EXPLORING HOW SOCIAL COHESION AFFECTS RESIDENTIAL LAWN MANAGEMENT IN BALTIMORE NEIGHBORHOODS

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PROBLEM STATEMENT

➢ "American Lawn" has potentially detrimental human health and ecological consequences (Robbins, 2007)

➢ Lawn care decision-making is rooted in dynamic, multiscalar socioeconomic and political processes (Roy Chowdhury et al., 2011; Polsky et al., 2014; Harris et al., 2012; Harris et al., 2013)

➢ Lawn management linkages to mesoscale practices, such as social cohesion, only superficially examined (Fraser et al., 2013)

RESEARCH QUESTIONS

1. How do mesoscale, e.g. neighborhood or city level, processes influence household lawn **watering, fertilizing, and mowing** preferences and practices?

   {Using comparison of ideal versus actualized behaviors as an analytical lens}

   a. What role does **ecology of prestige*** at the mesoscale level play in household lawn care choices?

   b. What role does **authority** at the mesoscale level play in household lawn care choices?

PURPOSE STATEMENT

This study investigates if there is a relationship between level of social cohesion and lawn management behaviors at the neighborhood-level in metropolitan Baltimore, which presents a key entry point for potential improvements in policy. The underlying goal is to contribute to the understanding of how nitrogen varies in residential landscapes (Figure 2).

NEIGHBORHOOD SELECTION

➢ Sampled from city's 502 block groups with ≥ 5% grass cover
➢ Neighborhoods selected based on demographic variables, lawn care importance, and reference groups (Figure 1)
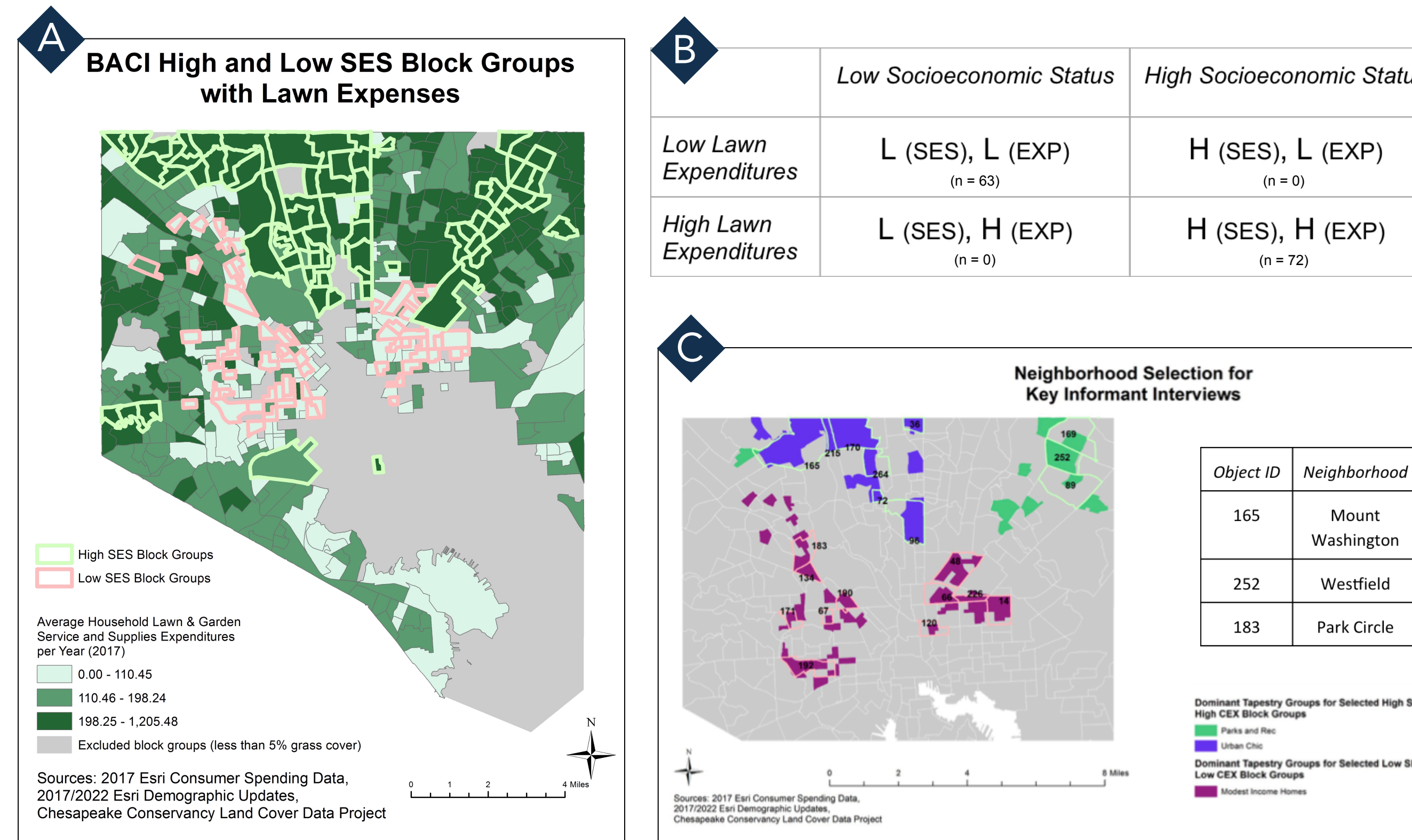

Figure 1. A) High and low socioeconomic status block groups for Baltimore city were determined using measures of median household income, percent educational attainment, and percent minority population. B) This information was associated with block groups of high and low lawn expenditures, presenting only "L,L" and "H,H" combination block groups. C) A comparison of block groups to neighborhood boundaries and a survey of Tapestry groups aided the final selection of neighborhoods for this project, which are Mount Washington (Figure 3), Westfield (Figure 4), and Park Circle (Figure 5).

THEORETICAL BACKGROUND

Among other inputs, homeowners apply fertilizer to their lawns in order to maintain a consistent, emerald-colored lawn (Robbins, 2007; Jenkins, 1994). High-intensity fertilizer application can lead to overfertilization, which negatively impacts lawn health and may result in harmful runoff (Robbins, 2007). Past work demonstrates decreased lawn species richness and diversity with fertilizer application and increasing household income, indicating a preference for uniform lawns that may be realized with higher household income (Wheeler et al., 2017).

Lawn care is typically examined from an individual perspective (microsale). However, these choices are not a direct result of economic decision-making. Homeowners who employ resource-intensive lawn care practices tend to be more worried about chemical usage than those who do not employ such practices (Robbins, 2007). Oppositely, the broader macroscale explanation aligns lawn care with global, societal responsibilities. This ignores conditions under which community standards are created.

Neighborhood-level, mesoscale explanation considers development of suburbia with relation to reference groups. Reference groups explain social stratification, the result of relative power and income differences among neighborhoods (Troy et al., 2007; Logan and Molotch, 1987), and how individuals may orient themselves to a group other than their own as a means of social mobility (Merton, 1968). Moreover, reference groups play a role in social control through social cohesion. Socially cohesive neighborhoods are those that exhibit mutual trust and solidarity among neighbors (Sampson et al., 1997). An ecology of prestige applies these concepts to lawn care, elucidating that these choices have social meaning.

*Ecology of prestige: Lawn choices demonstrate a household's desire to uphold the prestige of its community and outwardly express membership in a given lifestyle group (Grove et al., 2006)

STUDY AREA

Figure 2. Understanding how nitrogen varies in residential landscapes is particularly important for preserving the quality of Baltimore's many watersheds (pictured above), which drain into the Chesapeake Bay.

Figure 3. Mount Washington was classified as an upper-range "H,H" neighborhood in the "Urban Chic" Tapestry group. This neighborhood features detached single-family homes on large lots and families with college-educated professionals. This is also a locally designated historic district.

Figure 4. Westfield was classified as a mid-range "H,H" neighborhood in the "Parks and Rec" Tapestry group. This neighborhood features detached single-family homes on small lots and diverse, working-class families who like the feel of being in the county while still within city boundaries.

Figure 5. Park Circle was classified as an "L,L" neighborhood in the "Modest Income Homes" Tapestry group. This neighborhood features attached row homes, many of which are abandoned. This is a federally designated historic district that is currently undergoing a revitalization period.

DATA COLLECTION & ANALYSIS

➢ Mesoscale key informant interviews (Figure 7)
➢ Semi-structured with 4 sections of questioning
  ➢ 30-90 minutes each
  ➢ Took place July & October 2018
➢ Interviews transcribed verbatim
➢ Coded using modified grounded theory approach (Figure 6)
  ➢ Inductive technique that allows for the emergence of themes from data (Glaser and Strauss, 1967)
  ➢ Research questions instead of hypotheses
  ➢ Iterative process through open, axial, and selective coding (Charmaz, 2006)
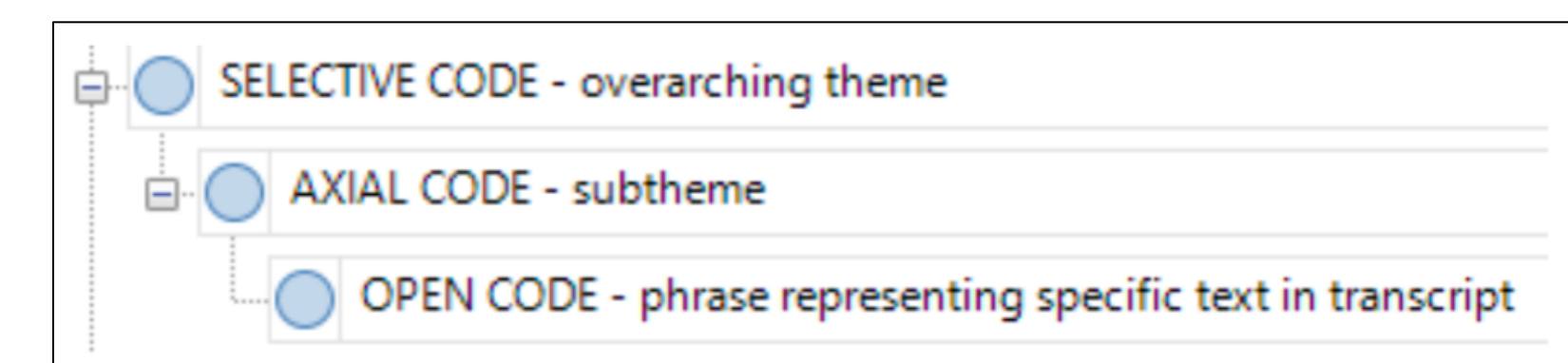

Figure 6. Thematic hierarchies, composed of open, axial, and selective codes, are visually represented using NVivo software (Image credit: Wood, 2017).

ANTICIPATED RESULTS

Question: How do mesoscale processes influence household lawn preferences and practices?

Answers:
➢ Neighborhood-based comparison of codes
➢ Quantification of code importance
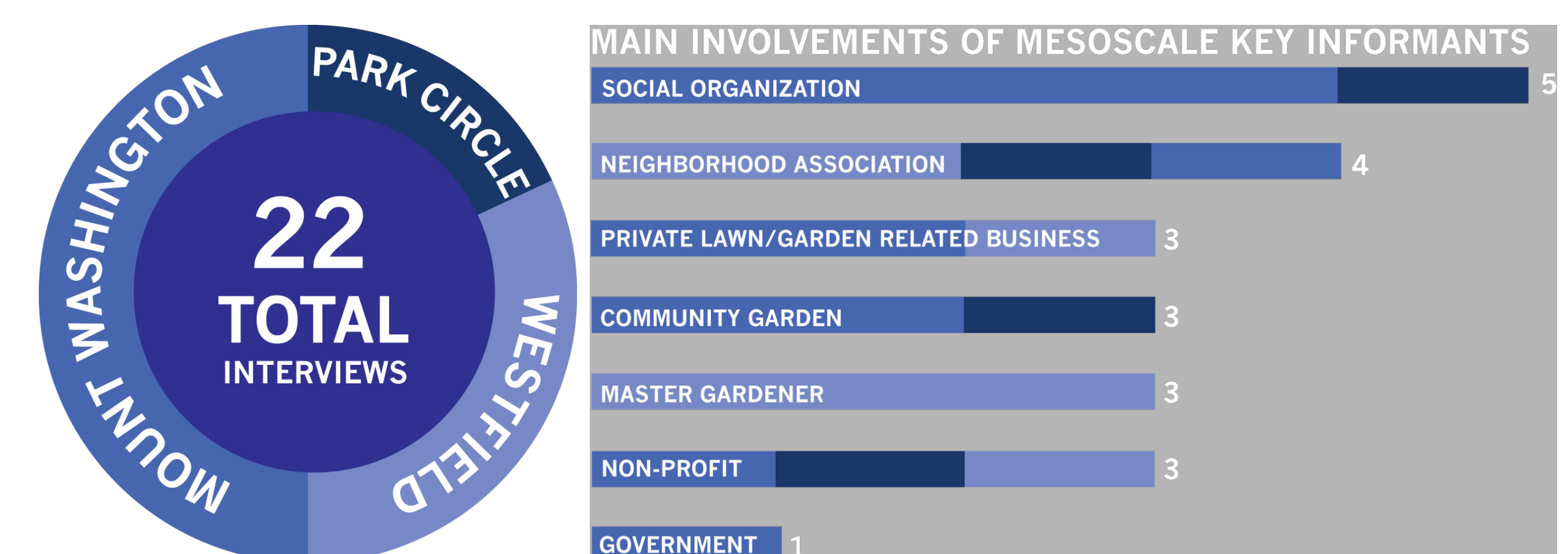➢ Determine relationships between responses to particular interview questions

Figure 7. Key informants from Mount Washington (11), Westfield (7), and Park Circle (4) were selected based on their main involvements within each neighborhood. While the main involvements are categorized here, many informants held positions across these involvements and they discussed their various roles freely during interviews.

REFERENCES

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis.* Sage.

Fraser, J. C., Bazuin, J. T., Band, L. E., & Grove, J. M. (2013). Covenants, cohesion, and community: The effects of neighborhood governance on lawn fertilization. *Landscape and Urban Planning*, 115, 30-38.

Glaser, B. G., & Strauss, A. L. (1967). The discovery of grounded theory: strategies for qualitative theory. *New Brunswick: Aldine Transaction.*

Grove, J. M., Troy, A. R., O'Neil-Dunne, J. P., Burch, W. R., Cadenasso, M. L., & Pickett, S. T. A. (2006). Characterization of households and its implications for the vegetation of urban ecosystems. *Ecosystems*, 9(4), 578-597.

Harris, E. M., Martin, D. G., Polsky, C., Denhardt, L., & Nehring, A. (2013). Beyond "Lawn People": The role of emotions in suburban yard management practices. *The Professional Geographer*, 65(2), 345-361.

Harris, E. M., Polsky, C., Larson, K. L., Garvoille, R., Martin, D. G., Brumand, J., & Ogden, L. (2012). Heterogeneity in residential yard care: Evidence from Boston, Miami, and Phoenix. *Human Ecology*, 40(5), 735-749.

Jenkins, V. (1994). *The lawn: a history of an American obsession.* Smithsonian Institution.

Logan, J. R., & Molotch, H. (1987). *Urban Fortunes: The Political Economy of Place.* Univ of California Press.

Merton, R.K. (1968). Contributions to the Theory of Reference Group Behavior. In *Social Theory and Social Structure* (pp. 279-334). New York: The Free Press.

Polsky, C., Grove, J. M., Knudson, C., Groffman, P. M., Bettez, N., Cavender-Bares, J., ... & Morse, J. L. (2014). Assessing the homogenization of urban land management with an application to US residential lawn care. *Proceedings of the National Academy of Sciences*, 111(12), 4432-4437.

Robbins, P. (2007). *Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are.* Temple University Press.

Roy Chowdhury, R., Larson, K., Grove, M., Polsky, C., Cook, E., Onsted, J., & Ogden, L. (2011). A multi-scalar approach to theorizing socio-ecological dynamics of urban residential landscapes. *Cities and the Environment (CATE)*, 4(1), 6.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277(5328), 918-924.

Troy, A. R., Grove, J. M., O'Neil-Dunne, J. P., Pickett, S. T., & Cadenasso, M. L. (2007). Predicting opportunities for greening and patterns of vegetation on private urban lands. *Environmental management*, 40(3), 394-412.

Wheeler, M. M., Neill, C., Groffman, P. M., Avolio, M., Bettez, N., Cavender-Bares, J., ... & Heffernan, J. B. (2017). Continental-scale homogenization of residential lawn plant communities. *Landscape and Urban Planning*, 165, 54-63.

Wood, A. A. (2017). *Valuing the Invaluable: Piquant Georgia Low-Country Marsh Ecosystem Services* (Master's thesis, Florida Atlantic University).