



Review article

Towards an integrated framework for understanding the links between inequalities and wellbeing of places in low and middle income countries



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ABSTRACT

As part of a larger research programme undertaking the development of a global index of wellbeing (GLOWING) through the exploration of population wellbeing in low to middle income countries (LMICs), this paper examines the role of inequality in shaping experiences of wellbeing. The paper explores various conceptualizations of wellbeing and inequality and outlines an integrated framework for understanding the importance of measuring the wellbeing of places. We conclude by urging geographers to explicitly engage with theory and cross-disciplinary research in order to adequately conceptualize the role of place in 'Beyond GDP' and progress measures.

1. Introduction

Human prosperity as measured by Gross Domestic Product (GDP) and life expectancy is better now than at any time in history (Deaton, 2013). However, there is a growing recognition that prosperity has been achieved at the expense of social, environmental, and economic costs, including rising inequalities (Costanza et al., 2014; Stiglitz, 2012). Population health and wellbeing can thus be hardly judged by focusing on GDP alone or measures of life expectancy without looking at the range of other factors that affect wellbeing (Deaton, 2013). Alternative measures of population wellbeing that reflect what society values, as well as their perceptions and aspirations, are thus needed to design, measure, implement, and evaluate policies. This is because "what we measure affects what we do; and if our measurements are flawed, decisions may be distorted" (Stiglitz et al., 2009; pg 1). Currently, policies are often judged based on their potential to promote economic growth; "but if our metrics of performances are wrong, our [policy] inferences may also be flawed" (Stiglitz et al., 2009, p 1).

Recently, several initiatives aptly categorised as 'Beyond GDP' are attempting to conceptualize and measure wellbeing of populations (Stiglitz et al., 2009; Costanza et al., 2014). Current alternative measures of wellbeing can be grouped into three main categories (Elliott et al., 2017): 1) indicators that correct the weaknesses of GDP; 2) indicators that measure aspects of wellbeing directly; and 3) composite indices that combine approaches (see Table 1 for a list of these indicators). These existing indicators have been a useful guide for policy and practice in their respective countries (Boarini et al., 2014). A growing literature from the 'Beyond GDP' initiatives suggests that

cultural, social, environmental factors and subjective perceptions are equally important factors shaping population wellbeing (Elliott et al., 2017; Davern et al., 2017; Barrington-Leigh and Escande, 2018).

Despite the relevance of alternative measures of wellbeing for practical and policy purposes, their uptake remains limited in LMICs (Elliott et al., 2017). With a few exceptions (e.g. Bhutan Gross National Happiness Index, Wellbeing in Development), the majority of wellbeing research is dominated by scholarly and policy literature based on the Euro-American version of wellbeing-individual wellbeing, with its associated values and aspirations (Ferraro and Barletti, 2016; Elliott et al., 2017). The current discourse conceives wellbeing as a measurable individual pursuit, evaluated in terms of health and/or material prosperity and ignores socio-cultural, ecological and collective discourses that accompany the 'good life' in other contexts (Ferraro and Barletti, 2016; Elliott et al., 2017). Their application and relevance for policy making, therefore, remain limited in LMICs, especially in SSA where such indicators are urgently needed (Elliott et al., 2017). That is, existing measures are limited in a range of ways: they may be narrow (e.g., the world happiness index), lack context (e.g., Human Development Index (HDI)), are data driven and not adequately conceptualized to capture other issues that contribute to wellbeing such as ecology, cultural identity, participation and psychological security (Costanza et al., 2008; White, 2010; Ferraro and Barletti, 2016). Also of critical importance is whether the constituents of these 'Beyond GDP' measures represent what really matters to people in their specific contexts and if they are capable of capturing the multi-dimensional nature of wellbeing (Allin and Hand, 2014). The take home message is that theoretically informed alternative measures of wellbeing that clearly interrogate the

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Table 1

Categories of alternative measures of wellbeing.

Adapted from Vemuri and Costanza (2006), Costanza et al., 2009.

Classification of alternative measures	Meaning	Examples
Indicators that correct for the weakness of GDP (GDP +, GDP + +)	Uses GDP as a foundation and adds or subtracts other economic welfare indicators, health, education, wealth distribution adjustments, and natural, social, and human capital adjustments	Green GDPs, Genuine Progress Indicator, Genuine Savings, Ecological footprint, Index of Sustainable Development Welfare and Genuine Wealth
Subjective Wellbeing measures	Derived from questions that require an individual to reflect on and evaluate their overall wellbeing, happiness or life satisfaction; these indices are typically based on the collection of primary data	Happiness Index, World Values Survey, and Quality of life indices
Composite measures of wellbeing Subjective + Objective indicators	Derived from a broad range of domains and indices that rely on both subjective and objective measures of wellbeing typically sourced from secondary and primary data sources	Bhutan Gross National Happiness Index, Happy Planet Index
Only Objective indicators	Derived from a broad range of domains and indices that rely on only objective measures of wellbeing typically sourced from secondary data sources	Human Development indices, Canadian Index of Wellbeing (CIW), Australian Index of Wellbeing (AIW),

role of place, as well as allow for relationality across scales and between people and places are needed in LMICs.

The inadequate conceptualisation of place to include the collective and socio-cultural context in wellbeing studies limits the relevance of current indicators in the contexts of LMICs where wellbeing is often promoted as a collective attribute at the community or household level rather than at the individual level (Steele and Lynch, 2013; Ferraro and Barletti, 2016). Place is often used merely as a backdrop to human activity, with little consideration to the complex experiences of people in place (Ferraro and Barletti, 2016). Even among the few research that calls for a more critical attention to the role of place, there exists a dominance of a Euro-American version of wellbeing, often concentrating on its health and psychological dimensions (e.g. Atkinson and Joyce, 2011; Schwanen and Atkinson, 2015), neglecting other world views. Moreover, the limited research that examines the role of place has mainly focused on the characteristics of individuals concentrated in particular places without drawing attention to collective opportunities in the ecological, physical and social environments, as well as the socio-cultural and historical features of places (Macintyre et al., 2002; Macintyre and Ellaway, 2009; Mackenbach, 2009). Thus, using individual level measures or theories of wellbeing for populations in LMICs may be problematic and also make it difficult to interrogate the relationality across and between scales, as well as interdependences between the compositional, contextual and collective facets of places and wellbeing.

This paper explores alternative ways of conceptualizing wellbeing and the role of inequality as a key component of the wellbeing of places. The rest of the paper is structured into five parts. Following the introduction, sections 2 and 3 examines different conceptualizations of wellbeing and inequality. Section 4 then examines the link between inequality and wellbeing and the pathways that link inequalities, health and wellbeing. In doing so, we also review the empirical literature on links between inequality and wellbeing especially, within the context of LMICs. To comprehensively explain these links, section 5 explores potential theoretical and methodological approaches that can be used to assess the relationships between inequality and wellbeing along with an outlined integrated framework. The paper concludes by emphasizing the importance of considering the wellbeing of places along with comprehensive measures of inequality.

2. Conceptualizing health and wellbeing

Health and wellbeing are two related but distinct concepts (Deaton, 2013; Allin and Hand, 2014). Since the middle of the twentieth century, there has been a move to increasingly stress the positive dimensions of health as a resource for everyday living (WHO, 2008; Kearns, 1993). As observed by the WHO Commission on Social Determinants of Health (2008) “while we see health as having intrinsic value – health as an end

in itself – the Commission also recognizes its instrumentality” (p. 10). Health is conceptualized as a positive concept that influences the social, personal and physical resources that enable individuals and communities to function emotionally, mentally and physically, and not merely the absence of disease and infirmity (WHO, 1986). Even though population health is important in itself, its major value lies in the contributions that it makes to and receives from other equally important aspects of life (Michalos et al., 2011; Michalos, 2017). Therefore health must be understood as constitutive parts of ends of development which is to improve population wellbeing.

But what is population wellbeing? Even though there is a considerable body of work which aims to develop measures of population wellbeing (e.g. Canadian Index of Wellbeing (CIW), Australian National Development Index (ANDI), OECD better life index), there is no consensus on how wellbeing should be defined and measured (McAllister, 2005; Forgeard et al., 2011; Hall et al., 2010; Allin and Hand, 2014). Nonetheless, different scholars guided by theoretical frameworks or consultative processes have attempted to conceptualize and measure wellbeing (e.g. Hall et al., 2010; Barrington-Leigh and Escande, 2018; Michalos et al., 2011). Though many different conceptualizations exist, the majority are utilitarian (including both the ‘revealed preferences’ approach and the happiness approach) or guided/based on the fulfillment of human needs, capabilities and functioning (Bleys, 2012). For instance, the Human development index is based on Sen’s capabilities approach whilst others such as Canadian index of wellbeing (CIW), OECD better life and UK’s How’s life indices employs pragmatic approaches by combining theoretical approaches and a consultative component (Michalos et al., 2011; Hall et al., 2010; Boarini et al., 2014; White, 2010; Barrington-Leigh and Escande, 2018). While these notions of wellbeing differ, they are united in the philosophy that wellbeing comprises both material and immaterial components (Hall et al., 2010). We use wellbeing here to refer to all things that are good for a person and society, that make for a good life (Deaton, 2013). Our idea of wellbeing is similar in construct to the Canadian Index of Wellbeing (CIW) and the OECD Better Life Index (CIW, 2016; OECD, 2016). For instance, the CIW conceptualizes wellbeing across eight domains including; community vitality, democratic engagement, education, environment; healthy populations, leisure and culture, living standards and time use (Appendix 1). The OECD Better Life index, on the other hand, conceptualizes wellbeing encompassing individual wellbeing as well as sustainability of wellbeing over time (Appendix 2). Despite these useful conceptualisations, we believe that what determines a good life is situational, contextual and is best articulated by people in their own context (Sen, 1993; Nussbaum, 2011). However, a critical indicator that undermines wellbeing everywhere is rising inequality (Pickett and Wilkinson, 2015; World Bank, 2016). Heightened concern about inequality stems from its dramatic increase worldwide, reinforced by the interconnectedness of the world that has increased the

visibility of disparities in living standards as well as a growing commitment of the world to basic human rights, dignity and entitlements (Sachs, 2012; Deaton, 2013; SDGs, 2015; World Bank, 2016). However, the role of inequality as a key construct of wellbeing has been to date inadequately conceptualized (Sen, 2006; Deaton, 2013; Pickett and Wilkinson, 2015).

3. Conceptualizing inequality

Rising inequality has become a critical challenge to wellbeing in the 21st century (World Bank, 2016). However, much of the concerns about inequality are based on a narrow view of inequality, relying on measures of income and wealth inequality (Sen, 2006). To re-echo Sen (1980) question; ‘equality of what?’ we explore current measures of inequality to explicitly state the informational spaces within which inequality is measured. This is necessary to understand the values and value systems, assumptions and presuppositions that shape our view of what is fair and socially just (Sen, 1999; Rawls, 2009; Nussbaum, 2011). Second, to be able to explicitly identify any links between inequality and wellbeing and the scale at which these links occur, we need to adequately conceptualize inequality to satisfactorily capture the wide range of political and cultural factors that structure inequality and social justice (Sen, 2000, 2006; Nussbaum, 2011). Conceptualizations of inequality are thus useful to enhance understandings of how inequality is ‘embodied’ and its linkages with population wellbeing as well as the scale at which inequality is measured when exploring the potential pathway through which inequality is embodied, experienced, and expressed. Over the years, various conceptualisation has guided inequality research coalescing around four major perspectives of fairness and equity. These include; 1) the Utilitarian view of equality; 2) Rawls’ theory of justice (Rawls, 1971); 3) Sen’s Capability inequality (1980); and 4) Stouffer et al. (1949) theory of relative deprivation. The strengths and weaknesses of each perspective are briefly reviewed below.

3.1. Utilitarianism measures of inequality

These measures employ utility-based theories in judging a person’s advantage, often measuring the distribution of income and wealth over the population (Sen, 2006; Deaton, 2013; Atkinson and Bourguignon, 2014). Gini coefficients have been widely used as a measure of inequality as they measure the extent to which actual income distribution deviates from a hypothetical distribution in which each individual receives an equal share (Cowell, 2000; Sen, 2006; Yitzhaki and Schechtman, 2012). Its measurement relies on real income as a metric for weighting different commodities that are deemed useful to people (Cowell, 2000). The Gini coefficient is thus relevant for evaluative assessments since income is assumed to have a general command over resources and the lack of income may lead to deprivation (Sugden and Sen, 1993; Sen, 2006). Also, the major form of injustice is achieved over access to economic resources (Atkinson, 2015) and most government agencies and policy makers use Gini coefficients as the primary summary measure of inequality (Lyon et al., 2016).

Despite its usefulness, Gini coefficients are insensitive to group partitioning and unable to capture institutionalized inequality that gives rise to socially structured groups (Sen, 2006). For example, gender inequality is a central dimension of inequality but its precise nature as a social construct is context dependent and Gini measures cannot capture it (Nussbaum, 2011). Similarly, Gini coefficients are measured at a structural level and do not reflect individual circumstances, as individuals may have unique characteristics that cannot be inferred from macro-level income data (Sugden and Sen, 1993; Ferreira and Peragine, 2015).

3.2. Rawls theory of primary goods

Rawls theory of justice and fairness is based on the concept of primary goods and social justice (Rawls, 1971). According to Rawls, primary goods are goods that every rational person is supposed to want, and these goods enable individuals to achieve their ends (Rawls, 2009; Sugden and Sen, 1993). Social goods, are at the disposal of society and include liberty and opportunities, income, wealth and self-respect (Rawls, 2001, 2009). Rawls principles of justice and equality are that “all social goods are to be distributed equally unless an unequal distribution of any, or all of them may lead to everyone’s advantage” (Rawls, 1971, p.6).

Rawls extends the informational space of inequality beyond measures of income and wealth to include freedoms, liberties and respect. Hence, in the context of LMICs, inequalities in political participation, access to justice and respect for civil rights are key to ensuring population wellbeing. However, the theory does not interrogate how people may convert these resources into capabilities and functioning to improve wellbeing (Sen, 1980, 1993; 1999; Nussbaum, 2011).

3.3. Sen capability inequality

Sen’s Capability based approach to inequality shifts attention from inequality of outcomes (income and wealth) and primary goods to inequality in capability/endowments (Sen, 1980, 2006). Sen defines capability as sets of opportunities and alternative combinations of functions feasible to people (Sen, 1993, 1999). Sen argues for inequality to be based on basic functions and endowments rather than in terms of outcome measures (e.g., income and wealth), claiming that ‘absolute deprivation in terms of a person’s capabilities relates to relative deprivation in terms of commodities, incomes and resources’ (Sen, 1983, pg. 153). The argument is that, because outcomes measure individual preferences and endowments, policies should focus on equalization of endowments themselves rather than a sole focus on ends (Sen, 1980; Sugden and Sen, 1993). Due to the focus on individual agency and freedoms, it offers insights into other forms of inequality including gender and ethnic inequalities that often result from lack of attention to household and group dynamics (Sugden and Sen, 1993; Sen, 2006; Klasen, 2007). The capability approach allows each society to identify the set of basic capabilities to form the basis for assessing capability inequality. Despite its usefulness, operationalizing the framework is difficult as it involves identifying the basic capabilities left to each society. Others such as Martha Nussbaum however, have contributed immensely to the capability framework, extending Sen’s analysis to include ten capabilities that each society should guarantee through their constitution (Nussbaum, 2011). She employs interpretative approaches to better understand people’s hopes, desires, aspirations, motivations and decisions. Also, the framework has been critiqued for the lack of emphasizes on how broader social, historical, economic, cultural, and political powers influence inequality and constrain people’s access to capabilities and their ability to function.

3.4. Relative deprivation

Relative Deprivation (RD) occurs when a person or a group is disadvantaged compared to a relevant referent, accompanied with feelings of anger, resentment, and entitlement (Stouffer et al., 1949; Smith et al., 2012; Smith and Pettigrew, 2015). The fundamental features of RD involve four basic tenets. First, individuals must make a cognitive comparison between themselves and their group (racial group, sex etc.). Second, a cognitive appraisal is made regarding a person or a disadvantaged group. Third, perceptions of any disadvantages are seen as unfair. Finally, resentment emerges due to these unfair and disadvantaged conditions (Smith et al., 2012; Smith and Pettigrew, 2015). These comparisons are made within a specific historical, social and experiential context (Smith and Pettigrew, 2015) reflecting the

emotional reactions of people to their objective situation, a process often neglected in the other measures of income inequality. Averages/distribution.

4. Linking inequality and wellbeing in LMICs

The relationship between inequalities and wellbeing is highly contested, with some researchers critical of the theoretical and methodological strengths of arguments asserting linkages (Easterlin, 1995, 2015; Deaton, 2008, 2013; Rözer and Kraaykamp, 2013; Verme, 2011). At the core of these debates is the *Easterlin paradox* which indicates that ‘long term trends in subjective wellbeing¹ and income are not related, however short term fluctuations in subjective wellbeing and income are positively related’ (Easterlin, 2015, page 1). In addition, it is claimed that happiness or subjective wellbeing (SWB) varies directly with personal income and inversely with other peoples’ income (Easterlin, 1995). Easterlin (2015) used data from 17 developed, 11 transitioning and 9 developing countries (only one from Sub-Saharan Africa (SSA)) over a period of 15–33 years to show an insignificant relationship between population wellbeing and per capita income. Easterlin argues that adaptation to any increase in income and social comparison operates to cancel out any short-run effects of income on wellbeing, causing short-run improvement in wellbeing to revert to their long-run levels (Easterlin, 1974, 2015; Layard, 2005; Beja, 2015). Similarly, numerous studies have found that one’s relative position in society is an important determinant of wellbeing (defined in terms of disease, infirmity, mortality or morbidity) (Preston, 1975; Wilkinson and Pickett, 2011).

However, some scholars are unconvinced that inequality is harmful to wellbeing. They argue that absolute income plays an important role in influencing wellbeing because of its effects on material living standards (Deaton, 2003, 2008; Stevenson and Wolfers, 2008; Veenhoven and Vergunst, 2014). Stevenson and Wolfers (2008) for instance, argue that income improves wellbeing in the exact same ways as differences in wellbeing between rich and poor countries. Deaton (2013) also argues that equal proportional differences in income are associated with equal proportional effects on SWB. However, there is a counter-narrative that suggests a threshold effect of income on wellbeing. The argument is that once per capita income rises above the poverty line or “subsistence level,” the main source of wellbeing is not income but rather social capital (Wilkinson and Pickett, 2009). For those who hold this view, the Easterlin paradox applies to only developed countries with per capita incomes greater than \$10,000 (Frey and Stutzer, 2002; McMahon, 2006; Wilkinson and Pickett, 2009). Following Easterlin (1974), an extensive literature examining the effects of inequality on wellbeing has resulted (Easterlin, 1995; Deaton, 2003; Pickett and Wilkinson, 2015).

Reviews of this relationship have been inconclusive with different interpretations of the evidence (Lynch et al., 2004; Macinko et al., 2003; Subramanian and Kawachi, 2004; Kondo et al., 2009; Wilkinson and Pickett, 2011). However, the majority of studies support the hypothesis that wellbeing tends to be worse in more unequal societies (Ross et al., 2005; Wilkinson and Pickett, 2011; Dorling et al., 2007; Pickett and Wilkinson, 2015). Consequently, researchers have argued that inequalities may influence wellbeing through a broad range of behavioural and physiological mechanisms (Link et al., 2008; Phelan et al., 2010; Wilkinson and Pickett, 2011; Pickett and Wilkinson, 2015). Yet others have contested these results. For instance, a meta-analysis conducted by Kondo et al. (2009, 2012) found a modest association between inequality and wellbeing, while Zheng (2012) reported a threshold effect and a time lag of about 5–12 years for the effects of inequality to manifest. These authors asked for caution when

interpreting the effects of inequality on wellbeing. Another meta-analysis of 168 studies conducted by Wilkinson and Pickett (2006) found that 52% of studies were fully supportive while the rest were partially or non-supportive of the inequality wellbeing hypothesis. Another review of the relationship limited to wealthy countries only found that inequality was not systematically related to population wellbeing (Lynch et al., 2004). Nevertheless, it is unclear at which geographical scale inequality is most damaging (Ballas et al., 2007; Layard, 2005). As previous studies indicate, inequality matters because people compare themselves with their reference groups. However, what remains unclear is whether these comparisons made with people in their neighbourhood, city, region, country or diaspora groups or with peoples [e.g. celebrities] they know little about (Ballas et al., 2007).

It is also important to note that most of these studies rely on data from the developed world where levels of poverty and inequality are relatively lower, making it difficult to understand the effects of inequality on wellbeing in the context of LMICs, where deprivation and inequalities are extreme (Dierk and Peter, 2015; Pop et al., 2013; Burns et al., 2017; Ward and Viner, 2017). Also, people’s perceptions and experience of inequality and how it affects wellbeing remain unknown in the context of LMICs. For instance, many LMICs have experienced rapid economic growth in recent years, which can be beneficial to population wellbeing in terms of reducing poverty, but may also exacerbate existing inequalities, increase the risk of sedentary lifestyles as well as the risk of non-communicable diseases (Burns et al., 2017; Ward and Viner, 2017). LMICs also record some of the highest levels of inequality globally, and the World Bank estimates that this has increased by 11% between 1990 and 2015 in SSA (World Bank, 2016). In the face of these challenges, it is thus pertinent to know whose wellbeing is affected and the scale at which the effects of inequality occur (Subramanian and Kawachi, 2004; Ballas et al., 2007; Layard, 2005).

Additionally, the causal mechanisms and processes through which inequality affects wellbeing in the contexts of LMICs have not been explicitly identified (Pickett and Wilkinson, 2015; Dierk and Peter, 2015). Thus, Pickett and Wilkinson (2015) recommend that future research should move towards explicitly clarifying any causal relations between inequalities and population wellbeing by: (1) using different measures of income inequality, (2) allowing for time lags for different outcomes, (3) modelling and testing of specific causal pathways, and (4) determining whether the effects of inequalities in wealth are similar to inequalities in income. Dierk and Peter (2015) have also called for research to identify the transmission channels and provide further insights into the links between different aspects of inequality and wellbeing in developing countries. In light of these proposals, we explore how geographers can contribute theoretical insight to help explain the relationships and causal mechanisms between inequality and wellbeing. As such the following section explores how geographers can contribute theory to help bridge the identified gaps, and improve our understanding of the inequality-wellbeing relationship.

5. Framing the inequality-wellbeing relationship in LMICs and the role of health geography

Health geographers have contributed to broader debates on population health and wellbeing and have engaged with how place and place-based experiences affect health and wellbeing (Gesler, 1992; Dorling et al., 2007; Ballas et al., 2007). Three geographical approaches, however, stand out. First, health geographers have been concerned with the *spatial distribution of health and wellbeing* often focusing on objective indicators such as income or life expectancy of places and spatial zones (Atkinson, 2013; Schwanen and Atkinson, 2015). Examples include the ‘territorial social indicators’ approaches concerned with spatial wellbeing (e.g. Smith, 1973; Cutter, 1995), and recently, the socio-spatial inequalities in wellbeing (Pacione, 2003; Dorling, 2015; Ballas, 2013). The second empirical foci have been on *explaining how inequalities in health and wellbeing are (re)produced*.

¹ The term “subjective well-being” encompasses a variety of measures of feelings of well-being – happiness, life satisfaction, and ladder-of-life (Easterlin, 2015).

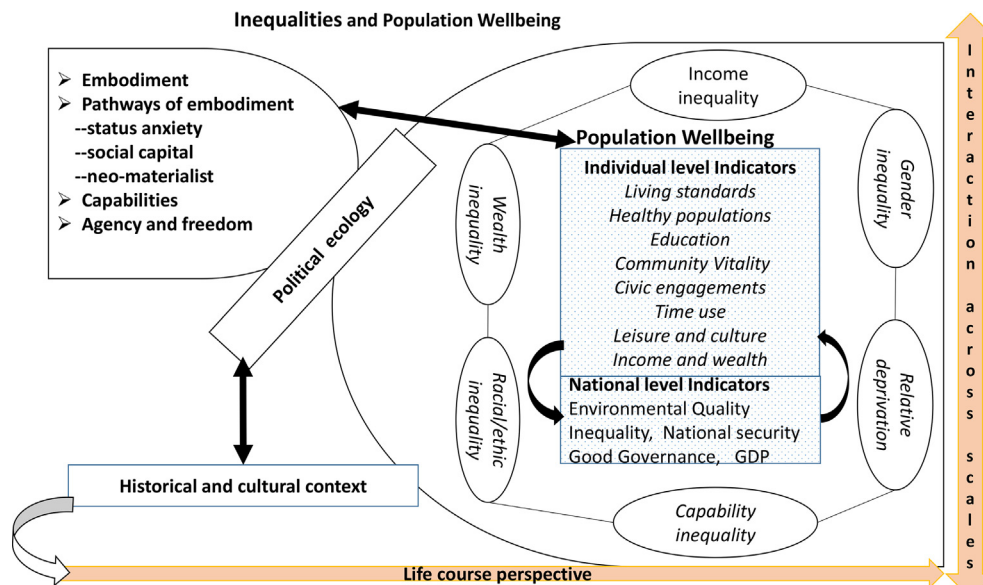


Fig. 1. Framework for explaining relationships between inequalities and wellbeing adapted from Krieger (2011).

Studies here largely employ theoretical approaches to explain how subjectively experienced wellbeing varies with both the social and physical dimensions of space (Atkinson, 2013; Andrews et al., 2014; Schwanen and Atkinson, 2015). These approaches mostly rely on hedonic measures of wellbeing – either pleasure experienced, or pain avoided (Gesler, 1992; Schwanen and Wang, 2014). Some health geographers have also recently engaged with eudemonic measurements of wellbeing at the individual level foregrounded in Aristotle's ideas of flourishing and Sen's Capability framework (Ryff and Singer, 2008; Schwanen and Wang, 2014; Ettema and Smajic, 2015; Fleuret and Prugneau, 2015). The third strand highlights the *politics of health and wellbeing* by utilizing Foucauldian discourse analysis to understand the social construction of wellbeing. This strand also includes studies that explore how the experience of wellbeing is constrained by political, economic, and social factors (Atkinson and Joyce, 2011; Scott, 2015). Research from these three major strands shows that wellbeing inures beyond the individual to include social and institutional practices that enhance or constrain the spaces through which individual and population wellbeing is (re)produced (Dinnie et al., 2013; Foo et al., 2015).

Despite these useful engagements, health geographers rarely define or conceptualize wellbeing for further critical examination and discussion (Andrews et al., 2014; Elliott, 2018), and contributes little to placing *place* and *social theories* in population wellbeing research. Health geographers have failed to leverage the richness, diversity and critical potential that the sub-discipline offers, to contribute to interdisciplinary debates on population wellbeing. Within the sub-discipline, wellbeing is often linked with health, even though health geographers 'have no theoretical or conceptual frameworks for informing our 'wellbeing' research, let alone techniques and methodological approaches for measuring it' (Elliott, 2018, pg. 2). Most studies rely on partial or oblique consideration, or the everyday or metaphorical understanding of wellbeing (Andrews et al., 2014; Pain and Smith, 2010). This has led others to conclude that wellbeing, as employed by health geographers, is a concept that 'explains almost everything, yet nothing explains it' (Andrews et al., 2014, p. 213).

Furthermore, the concept of wellbeing has often been reduced to either a synonym for physical health (Diener, 2009; Atkinson and Joyce, 2011) or psychological health expressed through mental health, resilience or happiness (Layard, 2005; Seligman, 2012; Atkinson, 2013; Andrews et al., 2014). The lack of attention to *place* in categories of social analysis makes the western conception of wellbeing susceptible to becoming instruments of hegemony, under the assumption that the

local occupy a subordinate position to Western informed ideas of wellbeing (Ferraro and Barletti, 2016). Indeed, it is our view that health geographers bear some responsibility for this and should contribute to debates on population wellbeing with which they have so far only partially engaged (Elliott, 2018).

We drew on Sen's Capability framework, political ecology and Krieger's eco-social theory as well as lessons learned, working with partners on the ground in Ghana, Kenya, Uganda and other parts of East Africa (Elliott et al., 2017) to form an integrated conceptual framework to frame the linkages between inequalities and wellbeing. Through reconnaissance, we discerned that it was feasible to develop socially, culturally, and geographically relevant indicators across the existing domains of wellbeing (Michalos et al., 2011; Hall et al., 2010; Boarini et al., 2014; White, 2010). However, the key caveat was that this must be done with explicit recognition of the role of *place* and in consultation with local partners. In this regard, a team of researchers conducted key informant interviews with policy makers and focus group discussions with communities to understand what wellbeing means in their specific contexts and the indicators that can be used to capture its essence (Kangmennaang and Elliott, forthcoming; Rishworth et al., forthcoming and Onyango and Elliott, forthcoming). It involved interacting with politicians, civil society, individuals, communities and special interest groups, all of whom may have an interest in how wellbeing is defined and measured. This was, first of all, to define or at least describe what wellbeing means in such context, before attempting measurement, a process we acknowledge require several iterations (Allin and Hand, 2014). Lessons learned are combined with key constructs from Sen's Capability framework (Sen, 1993: 1999), developed further by Martha Nussbaum including; capability (ies), functioning and agency, and embodiment, pathways of embodiment, life course perspective and political ecology to develop the integrative framework. These ideas are illustrated in Fig. 1.

6. Explaining the framework

6.1. Embodiment

Embodiment suggests that "we literally incorporate, biologically, the material and social worlds in which we live, from utero to death" (Krieger, 2001, p. 672). Krieger (2005) advanced three critical claims that are central to the notion of *embodiment*. First, "bodies tell stories about – and cannot be studied divorced from – the conditions of our existence"

(Krieger, 2005: 350). Second, “bodies tell stories that often – but not always – match peoples stated accounts” (Krieger, 2005: 350). Finally, Krieger argued that “bodies tell stories that people cannot or will not tell either because they are unable, they are forbidden, or they choose not to” (Krieger, 2005: 350). Embodiment is useful to understand how various social processes and circumstances (inequality) become ‘embodied’ to produce population wellbeing profiles. The construct of *embodiment* is fundamental to understanding the links characteristics of places and wellbeing as it expresses how people biologically incorporate the material, ecological and social circumstances within which they live (Krieger, 2005). The construct thus helps establish the feedbacks and independences between our bodies, ecologies and social organisation of power and privilege, illuminating how populations biologically embody the successes and failures of their societies and ecologies (Mackenbach, 2009). It also explicitly recognizes the temporal transformation of bodily characteristics as a result of exposure to inequalities and other social and ecological facets of life across the life course. For example, exposure to inequalities may affect an individual's height, stunting and cognitive development through an embodiment of their living conditions (e.g. food and water security, material condition) access to basic necessities and opportunities within society, which are often influenced by social and political factors (Krieger and Smith, 2004). Embodiment can be employed to advance various sociobiological interpretations of the pathways between inequality and wellbeing to highlight the interrelationship and interdependences between the inequalities, social, economic and ecological factors and their biological expressions (Moss and Dyck, 1999; Hall, 2000; Parr, 2002; Krieger, 2011; DeVerteuil, 2015).

6.2. Pathways of embodiment

Pathways of embodiment recognizes multiple ways of embodying inequality, structured simultaneously by; “societal arrangements of power, property, and contingent patterns of production, consumption, and reproduction”, and which “constrain the possibilities of our biology, as shaped by our evolutionary history, ecological context, and individual and community histories—that is, trajectories of biological and social development” (Krieger, 2005). For instance, health geographers have employed embodiment to advance sociobiological interpretations of health and wellbeing, highlighting the importance of the interrelationship between sociobiological processes and population wellbeing (Moss and Dyck, 1999; Hall, 2000; Parr, 2002; DeVerteuil, 2015). Inequality may be embodied through multiple pathways including but not limited to; status anxiety, social capital, neo-materialism and growth-inequality-poverty nexus to affect population wellbeing.

First, inequality may lead to poor wellbeing through *status anxiety*—the psychosocial response of individuals or societies to the perception of their place in the status ladder (Wilkinson and Pickett, 2011). Unequal societies are dominated by status competition and class differentiation that influences wellbeing (Wilkinson and Pickett, 2011). Low social status and the perception of inferiority produce negative emotions such as shame and distrust which directly damage wellbeing through stress reactions (Wilkinson and Pickett, 2011; Marmot and Bell, 2012). Moreover, social exclusion affects cognitive, emotional, and behavioural outcomes, and adaptations to a low social rank which lead to altered levels of hormones and behaviours, such as withdrawal, apathy, or hypervigilance (DeWall et al., 2011; Wilkinson and Pickett, 2011) which have direct effects on wellbeing.

Secondly, the ‘social facts’ of communities and societies like inequalities may have long lasting impacts on social cohesion and community vitality (Kawachi et al., 2008; Wilkinson and Pickett, 2011; Phelan et al., 2010). Higher levels of inequality lead to status differentials between individuals and groups, lower levels of civic participation and social mixing, which in turn leads to lower levels of interpersonal trust and social cooperation. Lower levels of social trust are

thus associated with lower collective efficacy, which makes people unwilling to offer social support to improve the indicators that influence wellbeing by affecting people's access to services and amenities (Wilkinson and Pickett, 2009). For example, socially cohesive communities are better united, participate actively in political processes and can lobby for better social services to improve wellbeing (Kawachi et al., 2008). This is applicable in the context of LMICs, where there may be competing interests from communities for governments to provide social amenities given limited resources.

Thirdly, inequality is detrimental to population wellbeing through the differential accumulation of exposures and experiences that have their sources in the material world, which weakens societies' willingness to make investments that promote the common good (Lynch et al., 2000; Elo, 2009; Torssander and Erikson, 2010). Thus, initial levels, as well as rising levels of inequality, may act as impediments in transforming economic growth into poverty reduction and improving wellbeing within SSA countries (Fosu, 2015). This pathway explicitly recognizes that the political and economic processes that generate inequality also influence individual access to resources (Kaplan and Lynch, 2001; Layte, 2011). In the context of LMICs, strategic investments in neo-material conditions via more equitable distribution of public and private resources are likely to have the most impact on wellbeing.

6.3. Agency and capability

The third construct, *agency and capability* focus attention on the capability of individuals to function – what they can do and are able to do as well as protection of central freedoms that makes for a good life (Nussbaum, 2011). Sen argues that the distribution of capabilities should be evaluated in terms of their contribution to individual functional capabilities in ways deemed to be objectively valuable (Sen, 1993). What counts is not just capabilities but the contributions of these forms of capabilities in enhancing individuals' and a communities' agency to respond to undesirable conditions [e.g. social, ecological, economic constraints]. Thus, the construct is useful to explore what people can do and are able to do within their own context to improve wellbeing. It is useful to explore the characteristics of a population in place (compositional effects) and how marginalized groups such as women, children and ethnic minorities negotiate their place in society in the face of gender, ethnic and racial inequalities (Nussbaum, 2011). It also directs attention at individual and institutional capacity to act and take responsibility for their actions and the ecological, political and economic contextual constraints.

6.4. Political ecology

Another key construct embedded within this framework is *political ecology* (P.E), which examines how large-scale political, social, economic and ecological processes affect the wellbeing of populations (Mayer, 1996; King, 2010; Richmond et al., 2005). Political ecology captures the myriad of ways in which ecosystems support and contribute to well-being including its roles in; supporting (e.g. nutrient cycling, soil formation and primary production); provisioning (e.g. food, fresh water, wood and fiber and fuel); regulating (e.g. climate regulation, flood and disease regulation and water purification); and cultural (aesthetic, spiritual, educational) and recreational (Bennett et al., 2015; Collins et al., 2011). Power, politics and social organisation are key constructs of this conceptual framework, particularly with respect to how they affect access to, and utilisations of ecosystem services. Attention to power, politics and ecology is useful to link the biophysical aspects of ecosystems and population wellbeing while creating avenues to assess trade-offs between ecological, socio-cultural, political and economic systems (Collins et al., 2011). For instance, PE explicitly recognizes that political decisions about investment in built, natural, human, and social systems in balanced ways may create

opportunities for people to fulfil their needs (Collins et al., 2011; Blaikie and Brookfield, 2015). This broadens our understanding of the role of multiple, complex and contested rationalities in ecological decision-making processes to shed lights on who loses and who gains in such processes (Neumann, 2009; Krieger, 2011; Blaikie and Brookfield, 2015). Further, P.E is useful to explore the collective effects of the macro-dimensions of the political economy (trade liberalization, and economic development) and the associated effects on the wellbeing of populations in specific contexts. The links between ecology (land degradation, drought, and climatic variability) and the wellbeing of populations in context can also be explored with P.E, thus providing a means for understanding the socio-political as well as ecological dimensions underpinning wellbeing inequalities.

6.5. Life course perspective and historical antecedents

The fifth construct, *life course perspective*, explicit recognizes the importance of time, the development of responses to embodied exposures such area level poverty and inequality and manifestation of their effects on population wellbeing. It also explicitly recognizes that consequences may persist even after these structural antecedents are eradicated or reduced (Mackenbach, 2009). It thus informs the exploration of the *spatio-temporal* effects of inequality on wellbeing as well as how communities' development trajectories, social and environmental histories are linked to population wellbeing. Similarly, the framework outlines how structural, historical and social factors contribute to inequality, and focuses on how population wellbeing is situated within historical, cultural, and social connections across several scales. It also exposes how social processes and local meanings inform and produce wellbeing profiles.

Our integrative approach extends beyond the recognition that wellbeing is effected by distal forces or factors defined at multiple scales to explicitly allow for dynamic processes that occur including feedbacks, interdependencies as well as interactions across several systems [ecology, social, economic]. These feedbacks and interdependencies may result in complex relations and unanticipated effects on wellbeing across space and time. The integrated framework help goes beyond the understanding of specific independent effects to a more nuanced understanding of the system as a whole. For instance, both the capability and eco-social frameworks portray wellbeing as multidimensional, but each takes a different interest in the material and non-material manifestation of wellbeing. For the capability framework, the unit of analysis is the individual and individual's capabilities and functions whereas the eco-social framework examines how the individual embodies social, ecological and political phenomena including inequality. The integrated framework helps make the theoretical connection between the materiality of nature and the socio-political processes embedded within them (Atkinson, 2013; Andrews et al., 2014). The integrative framework brings into focus the multi-dimensional nature of wellbeing and inequality as well as create avenues to explore the complex relationships between inequalities and wellbeing and intra-relationships between different wellbeing domains (Panelli and Tipa, 2009). Moreover, a relational approach will make connections to, and potentially inform policy and practice at multiple simultaneously engaged scales (Andrews et al., 2014).

The framework emphasizes the importance of human agency in enhancing wellbeing and while explicitly reflecting on how broader social, ecological, economic as well political factors constrain access to capabilities and functioning (Binder, 2014), especially in the context of LMICs where wellbeing is collective in nature (Gasper and Van Staveren, 2003; Stewart, 2005; Deneulin, 2008). Thus, the framework is able to generate broader policy recommendations beyond the individual level and brings attention to how collective attributes such as culture, ethnicity and historical antecedents constrain or create opportunities, capabilities and influences values and choices (Stewart, 2005; Deneulin, 2008).

The integrative approach recognizes co-production of knowledge and different ways of doing, supporting the use of mixed-methods. To operationalize this framework empirically, quantitative methods can be used to examine patterns and establish relationships between inequality and wellbeing, inequality and other domains of wellbeing. Qualitative methods can also be used to explore how inequalities are embodied, expressed and experienced across the life course. The use of qualitative methods can contribute to our understanding of what makes a society egalitarian and how local actors understand, enact, and respond to inequalities and, how inequalities translate into embodied effects on wellbeing. Conceptualizing inequality and wellbeing to encompass and to be influenced by determinants across several scales is also useful to explore the relationality between different measures (and determinants) of inequality as well as their effects on wellbeing through multi-level analysis. An explicit engagement with scale is useful to explore how local, national as well as global levels of inequality become embodied to influence wellbeing and its expression.

A key challenge of operationalizing the framework is the integration of all the key components. While it may not be easy to integrate all these in a single analysis, it is important to have conceptual clarity on the links and to seek more practical measures in the long run. Likewise, depending on the research question, researchers can integrate a combination of key constructs to afford a richer understanding of the links between inequalities and population wellbeing. Despite such challenges, we believe the framework provides a strong foundation for exploring the links between inequality and wellbeing and advocates for research to look beyond average and compositional measures of national wellbeing to account for inequalities in wellbeing vis-à-vis income, gender, and ethnic and capability inequality as well as explore how inequality is embodied.

7. Conclusion

This paper asserts that inequality is a key component of population wellbeing and is critical to understanding the wellbeing of places in LMICs. In so doing, we propose an integrated framework that can be used to understand the links between inequalities and population wellbeing in the contexts of LMICs where wellbeing is more collective rather individual. The proposed framework depicts wellbeing as multi-dimensional and highlights some of the inadequacies of GDP and 'Beyond GDP' measure of population wellbeing. The paper thus calls for alternative measures of wellbeing that adequately conceptualizes the role of place to ensure that wellbeing measures that hold meaning and matter to people in their context while ensuring equity. Thus, beyond the average and compositional measures of national wellbeing, measures need to move a step further to account for inequalities in wellbeing vis-à-vis other inequalities. This is important because what we measure often determines what we do and care about, and if measurements of wellbeing are flawed, decisions may be distorted (Stiglitz et al., 2009). Moving forward, health geographers are urged to actively engage with broader conceptualisations of population wellbeing and to engage with theory in order to improve our understanding of how social processes and place-based factors affect population wellbeing. Explicit engagement with theory will also enhance confidence in our measures of inequality and wellbeing, and provide evidence against which to test reliability, validity and the quality of our measures and inferences.

Conflicts of interest

The Author(s) declare(s) that there is no conflict of interest.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.socscimed.2018.07.002>.

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