

“Chains” to Destinations variables (for siblings ties and help with rice harvest)

The “chain” variables are calculated for the paths from each household based on sibling ties and based on help with the rice harvest ties. These variables give 1) the number of individuals (not necessarily distinct) reachable in each destination and 2) the number of paths of each length that end in at least one sibling (rice harvest helper) in the destination. These are calculated for paths of exactly length 1, 2, 3, 4, 5, and a path of any length. These counts are reported both for “unaggregated” and “aggregated” destinations.

The variables that count individuals give the number of individuals (not necessarily distinct) reachable in the destination through household to household sibling ties (rice harvest help). For path length 1, this is the number of siblings (or people who helped with the rice harvest) that the household reported in the destination. For path length 2 this is the number of individual’s reachable by paths of exactly length 2: household-to-household-to-sibling(s) (or household-to-household-to-rice helper) in destination. The household-to-household tie is a sibling (rice help) tie within the village (present if either household nominated a sibling (rice helper) in the other household). The final link is from household to sibling(s) (rice helper) in destination. These are summed for all individuals mentioned in the destination. For path length 3 this is the number of individuals reachable in paths of exactly length 3: household-to-household-to-household-to-sibling(s) (household-to-household-to-household-to-rice helper) in destination. And so on for increasing path length.

The variables that count number of paths give the number of paths that link the “starting” household to one or more siblings (rice helper) in the destination in exactly that path length. For a given path length k one can think of these variables as the number of households in the village at distance $k-1$ from the “starting” household that have at least one sibling (rice helper) in the destination. For path length 1 this indicates whether or not the household has any sibling (rice helper) in the destination. For path length 2 this is a count of the number of households that provide a length 2 path to one or more siblings (rice helper) in the destination: $hhA-hhB-sib(s)$ (or $hhA-hhB-rice\ helper(s)$). So for path length 2 this is the number of households (hhB) that link hhA to sibling (rice helper) of hhB in the destination. Equivalently it is the number of paths of exactly length 2 that end in one or more siblings (rice helpers) in the destination. For path length 3 this is: $hhA-hhB-hhC-sib(s)$ (or $hhA-hhB-hhC-rice\ helper(s)$). And so on for longer paths.

The chain variables were calculated using the path distances between households in the village and the ties from households to destinations outside the village. A path is a sequence of points (households) and lines (ties) beginning and ending with points (households) and not retracing any steps. The length of a path is the number of lines in it (Wasserman and Faust, 1994 Chapter 4). To find the paths between households, each relation was treated as dichotomous and symmetric (that is, the direction of the tie was ignored and ties were treated as either present or absent between each pair of households). The distance between two households is the length of the shortest path between them.