SAMUEL CENTRE FOR SOCIAL CONNECTEDNESS

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Identifying Isolation:

Assessing a proposed social isolation survey through participatory methods in Appalachia

By Samuel McQuillen

Visiting Research Scholar, 2021

Samuel Centre for Social Connectedness

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ABSTRACT

Despite being an integral aspect of multidimensional poverty, social isolation is rarely measured by national governments or development actors, thereby inhibiting policymakers from identifying the socially isolated or creating informed policies that promote inclusion. Three researchers have created an innovative, internationally comparable survey to measure acute social isolation on an individual level, but this questionnaire has yet to be widely implemented or subjected to academic scrutiny. I seek to evaluate this survey's robustness through participatory research at a fieldsite in central Appalachia, a coal mining region in the southeastern United States that has long been misrepresented as socially backwards in part due to its unique social practices.

Composed of interviews and participant observation, my fieldwork broadly upheld the importance of participatory measurement, further uncovered the linkages between isolation and multidimensional poverty, and supported the overall quality of the proposed survey. However, I argue that three of the survey's proposed dimensions may systematically misconstrue Appalachian social connectedness, and I further propose three dimensions of Appalachian interpersonal isolation that appear to be missing from the proposed survey. Although my research is highly preliminary and deeply imperfect, this report serves as exploratory research regarding the feasibility of international social isolation measurement and the nuances of Appalachian social dynamics.

INTRODUCTION

When asked what matters to them the most, materially poor individuals from across the world routinely cite social relationships as integral to their happiness, success, and overall wellbeing.[1] Despite the importance of such relationships, international indicators of social progress overwhelmingly exclude measures of social connectedness or isolation, preventing policymakers, activists, and academics alike from accurately understanding the lived social experiences of the poor. Zavaleta et al.[2] have sought to address this measurement gap by proposing a set of internationally comparable indicators to evaluate individuals' level of social connectedness, paving the way for social isolation to be meaningfully integrated into multidimensional poverty measurement worldwide.

Despite the survey's sophistication, social relationships remain difficult to evaluate due to the wide variety of social norms and institutions that exist across disparate contexts; this critique is particularly salient within Appalachia, a mountainous region in the southeastern United States whose social norms have been intimately shaped by its pervasive coal industry. If Zavaleta et al.'s survey systematically misrepresents social connectedness in Appalachia, then it would risk reproducing the fallacious 'culture of poverty' narrative that has long haunted the region.

My research thus aims to evaluate the Zavaleta et al. survey using participatory data from Whitesburg, KY, a small Appalachian city nestled in the heart of Letcher

[1] Narayan, D., Chambers, R., Shah, M. K., & Petesch, P. (2000). *Voices of the Poor: Crying out for Change*. New York: Oxford University Press for the World Bank.
[2] Zavaleta, D., Samuel, K, & Mills, C. (2014). Social isolation: A conceptual and measurement proposal.

County that is the home of Appalshop, one of the partners for my fellowship. After conducting nine in depth interviews with Letcher County residents, I discovered a number of social dynamics that problematize Zavaleta et al.'s survey to varying degrees; namely, some of my interview subjects suggested that certain questions in the survey may be misspecified or relatively more important than others, while other interviewees indicated that the survey may be missing certain dimensions of Appalachian social connectedness. Though these findings are preliminary, my fieldwork overall affirms the importance of participatory multidimensional poverty measurement and invites further exploration of this topic through subsequent academic research.

THEORETICAL FRAMEWORK

Multidimensional poverty and measurement

Within academia and policymaking alike, poverty is becoming increasingly recognized as a multidimensional phenomenon that extends beyond income alone. Inspired by Sen's capability approach, this framework defines poverty as "the failure to have certain minimum 'capabilities,"[3] thereby preventing poor individuals from pursuing the sort of life that they want to lead. Therefore, an individual may be considered multidimensionally poor if they experience a sufficient quantity of meaningful deprivations—such as inadequate access to healthcare or education—that inhibit them from achieving that which they value and have reason to value. Since this framework extends beyond income, multidimensional poverty cannot be measured by simply

[3] Sen, A. (1985). A sociological approach to the measurement of poverty: a reply to Professor Peter Townsend. *Oxford Economic Papers*, *37*(4), pg. 669.

implementing a monetary poverty line below which an individual is considered poor. Rather, the measurement of multidimensional poverty requires another tool: a multidimensional poverty index (MPI).

An MPI is a particular type of index that is constructed using the Alkire-Foster method in which individuals are labeled as either 'deprived' or 'non-deprived' for each of a list of predetermined, weighted indicators.[4,5] If an individual is deprived in a sufficient proportion of these weighted indicators, then they are identified as being multidimensionally poor. Both the number of poor in a population and the average amount of deprivations experienced by them can be combined in order to create a single, aggregated number that neatly summarizes the breadth and depth of multidimensional poverty within a specific area.

When constructing an MPI, a researcher must make a number of normative decisions regarding how the index will be conceptualized, constructed, and applied.[6] Principally, a researcher must determine the geographic and thematic *scope* of any given MPI; the Global MPI, for example, measures acute poverty on an international level[7], while Costa Rica's Business MPI explicitly attempts to capture deprivations

[4] Alkire, S., Foster, J. E., Seth, S., Santos, M. E., Roche, J., & Ballón, P. (2015a). *Multidimensional poverty measurement and analysis*: Chapter 5–The Alkire-Foster counting methodology. Oxford University Press, USA.

[5] For an accessible and thorough account of the Alkire-Foster methodology, see Section II of the 2019 report titled "How to build a national multidimensional poverty index (MPI): using the MPI to inform the SDGs" published jointly by the Oxford Poverty and Human Development Initiative and the United Nations Development Programme.

[6] Alkire, S., Roche, J. M., Ballon, P., Foster, J., Santos, M. E., & Seth, S. (2015b). *Multidimensional poverty measurement and analysis*: Chapter 6–Normative choices in measurement design. Oxford University Press, USA.

[7] Alkire, S., Kanagaratnam, U., & Suppa, N. (2018). The global multidimensional poverty index (MPI): 2018 revision. *OPHI MPI methodological notes*, 46.

amongst Costa Rican workers and their families.[8] Next, the conceptual dimensions and exact indicators therein must be determined for the MPI, although these decisions will be foremost be shaped by data constraints if the researcher is attempting to estimate an MPI from preexistent survey information. The researcher must then determine the MPI's deprivation cutoffs—that is, the minimum value that a respondent must report in order to be considered non-deprived in an indicator—as well as the weights for each indicator—that is, the relative contribution of each indicator to an individual's overall status as poor or non-poor. Finally, a researcher must determine the poverty cutoff of the entire index, determining the weighted proportion of total deprivations that an individual must experience overall in order to be considered multidimensionally poor.

Due to its normative assumptions, multidimensional poverty measurement has been criticized for misrepresenting the lived experiences of the poor. Gweshengwe, for example, has harshly attacked the Global MPI as being "deficient even in the dimensions that it measures … Meeting years of schooling or school attendance requirement [two indicators in the Global MPI's Education dimension] does not guarantee one's literateness or cognitive skills development."[9] Meanwhile, Ravallion argues that the weights assigned to each dimension in an MPI are fundamentally arbitrary, as they reflect abstract trade-offs that even the poor themselves wouldn't find meaningful.[10] In both critiques, the authors explicitly note the heterogenous experiences of the poor across disparate geographic, cultural, and national contexts, contemplating

[8] Montero, M. (2017). Business MPI. Retrieved from https://mppn.lfi.cl/wp-content/uploads/2017/10/Business-MPI-info-1CR.pdf
[9] Gweshengwe, B. (2019). A critique of the income poverty line and global multidimensional poverty index. *Southeast Asia: A Multidisciplinary Journal*, pg. 41.
[10] Ravallion, M. (2011). *On multidimensional indices of poverty*. The World Bank.

whether or not multidimensional poverty measurement can be meaningfully conducted on an international level.

Despite these setbacks, participatory methods can inform an MPI's normative underpinnings so that they are better representative of the lived experiences of the poor: "Ideally, recurrent participatory and deliberative processes," note Alkire & Foster, "could be used to choose [the normative aspects of an MPI]."[11] While imperfect, interviews, focus groups, surveys, and similarly participatory approaches have all been found to be successful in better incorporating the voices of the poor into MPIs, therefore representing viable methods of creating or critiquing such measures.[12] My research will thus endeavor to leverage participatory methods to evaluate a proposed survey to measure social isolation, a particularly complex dimension of multidimensional poverty.

Social isolation as a dimension of poverty

Within the capabilities framework, social isolation can be understood to represent a key deprivation in which individuals are deprived of meaningful interpersonal relationships, inhibiting individuals from experiencing social connectedness and freely participating in their communities. Indeed, the World Bank's *Voices of the Poor: Crying Out for Change* report—a compendium of 'participatory poverty assessments' in which

[11] Alkire, S., & Foster, J. (2011). Understandings and misunderstandings of multidimensional poverty measurement. The Journal of Economic Inequality, 9(2), pg. 18.
[12] Lustig, N. (2011). Multidimensional indices of achievements and poverty: what do we gain and what do we lose? An introduction to JOEI Forum on multidimensional poverty. *The Journal of Economic Inequality*, 9(2), 227-234.
Moreno, C. (2016). Defining MPI dimensions through participation: the case of El Salvador. *Dimensions*, 1, 16-20. 1, 16-20.
Fennell, S. (2019). Process and Outcomes: Participation and Empowerment in a Multidimensional Poverty Framework. In *The Capability Approach, Empowerment and Participation* (pp. 125-154). Palgrave Macmillan, London.

the global poor were given the opportunity to recount their experiences—discovered that social relationships were nearly universally valued by the poor, and thus the report contends that "discrimination and isolation … have a profound negative impact on quality of life."[13] The Stiglitz-Sen-Fitoussi Commission, another landmark effort to better incorporate the lived experiences of the poor into measurement and policy making, affirmed that 'social connections and relationships' is a "key dimension that should be taken into account [for poverty measurement],"[14] but their report notes that connectedness is chronically absent from most evaluations of social progress. Beyond representing a deprivation that is itself intrinsically valued by the poor, social isolation is correlated with many other components of wellbeing such as health and living standards, further demonstrating the importance of understanding and measuring social connectedness.[15]

In order to address this gap in measurement, Zavaleta et al.[16] [17]have proposed compiling a series of internationally comparable social isolation indicators into a single household survey. Consolidating an incredible amount of literature into one paper, Zavaleta et al. compellingly argue that social isolation is defined as "the inadequate quality and quantity of social relations with other people at the different levels where

[13] Narayan, D., Chambers, R., Shah, M. K., & Petesch, P. (2000). *Voices of the Poor: Crying out for Change*. New York: Oxford University Press for the World Bank, pg. 229.
[14] Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (2009). Report by the commission on the measurement of economic performance and social progress.
[15] Samuel, K., Alkire, S., Zavaleta, D., Mills, C., & Hammock, J. (2018). Social isolation and its relationship to multidimensional poverty. *Oxford Development Studies*, 46(1), 83-97.
Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. WW Norton & Company.
[16] Zavaleta, D., Samuel, K, & Mills, C. (2014). Social isolation: A conceptual and measurement proposal.
[17] Henceforth, I will simply refer to this paper as "Zavaleta et al." due to the sheer amount that I will be referencing it. The paper in its entirety can be viewed for free through the Oxford Poverty and Human Development's website: https://ophi.org.uk/social-isolation-a-conceptual-and-measurement-proposal/

human interaction takes place (individual, group, community and the larger social environment)."[18] Their proposed survey borrows questions from multiple questionnaires that have been found to be "reliable, intelligible, and inoffensive,"[19] thereby combining both objective and subjective indicators into a single, holistic snapshot of acute interpersonal isolation at the individual level. I have copied the entirety of Zavaleta et al.'s proposed survey into Appendix I, but reading their paper in its entirety is recommended so that each question is properly contextualized.

While Zavaleta et al. do not propose that their survey be used for any single purpose, the results from this survey could feasibly be synthesized into an MPI to identify isolated individuals and measure acute social isolation within a given population. [20] An MPI based off of this survey, however, would be particularly vulnerable to misrepresenting the lived experiences of the poor, as social relationships and institutions manifest themselves differently across disparate cultural, geographic, and socioeconomic contexts.[21] Consequently, the phrasing, weight, cutoff, and specification of each question in Zavaleta et al.'s survey would fundamentally impact how social isolation would be measured and, consequently, addressed if an MPI were to be derived from this survey. In this study, I will critically evaluate whether or not select questions in

[18] Ibid., pg. 5.
[19] Ibid., pg. 26
[20] Since the Zavaleta et al. paper was originally written and published the Oxford Poverty and Human Development Initiative—the research institute responsible for creating and championing multidimensional poverty measurement that is itself a partner in *this* research project—it appears incredibly likely that such survey results would eventually be leveraged into a social isolation MPI.
[21] Quan-Baffour, K., Romm, N. R., & McIntyre-Mills, J. (2019). Ubuntu: A dialogue on connectedness, environmental protection and education. In *Mixed Methods and Cross Disciplinary Research* (pp. 221-250). Springer, Cham.
Atleo, E. R. (2007). *Tsawalk: A Nuu-chah-nulth worldview*. UBC press.

Zavaleta et al.'s proposed survey can accurately capture local understandings of social isolation, while also identifying a number of potential missing dimensions in the survey, in one context that may be particularly vulnerable to mismeasurement: Appalachia.

INTRODUCING APPALACHIA: CONTEXT, DATA, AND LIMITATIONS

Appalachian Poverty, Coal, and Development

Located in a mountainous region in the Southeastern United States, Appalachia[22] has long experienced exorbitant levels of multidimensional poverty, including some of the highest rates of income poverty, suicide, incarceration, chronic disease, and substance abuse in the country.[23] Scholars and activists alike have traced the roots of Appalachian poverty to the region's coal industry, an exploitative force that has been blamed for dispossessing Appalachians of their land, destabilizing local bureaucracies, destroying the mountains' topography, and cheating miners out of their wages or pensions.[24] While it has been in decline for decades, Appalachia's coal industry has physically and figuratively scarred the land, leaving behind a complex legacy of

[22] Appalachia technically refers to the entire area surrounding the Appalachian mountains, spanning from northern Mississippi to central New York. However, my research is specifically relevant to central Appalachia, an area that includes sections of Kentucky, North Carolina, Tennessee, North Carolina, Virginia, and West Virginia. For brevity, I will refer to central Appalachia as simply 'Appalachia' or 'the mountains,' two common metonyms for central Appalachia.
[23] Appalachian Regional Commission. (2020a). *County Status, Fiscal Year 2020*. Washington, DC.
[24] Gaventa, J. (1982). *Power and powerlessness: Quiescence and rebellion in an Appalachian valley*. University of Illinois Press.
Billings, D. B., & Blee, K. M. (2000). *The road to poverty: The making of wealth and hardship in Appalachia*. Cambridge University Press.
Eller, R. (2008). *Uneven ground: Appalachia since 1945*. University Press of Kentucky.

ecological, economic, and social blight that remains controversial amongst Appalachians and outsiders alike.[25]

Despite the clear influence of the coal industry upon Appalachian poverty, development actors and the American public at large have long blamed Appalachian poverty principally upon Appalachia's nebulous 'culture of poverty.'[26] Inspired by the deeply flawed theories of the popular sociologist Arthur Lewis, the 'culture of poverty' theory asserts that Appalachia is not impoverished due to centuries of exploitation and corruption, but rather that its material hardships are due to cultural backwardness and social stunting that are somehow ingrained into the mountains' very families and communities. This narrative has been repeatedly supported by humiliating photography, news articles, and popular media that paints Appalachia as a homogeneously and quintessentially poor region, reproducing the undignifying stereotypes that have long haunted the region.[27] Perhaps unsurprisingly, development efforts in the region—including the 1960's 'War on Poverty' that directly targeted Appalachian poverty—have been criticized for targeting a fictitious 'culture of poverty' rather than the exploitative power structures created and upheld by the coal industry, continuously rendering these efforts ineffective at meaningfully reducing Appalachians' material deprivations.[28]

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[25] Lewin, P. G. (2019). "Coal is not just a job, it'sa way of life": the cultural politics of coal production in Central Appalachia. *Social Problems*, 66(1), 51-68.
[26] Kiffmeyer, T. (2008). *Reformers to Radicals: The Appalachian Volunteers and the War on Poverty*. University Press of Kentucky.
Katz, M. B. (1989). *The undeserving poor: From the war on poverty to the war on welfare* (Vol. 60, pp. 173-187). New York: Pantheon Books.
[27] Holtman, J. M. (2004). *"White trash" discourses: Literature, history, social science and poor white subjectivity*. The Pennsylvania State University.
[28] Stricker, F. (2011). *Why America Lost the War on Poverty--and how to Win it*. UNC Press Books.

Whereas outside development actors have done little to combat coal, Appalachians themselves have autonomously resisted exploitative power structures themselves through labor and social movements.[29] Historically, Appalachia's social and cultural traditions have been distinctly shaped by the complex history of exploitation and resistance, resulting in a multitude of social institutions—including folk music ensembles, quiltmaking circles, and woodcarving groups—that are distinctly Appalachian and cannot be neatly compared to those of the greater United States.[30] Recent research has affirmed that even recently established social dynamics, such as LGBTQ+ movements and stigma surrounding certain health conditions, continue to be intimately embedded into the region's history of coal extraction.[31]

Due to the region's historical idiosyncrasies, the Zavaleta et al. survey—and thus any MPI derived from it—would be at particular risk of misrepresenting social connectedness in the Appalachian context. It is entirely possible that these survey questions do not meaningfully reflect how Appalachians create, conceptualize, and enact social connectedness; even if the questions were to be perfectly formulated, an MPI using this survey may need to carefully tailor the weight and cutoff of each indicator to accurately capture Appalachia's specific social dynamics. Furthermore, the Zavaleta

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[29] Fisher, S. (2009). *Fighting back in Appalachia: Traditions of resistance and change*. Temple University Press.

[30] Using visual sources, I deeply explored this dynamic and its implications for Appalachian development in my master's thesis; If you are interested in accessing a copy of my thesis, please contact info@scscglobal.org.

[31] Shriver, T. E., & Bodenhamer, A. (2018). The enduring legacy of black lung: environmental health and contested illness in Appalachia. *Sociology of health & illness*, 40(8), 1361-1375.
Dakin, E. K., Williams, K. A., & MacNamara, M. A. (2020). Social Support and Social Networks among LGBT Older Adults in Rural Southern Appalachia. *Journal of gerontological social work*, 63(8), 768-789.
Lewin, P. G. (2019). "Coal is not just a job, it'sa way of life": the cultural politics of coal production in Central Appalachia. *Social Problems*, 66(1), 51-68.

et al. questionnaire may be missing critical dimensions of Appalachian social connectedness that lay beyond the scope of the survey, thereby omitting Appalachian modes of connectedness that may be uncorrelated with *any* of the proposed indicators. If the survey misrepresents the lived experiences of Appalachians, then it risks mismeasuring social isolation across the region and inadvertently reproducing the 'culture of poverty' narrative rather than critically deconstructing it. As such, my study aims to critically analyze the robustness of the Zavaleta et al. survey through interview data from an Appalachian community.

The Details: Fieldsite, Data, and Constraints

Under my fellowship, I undertook two weeks of fieldwork in Letcher County, Kentucky. I was hosted by Appalshop, a unique organization founded during the War on Poverty as a media center that has since evolved to undertake a variety of arts, community development, and social advocacy functions. Since I had previously worked as a consultant to Appalshop through my undergraduate university, I was thankfully acquainted with a number of Appalshop employees and Letcher County residents prior to undertaking my fieldwork. Though I was centered in Appalshop's home city of Whitesburg, KY, my fieldwork brought me into contact with individuals from all across Letcher County, and I even ventured into an adjacent county for one of my interviews.

Originally, I had hoped to leverage Appalshop's physical campus—a lively venue that is frequented by Appalshop employees, local artists, and Whitesburg residents alike—in order to organically introduce myself and locate interview partners, but I was

informed that the main building had a major sewer breakage just three days before my scheduled arrival. I was thus constrained to scheduling interviews through an online poll sent out to Appalshop employees which, understandably, attracted less enthusiasm than I had hoped, especially given the short notice and the multitude of technological problems that I encountered. Furthermore, I soon discovered that multiple key individuals at Appalshop were away on vacation during my fieldwork, further limiting my opportunities to collect data and form meaningful connections. While I managed to build some momentum towards the end of my stay, I was only able to secure a total of nine interviews throughout my two weeks of fieldwork, six of which were with Appalshop employees. What I lacked in quantity, however, I made up for in quality; three of my interviews lasted for over two hours, and even my shortest interviews lasted upwards of 45 minutes. In addition to interviews, I also attended numerous social events within Whitesburg and informally interacted with the community throughout the workday, and so participant observation became an equally important component of my research.

Despite the insightful content of my interviews, my report should not be considered to be a final, totatalizing, or conclusive account of social connectedness in Appalachia. Foremost, I remain an outsider to Letcher County and could never possibly understand all of the intricacies of the local community, especially given the short length of my visit. Equally importantly, my interview partners tended to either be employed by or associated with Appalshop, and so nearly all of my interviews were sampled from a particular subset of Letcher County residents who tended to be younger, relatively more progressive, and more formally educated than the average Letcher County resident.

Finally, neither Whitesburg itself nor Letcher County as a whole are representative of the entirety of Appalachia, a region that contains an immense amount of geographic, cultural, and economic diversity. In this respect, my report should be understood as exclusively applicable to Whitesburg and its immediate surroundings, although I will attempt to separate trends that appear to specifically apply to Whitesburg from those that may be broadly applicable across Appalachia throughout my analysis.

OVERALL FINDINGS

Across my interviews, I was able to identify a number of key findings that are broadly applicable to social isolation, multidimensional poverty, or participatory measurement. Principally, my interview partners overwhelmingly reaffirmed the link between isolation and multidimensional poverty, emphasized the importance of incorporating local voices into poverty measurement, and praised the overall quality of Zavaleta et al.'s index. While I briefly touch upon topics related to the Zavaleta et al. survey, this section primarily reflects on the dynamics that I encountered while undertaking my interviews and on the overall lessons that I learned from my fieldwork.

Interlinkages with multidimensional poverty

As identified by Samuel et al.,[32] my fieldwork has affirmed that social connectedness and multidimensional poverty are deeply interrelated within the context of central Appalachia. However, my interview partners were quick to note that the

[32] Samuel, K., Alkire, S., Zavaleta, D., Mills, C., & Hammock, J. (2018). Social isolation and its relationship to multidimensional poverty. *Oxford Development Studies*, 46(1), 83-97.

dynamic between connectedness and poverty was not homogeneously experienced across the mountains, nor would simply eliminating social isolation be sufficient to eliminate most material deprivations faced by Appalachians.

Every single one of my interview partners readily provided examples in which social relationships were leveraged in order to reduce individuals' material hardships, a trend that I will discuss in greater detail within the *Indicator-specific feedback: Social network support* and *Indicator-specific feedback: Reciprocity and volunteering* sections below. In short, my interview partners indicated that social relationships were crucial to successfully navigating daily life within a geographic region in which many services are inaccessible. From helping neighbours to clear snow from their driveways to sharing vegetables in their gardens with hungry families, Appalachians appear to actively combat poverty autonomously through social relationships and networks, without which individuals would be deprived of many essential products and services.

Inversely, my interviews also contained various anecdotes describing how material deprivations have exacerbated interpersonal isolation amongst the mountains. When describing her father's experiences with isolation, for example, one interviewee noted that "my father was supposed to come over for dinner on Sunday, but it rained really hard on Sunday … There's a mountain between us, so he didn't want to risk driving through flash flooding [given the county's poor infrastructure]." As described by numerous interlocutors, Letcher County's transportation infrastructure has historically been constructed around trucking routes in order to facilitate the extraction of coal, resulting in highly unequal road quality across the county dependent upon physical

proximity to former mines. As is true across many parts of Appalachia, access to a stable broadband or cellular connection is also unevenly spread throughout Letcher County; consequently, many of my interview partners identified a lack of communication infrastructure to be a key barrier to social connectedness for individuals who may be unable to consistently stay in touch with family and friends over social media or phone. In this sense, individuals who cannot easily attain transportation or communication—two capacity deprivations that themselves may be considered intrinsic dimensions of poverty—may also be less likely to be socially connected, solidifying the relationship between multidimensional poverty and interpersonal isolation.

Importance of participatory measurement

With few exceptions, Letcher County residents were extremely suspicious of outsiders who ambitioned to undertake *any* type of development work or academic research. Even when speaking with individuals with whom I had already been acquainted during my previous trip to Appalshop, I initially encountered hesitancy on the part of my discussion partners when introducing the scope of my research project; in these instances, my position as an Oxford-associated scholar and Samuel Center for Social Connectedness Fellow became a liability rather than an asset. This tangible suspicion, in the words of one of my interview partners, was a consequence of the persistent “neocolonialism in the guise of human development” that has long plagued the region, whereby development actors have historically undertaken nominal development projects in order to further facilitate coal extraction or attract grant money.

For example, one of my interview partners—a farmer living just outside of Letcher County—recounted a recent development program in which Appalachian farmers were promised large sums of money in exchange for growing specific herbs used in traditional Chinese medicine. After attracting a large amount of public and private investment, however, the program spectacularly failed due to the difficulty of growing these herbs in the mountains' harsh climate and logistical concerns over transporting goods from Appalachia onto the international market. The only remainder of this program's grand vision was a sizable patch of the pleasant-smelling botanicals in my interlocutor's field. Throughout my various conversations, I was introduced to countless examples of similar development projects that had likewise failed to incur any real economic, social, or political change, explaining the palpable skepticism that most of my interview partners initially expressed to me. The implications of this dynamic for social isolation measurement will be further discussed in the *Indicator-specific feedback: Reciprocity and volunteering* section.

After introducing my personal story and research project, however, my interview partners usually became far more friendly and conversational. Above all, my interlocutors appeared to be concerned that they would falsely be portrayed as uniformly poor, culturally backwards, or socially stunted, and so my approach of participatory measurement was enthusiastically accepted by most of those with whom I spoke. As such, a key finding of my research was the importance of incorporating local voices into how multidimensional poverty is conceptualized, quantified, and addressed

within Appalachia, as many of my interview partners seemed to be categorically concerned that their communities would be misconstrued by top-down measurements.

Quality of Zavaleta et al. survey

Overall, my interlocutors affirmed that the Zavaleta et al. questionnaire itself is, for the most part, "reliable, intelligible, and inoffensive."[33] Indeed, no single survey question provoked overt disapproval or outrage, nor did I sense that my interview partners struggled to understand any aspect of the survey. The single critique that was targeted against the survey as a whole was that the later questions came across as too 'abstract,' although the interviewee later admitted that this may not be avoidable when discussing an individual's personal evaluations of their social relationships. While a few of my interview partners expressed their skepticism that social relationships can be meaningfully measured on an international level, these concerns were more broadly theoretical than pointedly critical towards the proposed survey questions themselves.

However, my interview partners *did* identify a number of concerns that may lead to an index derived from the Zavaleta et al. survey misidentifying individuals as socially isolated or connected due to the idiosyncrasies of Letcher County and, sometimes, the greater Appalachian context. That's to say, a Letcher County resident could feasibly exhibit a low deprivation score on the Zavaleta et al. questionnaire but personally and communally be considered socially isolated; inversely, an individual who is locally considered deeply connected could potentially display a high deprivation score on this

[33] Zavaleta, D., Samuel, K, & Mills, C. (2014). Social isolation: A conceptual and measurement proposal, pg. 26.

matrix. In the next two sections, I address the specific indicators and missing dimensions of the Zavaleta et al. survey that may be responsible for these mismatches.

INDICATOR-SPECIFIC FEEDBACK

My purpose in this section is to critically evaluate three of the indicators proposed by Zavaleta et al.—'Frequency of social contact,' 'Social network support,' and 'Reciprocity and volunteering'—whose proposed cutoff, weight, phrasing, or specification may need to be adapted to meaningfully measure social isolation within Letcher County. My purpose in this section is not to assert any single 'fix' for these indicators, but rather I intend to propose a preliminary modification for each question to better capture the lived experiences of Letcher County residents and invite further discussion regarding the use of each indicator in an Appalachian social isolation MPI.

Frequency of social contact

Zavaleta et al.'s survey begins with two indicators related to 'frequency of social contact,' as they contend that routine social interaction "has strong links with well-being, allows estimation of the level of objective social isolation, and is a proxy for meaningful relations."[34] Both of the survey questions within this dimension are exceedingly straightforward; the first question asks "How often in the previous two weeks have you spent time together with family?" (with possible responses being "Every day," "Most days," "Few days," and "Never"), while the second question inquires "How often in the

[34] Ibid., pg. 29.

last week did you meet face to face with friends and relatives living outside your household?" (with the exact same response structure).

Principally, many of my interview partners suggested that the *quality*—rather than simply the *quantity*—of social contact determined how connected they felt to their families and communities. Due to the rudimentary transportation infrastructure in certain parts of Letcher County and the physical distance between households in a mountainous, rural region, Appalachians may not feasibly be able to meet with one another in person on a daily, weekly, or even monthly basis. However, my interview partners contended that social interactions between family and community members in Letcher County were usually longer in duration and more intimate as a consequence of their infrequency. Indeed, one interviewee explicitly condemned the routine interpersonal interactions in urban spaces as "shallow" due to their effortless and perfunctory nature, instead suggesting that the logistical challenges of social contact in rural areas actually served to strengthen social connectedness.

To illustrate this point, one of my interview partners—an Appalshop employee who was born and raised on the US East Coast but married into a local family—described the extravagant family gatherings that her husband's parents hosted each year, seemingly typical of those that are commonly held across the region: "The first time I [attended one], I was overwhelmed because it was *huge* … There would always be different activities in the different rooms in the house, so in the kitchen it would just be discussions about cooking recipes, in the living room there is often a piano and people with guitars or banjos … and then you would go into another room

and there would be a story circle happening or people are telling stories from their childhood and, you know, family stories … This made me understand my husband more." While these lively gatherings may only occur once or twice annually, they appear to single-handedly establish a deep level of connectedness between family members that persists throughout the rest of the year.

Consequently, simply measuring the *frequency* of social contact over the past two weeks may not serve as a sufficient proxy for 'meaningful social relations' within the context of Appalachia, especially if the survey is administered during the winter during which time navigating Letcher County's mountainous terrain may be particularly difficult. To better approximate meaningful interpersonal interaction, this question could instead inquire about both the duration *and* frequency of recent social contact, or respondents could be asked about their average amount of contact with friends and family members throughout the entirety of the last year.

Social network support

Zavaleta et al. suggest that supportive relationships are often both intrinsically and instrumentally valuable to individuals, constituting an important dimension of social connectedness. To estimate the existence of supportive relationships, the Zavaleta et al. survey asks "If you were in trouble, do you have relatives or friends you can count on to help, such as financial assistance?" Respondents can either answer "Yes," "No," or "Does not know/Does not want to answer"; if the answer is yes, the survey proposes

further asking respondents how much financial assistance they could expect from their friends and families during such crises.

Rather than critiquing this question, my interview partners specifically emphasized the central importance of supportive relationships within the Appalachian context. As an intrinsic dimension of social connectedness, supportive relationships were constantly referenced as the *most* important factor in determining whether or not an individual would be considered isolated by their community; if fact, one interviewee explicitly defined 'community' as a "place where you know everyone has got your back and will help you out no matter what." Despite this trend, my interview partners were usually hesitant to attempt to convert their social support into an exact dollar amount, as estimating the financial value of their social relationships was felt to be either presumptuous, infeasible, or pointless by most of my interlocutors.

Social networks were likewise identified as instrumental tools to fight other aspects of social isolation and, more broadly, multidimensional poverty. Since many services are inaccessible in much of the county due to either geographical remoteness or simply a lack of service providers, Appalachians were described as routinely soliciting support from their neighbours, families, and communities in order to meet their material needs. Instead of understanding these periodic favours to be a burden, however, many of my interview partners believed that supporting those in their social network deepened their interpersonal connections. Indeed, one of my interlocutors described a local practice—referred to as a 'working'—in which an individual calls upon their community to assist them in an urgent task; while completing the job, community members share

stories, play music, and discuss recent events, transforming an otherwise mundane chore into a lively social event. To illustrate his point, my interlocutor enthusiastically recounted a recent 'working' in which he and his friends traded ghost stories throughout the night, barely mentioning the tedious labor which he was undertaking as part of the 'working.' Social network support is therefore not only intrinsically valued within the Appalachian context, but it can also alleviate other material deprivations and facilitate social contact between community members.

While the survey questions themselves may be applicable to Letcher County, 'social network support' would have to be weighted heavily within any index that attempts to measure social isolation in this context. Even if an individual is subjectively satisfied with their relationships and frequently meets with family members, then they may nonetheless be locally considered isolated if they cannot depend upon their social network for support. Additionally, my interviewees suggested that attempting to measure the monetary value of social support may not be feasible within Letcher County, as doing so provoked a somewhat adverse response from a few of my interlocutors.

Reciprocity and volunteering

A third and final dimension of interest commented upon by my interlocutors is 'Reciprocity and volunteering,' two concepts that both attempt to measure altruism. Zavaleta et al. note that, "despite being the 'touchstone' of social capital, reciprocity remains under-theorized and rarely measured, partly because it is difficult to summarise in a simple question ... and also because norms of reciprocity are complicated to

operationalize."[35] Meanwhile, Zavaleta et al. suggest that 'volunteering' is a complementary, yet distinct, aspect of social connectedness that explicitly focuses on altruism rather than social obligation. In order to capture both the obligatory and altruistic aspects of sharing, Zavaleta et al. propose two separate questions to measure this dimension. The first question asks respondents to rank three statements on a seven-point scale as to how applicable each one is to their lives: "a) If someone does a favour for me, I am ready to return it," "b) I go out of my way to help somebody who has been kind to me before," and "c) I am ready to undergo personal costs to help somebody who helped me before." The second question simply asks "In the last 12 months have you done any volunteer activities through or for an organization?" with possible responses being "a) Yes b) No c) Does not know/Does not want to answer."

Similarly to 'social network support,' my interview partners heavily emphasized the importance of 'reciprocity' as a dimension of social connectedness. However, the Zavaleta et al. survey only captures a respondent's *own* propensity to reciprocate favours, rather than the perceived amount of reciprocity across a respondent's entire social network. For example, one of my interview partners expressed his frustration with a destitute family who attended his community center's monthly potluck but did not contribute anything to the meal, instead bringing tupperware containers to bring home leftovers from the dinner. My interview partner was not upset that the family took leftovers—in fact, he encouraged them to do so—but rather he was offended that the family did nothing to reciprocate his community center's generosity, whether it be

[35] Ibid., pg. 29.

bringing a few dollars worth of soda or staying afterwards to help clean up the event.[36] Likewise, another of my interview partners felt slighted that her needful neighbour, with whom she shared many fruits and vegetables from her garden, no longer reciprocated her generosity with occasional baked goods. In both instances, my interview partners did not expect an equal reciprocation of their altruism, but rather they desired a symbolic token of appreciation so that they did not feel as though their help had been taken for granted. Reciprocity is therefore an integral aspect of social connectedness within the context of Appalachia, but solely asking whether or not a respondent would be willing to reciprocate generosity may not capture general reciprocity across their entire social network.

Surprisingly, I discovered that 'volunteering' for an organization is somewhat of a contentious dynamic within Letcher County. Due to decades of failed developmental interventions targeting the area, sections of Letcher County are saturated with non-profit organizations and charities that, in the words of one interviewee, are "only mining, all they're doing is mining, every one of their projects is only about a grant … They got a million dollar grant at the University of Kentucky to do something, and they're going to spend about $20,000 to come to Whitesburg and do a program that lasts about six months. I've seen that happen ten times in the last ten years … They're not adding anything for the community." As such, officially volunteering with one of these organizations appears to be somewhat stigmatized across the county, signifying that an individual is actually *disembedded* from local communities and social networks rather

[36] Thankfully, this story has a happy ending; my interview partner maturely expressed his disappointment to the family, who understood his concerns and brought paper plates to the next potluck. The family continued to attend the dinners and became further integrated into the community.

than genuinely connected to them. Of course, this doesn't hold true for all nonprofit organizations—Appalshop and a number of health and legal charities seem to have integrated themselves well into their local contexts, for example—but the survey question nonetheless may inaccurately measure connectedness by stipulating that volunteering must be facilitated by a formal organization.

Though Appalachian altruism appears to mostly manifest itself within informal social interactions such as 'workings,' my interviews revealed one formal organization through which Appalachians regularly volunteer: the church. However, my interview partners were unsure whether or not locals would understand charitable acts through their church to necessarily constitute 'volunteering through or for an organization,' as churchgoers may understand volunteering to be an extension of their spiritual practice.

As rightly identified by Zavaleta et al., 'reciprocity' is a complex yet integral dimension of social connectedness within Appalachia. Rather than exclusively measuring an individuals' own propensity to reciprocate, a social isolation index in Appalachia would also benefit from measuring a respondent's perception of reciprocity across their wider social network, as a number of my interviewees explicitly identified instances in which they felt snubbed by others who failed to symbolically reciprocate their generosity. 'Volunteering,' however, appears to be a more complicated dynamic within Letcher County, since non-profit organizations are widely regarded with suspicion due to the region's history of extractive developmental efforts. One potential solution to this would be to clarify that altruistic activities conducted through churches constitute as volunteering; even then, many of my interviewees have also noted that there are few

non-Christian places of worship in Letcher County, and so clarifying this may preclude non-Christians from being identified as ‘volunteers’ despite their informal altruistic activities. Another solution would be to remove “through or for an organization” from the phrasing of the question altogether, but then ‘volunteering’ may be conceptually indiscernible from ‘social network support’ or ‘reciprocity.’ Perhaps most feasibly, ‘volunteering’ may simply be omitted from an index that specifically targets Appalachia, raising questions as to whether or not ‘volunteering’ is categorically meaningful across disparate geographic contexts.

POSSIBLE MISSING DIMENSIONS

Beyond indicator misspecification, the Zavaleta et al. survey may be overlooking integral components of how connectedness is conducted in Letcher County. In particular, I identify ‘participation in cultural events,’ ‘deep-seated divisions,’ and ‘collective isolation and stigma’ as three potentially missing dimensions from the survey, none of which appear to be perfectly correlated with any of the other indicators in the questionnaire. While I may not personally be entirely convinced that all three of these should be included in an Appalachian social isolation MPI, a significant portion of my interview partners identified these dimensions as integral to Appalachian social connectedness; as such, my fieldwork suggests that, at the very least, these three dimensions should receive further consideration from subsequent researchers.

Participation in cultural events

As I undertook interviews and interacted with the Whitesburg community, it became clear that distinctly Appalachian cultural events were integral to how Letcher County residents connected to one another. Since Appalshop is involved with the production of film, radio, music, and stage plays in various capacities, I was relatively unsurprised that my interviews with Appalshop employees were saturated with references to the importance of the arts to community development. However, I was astounded by the overwhelming amount of cultural events and practices that I was exposed to throughout my fieldwork, despite the steep restrictions imposed by the COVID-19 pandemic. During my two week stay, I attended no less than six concerts performed by local or nationally-touring bands, all hosted within the small city of Whitesburg: “you can’t swing a cat here [in Letcher County],” teased one of my interview partners, “without hitting a banjo player upside the head.” In addition, I attended four farmers’ markets populated with artisans selling a wide variety of crafts and small-scale farmers selling both fresh or preserved produce. All of these events were lively and well attended, each seeming to itself constitute a vital social space in which the Whitesburg community and social networks therein were enacted.

While I only directly participated in Letcher County’s music scene, my interview partners further elaborated upon a multitude of cultural events and practices through which Letcher County residents form meaningful social relationships. For example, one of my interview partners described the Appalachian tradition of ‘story circles’ in which participants take turns sharing improvised, personal narratives from their lives, often

resulting in touching, humorous, or painful moments that fosters connectedness between the storytellers. Another interview partner recounted the social functions of Appalachian quilt making circles as he gave me a tour of their community center's sewing room, pointing out the friendship quilt affixed to the wall that combined creative or ancestral patterns from various community members into one blanket, the quilting frames around which seamstresses would painstakingly work while conversing, and the photographs pinned to a bulletin board displaying countless generations of quilting groups. The same interview partner proudly detailed the square dances that his community center regularly hosted prior to the pandemic, drawing participants from across Letcher County despite the difficulty of reaching his mountaintop town. Whether in relation to Appalachian wood carving, oral history, or traditional medicine, my interview partners constantly referenced local practices that themselves appeared to constitute an integral dimension of social connectedness.

When asked whether or not any of the questions from the Zavaleta et al. survey could feasibly estimate whether or not an individual participated in cultural events, the majority of my interview partners were skeptical that this dimension *could* be reliably captured by a proxy. One of my interview partners went as far as to assert that "community has to be grounded in reality … there needs to be a physical thing that pulls a community together," seemingly questioning whether or not meaningful social relationships existed outside of concrete expressions of connectedness. In a number of cases, my interview partners specifically noted that a Letcher County resident could feasibly be identified as non-deprived in the overwhelming majority of dimensions in the

Zavaleta et al. survey, but, nonetheless, they could still be considered profoundly isolated if they were to never participate in local cultural events. Indeed, a few of my interview partners identified examples from their personal lives in which a friend or family member—usually someone who grew up outside of Letcher County and only immigrated there in order to find employment or join their spouse—had regular contact with family and friends, were generally satisfied with their existing relationships, and trusted their community, but nonetheless struggled with feelings of isolation due to them feeling disconnected from Appalachian social and cultural traditions.

As such, 'participation in cultural events' may constitute a missing dimension of isolation in the Zavaleta et al. survey—at least in reference to the Appalachian context—due to the intrinsic and instrumental importance of such traditions to social connectedness in Letcher County. Furthermore, 'participation in cultural events' does not appear to have reliable linkages with other dimensions of social isolation, suggesting that an index without indicators related to this may risk mismeasuring interpersonal connectedness within Letcher County. To actually measure 'participation in cultural events,' however, far more consideration and participatory work must be conducted in order to formulate a question that reliably captures this dimension.

Deep-seated divisions

Appalachian communities and families are seldom unitary, homogenous, or indivisible entities; indeed, many of my interlocutors highlighted numerous social cleavages that fragmented social networks and ignited fervid quarrels between longtime

friends. Primarily, these fragments appear to have been a result of political differences that arose after the 2016 Presidential Election and COVID-19 pandemic, although the role of coal in Appalachia's history and future has long been a contentious political topic throughout the region. One of my interlocutors even banned political discussion from occurring on his town's Facebook page in order to avoid fracturing his community across partisan lines. Another interview partner also admitted that some nearby towns were split as a result of "intergenerational infighting that … East Kentucky is famous for, you know, the feuds,[37]" but I never personally witnessed any such dynamic nor received additional information about contemporary feuds outside of occasional, vague references to them across my interviews.

When asked whether or not such divisions inhibited connectedness, my interview partners were quick to describe how alienating such divisions can be: "My hometown … has a long history of a lot of fighting," reflected one of my interview partners, "You know, it's gotten wet, dry,[38] things like that will tear a community apart. It will tear a community apart … [My hometown] will one day be completely just a bedroom for Pikeville [a growing city nearby], it will no longer be a community." In other interviews, I heard stories about individuals who refused to speak to either their parents, siblings, or former friends due to political differences, resulting in distinctly meaningful relationships

[37] Appalachia has long been popularly associated with violent conflicts between warring families who fought over land, resources, and pride, exemplified by the famous Hatfield and McCoy feud (Waller, 2012). Indeed, Billings & Blee (2000) have identified these feuds as a secondary cause of intergenerational Appalachian poverty, although their analysis reveals that these conflicts were a manifestation of the greater class interests that blighted the mountains. Perhaps naively, I had assumed that such conflicts had largely been discontinued in Kentucky; my interlocutors suggested otherwise.

[38] "Wet" here refers to a county or town in which the sale of liquor is legal, whereas "dry" describes an area in which liquor sales are prohibited. Liquor prohibition laws have fluctuated across Kentucky since the early 20th century, resulting in a controversial and often violent history of illicit liquor production known as 'moonshining' (Peine & Schafft, 2012).

becoming painfully estranged. Even if such an individual continues to maintain numerous other, high-quality relationships, they may still undergo acute isolation after being bereaved of a specific, unreplaceable relationship following a fierce dispute. This logic may similarly apply to a fragmented community whose internal subgroups are inwardly connected but outwardly antagonistic towards one another, potentially creating divisions that reverberate across generations.

Despite these trends, it remains unclear whether the existence of social divisions is an intrinsic or instrumental dimension of isolation; that's to say, Appalachians may intrinsically value unity in their communities, families, and networks, or divisions may instead only be instrumentally undesirable due to their tendency to inhibit meaningful social relationships. In either case, neatly interjecting social divisions into Zavaleta et al.'s definition of social isolation—"the inadequate quality and quantity of social relations with other people at the different levels where human interaction takes place"[39]—would prove difficult, as this phrasing is meant to capture acute isolation rather than broader social trends. Feasibly, antagonistic relationships could be simply dismissed as one factor contributing to the 'inadequate quality' of individuals' 'social relations,' but this may risk oversimplifying such a complex dynamic.

Numerous questions and subquestions on the Zavaleta et al. survey may be correlated with the existence of social cleavages,[40] but no single indicator directly inquires about or could perfectly predict the presence of them. While the relationship

[39] Ibid., pg. 5.
[40] Question 7 (Levels of satisfaction), Question 9 (Whether people feel that they belong strongly to their neighbourhood), Question 10 (Level of loneliness felt by respondent), and Question 11 (Level of loneliness felt by respondent) [especially Question 11.5] appear to be potential—yet deeply imperfect—proxy variables to approximate the existence of deep-seated social cleavages.

between deep-seated divisions and acute social isolation requires far more theorizing, my interlocutors widely believed that asking respondents about the cohesion of local social networks would be gainful within the context of Letcher County. As such, my fieldwork suggests that the presence of social divisions remains an underexplored, if not wholly missing, dimension of Appalachian social isolation.

Collective isolation and stigma

Upon learning of my academic interest in social isolation, many of my interlocutors initially assumed that I wanted to study isolation on the communal rather than interpersonal level; after all, Appalachia is popularly associated with small, remote towns that are fundamentally cutoff from the rest of the nation. Even after clarifying that my unit of analysis was the individual, a number of my interview partners continued to reference Appalachia's subordinate place within the American mythos, solemnly recounting the countless undignifying stereotypes of backwardness and insularity that have haunted the region for centuries.

While I initially conceptualized this dynamic to better represent a dimension of shame or humiliation—two concepts that are both deeply interconnected with social isolation but have been separately theorized and measured[41]—rather than connectedness, I began to question this assumption upon reviewing my data. If social isolation refers to "the inadequate quality and quantity of social relations with other people *at the different levels where human interaction takes place* [emphasis added],"[42]

[41] Zavaleta, D. (2007). The ability to go about without shame: A proposal for internationally comparable indicators of shame and humiliation. Oxford Development Studies, 35(4), 405-430.
[42] Ibid., pg. 5.

then an individual's feeling of belongingness within a national community could feasibly be understood to represent a legitimate component of acute isolation. To my interlocutors, Appalachia's abject reputation across the rest of the United States has become particularly salient within the past few years due to the recent polarization of American politics; as a result, a number of my interview partners felt insulted by national media outlets, struggled to navigate digital spaces that were dismissive, if not openly hostile, to Appalachian voices, and found themselves frequently arguing with strangers on social media. While this may not neatly align with traditional notions of social connectedness, some of my interlocutors clearly felt cut off from one specific 'level where human interaction takes place': the nation.

At a more tangible level, some interviewees also expressed that external linkages between individual towns across Letcher County were highly unequal. While Whitesburg itself frequently attracted visitors from across the region due to its status as the county seat, my interview partners noted that many of the nearby cities, towns, and communities rarely interacted with outsiders. According to my interview partners, individuals who have deep connections in their immediate communities may nonetheless be isolated from external social networks, echoing the distinction between 'bridging' and 'bonding' social capital that has been developed by authors such as Putnam and Agnitsch.[43] Once again, the regional level appears to be one such arena in which meaningful social interaction takes place, resulting in individual-level seclusion

[43] Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and schuster.
Agnitsch, K., Flora, J., & Ryan, V. (2006). Bonding and bridging social capital: The interactive effects on community action. *Community Development*, 37(1), 36-51.

from subnational networks potentially constituting another dimension of interpersonal isolation.

Although I am still personally skeptical that collective isolation or stigma are intrinsic dimensions of isolation at an individual level, my interview partners consistently expressed that national and subregional linkages were personally meaningful to how they and their communities experience social connectedness. As such, my fieldwork indicates that inquiring about an individual's connections outside of their immediate community may better capture Appalachians' lived experiences of social isolation. This could be done relatively painlessly by adding additional components to Question 7[44] in the Zavaleta et al. survey related to respondents' satisfaction with their greater national, regional, and sub-regional context, although specifying the exact levels of interest will require additional participatory research.

CONCLUSION

Throughout this report, I have introduced, described, and ultimately evaluated the Zavaleta et al. survey in relation to its ability to capture the lived experiences of social connectedness within Letcher County. Although my fieldwork found that the overall survey is well constructed, my interview partners identified three indicators in the questionnaire that may prove problematic if synthesized into an Appalachian social

[44] Question 7 reads "In general, how satisfied or unsatisfied are you with your: 1. Life overall 2. Food 3. Housing 4. Income 5. Health 6. Work 7. Local security level 8. Friends 9. Family 10. Education 11. Free choice and control over your life 12. Dignity 13. Neighbourhood/town/community/ 14. Ability to help others 15. Spiritual, religious or philosophical beliefs 16. Spouse or partner." Respondents' possible answers are as follows: "1 = Very satisfied; 2 = Fairly satisfied; 3 = Not very satisfied; 4 = Not at all satisfied; 99 = Don't Know / No Answer."

isolation MPI, as well as three potentially missing dimensions of social connectedness in Letcher Country that cannot be easily estimated by the questionnaire's current indicators. While it remains unclear whether all of these suggestions could feasibly be theorized or operationalized in a productive way, my interview partners provided valuable insight into the lived experiences of social connectedness in Letcher County and raised important questions surrounding the measurement of social isolation. In addition to these specific findings, my fieldwork has also broadly affirmed the interlinkages between multidimensional poverty and social isolation, highlighted the importance of participatory measurement, and challenged my own academic understandings of Appalachia and connectedness.

Above all, these findings should be viewed as preliminary, contextualized in relation to my specific fieldsite, and considered alongside the limitations and hurdles that I experienced during my fieldwork. Further theoretical and empirical research must be undertaken in order to meaningfully incorporate these findings into the Zavaleta et al. survey, but I hope that this research inspires further conversations related to social isolation measurement and draws attention to the importance of this within the policymaking space. Overcoming social isolation will require far more than number crunching, but ensuring that social isolation measurements are meaningful is one critical step towards creating a more equitable and connected future.

APPENDIX I: ZAVALETA ET AL. SURVEY

Internal social isolation

Frequency of social contact

- Question 1: How often in the previous two weeks have you spent time together with family?
    - Response structure: a) Every day b) Most days c) Few days d) Never
- Question 2: How often in the last week did you meet face to face with friends and relatives living outside your household?
    - Response structure: a) Every day b) Most days c) Few days d) Never

Social network support

- Question 3: If you were in trouble, do you have relatives or friends you can count on to help, such as financial assistance?
    - Response structure: a) Yes b) No c) Does not know/Does not want to answer
        - b. If yes, how much support?

Presence of discussion partner

- Question 4: Do you have anyone with whom you can discuss intimate and personal matters?
    - Response structure: a) Yes b) No c) Refusal d) Don't know e) No answer

Reciprocity and volunteering

- Question 5: Respondents were asked to indicate on a seven-point scale how well each of the following statements applies to them personally (7-point scale)
    - a) If someone does a favour for me, I am ready to return it
    - b) I go out of my way to help somebody who has been kind to me before
    - c) I am ready to undergo personal costs to help somebody who helped me before

- Question 6: In the last 12 months have you done any volunteer activities through or for an organization?
    - Response structure: a) Yes b) No c) Does not know/Does not want to answer

External social isolation

Satisfaction with social relationships

- Question 7: In general, how satisfied or unsatisfied are you with your:
    - 1. Life overall
    - 2. Food
    - 3. Housing
    - 4. Income
    - 5. Health
    - 6. Work
    - 7. Local security level
    - 8. **Friends
    - 9. **Family
    - 10. Education
    - 11. Free choice and control over your life
    - 12. Dignity
    - 13. Neighbourhood/town/community
    - 14. Ability to help others
    - 15. Spiritual, religious or philosophical beliefs
    - 16. **Spouse or partner
        - Response structure: 1 = Very satisfied; 2 = Fairly satisfied; 3 = Not very satisfied; 4 = Not at all satisfied; 99 = Don't Know / No Answer

Need for relatedness

- Question 8: How true are the following statements for you?
    - a. I get along well with people I come into contact with.
    - b. I consider myself close to the people I regularly interact with.
    - c. People in my life care about me.
        - Response structure: 1 = Not at all true 2 = Somewhat true 3 = Fairly true 4 = Completely true 5 = Don't know / No answer

Feeling of belonging

- Question 9: How strongly do you feel you belong to your immediate community/neighbourhood?
    - Response structure: 1 = Very strongly 2 = Fairly strongly 3 = Not very strongly 4 = Not at all strongly 4 = Don't know

Loneliness

- Question 10: Indicate how often you feel the way described in each of the following statements:
    - 1. How often do you feel that you are ‘in tune’ with the people around you?
    - 2. How often do you feel that no one really knows you well?
    - 3. How often do you feel you can find companionship when you want it?
    - 4. How often do you feel that people are around you but not with you?
        - Response structure: 1 = Never 2 = Rarely 3 = Sometimes 4 = Often

Trust

- Question 11: Please indicate for each of the statements, the extent to which they apply to your situation, the way you feel now:
    - 1. I experience a general sense of emptiness
    - 2. There are plenty of people I can rely on when I have problems
    - 3. There are many people I can trust completely
    - 4. There are enough people I feel close to
    - 5. I miss having people around
    - 6. I often feel rejected
        - Response structure: 1 = yes! 2 = yes 3 = more or less 4 = no 5 = no!
            - Alternative structure: 1 = yes 2 = more or less 3 = no

- Question 12: Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?
    - Response structure: a. People can be trusted b. You can’t be too careful

- Question 13: In general, do you agree or disagree with the following statements?
    - A. Most people in this village/neighbourhood are willing to help if you need it.
    - B. In this village/neighbourhood, one has to be alert or someone is likely to take advantage of you.
        - Response structure: 1 = Agree strongly 2 = Agree somewhat 3 = Neither agree or disagree 4 = Disagree somewhat 5 = Disagree strongly

- Question 14: How much do you trust….
    - 1. Local government officials
    - 2. Central government officials
    - 3. Private businesses
    - 4. Legal system

        - Response structure: 1 = To a very great extent 2 = To a great extent 3 = Neither great nor small extent 4 = To a small extent 5 = To a very small extent

- Question 15: If you lost a wallet or a purse that contained two hundred dollars, and it was found by a neighbour, how likely is it to be returned with the money in it?
    - Answer category: 1 = Very likely 2 = Somewhat likely 3 = Somewhat unlikely 4 = Not at all likely?
        - Note: Must adapt question to particular context

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