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Subject:	Oregon EJC Adopted Decisions: October 10, 2024
Date:	Tuesday, October 22, 2024 1:45:00 PM

Hello,

Here are the adopted decisions from the October 10th EJC meeting:

1. Decision Point 4: Weighting
    a. Thesis Statement: EJ Mapping Tool domain and indicator weighting can be used to assign levels of importance to environmental burdens and social disparities. The EJC will decide whether the domains and/or indicators should be weighted, and if so, how.
    b. Recommendation for Version 1: Use principal component analysis to weight indicators for the first version of the Oregon Environmental Justice Mapping Tool. Allow for flexibility to revisit the recommendation for Decision Point #4 during the sensitivity analysis (Decision Point #8) after the final set of indicators are selected.
    c. Recommendation for Future Versions: Transition to participatory weighting of indicators and domains using conjoint analysis for future versions of the Oregon Environmental Justice Mapping Tool. Participatory weighting should include community survey input and technical expert consultation.
    d. Rationale for PCA:
        i. PCA is a measure of inequity that can tell us which indicators are contributing to the greatest environmental, health and social inequities in Oregon Communities.
        ii. PCA can also tell us which Oregon communities are experiencing the greatest inequities.
        iii. Identifying which communities are experiencing the greatest inequities can help guide policies intended improve conditions that contribute to inequities.
        iv. There is an underlying assumption in using PCA for determining weights that the selected indicators are important, comprehensive components of environmental equity.
    e. Rationale for Conjoint Analysis
        i. PCA is a measure of inequity that can tell us which indicators are contributing to the greatest environmental, health and social inequities in Oregon Communities.
        ii. PCA can also tell us which Oregon communities are experiencing the

greatest inequities.

iii. Identifying which communities are experiencing the greatest inequities can help guide policies intended improve conditions that contribute to inequities.

iv. There is an underlying assumption in using PCA for determining weights that the selected indicators are important, comprehensive components of environmental equity.

2. Decision Point 5: Domain Aggregation
    a. Thesis Statement: EJ Mapping Tool domain aggregation must be used the subdomains and domains are standalone indices that must be combined to create the composite index. The EJC will decide whether the domains should be aggregated by addition or multiplication.
    b. Recommendation: Use a multiplicative approach to domain aggregation where the subdomains are summed, but the primary domains (Place & People) are multiplied.
    c. Rationale:
        i. Cumulative impacts are not independent. Health effects caused by environmental exposures are multiplicative in vulnerable populations (McHale et al., 2017).
        ii. Evidence from human studies have shown that population characteristics can modify the response to pollution burden multiplicatively, providing scientific support for the use of a multiplier (Alexeeff et al., 2012).
        iii. Priority rankings done by various emergency response organizations to score threats have used scoring systems with the formula: Risk = Threat × Vulnerability (Brody et al., 2012).
        iv. Applying additive aggregation to subdomains will provide more insight into the interactions of the indicators (VanderWeele & Knol, 2014).
3. Decision Point 6: Data Standardization
    a. Thesis Statement: EJ Mapping Tool data standardization must be used because raw indicator data units can differ a lot and are often incompatible for aggregation inside a composite index. The EJC will decide whether to use percentiles or z scores to standardize indicator data.
    b. Recommendation:
        i. Standardize raw indicator values using z-scores.
        ii. Reduce the effects of extreme outliers in the data.
        iii. Rescale z-scores between 1-99 percent for easier interpretation.
        iv. Use a technique called "winsorization" to reduce outliers and rescale the z-scores.
    c. Rationale:
        i. A percentile does not describe the magnitude of the difference between two or more communities. For example, a community ranked

in the 30th percentile is not necessarily three times more impacted than a community ranked in the 10th percentile.

ii. Investments in communities should be made where risks are the worst. Z-scores are more accurate than percentiles at identifying outliers and similarities between communities. Indicators with extreme values thus have a greater effect on the composite index.

iii. It may be necessary to cap high and low z-scores to avoid skewing the mean indicator scores.

iv. The Methodology Workgroup endorses further exploration of setting reference points for indicators because it can show whether a goal is achieved for a community or how far it is away from reaching a goal.

Motion made by Sanchez to adopt decision points 4-6 as written with the opportunity to amend in the future.
Seconded by Duncan
Motion voted by Vice Chair Sanchez, Council Members Rajagopal-Durbin, Duncan, Ong, Paykar, Sullivan-Astor, and Chair Read

Motion passed unanimously.

Thank you!

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