 6.9 11 9 2 2 China 1,355,692,576 0,719 2 6.7 24 4 5 Colombia 64,245,276 0,711 4 6.6 4 10 7 9 Costa Rica 4,713,168 0,763 7 9.0 5 3 5 Cuba 11,210,064 0,815 2 6.6 5 3 7 Cocha Rica 4,713,168 0,763 7 8.5 2 0 4 Democratic Republic 0 10,215,000 0,861 7 8.5 2 0 0 Democratic Republic 10,378,267 0,700 5 4.5 3 2 1 Equator 15,866,700 0,711 5 7,7 10 1 7 Equator 15,865,000 0,814 7 8.8 2 8 2 1 Ethiopia 87,952,991 0,435 2 6.5 2 0 4 Ethiopia 87,952,991 0,435 2 6.5 2 0 4 Ethiopia 87,952,991 0,435 2 6.5 2 0 4 Ethiopia 87,952,991 0,435 2 6.5 9 4 3 1 Edinica 10,628,972 0,392 3 6.7 3 0 0 0 Ethiopia 10,745,655 0,428 4 7.8 7 1 3 Guinea 10,628,972 0,392 3 6.7 3 11 1 1 1 1 Indica 17,436,840 0,881 0,891 1 7 Indica 1,236,446,831 0,586 5 7,6 28 9 9 Indonesia 25,2164,800 0,684 4 8.0 4 8.0 4 8.0 10 Ireland 4,595,000 0,715 5 2.0 1 1 4 3 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 4 4 Imanica 2930050 0,715 5 2.0 1 1 1 4 1 Imanica 2930050 0,715 5 2.0 1 1 1 4 1 Imanica 2930050 0,715 5 2.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=			J				
Australia	_			6				
Bangladesh 157,306,000 0.558 4 6.3 6 0 6 6 Bolivia 10,027,254 0.667 5 7.2 15 7 5 Brazil 202,656,788 0.744 6 8.0 114 8 5 5 Bulgaria 6,924,716 0.777 6 8.0 114 8 5 Bulgaria 6,924,716 0.777 6 7.7 7 0 0 0 0 Burrian Faso 17,322,796 0.388 5 6.8 2 0 0 0 Burrian Faso 17,322,796 0.524 2 6.0 4 0 5 1 8 8 Cameron 23,130,708 0.504 2 6.8 4 1 8 8 Cameroon 23,130,708 0.504 2 6.8 4 1 8 8 Cameroon 23,130,708 0.504 2 6.8 4 1 1 8 8 Cameroon 23,130,708 0.504 2 6.8 4 1 1 8 8 Cameroon 23,130,708 0.504 2 6.8 4 1 1 8 8 Camedad 34,834,841 0.992 7 7.1 55 10 10 10 Chale 17,363,894 0.822 7 6.9 11 99 2 China 13,215,000 7.719 2 6.7 24 4 7 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 5 Cuba 11,210,064 0.815 2 6.6 5 3 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 3 2 1 Colombia 10,373,267 0.700 5 4.5 3 2 0 0 4 Colombia Republic 10,378,267 0.701 5 7.7 10 1 7 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 3 2 2 0 0 7 7 Costa Rica 4,713,168 0.763 7 9.0 5 8 2 8 2 1 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 7 8 5 2 0 0 4 1 7 7 8 5 1 7 7 1 0 1 7 7 8 5 1 7 7 1 0 1 7 7 8 5 1 7 7 1 0 1 7 7 8 5 1 7 7 1 0 1 7 7 8 5 1 7 7 1 0 1 7 7 8 7 7 1 0 1 7 7 8 7 7 1 1 1 7 1 7 8 7 7 1 1 1 1 1	-							
Bolivia 10,027,254 0.667 5 7.2 15 7 5 Brazil 202,656,788 0.744 6 8.0 14 8 5 Bulgaria 6,924,716 0.777 6 7.7 7 0 0 Burkina Faso 17,322,796 0.388 5 6.8 2 0 0 Burma/ 51,419,420 0.524 2 6.0 4 0 5 Burma/ 51,419,420 0.584 3 6.0 5 1 8 Cambodia 15,184,116 0.584 3 6.0 5 1 8 Cameroon 23,130,708 0.504 2 6.8 4 1 8 Cameroon 23,130,708 0.504 2 2 2.5 1 0 0 Chad 13,211,000 0.372 2 2.5 1 0 0 Chad 13,211,000 0.372 2 2.5 1 0 0 Chille 17,363,894 0.822 7 6.9 11 9 2 Chilina 1,355,692,576 0.719 2 6.7 24 4 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 Cogen Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic 10,521,600 0.861 7 8.5 2 0 0 Compo Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.701 5 8.2 8 2 1 Ethiopia 87,952,991 0.682 3 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7 7 8 17 6 4 Hong Kong 7,112,688 0.891 1 1 1 1 1 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 15,286,790 0.749 2 7 7 7 7 7 7 7 7 Imagia 2,74,03,388 0.890 7 5.3 3 0 0 India 1,236,340,631 0.586 5 7.6 28 9 9 Indonesia 2,52,600 0.916 7 5.3 3 0 0 India 1,236,340,631 0.586 5 7.6 28 9 9 Indonesia 2,52,600 0.916 7 5.3 3 0 0 India 1,736,700 0.749 2 7 7 7 7 7 7 7 7 Imagia 2,90000 0.156 7 5.3 3 0 0 India 1,736,700 0.749 2								
Brazill 202,656,788 0.744 6 8.0 14 8 5 Bulgaria 6,924,716 0.777 6 7.7 7 0 0 Burral 6,924,716 0.777 6 7.7 7 0 0 Burral 73,322,796 0.388 5 6.8 2 0 0 0 Burral 17,322,796 0.388 5 6.8 2 0 0 0 Burral 51,4419,420 0.524 2 6.0 4 0 5 Burral 51,4419,420 0.524 2 6.0 4 0 0 5 Myanmar 6	_							
Bulgaria 6,924,716 0.777 6 7.7 7 0 0 0 Burkina Faso 17,322,796 0.388 5 6.8 2 0 0 0 Burkina Faso 17,322,796 0.388 5 6.8 2 0 0 0 Burkina Faso 17,322,796 0.388 5 6.8 2 0 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								
Burkina Faso 17,322,796 0.388 5 6.8 2 0 0 0 8								
Burma/	•							
Myanmar 51,419,420 0.524 2 6.0 4 0 5 Cambodia 15,184,116 0.584 3 6.0 5 1 8 Cameroon 23,130,708 0.504 2 6.8 4 1 8 Canada 34,834,841 0.902 7 7.1 55 10 10 Chile 13,211,000 0.372 2 2.5 1 0 0 Chile 17,363,894 0.822 7 6.9 11 9 2 China 1,355,692,576 0.719 2 6.7 24 4 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 <		17,322,730	0.388	3	0.8	2	O	O
Cameroon 23,130,708 0.504 2 6.8 4 1 8 8 Canada 34,834,841 0.902 7 7.1 55 10 10 10 Chad 13,211,000 0.372 2 2 2.5 1 0 0 0 Chile 17,363,894 0.822 7 6.9 11 9 2 2 China 1,355,692,576 0.719 2 6.7 24 4 5 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 7 Czech Republic 10,521,600 0.861 7 8.5 2 0.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 0 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 0 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 7 Ezypt 18,895,099 0.682 3 8.2 8 2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 0 4 4 France 66,259,012 0.884 7 8.8 14 2 3 3 Germany 80,996,685 0.911 7 7.8 17 6 4 3 1 4 2 3 3 Germany 80,996,685 0.911 7 7.8 17 6 4 4 3 1 4 2 3 3 Germany 80,996,685 0.911 7 7 7.8 17 6 4 4 3 1 4 4 3 1 4 4 4 5 4 3 1 4 4 5 4 4	Myanmar		0.524	2	6.0	4	0	5
Canada 34,834,841 0.902 7 7.1 55 10 10 Chad 13,211,000 0.372 2 2.5 1 0 0 Chile 17,363,894 0.822 7 6.9 11 9 2 China 1,355,692,576 0.719 2 6.7 24 4 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 7 Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic 10,538,267 0.700 5 4.5 3 2 1 Corgo 15,866,700 0.711 5 7.7 10 1 7 Eypt 8 (59,999) 0.682 3	Cambodia	15,184,116		3		5	1	8
Chaid 13,211,000 0.372 2 2.55 1 0 0 0 Chile 17,363,894 0.822 7 6.9 11 9 2 Chile 17,363,894 0.822 7 6.9 11 9 2 Chile 17,363,894 0.822 7 6.9 11 9 2 Chile 1,355,692,576 0.719 2 6.7 24 4 5 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 0 4 Democratic Republic of Congo 69,360,000 0.338 2 7 7.0 2 0 7 Congo Congo 15,866,700 0.711 5 7.7 10 1 7 7 7 7 10 1 1 7 7 1 7 1 1 1 1 1	Cameroon	23,130,708	0.504	2	6.8	4	1	8
Chile 17,363,894 0.822 7 6.9 11 9 2 China 1,355,692,576 0.719 2 6.7 24 4 5 Colombia 46,245,297 0.711 4 6.4 10 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 0 4 Democratic Republic of 69,360,000 0.338 2 7.0 2 0 7 Compo minican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Gerece 10,992,589 0.883 6 5.9 4 3 1 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Indiana 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 1,236,344,631 0.586 6 6.0 13 1 1 1 Italy 61680122 0.872 7 7.4 9 10 1 Iran 77,887,900 0.916 7 5.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 1,236,344,631 0.586 6 6.0 13 1 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Iran 77,887,900 0.916 7 5.3 3 0 0 Ireland 1,271,03,388 0.890 7 8.3 6 6 5 9 9 Kazakhstan 17,353,700 0.757 8 8 0 6 5 9 9 Kazakhstan 17,353,700 0.757 8 8 0 6 5 9 9 Kazakhstan 17,353,700 0.757 8 8 0 6 5 9 9 Kazakhstan 17,353,700 0.757 8 9 0.757	Canada	34,834,841	0.902	7	7.1	55	10	10
China 1,355,692,576 0.719 2 6.7 24 4 5 Colombia 46,245,297 0.711 4 6.4 10 7 99 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 7 Cuba 11,210,064 0.815 2 6.6 5 3 7 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 6.6 5 3 7 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 7 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 1 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 1 0 7 Czech Republic 10,378,267 0.700 5 4.5 3 2 1 0 1 1 7 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 2 1 1 0 1 1 7 7 Egypt 86,895,099 0.682 3 8.2 8 2 8 2 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Chad	13,211,000		2	2.5	1	0	0
Colombia 46,245,297 0.711 4 6.4 10 7 9 Costa Rica 4,713,168 0.763 7 9.0 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic of Congo 69,360,000 0.338 2 7.0 2 0 7 Dominican Republic of Congo 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 7 1 1 1 7 1 1 1 1 1 1 1 2 1 1<	Chile	17,363,894	0.822	7	6.9	11	9	2
Costa Rica 4,713,168 0.763 7 9.0 5 3 5 Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic of Congo 69,360,000 0.338 2 7.0 2 0 7 Dominican Republic of 15,866,700 0.711 5 7.7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 10 1 7 7 1 1 1 4 3 1	China	1,355,692,576	0.719	2	6.7	24	4	5
Cuba 11,210,064 0.815 2 6.6 5 3 7 Czech Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic of Congo 69,360,000 0.338 2 7.0 2 0 7 Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573	Colombia	46,245,297	0.711	4	6.4	10	7	9
Czech Republic 10,521,600 0.861 7 8.5 2 0 4 Democratic Republic of Congo 69,360,000 0.338 2 7.0 2 0 7 Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853	Costa Rica	4,713,168	0.763	7	9.0	5	3	5
Democratic Republic of Congo 69,360,000 0.338 2 7.0 2 0 7 Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guinea 15,806,675 0.628	Cuba	11,210,064	0.815	2	6.6	5	3	7
Congo 89,800,000 0.338 2 7.0 2 0 7 Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 4 3 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guinea 15,806,675 0.628 4 <td< td=""><td>Czech Republic</td><td>10,521,600</td><td>0.861</td><td>7</td><td>8.5</td><td>2</td><td>0</td><td>4</td></td<>	Czech Republic	10,521,600	0.861	7	8.5	2	0	4
Dominican Republic 10,378,267 0.700 5 4.5 3 2 1 Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guinea 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 <t< td=""><td>Democratic Republic of Congo</td><td>69,360,000</td><td>0.338</td><td>2</td><td>7.0</td><td>2</td><td>0</td><td>7</td></t<>	Democratic Republic of Congo	69,360,000	0.338	2	7.0	2	0	7
Ecuador 15,866,700 0.711 5 7.7 10 1 7 Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3		10,378,267	0.700	5	4.5	3	2	1
Egypt 86,895,099 0.682 3 8.2 8 4 3 El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4 8.0	Ecuador							
El Salvador 6,401,240 0.662 5 8.2 8 2 1 Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 0 Ireland 4,595,000 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Ethiopia 87,952,991 0.435 2 6.5 2 0 4 France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4<	El Salvador							
France 66,259,012 0.884 7 8.8 14 2 3 Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guitemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iraq 36,004,552 0.642 2 7.3 3 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Germany 80,996,685 0.911 7 7.8 17 6 4 Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iraq 36,004,552 0.642 2 7.3 11 1 1 Iraq 4,595,000 0.916 7 5.3 3	·							
Ghana 25,758,108 0.573 6 6.9 5 2 8 Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iraq 7,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13								
Greece 10,992,589 0.853 6 5.9 4 3 1 Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13	•							
Guatemala 15,806,675 0.628 4 7.8 7 1 3 Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 <								
Guinea 10,628,972 0.392 3 6.7 3 0 2 Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Jamaica 17,353,700 0.757 3 1								
Haiti 10,745,665 0.471 3 8.3 4 0 0 Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Hong Kong 7,112,688 0.891 4.0 1 6 4 India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
India 1,236,344,631 0.586 5 7.6 28 9 9 Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0				J				
Indonesia 252,164,800 0.684 4 8.0 4 8 10 Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0				5				
Iran 77,887,900 0.749 2 7.3 11 1 1 Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Iraq 36,004,552 0.642 2 7.3 3 0 0 Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Ireland 4,595,000 0.916 7 5.3 3 0 7 Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Israel 7,821,850 0.888 6 6.0 13 1 4 Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0	•							
Italy 61680122 0.872 7 7.4 9 10 1 Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Jamaica 2930050 0.715 5 2.0 1 4 3 Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
Japan 127,103,388 0.890 7 8.3 6 5 9 Kazakhstan 17,353,700 0.757 3 10.0 1 0 0	•							
Kazakhstan 17,353,700 0.757 3 10.0 1 0 0								
	Kenya							

	24.042.467	0.400		0.5	2	0	0
Madagascar	21,842,167	0.498	4	9.5	2	0	0
Malawi	15,805,239	0.414	4	10.0	1	3	9
Malaysia	30,398,400	0.773	4	8.0	2	7	9
Mali	16,455,903	0.407	4	9.5	2	0	0
Mexico	120,286,655	0.756	5	5.1	10	7	9
Morocco	33,434,200	0.617	4	5.9	6	0	0
Mozambique	25,041,922	0.393	5	6.7	3	4	4
Nepal	26,494,504	0.540	4	8.0	3	0	5
New Zealand	4,401,916	0.910	7	6.7	11	8	5
Nicaragua	5,675,356	0.599	5	6.0	2	2	5
Niger	17,138,707	0.337	4	4.5	2	0	0
Nigeria	178,517,000	0.504	3	6.9	8	2	8
Norway	5,147,792	0.944	7	7.1	7	4	3
Pakistan	188,117,000	0.537	3	6.8	8	3	3
Palestine	4,420,549	0.686		6.9	8	5	5
Panama	3,657,024	0.765	6	5.3	2	3	5
Paraguay	6,783,272	0.676	4	4.5	2	8	4
Peru	30,147,935	0.737	5	8.0	8	7	3
Philippines	100,539,100	0.660	5	9.2	6	6	9
Poland	38,346,279	0.834	7	7.4	8	7	8
Portugal	10,813,834	0.822	7	5.0	1	8	9
Puerto Rico	3,620,897	0.905		7.0	5	8	3
Romania	21,729,871	0.785	6	5.3	3	4	6
Russia	146,149,200	0.778	2	6.9	7	0	1
Rwanda	10,996,891	0.506	2	4.0	1	1	2
S. Africa	48,375,645	0.658	6	6.4	18	9	7
S. Korea	50,423,955	0.891	6	7.0	22	3	6
S. Sudan	11,384,393		2		0	0	0
Saudi Arabia	30,770,375	0.836	1	4.0	1	0	2
Senegal	13,508,715	0.485	6	7.9	7	0	8
Somalia	10,806,000	0.364	1		0	0	3
Spain	47,737,941	0.869	7	6.0	11	10	9
Sri Lanka	20,277,597	0.75	3	4.0	2	0	4
Sudan	37,289,406	0.473	1	9.0	2	0	7
Syria	22,915,716	0.658	1	6.8	3	0	0
Taiwan	23,410,280	0.882	6	7.0	1	4	3
Tanzania	47,421,786	0.488	5	7.5	2	2	8
Thailand	64,871,000	0.722	3	7.9	7	7	4
Tunisia	10,982,754	0.721	5	10.0	1	0	0
Turkey	81,619,392	0.759	4	7.2	8	2	3
Uganda	36,600,000	0.484	3	7.3	3	2	7
UK	63,742,977	0.892	7	7.3	32	10	10
Ukraine	42,977,367	0.734	5	8.5	4	0	0
Uruguay	3,332,972	0.790	7	7.3	3	4	1
USA	318,892,103	0.914	, 7	6.9	360	10	10
Uzbekistan	30,492,800	0.661	1	3.0	1	0	1
Venezuela	28,868,486	0.764	3	8.3	3	8	6
Vietnam	89,708,900	0.764	3	8.3 7.0		0	
			2	7.0 7.0	1		6 1
Yemen	25,956,000	0.500			2	0	1
Zambia	15,023,315	0.561	4	6.0	3	1	4
Zimbabwe	13,061,239	0.492	2	5.7	3	5	4

^{*} Estimates based on indigenous professional associations or conferences, undergraduate and graduate courses and programs, articles and journals in each of field. Information on examples that may have been missed or other comments or questions may be emailed to d.perkins@vanderbilt.edu.