Point/Counterpoint

Paul Decker and Kevin Kelly, Co-Editors

PROMOTING EQUITABLE APPROACHES IN SOCIAL SCIENCES RESEARCH

As we anticipate the readers of this journal are aware, there has been a growing number of conversations in recent years regarding equity and justice. These discussions have spread throughout many fields and sectors, including among those of us in the public policy analysis and management social sciences. Our own organization (Mathematica) joined with eight others in the policy research field to form the Evidence and Equity Collaborative.[1] Staff within our organizations connect to share strategies that promote diversity, equity, and inclusion within our institutions; collaborate together on partnerships and opportunities that could expand the diversity of those exploring policy research careers; and discuss equitable methods and approaches for conducting policy research. By sharing and learning alongside one another, we hope to build a foundation for analysis ready to advance equitable systems, policies, and programs across the nation. Throughout our experience, we have learned that there are a variety of perspectives on what it means to promote equity in research and evaluation methodologies, and that individuals hold different beliefs about how equity can or should be incorporated into this work.

This column breaks from our traditional format of having two authors share a back-and-forth exchange on a specific policy area. However, we uphold the spirit of the Point/Counterpoint column by sharing different authors' perspectives on a key topic of interest to many in the *JPAM* audience. We have enlisted contributors from member organizations in the Evidence and Equity Collaborative to share their views and experiences using equitable approaches to research and evaluation methods. Nitya Venkateswaran of RTI begins with an essay on how researchers can conceptualize the principles of diversity, equity, and inclusion in their work and provides concrete examples of how those principles can be embedded. Next, Vanessa Hoffman and Glynnis Melnicove of the American Institutes for Research share an essay describing their experience using a participatory research approach in a Ugandan community to involve those who would traditionally be considered as "research subjects" into the research process itself. Then, Marjorie Dorimé-Williams of MDRC provides her reflections on how quantitative research methods, including disaggregating data, have the opportunity to more accurately reflect the experiences of those from historically underrepresented communities; however, she warns that unless equitable practices are used in these methods, such as critical quantitative inquiry, they can result in further harm to the communities. Then, John Hotchkiss, Divya Vohra,

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[1] The Evidence and Equity Collaborative includes Abt Associates, American Institues for Research (AIR), Mathematica, MDRC, NORC at the University of Chicago, the RAND Corporation, RTI International, the Urban Institute, and Westat. More information on the Evidence and Equity Collaborative can be found at www.evidenceandequitycollab.org.

and So O'Neil of Mathematica discuss how agent-based modeling can be designed to honor equity by simulating real world interactions that recognize the complex roles and identities of individuals, which can be used to answer "what if" questions in places where experiments may be infeasible or unethical. To conclude the column, we provide a brief response to these four essays to summarize themes and share considerations for the further advancement of our field.

EMBEDDING PRINCIPLES OF DIVERSITY, EQUITY, AND INCLUSION WHEN COLLECTING AND ANALYZING DATA

Nitya Venkateswaran

INTRODUCTION

The longstanding operating premise for most research is that policymakers objectively use evidence and data to define and understand problems, determine solutions, and validate existing policies or strategies (Weiss, 1979). However, not enough attention has focused on social dimensions of the research process, including who is and is not involved in it. "How are problems defined and what issues are left unexamined? Which solutions are developed, and which are discarded?" (Venkateswaran et al., 2023, p. 2). To ensure research is in service of equity goals, researchers must explicitly embed principles of diversity, equity, and inclusion in the research process.

Often the application of diversity, equity, and inclusion in research is limited to the diversity of researchers or disaggregation of data by demographic characteristics. While these approaches are a good start, embedding diversity, inclusion, and equity principles in the research enterprise requires a significant departure from mainstream methodologies, including (a) a transformation of researchers' perspectives and worldviews; (b) an expansion of the research content to focus on systems that perpetuate inequities; and (c) shift in the process of conducting research to explicitly incorporate culture and context, the perspectives of communities most impacted by the research, and anti-racist and anti-oppressive approaches to the research process (Venkateswaran et al., 2023). Each element affords various implications for collecting and analyzing data. This paper highlights examples of embedding principles of diversity, equity, and inclusion in research, even when equity goals of the research or evaluation project are undefined.

PRINCIPLES OF DIVERSITY, EQUITY AND INCLUSION IN RESEARCH

This section outlines how researchers can conceptualize diversity, equity, and inclusion in research.

Diversity

It is important for researchers to acknowledge different worldviews and the experiences of marginalization and privilege often associated with different racial or ethnic identities, genders and gender identities, sexual orientations, ages, socioeconomic statuses, languages, (dis)ability statuses, religions, political perspectives, and cultures. Researchers must address the ways in which their social identities influence

how they see the world and interact with others (Symonette, 2009) and implications of these biases on the research process. Research should also center the cultural systems represented within the physical or social context of the research taking place (Hood et al., 2015; Trainor & Bal, 2014) to achieve multicultural validity. Multicultural validity refers "to the accuracy and trustworthiness of understandings and actions across multiple, intersecting dimensions of cultural difference" (Kirkhart, 2013, p. 2).

Equity

Centering equity in the research process requires "acknowledging, addressing, and dismantling systemic biases in mindsets, practices, and policies" (Venkateswaran et al., 2023, p. 4). To center equity, research should focus on how, if at all, interventions, policies, and programs dismantle inequitable systems (Community Science, 2021) or examine systems that keep disparities in place (Andrews et al., 2019). Centering equity also requires acknowledging that mainstream research practices, such as how researchers collect and use social identity data, can perpetuate White supremacy and racism (Bonilla-Silva & Zuberi, 2008).

Inclusion

Inclusion in research anchors the "voices, perspectives, and cultures of those most excluded from power and influence in the research process" (Venkateswaran et al., 2023, p. 4). Research can greatly influence how people conceive of problems and the solutions that address social problems. However, research is often guided by the interests of researchers and/or clients, not those of research participants or the communities most affected by the social condition examined by the research. Therefore these latter populations may have the least say in the policies or practices that affect their lives. Including the participants and communities who stand to be most impacted by the research requires building intentional partnerships to ensure that these contributions are valued and that these populations are able to participate as informed partners.

APPLICATION OF PRINCIPLES IN DATA COLLECTION AND ANALYSIS

This section includes examples of how to embed principles of diversity, inclusion, and equity in evaluation projects with a diverse set of clients and populations to transform the content of the research and the process of conducting research.

Diversity

This example project focused on understanding the impact of workforce development programs in the environmental field immediately after participants completed their program and one year later. The team reworked traditional concepts of impact used in the field, including past evaluations sponsored by the client, choosing not to use White-dominant frames and perspectives. This was particularly important given the focus on examining participants of color historically excluded from the environmental field. Conservationism has been critiqued as being rooted in colonialism and racism (Rudd et al., 2021; Taylor, 2016).

Previous measures looking at an individual's environmental ethic examined participants' recycling practices or purchase of outdoor gear, measures rooted in White-dominant frames. It would be culturally invalid to use the same measures on groups with different norms and cultural values (Hood et al., 2015), even though it is

common practice to use validated instruments or frameworks to measure impact. Given that no instruments exist outside of a White-dominant frame for constructs such as environmental ethic or environmental action, we are in the process of creating our own measures using a two-pronged approach. We are developing these scales using participants' experiences and perceptions of impact, which we have learned through focus groups and interviews. In addition, we will collaborate with program staff and former workforce program participants from different racial and ethnic backgrounds during the development of the survey to create and refine appropriate measures or necessary constructs.

Equity and Inclusion

This example project incorporating equity and inclusion is an evaluation of a non-profit program that addresses barriers to persistence by providing supports to college students most marginalized by the education system. This program provides an individual-level intervention to address a systemic problem in colleges and universities: the disparate persistence rate of communities of color despite students' high level of preparation (Carnevale & Strohl, 2013), especially those students from families with taxable income that does not exceed 150 percent of the poverty level. The evaluation focuses on understanding the quality of implementation and perceived impacts on students.

To embed an equity lens in the research content, the focus of the evaluation expanded from looking solely at program implementation to understanding systemic barriers that students may face. Although the program would not impact systemic barriers, it could at least aid in understanding students' experiences and using feedback to (a) better understand how to support students and (b) contextualize results about perceived impact. Research on postsecondary persistence suggests that institutional factors such as campus culture and climate (including presence of discrimination) and the availability of supports for students who may not have the cultural capital to navigate higher education can influence their sense of belonging, which is a predictor of persistence (Museus, 2014; Stephens et al., 2015). We created research questions focusing on students' experiences and added questions to the survey about students' perceptions of campus climate, belonging, and discrimination, using scales that have been validated with multiple racial and ethnic groups.

When disaggregating survey data on students' perceptions of experiences, such as belonging, we often disaggregate data by race or other demographic characteristic to make claims about how the social demographic affects perspectives or trends. However, this practice of using race or gender as a proxy variable can perpetuate oppression because we "mathematically homogenize the experience of an entire group of diverse people, which, of course, is part of racism" (Kraus, 2020). Instead of assuming which demographic characteristics are most salient to students' experiences of discrimination and sense of belonging, we asked students to identify the aspects of their social identity they attributed to their experiences, which gave us more accurate responses than if we used social identity characteristics as proxy variables.

The project also included college students in the research process. Students participated in the analysis and interpretation of data so that the framing of the perceived effect of the program was provided through students' own words and perceptions, rather than those of the researchers. We gave students quotes from student focus groups and asked them to develop headlines summarizing the overall themes and then connect the headlines to overall survey results. Students' sensemaking gave us a framework for interpreting survey and focus group results to demonstrate how the program supports students' college persistence. Based on the emerging findings,

students then developed recommendations for how the program could improve their college experience. To show appreciation for their time and expertise, we provided students with compensation.

CONCLUSION

Research plays a significant role in shaping awareness of issues or problems, policy, and practice. If research is in service of a more just and equitable world in which outcomes in life are not determined by "social identities, residence in marginalized communities, and/or experience with oppressive systems" (Venkateswaran et al., 2023, p. 4), then it is critical to transform the research enterprise to align with goals of equity. To this point, integration of principles of diversity, inclusion, and equity has not occurred in mainstream research practice due to beliefs that research is neutral or objective (Zuberi & Bonilla-Silva, 2008).

These example projects provide a starting point to understand how principles of diversity, equity, and inclusion can be applied to research or evaluation projects while including the populations most impacted by the condition studied or program participants belonging to marginalized communities. Both clients and funders did not specifically request these approaches; rather the research team suggested them to ensure that research was in service of clients' goals to improve programs and services that affect marginalized communities.

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ENGAGING COMMUNITIES AND LIVED EXPERIENCE THROUGH PARTICIPATORY APPROACHES

Vanessa Hoffman and Glynnis Melnicove

INTRODUCTION

As the international development community seeks to be more intentional about equity in programming and localization, organizations and donors are identifying different ways to engage stakeholders. One approach to ensuring that research and programming are more equitable is to embed participatory methods in the design and implementation of activities and initiatives. Participatory methods "use systemic inquiry in direct collaboration with those affected by an issue being studied for the purpose of action or change" (Vaughn & Jacquez, 2020, para. 1).

The USAID Graduating to Resilience Activity[1] (the Activity), implemented by the AVSI Foundation in partnership with the American Institutes for Research (AIR) and Trickle Up, uses the standing committee approach, which features community-elected committees to provide feedback throughout implementation to ensure the

[1] For more information, visit: https://www.air.org/project/graduating-resilience-uganda and https://avsi-usa.org/graduating-to-resilience/

Activity achieves its goals. The Activity's primary goal is to graduate ultra-poor refugee and Ugandan households in the Kamwenge District from conditions of food insecurity and fragile livelihoods to self-reliance and resilience. Using a woman-plus household approach,[2] the Activity engages 13,200 economically active households that are unable to meet their basic needs. Through two implementation cohorts, the Activity supports households with a suite of interventions including consumption support, asset transfer, livelihood skills training, savings and financial inclusion support, coaching, and linkages and referrals to services.

In this essay we discuss the background and rationale for using the standing committee approach, describe how the Activity designs committees to ensure they are representative, provide examples of how feedback from the standing committees has directly affected program design and implementation, and identify the strengths and weaknesses of this approach.

PARTICIPATORY ACTION RESEARCH APPROACH

During a one-year refine and implement period, the Activity designed an accountability framework and decided to engage communities to reflect the community voice in programming through a standing committee approach, in addition to other feedback mechanisms such as toll-free phone lines, walk-in feedback, and direct reports to Activity staff members. This approach focuses on the importance of participants' lived experience, reflection, and subsequent actions taken (Baum et al., 2006; MacDonald, 2012). Engaging community members to participate in this way increases the likelihood of cultural appropriateness and relevance of interventions (Minkler, 2005). For example, researchers in Uganda used Photovoice to engage community members to identify issues that have positive and negative effects on health in the community as well as community strengths, with findings validated by survey results (Dowhaniuk et al., 2021). The researchers engaged a community advisory board and discussed findings with board members to promote authentication and relevance of analysis and interpretations in the local context, given the board's understanding of the community's strengths and challenges.

In the Activity, standing committees are comprised of elected representatives of participating households from randomly selected villages within the implementation area. Standing committee representatives serve in their role for the duration of the cohort implementation period, approximately 24 months. To ensure that standing committees represent the diversity of participant experiences and needs, standing committees are divided up based on demographic groups including age, gender, and refugee or host community status, with each group equally represented. In total, the Activity has 12 standing committees, each with 10 elected representatives. As representatives from the community, the standing committee members receive feedback and complaints from participants and share that information with Activity staff through quarterly standing committee meetings. Feedback may include suggestions, opinions, advice, and concerns to help improve program implementation. The standing committees are intended to serve as a feedback mechanism as well as a way to elicit local priorities and perspectives to inform and improve program implementation.

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[2] The woman-plus household approach focuses on women as the primary participant for activity interventions, but, recognizing that most women operate as part of a household unit, engages other household members such as spouses and children to build buy-in and acceptance.

Reflecting Community Voices in Programming

Facilitated by Activity staff, standing committees convene on a quarterly basis for two to three hours to discuss current challenges and opportunities, and provide insights about issues affecting communities. Prior to the meeting, the Activity develops a set of questions based on emergent trends observed in performance monitoring data, feedback from Activity staff, and topics of interest identified by Activity leadership. There is time allocated during each session to address any other concerns from standing committee members. After each meeting, Activity staff review transcripts to pull out themes across different demographic groups including host and refugee, men and women, and youth[3] and adults. The feedback provides insights on contextual and environmental changes affecting the Activity, as well as challenges related to Activity implementation and opportunities to adjust programming with selected examples presented below.

Understanding the Changing Context and Environment

Following the onset of the COVID-19 pandemic, standing committee members shared that households had increased hand washing behavior to help stop the spread of the virus. While most participants reported having adequate access to water for regular handwashing, members reported that soap was prohibitively expensive. The Activity reviewed market data and confirmed that the price of soap had increased per bar from 3,500 UGX ($0.94 USD) in April 2020 to 3,643 UGX ($0.98 USD) in June 2020.[4] Although the Activity was not able to mitigate the challenge of rising costs, staff continued tracking the price of commodities, including soap, to understand potential changes in household behavior. Activity staff also advised households on finding shared handwashing stations, using hand sanitizer as an alternative, and practicing overall social distancing to reduce exposure and need for washing hands.

The pandemic and related gathering restrictions also affected Activity components, including the functioning of Village Savings and Loans Association groups. Standing committee members shared that since savings group members were meeting in a modified format, in smaller groups and not all in one meeting, there was a lack of trust, with some groups feeling uncomfortable about how money was kept and spent without being able to see the transactions. To address this concern, the Activity worked with local leaders to get permission to meet in groups of 10, which would reduce concerns among group members, while still allowing participants to keep safe physical distances. Activity staff also maintained a core group of leaders in each smaller meeting whom members trusted.

Feedback on Activity Implementation and Design

One of the key challenges identified by standing committee members around the implementation of Activity components was spouse participation, particularly in coaching.[5] Generally, participants noted that most spouses do not participate in coaching sessions. Reasons for lack of spouse participation include that men are often working away from home or that men were told that only women should participate in activities. Standing committee members suggested involving men from

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[3] Youth is defined as ages 18 to 30 years.
[4] $1 USD = 3692.88 UGX as of December 29, 2022 from https://www.oanda.com/currency-converter/en.
[5] Participants receive group or individual coaching from trained individuals to regularly monitor household status and participation in activities and deliver messages on key topics such as nutrition; water, sanitation, and hygiene; preventive health care; savings; business planning; equitable gender norms; and parenting and life skills.

the start of the Activity, providing more sensitization, and proactively encouraging them to join coaching sessions. In response, changes were made: the participant form is now signed by both male and female household members and additional sensitization sessions are conducted to promote greater understanding of the project among spouses and to encourage spouse participation in coaching. Activity staff also started to collect the phone numbers of male spouses and provide them reminders to join coaching sessions and other activities.

Standing committee members also discussed adding new components to the Activity. For example, standing committee members mentioned the Activity was exclusively training participants on crop production, however, most participants wanted training on animal husbandry, since many households pursued livestock-rearing livelihoods. Standing committee members also expressed that many participants lost animals due to their lack of animal rearing skills. As a result, the Activity adapted to expand the training curriculum to include animal husbandry to better reflect livelihood choices in the community. Similarly, youth standing committee members noted that they felt they were not included in the program, shared their goals focused on employment, and suggested that the Activity include apprenticeship skills training for youth. This was identified as a gap in the Activity's original design and approach to engaging youth as members of the household, and apprenticeship skills training for youth was subsequently added as an intervention. Standing committees also supported including mental health in coaching, particularly given that many participants struggle with depression, trauma, and stress. As a result, the Activity incorporated group interpersonal therapy into the coaching curriculum.

Best Practices and Lessons Learned

The key strengths in the design and structure of standing committees are their commitment to confidentiality, discussion-based format, and community leadership development. Some participants noted that they feel more comfortable relaying a sensitive issue or concern to their standing committee member representative rather than reporting it directly to Activity staff or through the Activity toll free number where their name is recorded. In reporting to their representative, they maintain a layer of anonymity while still ensuring their concern is raised. This also fosters trust within the community as participants rely on their representatives as liaisons. Holding committee meetings on a quarterly basis and addressing the issues identified builds trust in the Activity as participants see that the Activity can respond in a timely manner. From an inclusion perspective, because standing committees are conducted in a discussion format, people with low literacy levels who otherwise might not be able to access accountability mechanisms, such as complaint boxes, are able to participate and provide feedback. Lastly, and perhaps most importantly, serving as a standing committee member can help individuals build their capacity to seek out and listen to feedback, present issues to their peers, and problem solve. Anecdotally, the Activity has seen that taking on these types of leadership roles can encourage individuals to seek out other leadership opportunities within their communities.

While the standing committee approach proved to be successful, there are several lessons learned that should be considered. First, the frequency and location of meetings were noted as challenges for some participants, particularly for women who stated that they needed more time to prepare for meetings because of their other household duties. Scheduling meetings at a time that is convenient for all participants and compensating participants for transportation costs is essential to ensuring the committees are accessible and inclusive. Second, if using random sampling to select standing committee groups, it is necessary to review the final selection to ensure diversity so that the perspectives of one area or group are not

overrepresented. Lastly, depending on how often meetings are organized, a lag in identifying and responding to issues can emerge, which is why having multiple accountability and feedback mechanisms is important.

CONCLUSION

Engaging participants and community members in a meaningful consultation and feedback process is possible and can be extremely useful for ensuring that a project is responsive to the needs of community members in real time. However, these initiatives need to be well planned and integrated into the research, learning, or program design from the beginning to ensure their effectiveness. The standing committee approach is just one possible option for implementors to explore when thinking about how to make programs more equitable and how to move from a paradigm where beneficiaries are passive participants in programming to one in which they are in the driver's seat.

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PROMOTING EQUITY IN METHODOLOGICAL CONSIDERATIONS FOR DISAGGREGATED DATA

Marjorie Dorimé-Williams

INTRODUCTION

Quantitative scholars and methodologists have historically been elevated in social science research for their "objectivity" (Zuberi & Bonilla-Silva, 2008). From undergraduate classrooms to professional organizations, using quantitative data implied

that a researcher was without the same biases assumed to be present in qualitative research methods. Over the last several decades, the field has advanced its thinking on objectivity in quantitative research methods, particularly regarding equitable methodological considerations for disaggregating data. For example, race and ethnicity, gender, disability status, and socioeconomic status are a few ways individuals have historically been placed in subgroups by social scientists in efforts to understand, explain, and address social disparities (Garcia et al., 2018; Sablan, 2019; Stage & Wells, 2014).

Less than 20 years ago, using large-scale disaggregated data, Murray and Herrnstein (1994) concluded that students of "Anglo-Saxon ancestry" were more intelligent than students of "African ancestry." However, these social scientists failed to examine their biases or the long history of implementing laws and policies for the express purpose of disadvantaging and disenfranchising Black Americans (Price, 2019). Furthermore, racial, ethnic, and other identities are not measures of some psychological factor but serve as proxies for how social norms and expectations are enacted on individuals. Many scholars, researchers, and experts supported and promoted Murray and Herrnstein's findings. Others pushed back against the framing, lack of context, and erroneous conclusions drawn by the authors. This is only one of many examples demonstrating how supposedly objective quantitative disaggregated data and research can harm marginalized subgroups.

Considering the widespread use of disaggregated data to make decisions at the local, state, and federal levels, researchers can significantly influence and shape public policy (Roegman et al., 2018; Yeung & Mun, 2022). Therefore, researchers should employ more inclusive, equitable, and critical methodological practices, such as critical quantitative inquiry, to effectively analyze and address social problems.

POTENTIAL & PITFALLS OF DISAGGREGATED DATA

Data disaggregation can be defined as breaking down summarized data findings into smaller components based on some characteristic of a sample population instead of the aggregate. It is also a process by which researchers can examine findings in data with more nuance and better understand heterogeneity within a sample population (EdSource, 2022; Yeung & Mun, 2022). There are many uses for quantitative data in social science research (e.g., casual studies, descriptive studies, predictive analytics), particularly for large datasets that examine disaggregated findings by populations of interest (e.g., race, gender, class). However, all research methodologies have limitations and using disaggregated data to study subgroups is no exception. Disaggregation can both support and hinder good public policy depending on how that data is analyzed or interpreted.

Disaggregating Data – Potential

Aggregated data can lead to incorrect conclusions about the behavior and outcomes of individuals. Aggregated data can mask the outcomes we seek to observe and can fail to adequately represent the diversity of experiences within a particular area (Price, 2019; Roegman et al., 2018; Yeung & Mun, 2022). Nevertheless, reliable and valid data are necessary for developing, administering, and promoting social policy interventions. As such, disaggregated data is a powerful tool for addressing social policy issues.

Disaggregating data by subgroups can help identify disparities in outcomes based on individuals' demographics or other classifications. Researchers can identify how specific subgroups experience the same circumstances (Roegman et al., 2018). In theory, this practice could help hold institutions accountable for individuals'

outcomes, particularly those who have historically faced barriers to opportunity (Roegman et al., 2018). Another reason for exploring disaggregated data is to promote a better understanding of differences between and within subgroups. For example, in 2020, 861 women died of maternal causes in the United States; the maternal mortality rate for 2020 was 23.8 deaths per 100,000 live births. However, when looking at data disaggregated by race, the maternal mortality rate for non-Hispanic Black women was 55.3 deaths per 100,000 live births, 2.9 times the rate for non-Hispanic White women, despite an overall global decrease in maternal mortality rates over time and controlling for income and education (Bridges, 2020; Hoyert, 2022; Roser & Ritchie, 2013). Without disaggregating this data, Congress may not have passed the 2018 *Preventing Maternal Deaths Act*. Disaggregating data can help to identify systemic inequities and understand the context that creates and perpetuates them.

Disaggregating Data—Pitfalls

While a history of racial and ethnic categories in the United States is beyond the scope of this article, it is essential to note that the current racial categories of the American population used by the U.S. Census Bureau and the Office of Management and Budget (OMB) were defined by 1998 standards on race and ethnicity; scholarship on race and ethnicity and methodological approaches to both have advanced since that time. There are numerous ways this can negatively affect researchers seeking to use disaggregated data. In a letter to the editor of the *Journal of Family Medicine*, Dr. Oanh Truong (2022) makes the case that racial/ethnic data collections treat Asian Americans as a homogenous group, which in turn masks the vast diversity of nationalities, languages, cultures, and socioeconomic backgrounds of individuals placed in this group. For example, Truong cites the fact that Japanese Americans experience lower rates of poverty compared to Hmong, Khmer, Laotian, and Vietnamese Americans, and that aggregated reporting not only masks the heterogeneity within the Asian American population but also causes harm by perpetuating stereotypes and myths that Asian Americans do not need support in ways that other racial and ethnic minority groups do.

The issues raised above provide a clear rationale to move away from the epistemological belief that quantitative research—and quantitative researchers—is objective or "neutral" simply because it uses numbers or formulas in its methodological approach (Sablan, 2019; Zuberi & Bonilla-Silva, 2008). Instead, research is influenced by personal, social, historical, political, and cultural beliefs and norms. To engage in quantitative work more equitably, researchers should consider how critical quantitative inquiry can support practices that center equity for collecting, analyzing, and reporting on disaggregated quantitative data. If the goal of social policy research is to improve human welfare, then social scientists have an obligation to ensure that our work is not used to cause further harm to systemically disadvantaged individuals.

PROMOTING EQUITY THROUGH QUANTITATIVE RESEARCH

Recent literature on quantitative research and methodology has highlighted an important development related to thinking beyond historically hegemonic, White-normative approaches (Garcia et al., 2018; Sablan, 2019; Stage & Wells, 2014). In other words, dominant socio-politically and culturally informed approaches that center "Whiteness" as the norm, with anything that does not adhere to these cultural and social beliefs labeled as deficient. For example, requiring White participants in a study as a comparison group when examining other racial/ethnic groups. These

ideas show how quantitative data is not objective, neutral, or immune to researchers' bias.

In addition, critiques of past quantitative research and methodology have highlighted the inability to capture nuance when analyzing and reporting on data (Garcia et al., 2017). For example, whether quantitative methods can adequately illustrate the relationship between high rates of obesity in Black communities and the prevalence of food deserts or food swamps that result from a lack of economic investment in these very areas (Cooksey Stowers et al., 2020). This is particularly relevant in social policy because socially marginalized populations are likely to be "most vulnerable to unfair treatment based on the meanings attributed to their social characteristics" in numerous policy areas (Garcia et al., 2017, p. 150).

Applying Critical Quantitative Inquiry to Quantitative Methodologies

Critical quantitative inquiry is a paradigm that can be used to improve observed inequities. This work has evolved from a desire to "identify social or institutional perpetuation of systemic inequalities" in social processes and outcomes (Stage & Well, 2014, p. 2). Critical quantitative scholars seek to develop quantitative practices that better describe the experiences of those historically marginalized in society (Stage & Well, 2014). Using this approach, social scientists can become better equipped to conduct culturally relevant research and understand the context of their subjects and the institutions they inhabit. If quantitative researchers intend to inform public policy to improve lives appropriately, then we fail in our purpose by using disaggregated data to simply report numbers and interpret what we find at face value. A critical quantitative approach ultimately means focusing on equity concerns that can be elevated through analysis, reporting from large datasets, and disaggregating data for marginalized subgroups.

Disaggregated data can become decontextualized, reaffirm imbalanced power dynamics, promote deficit analyses, or perpetuate social inequities if researchers fail to critically evaluate their methodological approach (Garcia et al., 2017). When disaggregating data, carefully analyzing the how and why behind our statistical analysis is necessary for promoting equitable solutions for social policy problems. Finally, researchers are encouraged to think critically about how quantitative data answers policy issues affecting marginalized populations while attending to nuanced explanations beyond surface reporting.

IMPLICATIONS FOR RESEARCH & PRACTICE

While we have made significant advances in the field and how we think about and use data, work remains to be done. Some researchers are stymied by the challenges experienced while trying to engage in this work. The following questions offer issues to consider when choosing to disaggregate data and how to analyze to advance equity.

Questions to Consider

- What are the ethical considerations for and unintended consequences of large datasets and disaggregating secondary data sources that have racial or social implications for marginalized groups?
- Beyond the requirements of an IRB for primary data collection, how do we ensure that our work is equitable?
- How can we better approach understanding racial and ethnic differences in outcomes while also understanding how external factors such as community

and neighborhood resources can affect these perceived differences in racial and ethnic outcomes?

By using disaggregated data, researchers can elevate the voices and experiences of those who have been historically oppressed in many social spaces. However, more than simply disaggregating data is needed to ensure that we are not reproducing existing inequalities. As Zuberi (2003) cautioned, we need to recognize that categories like "race" are a measure of and a proxy for the relationship between individuals and how they are positioned by society, not innate or intrinsic characteristics. When social scientists disaggregate data, they must also be aware of how historical, social, cultural, political, and other factors shape the experiences of the studied subgroups.

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THE PROMISE OF AGENT-BASED MODELING FOR EQUITY-CENTERED RESEARCH

John Hotchkiss, Divya Vohra and So O'Neil

INTRODUCTION

Complex historical, cultural, political, social, and environmental factors have brought about the inequities that exist today (O'Neil & Wesley, 2021). These factors often advantage those living in affluent neighborhoods with better access to resources, leading to better employment, income, and health (Turner et al., 2012). As seen in the Moving to Opportunity demonstration supported by the U.S. Department of Housing and Urban Development, living situation (an environmental factor) often intersects with social factors such as race and class to make it hard for individuals to accumulate wealth and health. In this way, existing inequities are perpetuated from one generation to another (de Souza Briggs et al., 2010). For example, due to historical disadvantage—consider redlining—people of color disproportionately live in disinvested, resource-poor neighborhoods, which makes it difficult for them to increase their income and social standing. In contrast, a larger income increases social standing and the ability to afford living in resource-rich neighborhoods, leading to a cycle of those living in resource-rich neighborhoods getting richer and facilitating the next generation's ability to stay rich or become richer (Lynch et al., 2021; Swope et al., 2022).

Social ecological models conceptualize people's health and well-being beyond individual-level factors and consider the impacts of the cultural, political, and social environments in which individuals live, work, and play (Dahlberg et al., 2002). The conceptualization of the complex world and its multiple factors that lead to observed inequities has spurred researchers to mimic this complexity as best as they can through various computational models. However, most regression-based statistical methods rely on two key assumptions that do not reflect the complexity and interdependence that lay at the root of inequities. These assumptions include: (1) the Stable Unit Treatment Value Assumption (SUTVA), which requires that the outcomes of an individual are based only on their own treatment and not the treatment of others; and (2) the assumption that causal forces act independently of one another and do not depend on each other (Imbens & Rubin, 2006; Marshall & Galea, 2015).

The authors have difficulty reconciling the use of methods that rely on these assumptions for policy research with an equity lens when our understanding of social ecological models so clearly invalidates these core assumptions. Agent-based models (ABMs) are a promising alternative framework for equity-centered policy and program evaluation and research that address the limitations of regression-based

approaches. ABMs can account for the complex interactions and relationships explained by social ecological models that are found to drive inequities. Policy researchers can use ABMs to rapidly assess the differential impacts of equity-centered policies on various groups, accounting for real-world complexities and unintended consequences more effectively than with other methods.

THE LIMITATIONS OF REGRESSION-BASED STATISTICAL METHODS FOR EQUITY RESEARCH

In practice, regression-based statistical methods cannot capture individual interactions. Instead, they treat individuals as members of distinct groups with associated group effects—ignoring the nuanced influence these individuals may have on each other's outcomes and the impact of their unique individual characteristics (e.g., their social networks; Hudgens & Halloran, 2008; Tchetgen et al., 2021). A classic example of individuals influencing each other's outcomes can be found in Schelling (1971), which investigates the impact of individuals' preferences not to be in the extreme minority on neighborhood segregation. Since individuals moving to match their preferences impacts the majority-minority balance of both the neighborhood they left and the one they joined, were the investigation to use regression-based methods, the SUTVA would be violated.

Furthermore, traditional statistical methods also often assume that causal forces operate independently; for example, the effect of racism on people's health outcomes can be modeled independently from the effect of immigration. This does not account for the amplification of inequities from having multiple intersecting identities, such as men identifying as both foreign-born and Black having higher rates of HIV than U.S.-born Black men (Taylor et al., 2020).

Policy researchers have developed extensions to regression-based methods that seek to address their more problematic assumptions, but without universal success. For example, hierarchical linear modeling seeks to separate treatment effects on individuals' outcomes from environmental differences such as their assigned class within a school and the school within a community (Woltman et al., 2012). However, this approach still assumes that the students in a class are all independent from one another once covariates are taken into account.

Researchers often also use interaction terms in regression models to try to account for the possibility that causal factors may not be independent, but this approach requires a very large volume of data to account for all the possible interactions of causal mechanisms. Researchers have tried to circumvent or account for these complexities through the use of generalized estimation equations (Ballinger et al., 2004), instrumental variables regression (Angrist & Pischke, 2008), the parametric g-formula (Hernan, 2015; Robins, 1986), and other methods, but they each have their limitations.

These limitations in regression-based modeling of the complexity of individuals' interactions with each other and with their environments can leave out the underlying mechanisms that perpetuate disparities and mask the true impact that policies and programs could have on them. Mis-specifying a model assuming independence across individual observations when there is not independence, or that there is not a causal loop when there is one, can lead to biased estimators and distorted standard errors, resulting in policy decisions made on potentially erroneous conclusions.

ABMS CAN BETTER REFLECT INTERACTION OF FACTORS DRIVING INEQUITIES TO ADVANCE EQUITY

ABMs address these limitations with regression-based approaches to account for the complex interactions and relationships that drive inequities. Because of these

benefits and ABMs' predictive nature, they allow for the rapid assessment of the potential impacts of equity-centered policies on specific populations.

ABMs are simulation-based models designed around the importance of modeling individuals (agents) with unique characteristics and behavior whose interactions reverberate over time and, in aggregation, determining systems-level behavior and outcomes (emergent phenomena). The interaction of agents is modeled through the definition of environments (generally networks of agents) that may have additional environment-specific mechanics that further modify agent behavior and interactions within them. An ABM answers policy questions by comparing emergent phenomena from one simulation to a counterfactual simulation where a mechanism or set of mechanisms representing a policy have been added or removed. Taken together, all of these aspects of an ABM allow the modeler to build a much more realistic model of agents' intersecting identities, heterogeneous behavior, and influence on one another than the equivalent regression-based method.

ABMs can incorporate the social-ecological model in ways that cannot be represented by regression-based frameworks. For example, the authors were part of a team tasked with developing an ABM that models COVID-19 spread through different K–12 schools in order to measure the effectiveness of proposed testing regimes (Vohra et al., 2021). Infectious disease spread in schools is determined by the characteristics of the disease, the prevailing community incidence rate, the actions taken by independent individuals, and the impact those choices have on the individuals in contact with them. For example, an individual's choice to vaccinate decreases their contact's probability of acquiring the virus, which decreases the contact's contacts' risk, and so on. Accurate representation of disease spread, and therefore efficacy of the testing to mitigate it, are dependent upon modeling all of those relationships.

Because of these advantages, ABMs can rapidly and effectively help us understand the potential impacts of equity-focused policies without implementation of the policies for long periods of time or at all. Therefore, ABMs have a role to play when policy interventions seeking to resolve or mitigate inequities face ethical concerns or lack the political will or understanding to be implemented. One can imagine situations where the more equitable policy may be infeasible in the real world due to an "unfair" though potentially more equitable distribution of outcomes. For example, a policy that intentionally prioritizes in-person schooling for students who rely on free or reduced-price lunch may lead to a more equitable distribution of learning outcomes, since those students are also more likely to lack the resources to learn well from home. Furthermore, an experimental research design to provide evidence on whether in-person learning provides benefits to students relying on reduced-price lunch could be potentially deemed unethical. It could be considered problematic to randomize students who rely on reduced-price lunch into groups that learn in-person (treatment group) and those that don't (control group) because *all* of these students come from households with lower income.

ABMS ARE NOT PERFECT, BUT THEY ARE A PROMISING APPROACH FOR RESEARCHERS INTERESTED IN EQUITY

Despite the benefits discussed, ABMs might not be the solution to generate evidence to support all decision-making. Just as with any statistical model, ABMs' ability to simulate reality begins with the quality of the data used to develop the model and which is fed into the model—the data needs to represent all populations, factors, and outcomes. But ABMs can simulate hypothetical policies while traditional regression-based models cannot. Additionally, ABM researchers must have clarity regarding the set of individual characteristics and behaviors that impact the outcomes of interest. Otherwise, the model and its outputs will be biased. Modelers must thoroughly

understand how factors interact in real-life and not introduce their own theories or biases into the modeling process. However, these limitations are inherent to all statistical modeling and are not unique to ABM. The advantages of ABM to other models detailed above make it potentially well-suited in situations with quality data corresponding to the system of interest, complex interactions of multiple factors, nested levels of factors, and dynamic and evolving environments and outcomes—all of the conditions particularly conducive to equity research.

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CONCLUDING REMARKS ON EQUITABLE APPROACHES TO RESEARCH

Paul Decker and Kevin Kelly, Co-Editors

As we reflect on why we were initially drawn to the field of policy research, we come back to our core belief that the world can be a better place when policymakers use data and research to drive their decisions. We expect that much of the *JPAM* audience agrees with this sentiment; it's likely a key reason most of us have pursued our chosen career paths. Concerns about equity cut across all the policy fields to which we contribute, and our chosen research methodologies need to be re-considered to the degree that they may interfere with achieving greater equity. At the same time, too often conversations focused on equitable research methods can turn into an argument about a perceived conflict between "rigor" and "equity." However, we do not see those concepts as being in conflict with one another; in fact, we view them as deeply connected. Conducting rigorous research requires taking steps to generate answers that are closest to the truth. With that lens, applying equity-sensitive methods is a critical component of conducting rigorous research. Equitable research should fill gaps and address biases that would otherwise lead us away from the truth that we seek in our work.

We hope that these essays have been useful in thinking through different approaches to and perspectives on promoting equity through research and evaluation and getting closer to truth. Whether engaging with funders, communities, other researchers, or new methods, we, as the evidence-building community, can play our

important role in advancing equity through our work. We hope this column helps promote an ongoing conversation. APPAM has a long history of being a critical venue for discussions on how methods can evolve to get us closer to the truth, and the organization also has a clear commitment to diversity, equity, and inclusion. Thus, it is a fertile environment for collaborating on further evolutions to our methods to promote equity and extend our opportunity to improve decision-making. APPAM members and leadership should carefully consider the venues for these conversations, whether at existing events like the annual research conference or new events that could be created. Together, we can develop and use methods that get us closer to the truth so that we can realize the better world we hope to see.