

Risk Factors of Stunting

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Jr., Benjamin F. Arnold*

2018-06-14

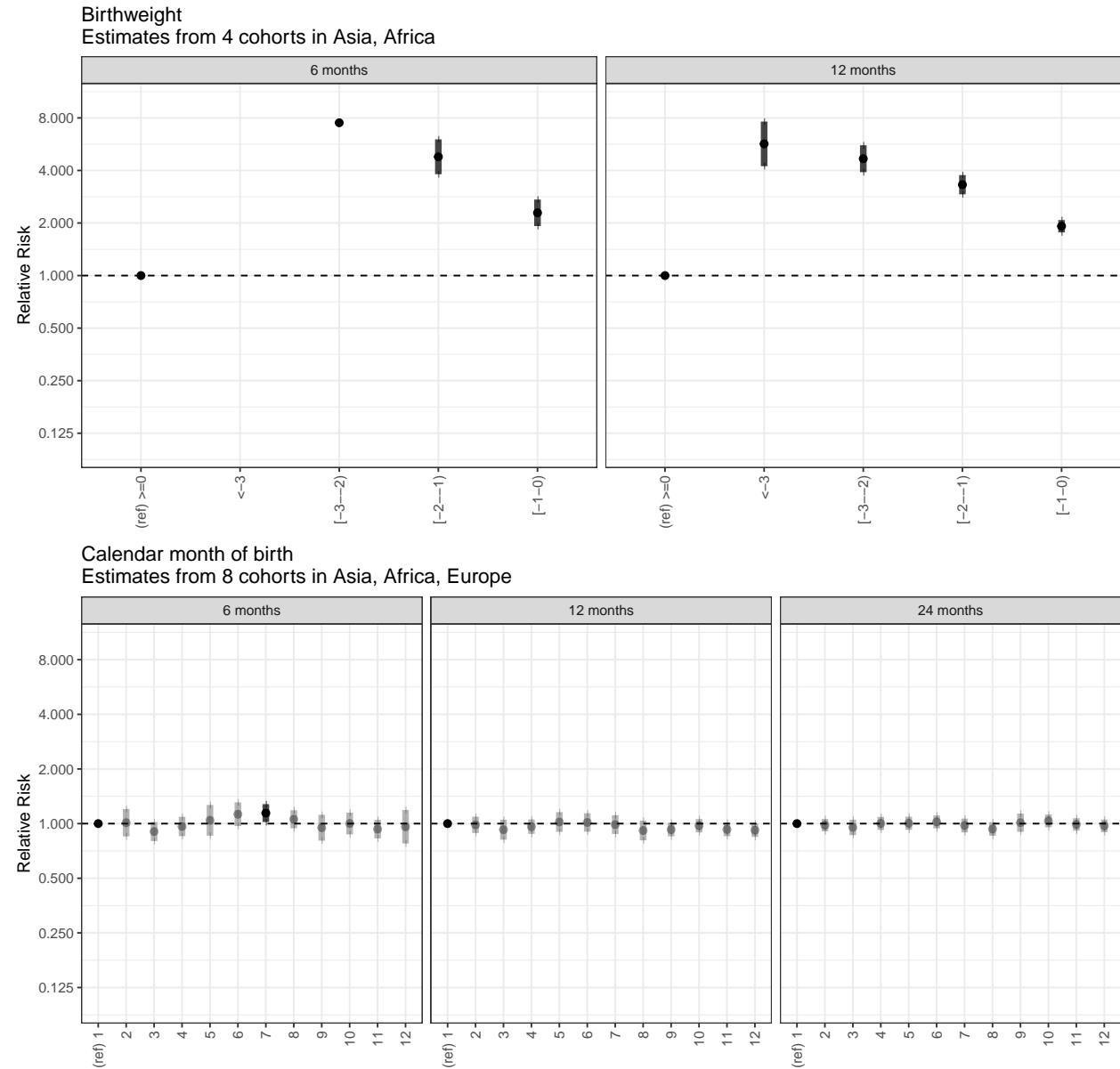
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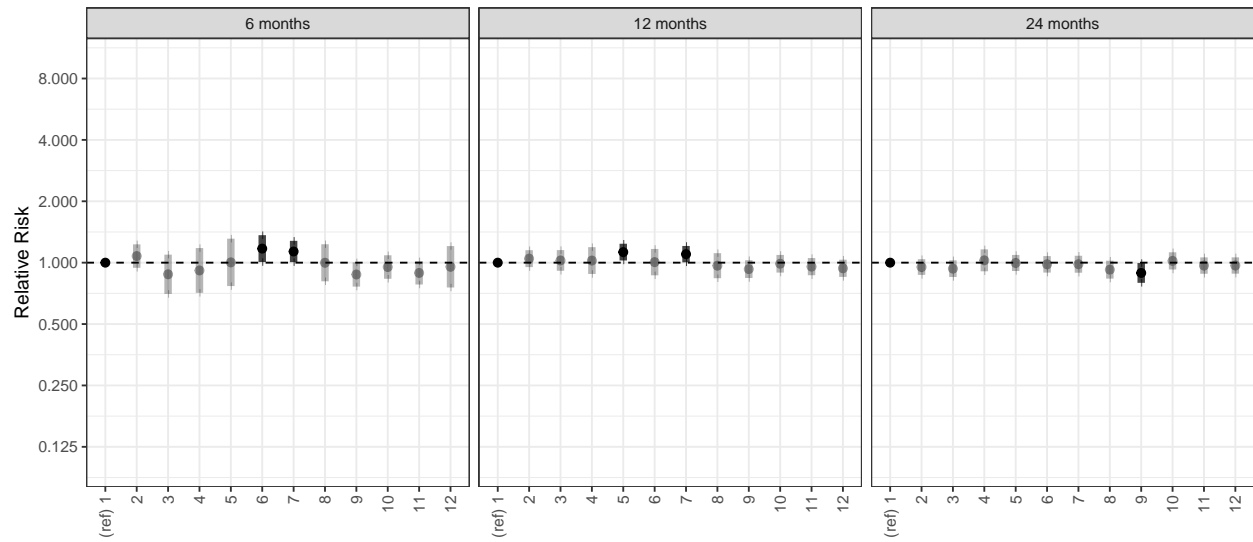
Relative risk pooled across cohorts

Cumulative incidence of stunting from birth to 24 months

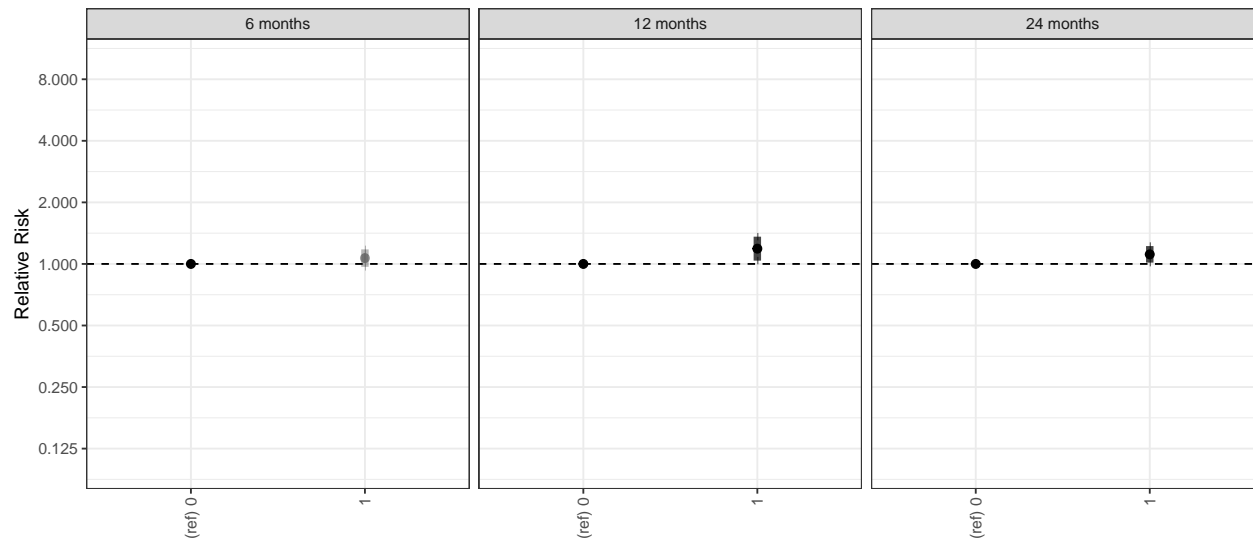
Child characteristics



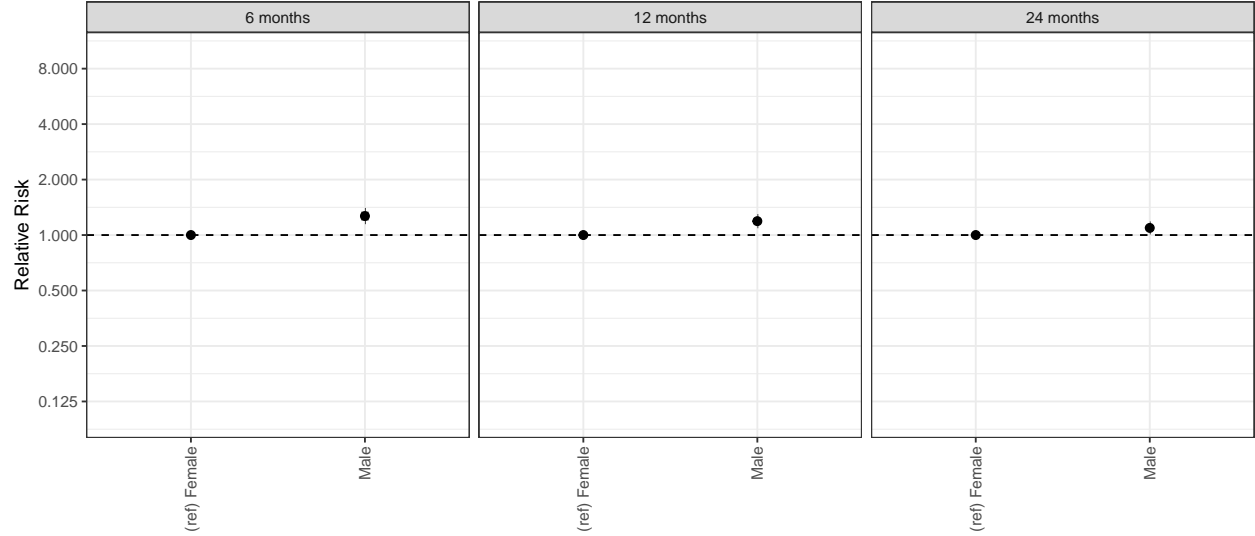
Calendar month of measurement
Estimates from 7 cohorts in Asia, Europe, Africa



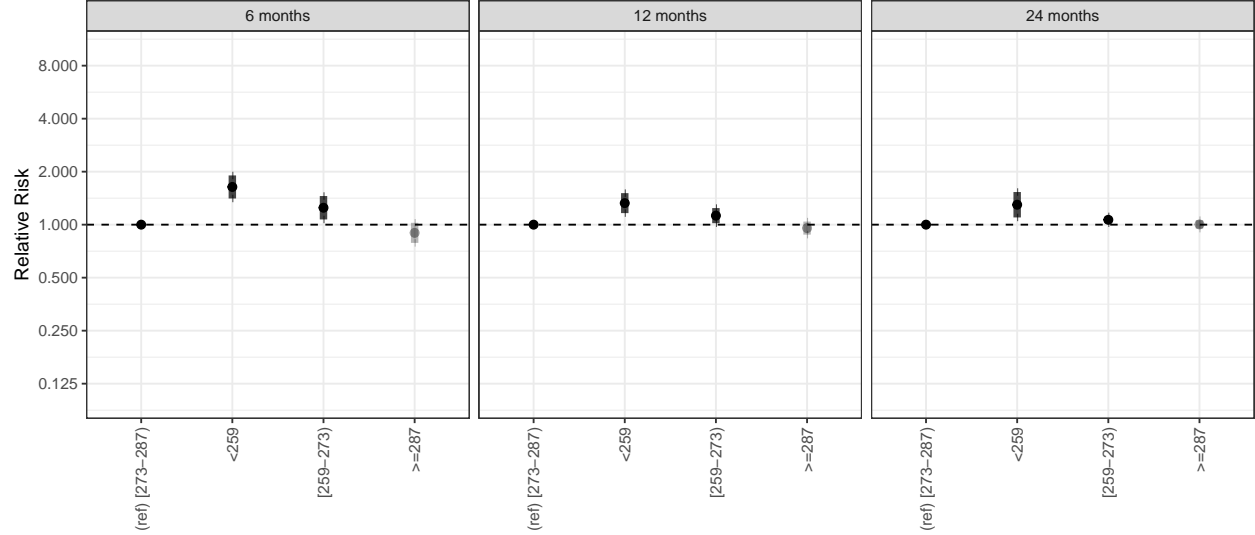
Child delivered at home
Estimates from 8 cohorts in Asia, Africa



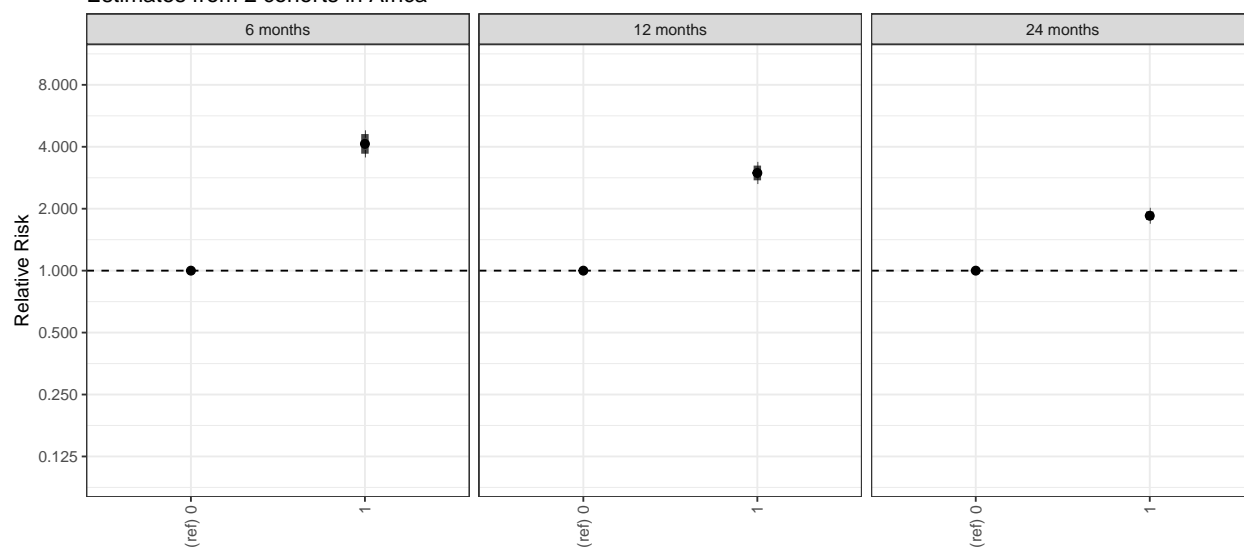
Child's sex
Estimates from 32 cohorts in Asia, Latin America, Africa, Europe



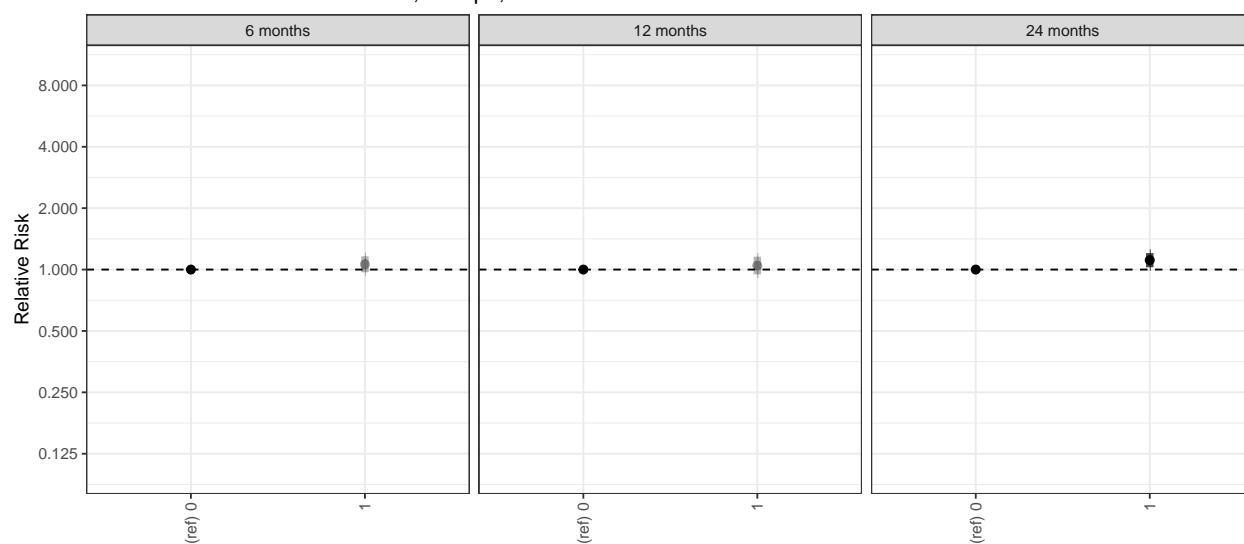
Gestational age at birth in days
Estimates from 6 cohorts in Asia, Africa



Stunted at enrollment
Estimates from 2 cohorts in Africa

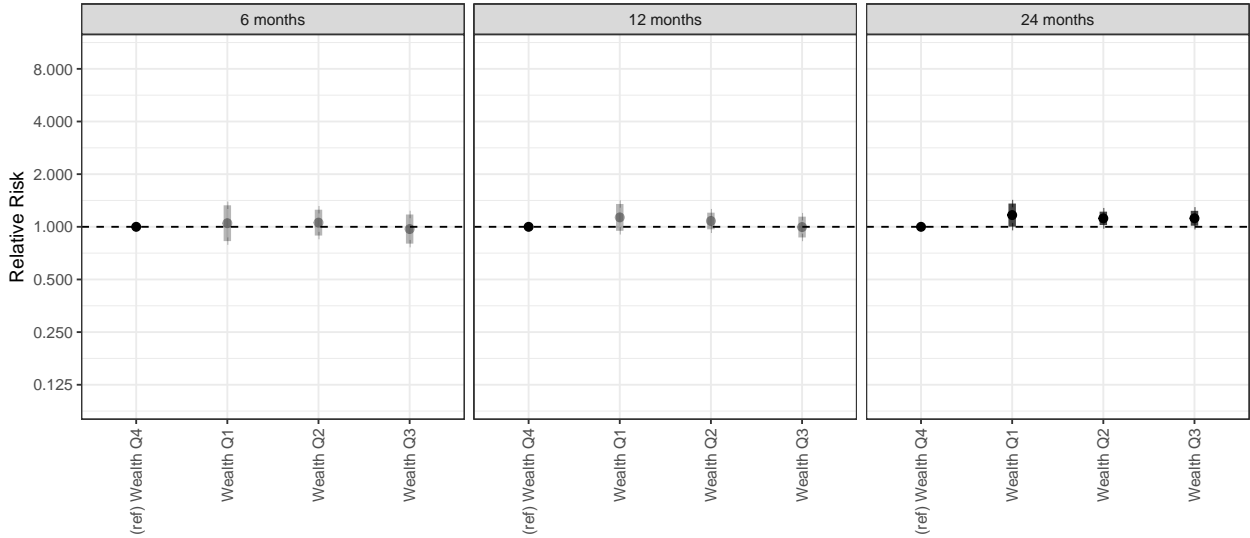


Vaginal delivery
Estimates from 9 cohorts in Asia, Europe, Africa

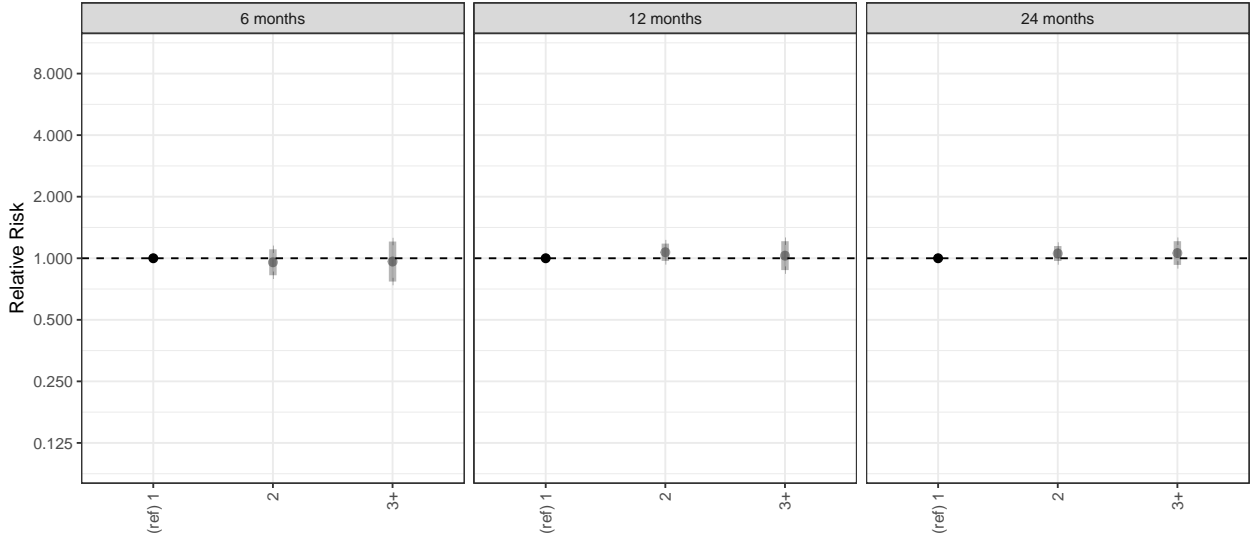


Household characteristics

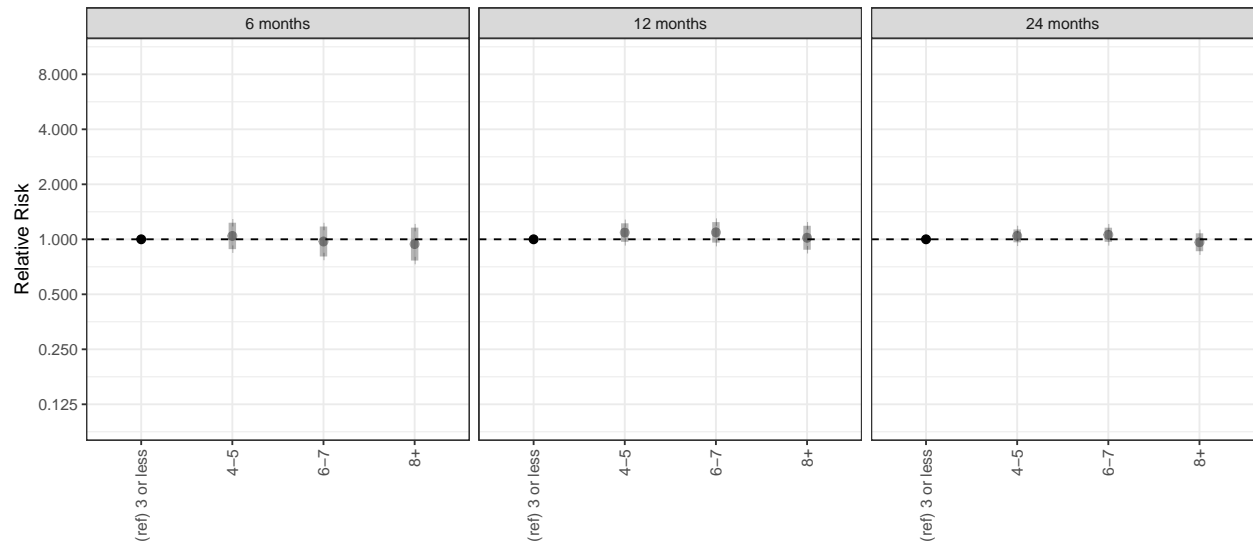
Asset based wealth index
Estimates from 11 cohorts in Asia, Latin America, Africa



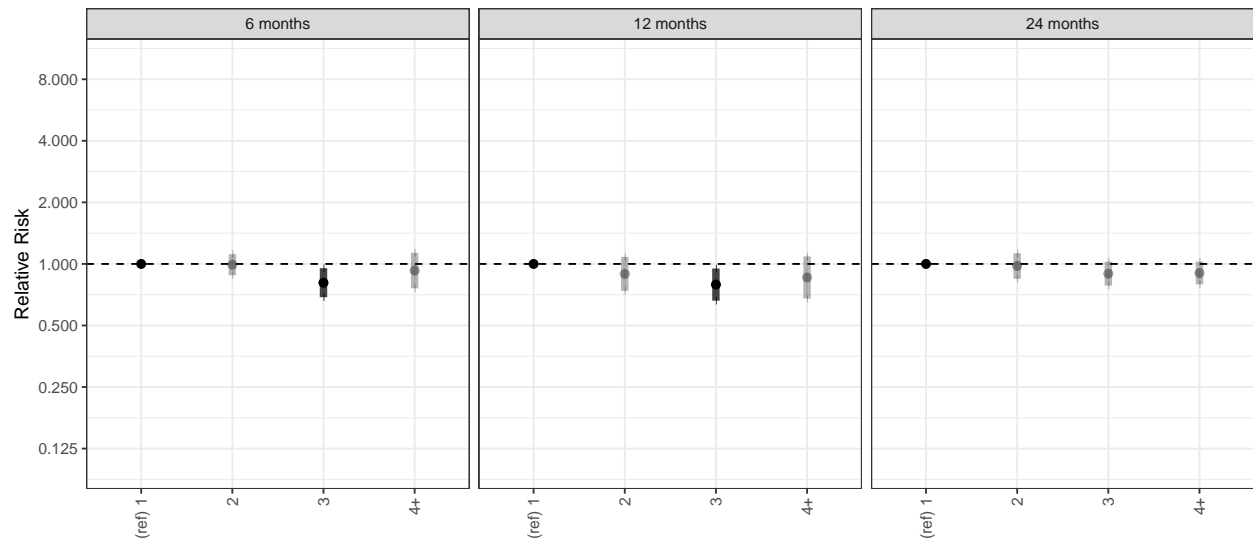
Number of children in the household under 5 years
Estimates from 4 cohorts in Asia, Africa



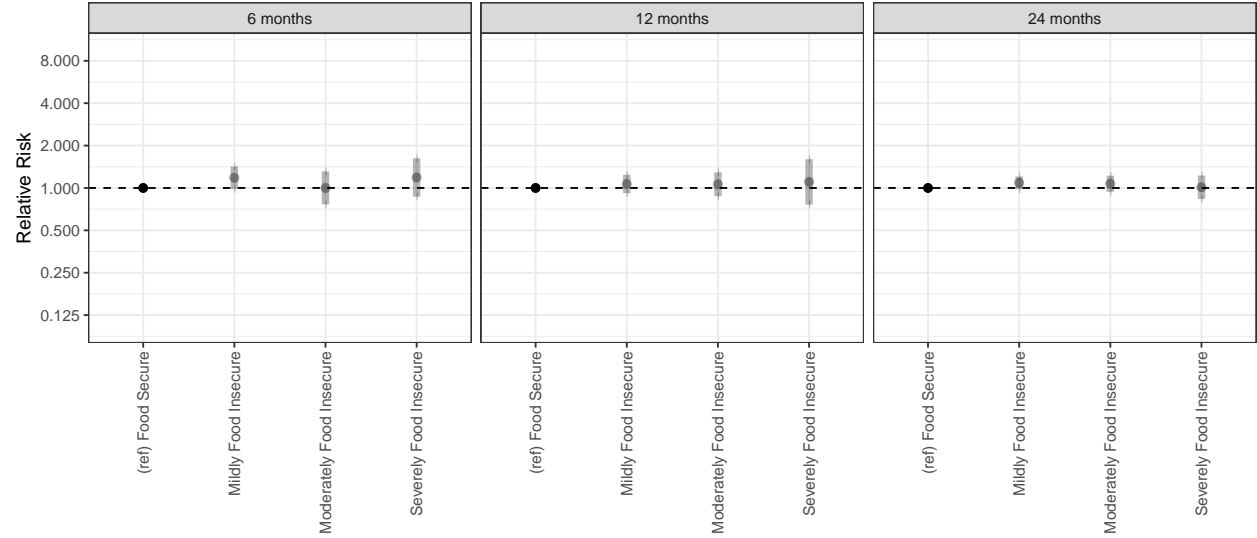
Number of people in the household
Estimates from 4 cohorts in Asia



Number of rooms in household
Estimates from 11 cohorts in Asia, Latin America, Africa

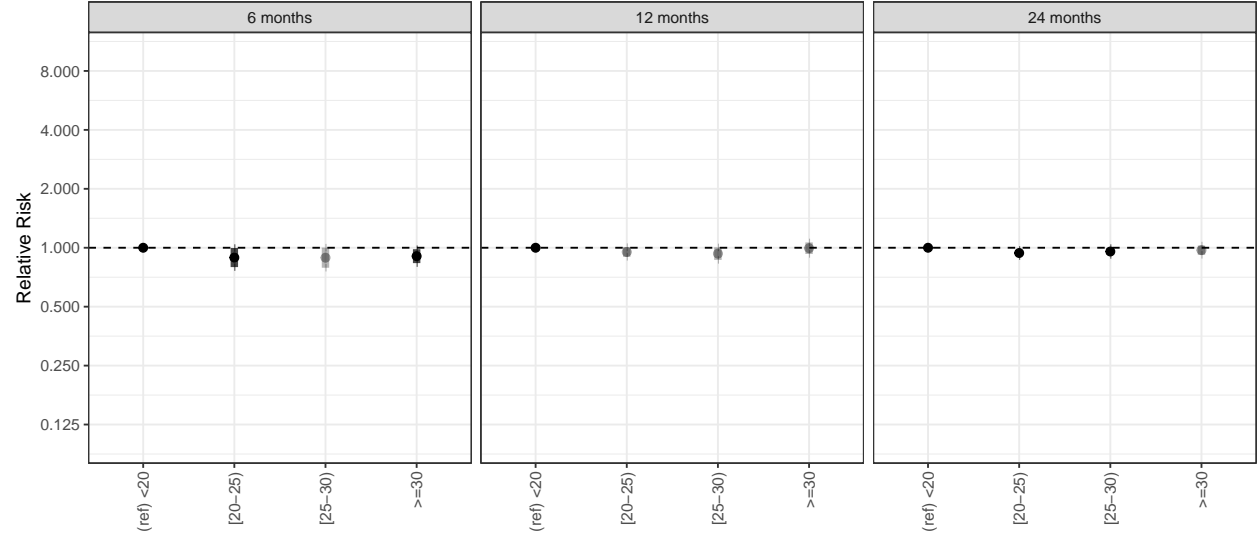


USAID Household Food Insecurity Access Scale (HFIAS) category
Estimates from 3 cohorts in Asia, Latin America

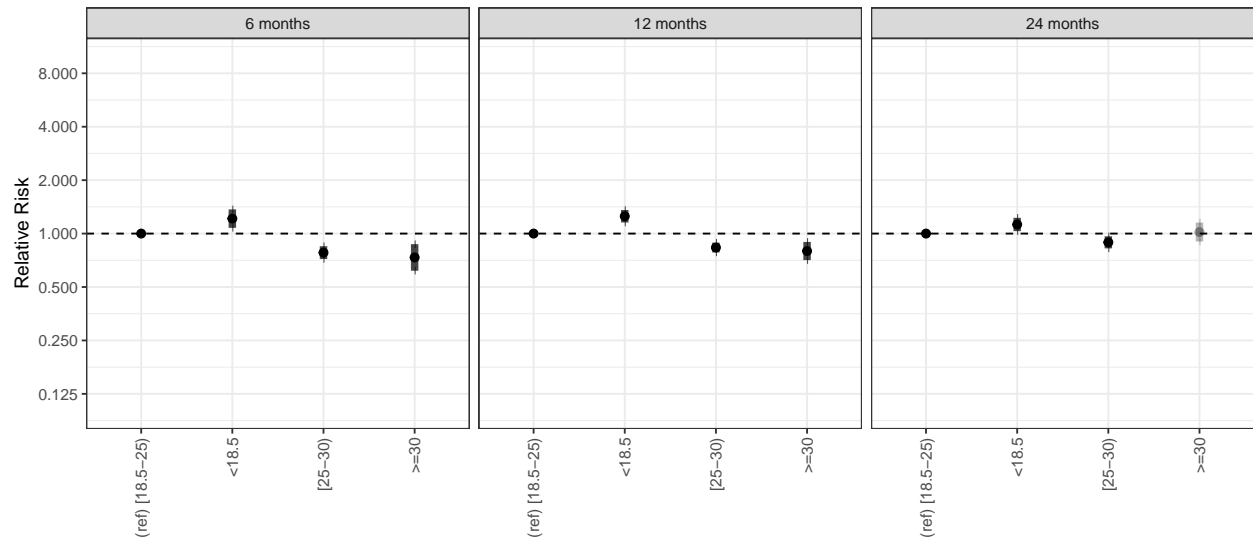


Maternal characteristics

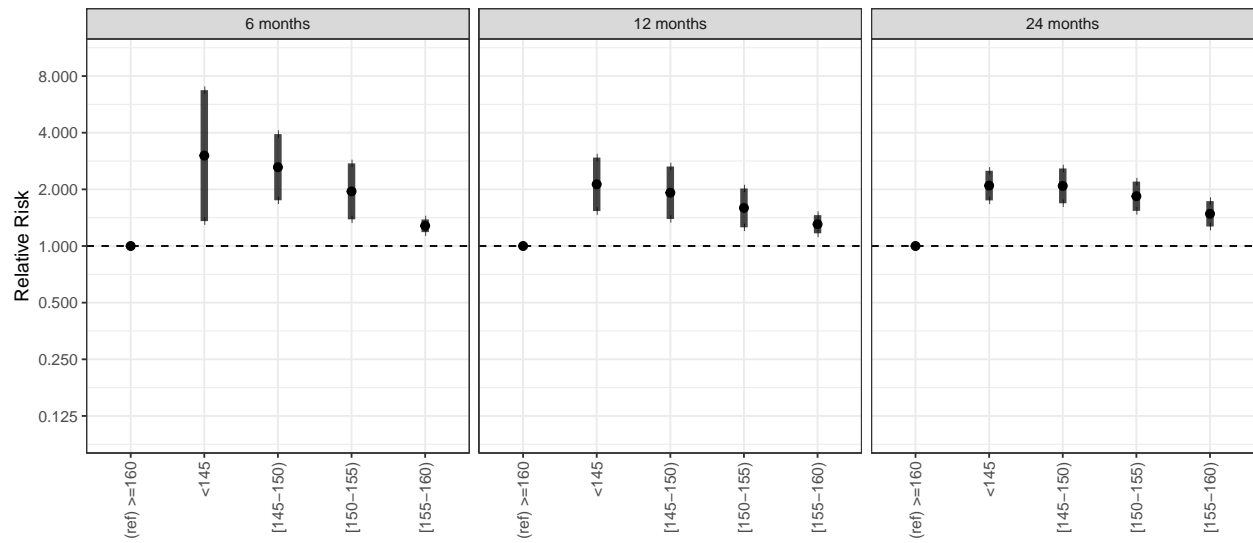
Maternal age
Estimates from 20 cohorts in Asia, Latin America, Africa, Europe



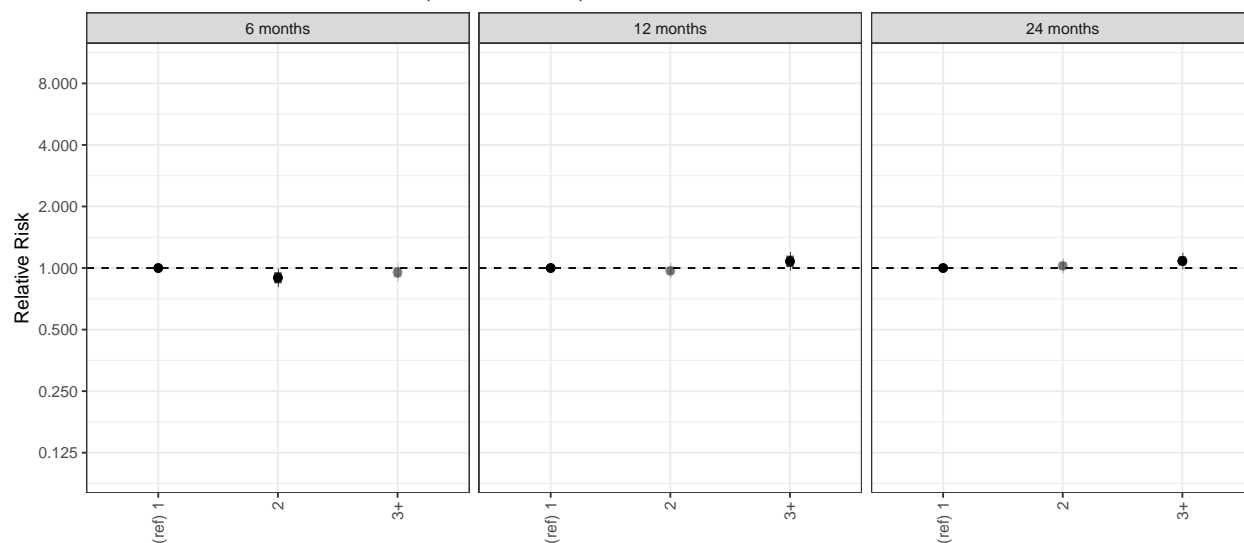
Maternal BMI
Estimates from 5 cohorts in Asia, Europe, Africa



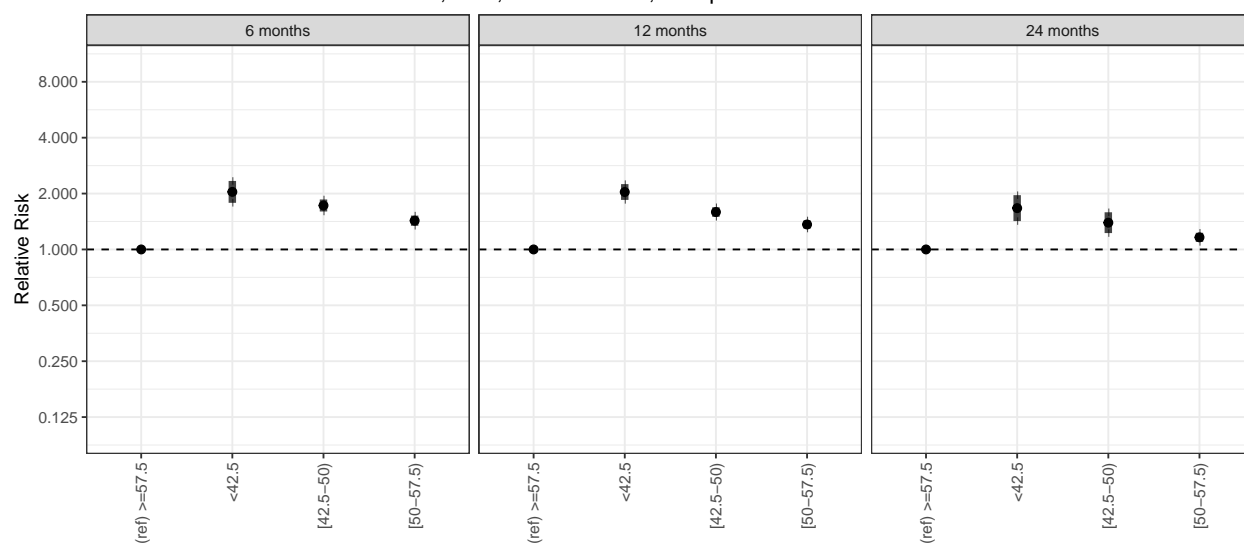
Maternal height
Estimates from 8 cohorts in Asia, Latin America, Africa



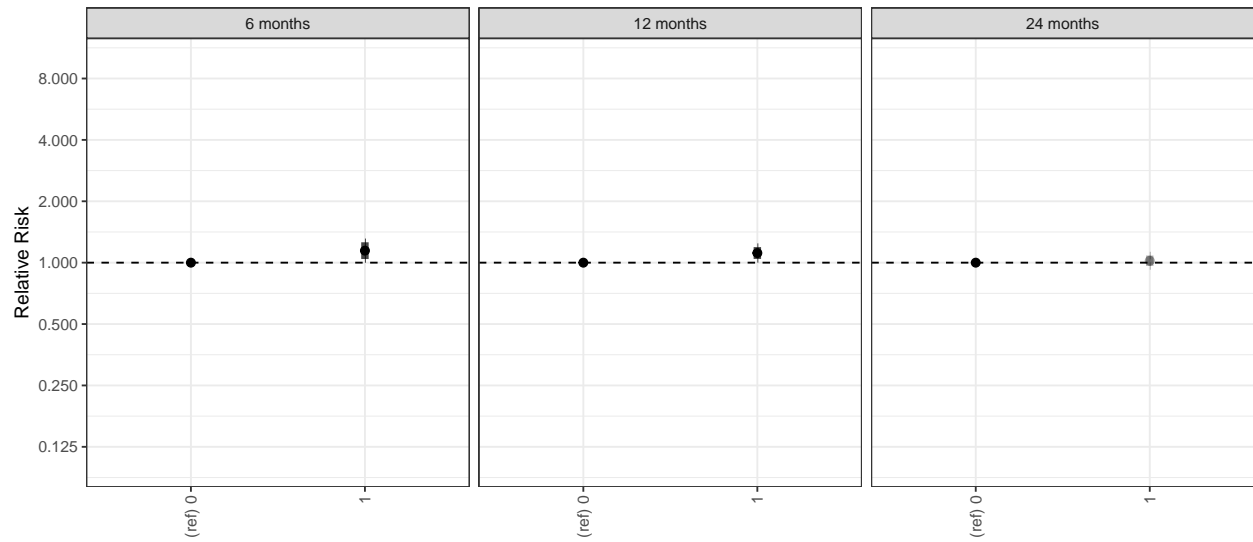
Maternal parity
Estimates from 10 cohorts in Asia, Latin America, Africa



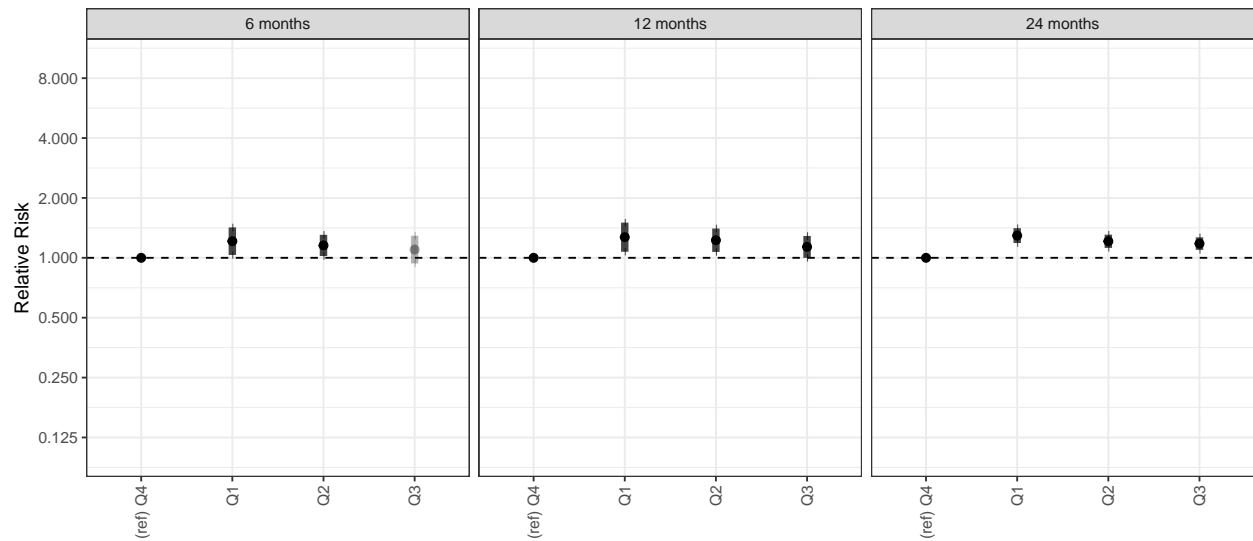
Maternal weight
Estimates from 11 cohorts in Africa, Asia, Latin America, Europe



Mother is unmarried
Estimates from 9 cohorts in Latin America, Asia, Africa, Europe

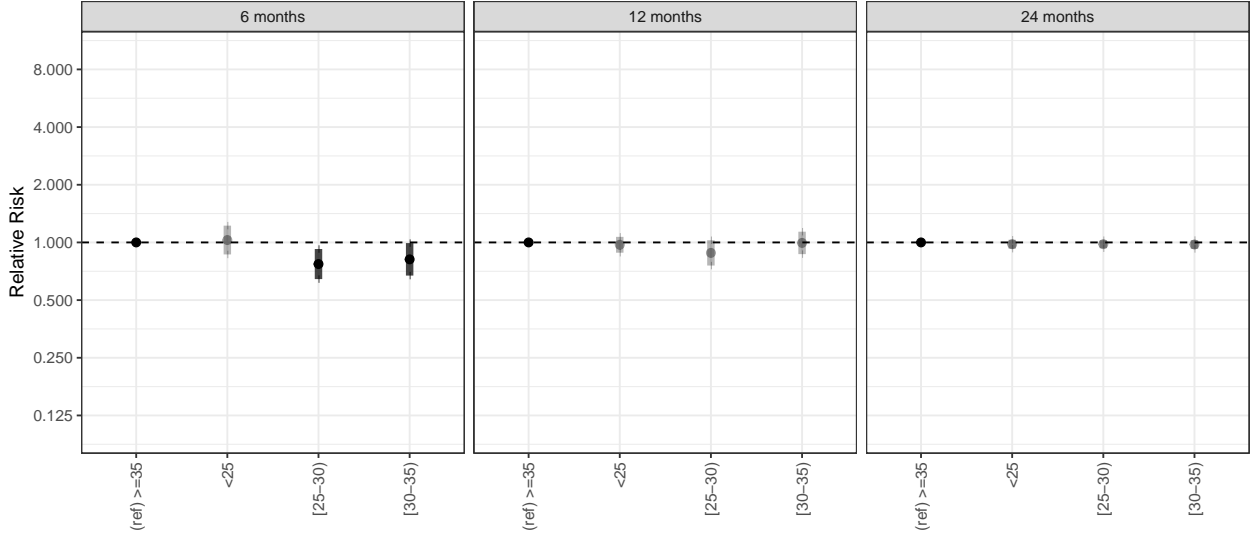


Mother's education
Estimates from 15 cohorts in Asia, Latin America, Africa

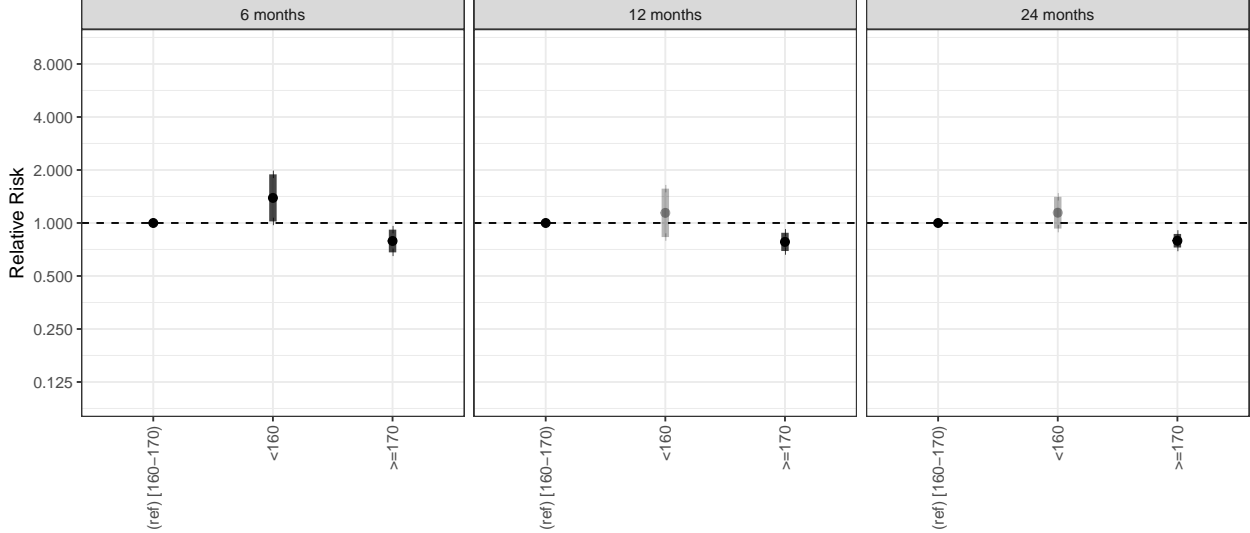


Paternal characteristics

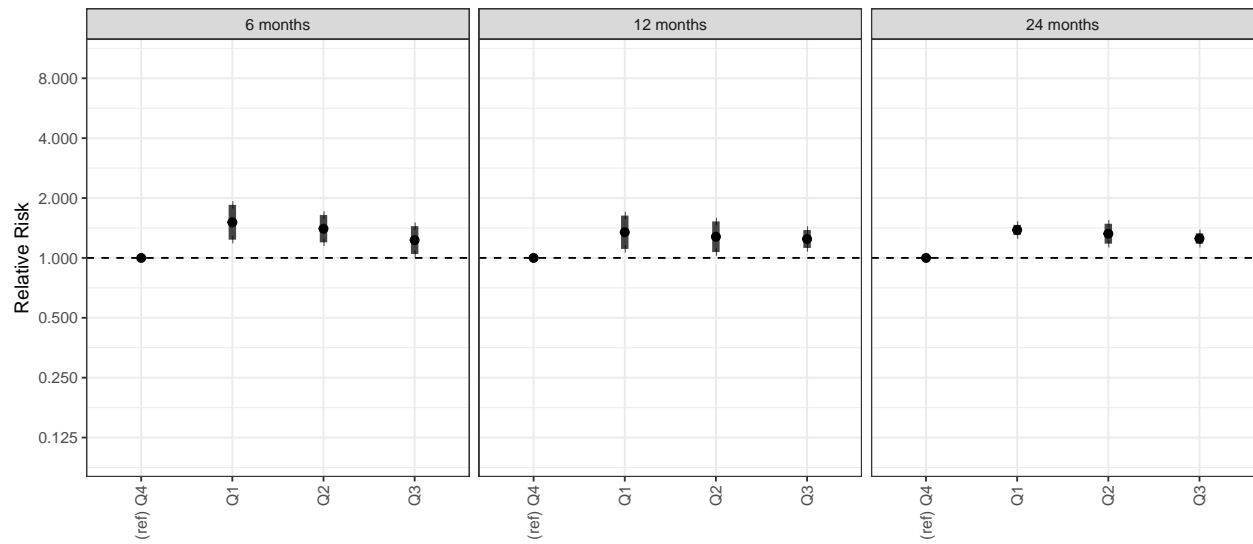
Father age
Estimates from 5 cohorts in Latin America, Asia, Africa, Europe



Father height
Estimates from 3 cohorts in Africa, Asia



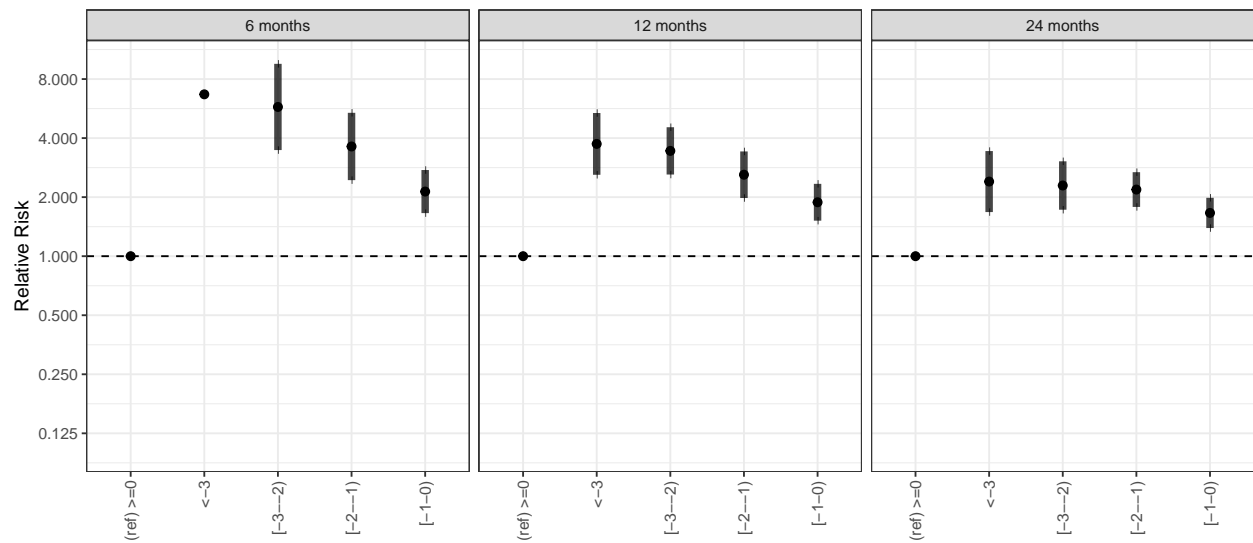
Father's education
Estimates from 12 cohorts in Asia, Africa, Latin America



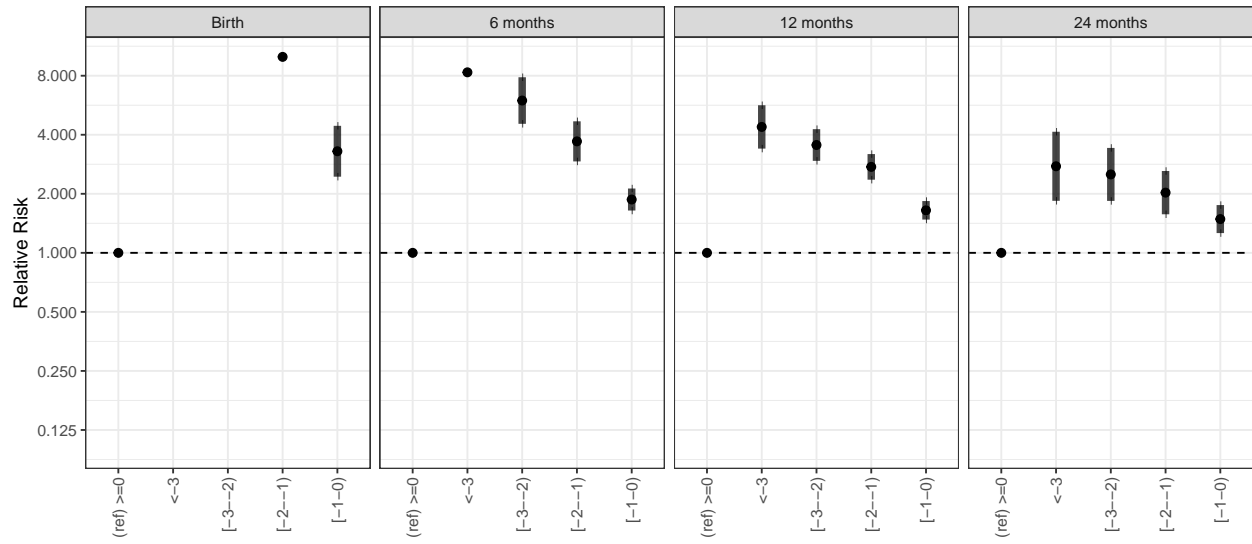
Point prevalence of stunting

Child characteristics

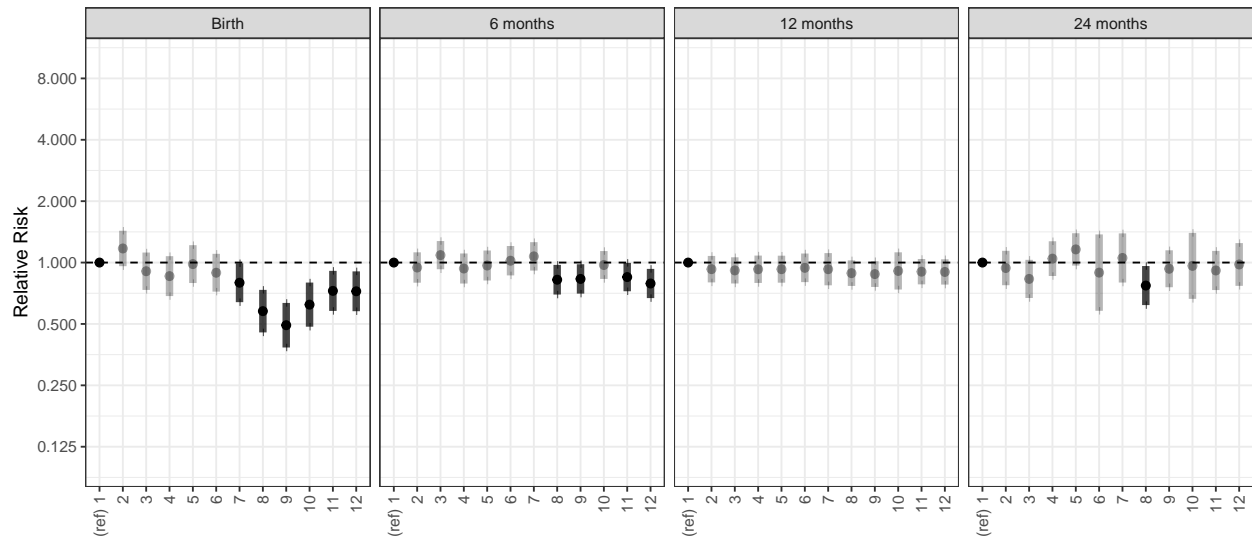
Birth length
Estimates from 6 cohorts in Asia, Africa



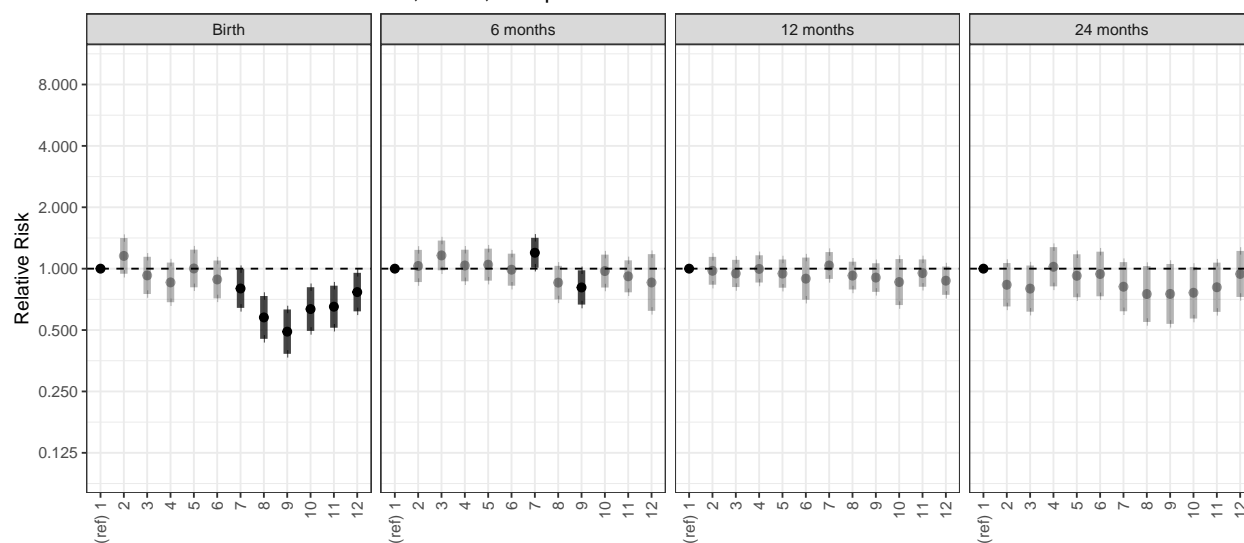
Birthweight
Estimates from 2 cohorts in Asia, Africa



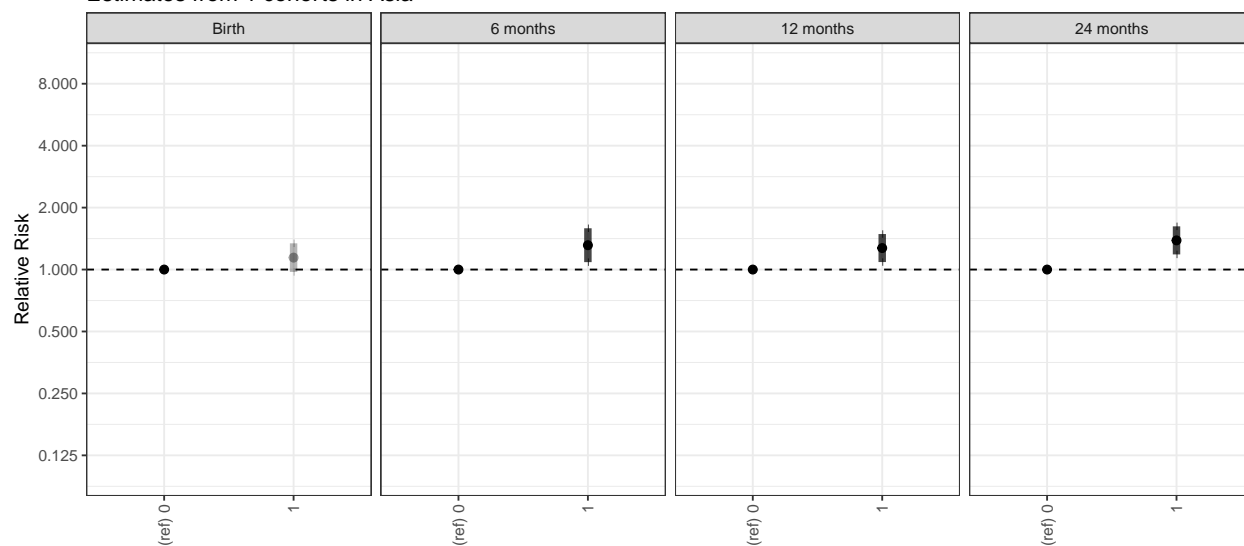
Calendar month of birth
Estimates from 9 cohorts in Asia, Africa, Europe



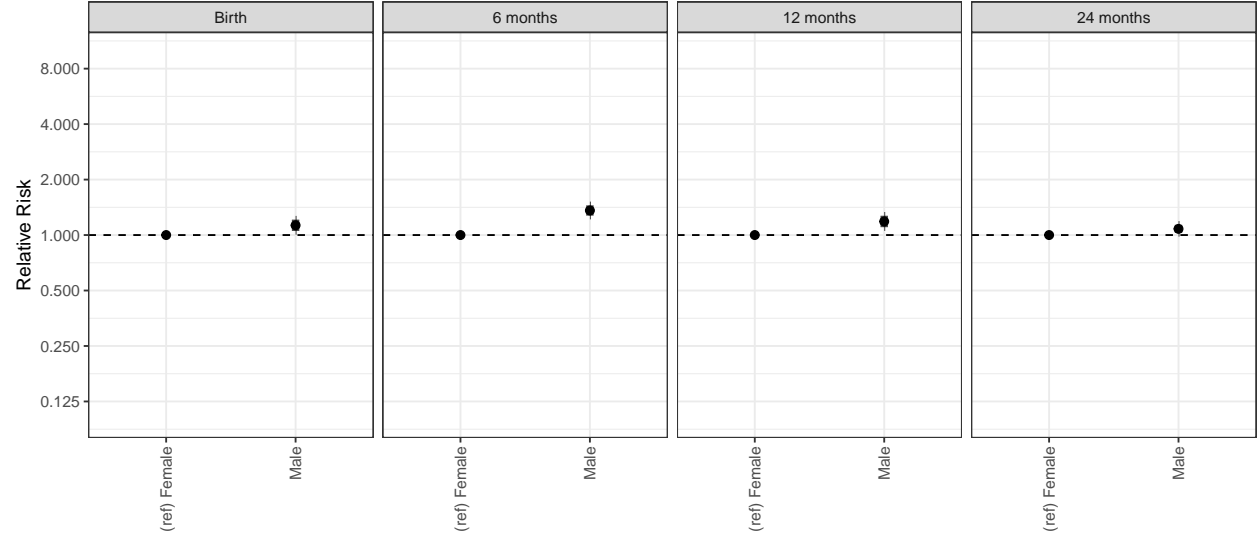
Calendar month of measurement
Estimates from 8 cohorts in Asia, Africa, Europe



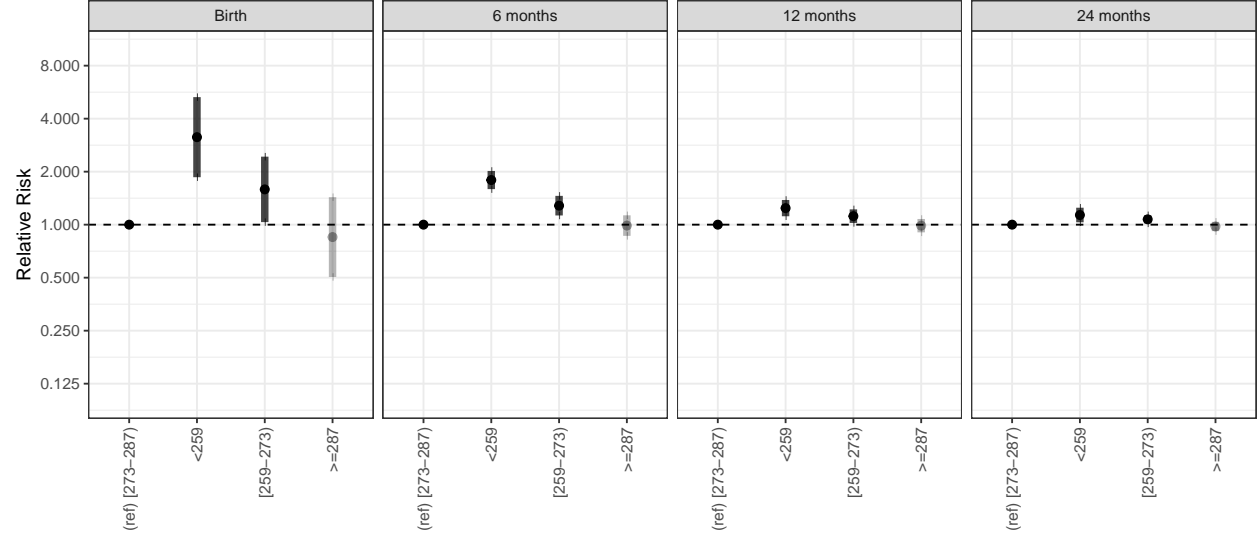
Child delivered at home
Estimates from 1 cohorts in Asia



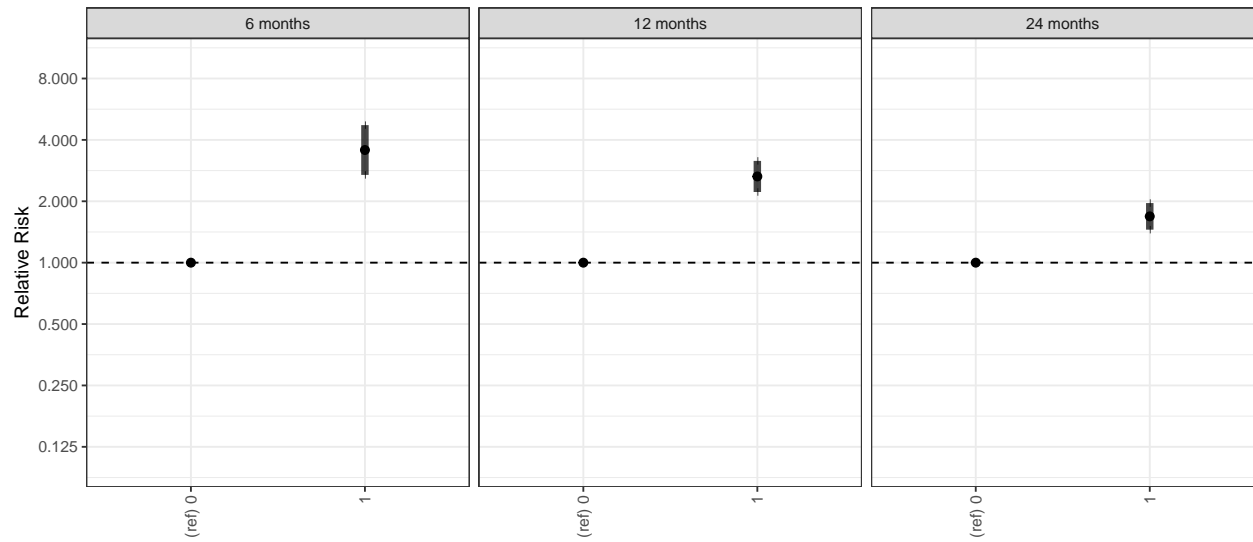
Child's sex
Estimates from 18 cohorts in Asia, Latin America, Africa, Europe



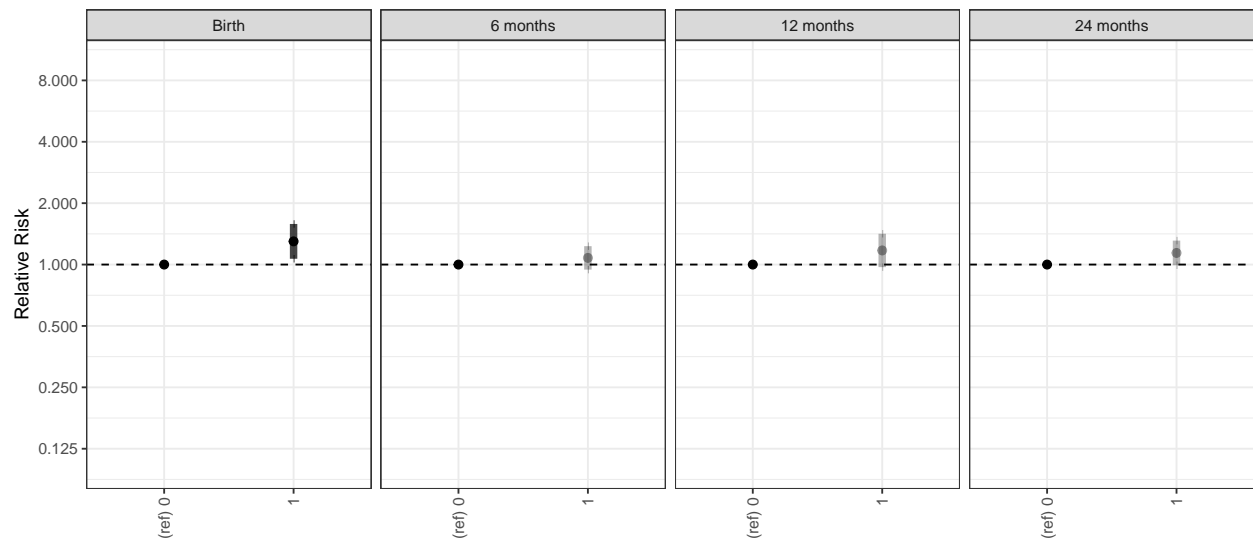
Gestational age at birth in days
Estimates from 8 cohorts in Asia, Latin America, Africa



Stunted at enrollment
Estimates from 18 cohorts in Asia, Africa, Latin America, Europe

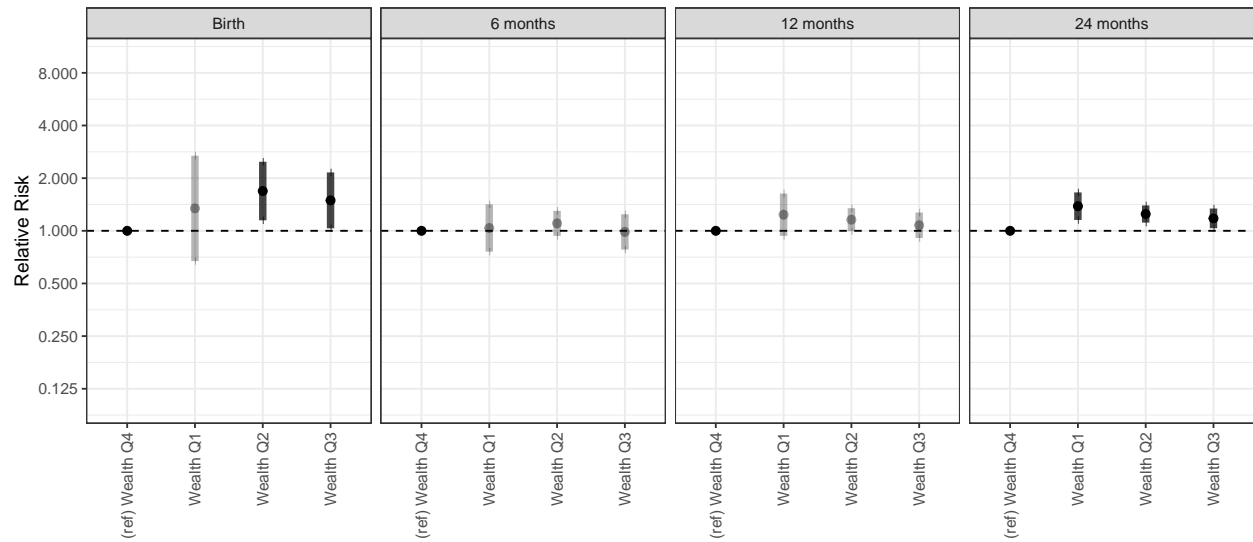


Vaginal delivery
Estimates from 9 cohorts in Asia, Europe, Africa

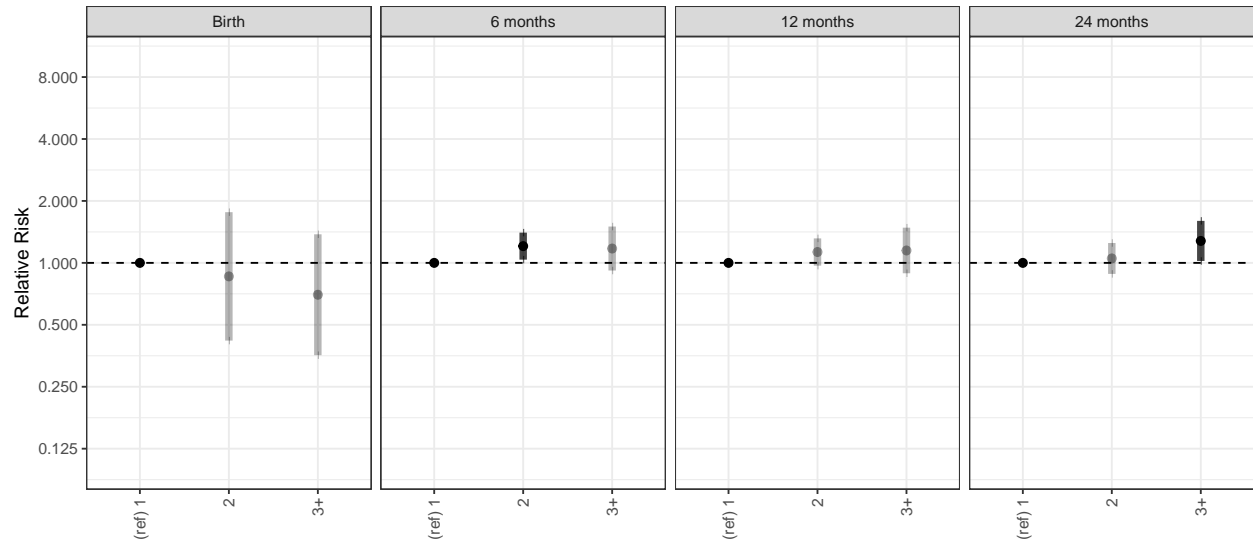


Household characteristics

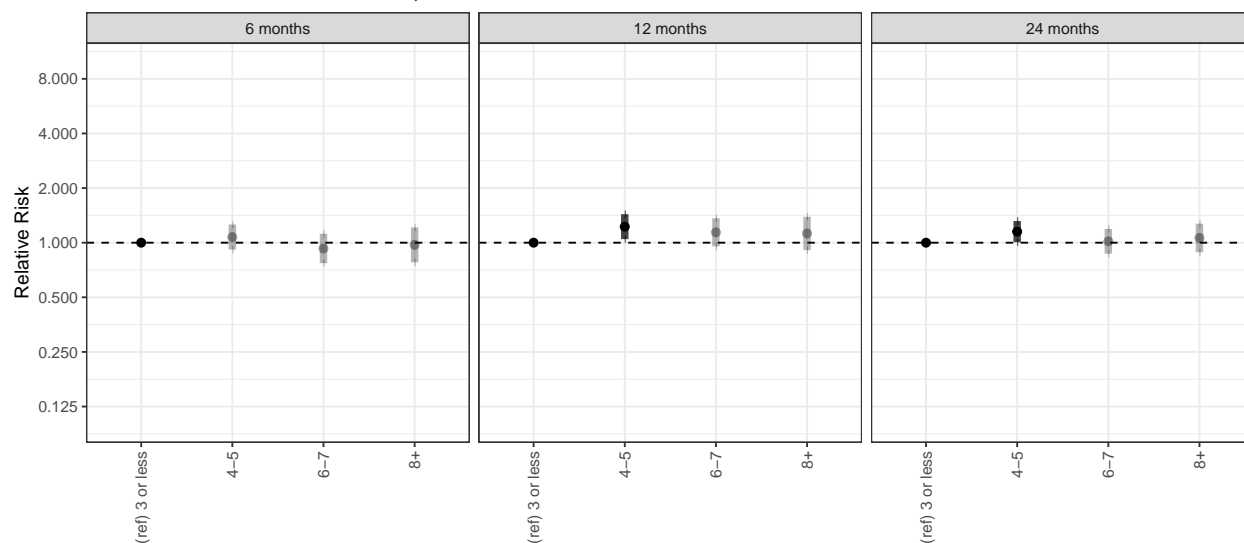
Asset based wealth index
Estimates from 10 cohorts in Asia, Latin America, Africa



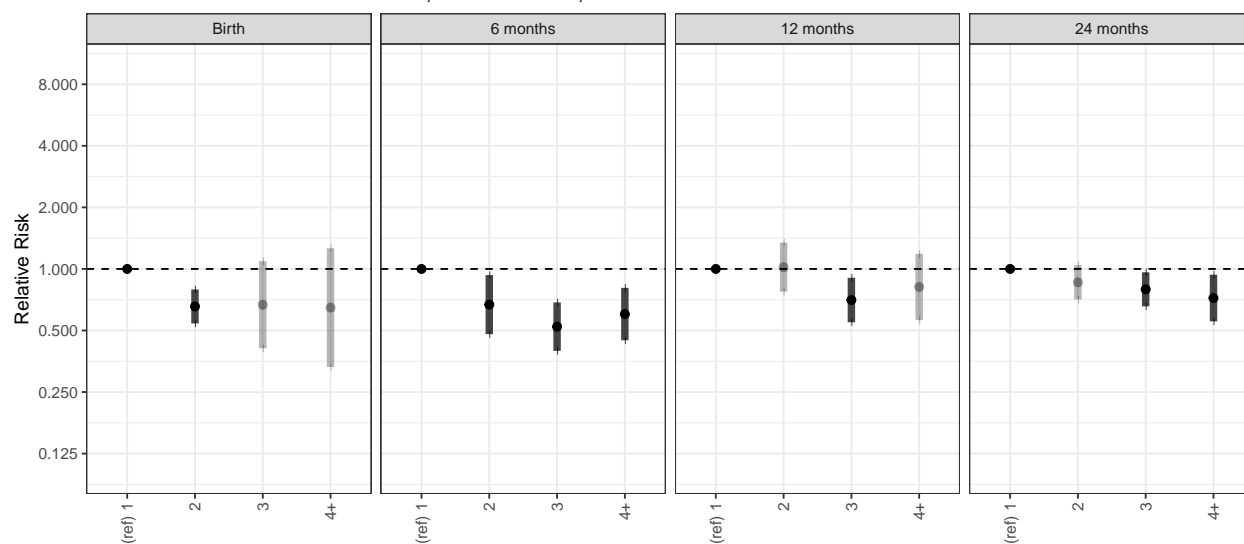
Number of children in the household under 5 years
Estimates from 2 cohorts in Asia



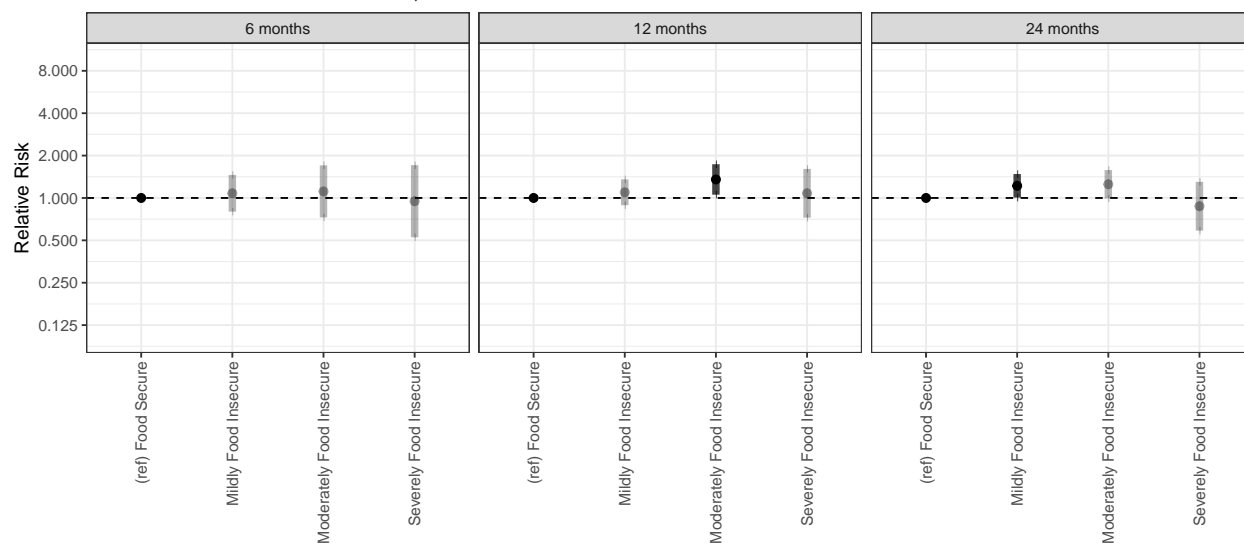
Number of people in the household
Estimates from 5 cohorts in Asia, Africa



Number of rooms in household
Estimates from 10 cohorts in Asia, Latin America, Africa

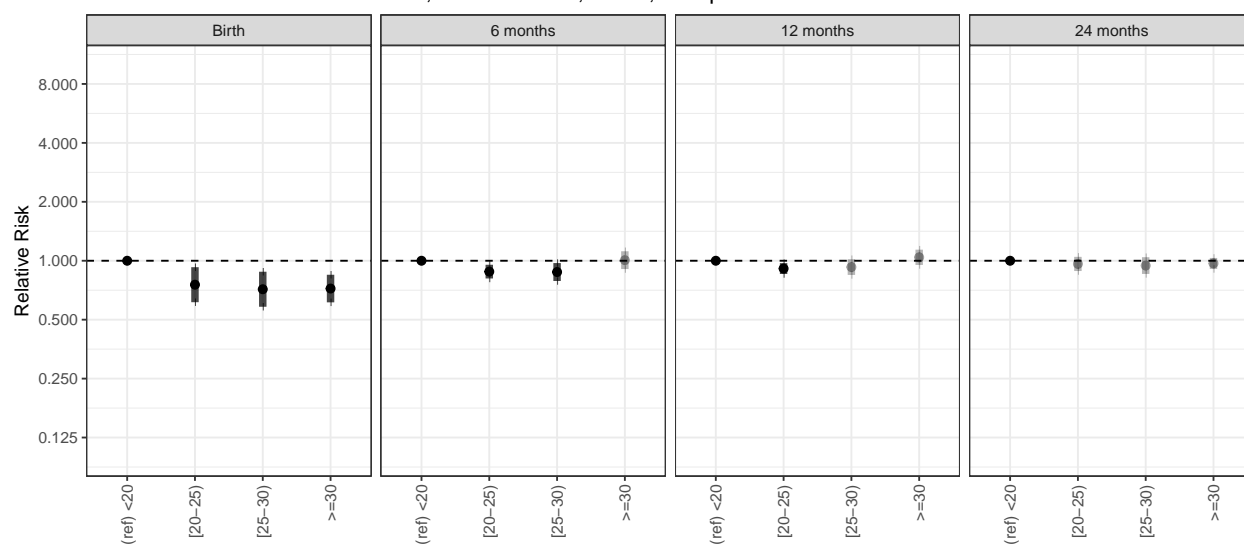


USAID Household Food Insecurity Access Scale (HFIAS) category
Estimates from 3 cohorts in Asia, Latin America

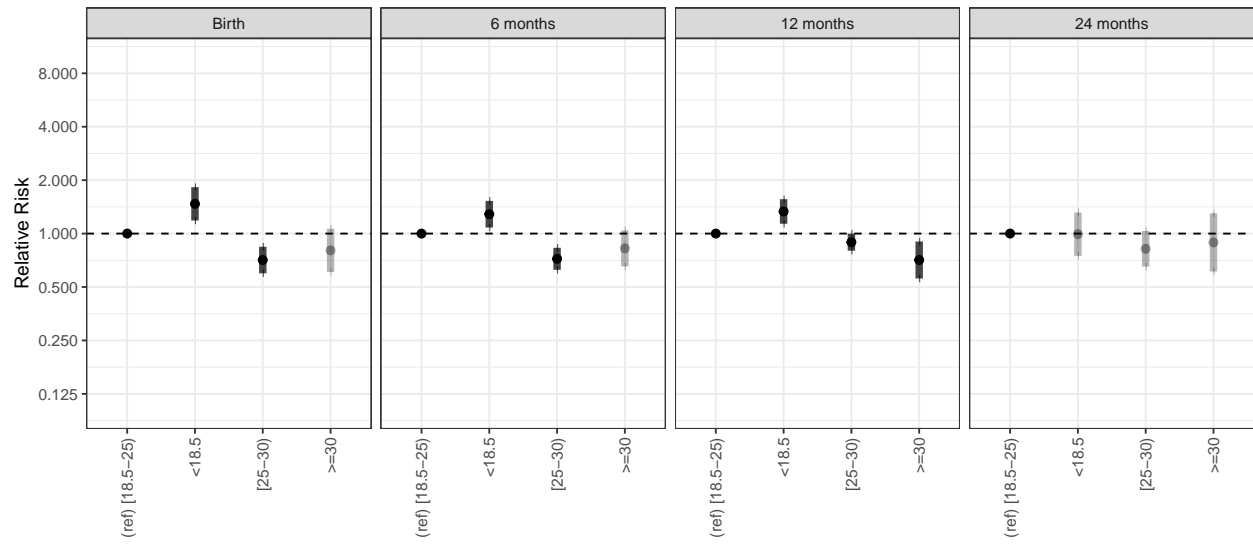


Maternal characteristics

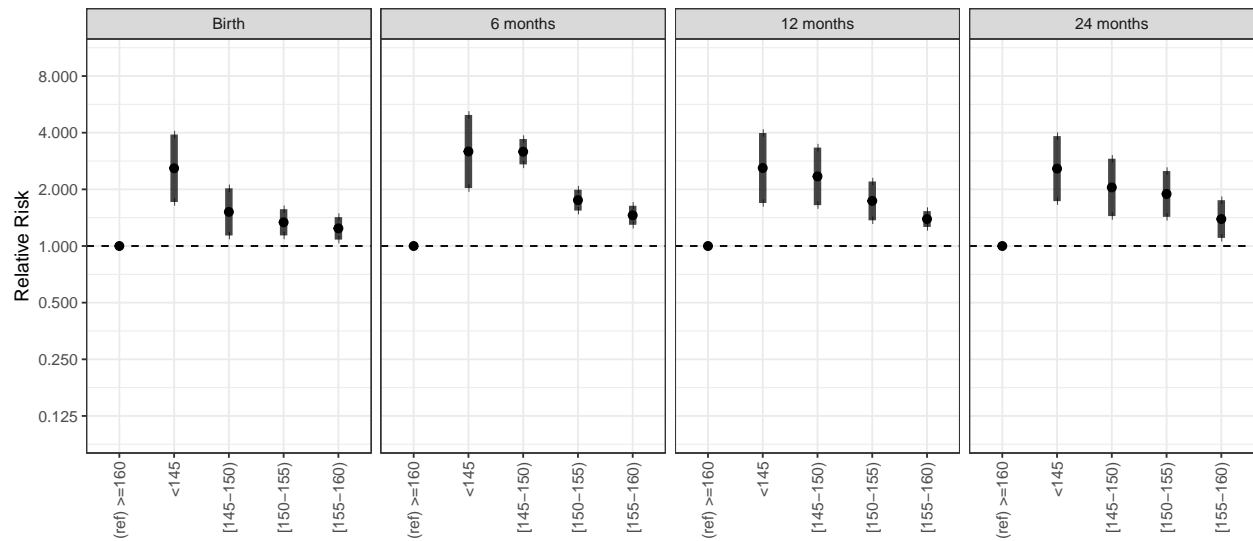
Maternal age
Estimates from 20 cohorts in Asia, Latin America, Africa, Europe



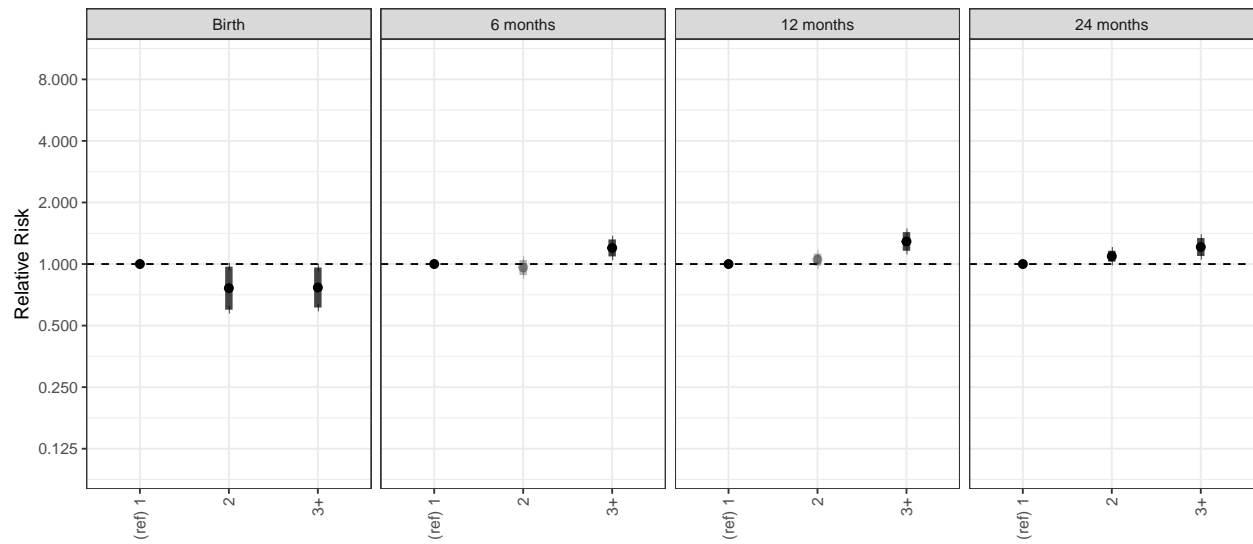
Maternal BMI
Estimates from 3 cohorts in Asia, Europe, Africa



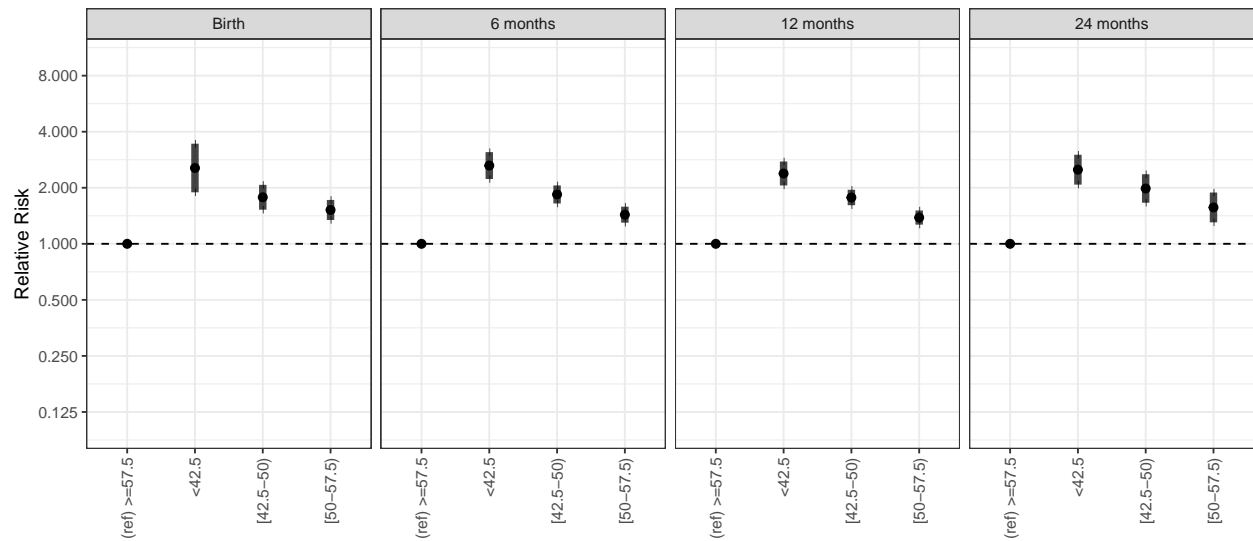
Maternal height
Estimates from 3 cohorts in Asia, Africa



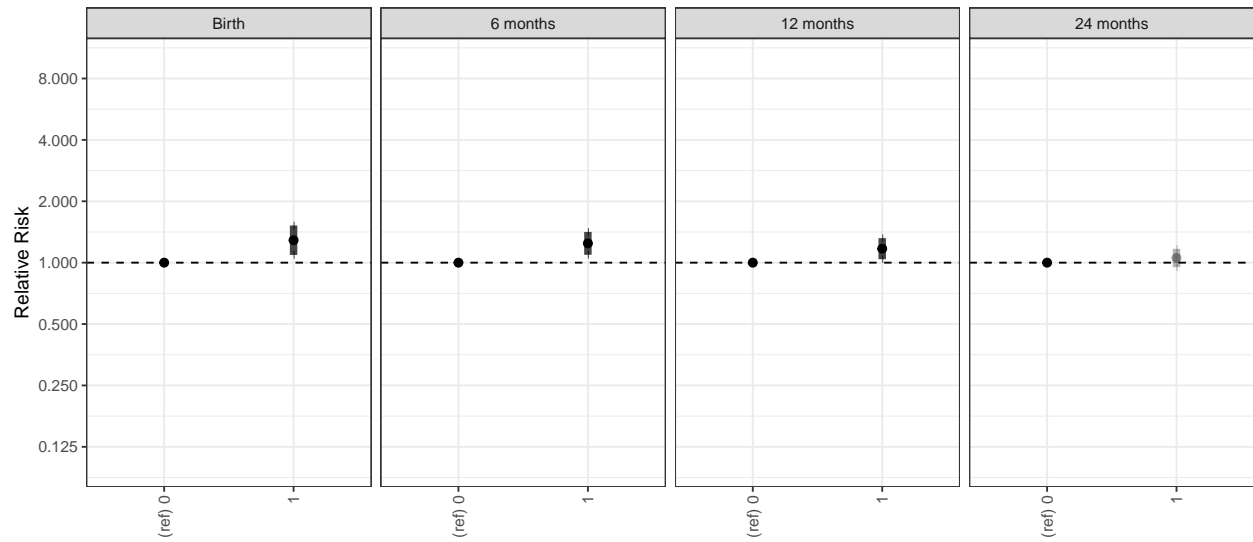
Maternal parity
Estimates from 5 cohorts in Asia, Africa



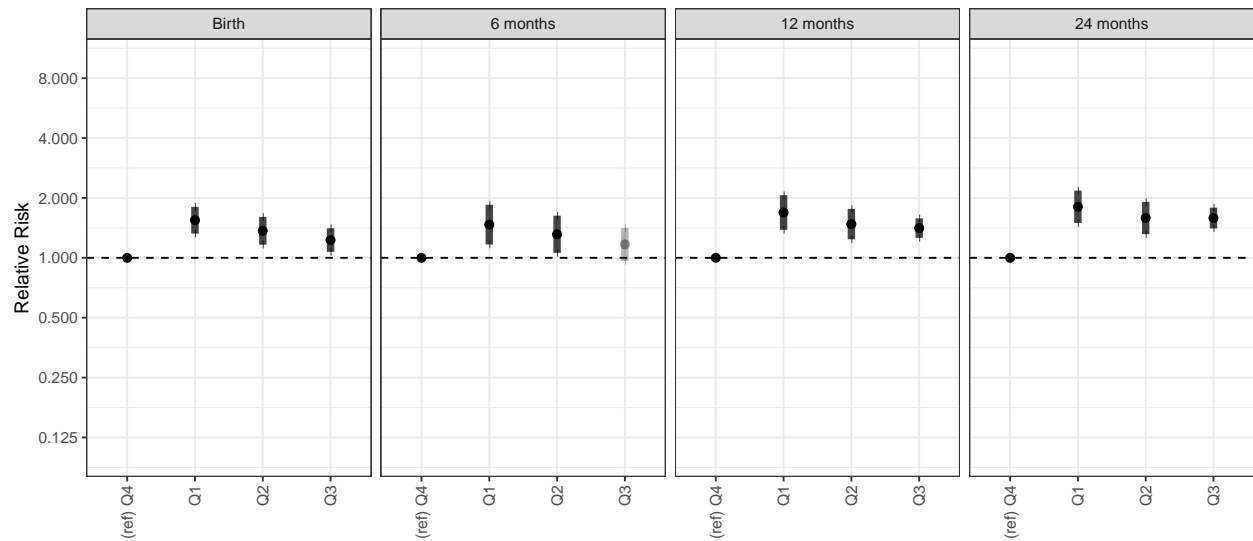
Maternal weight
Estimates from 7 cohorts in Africa, Asia, Latin America



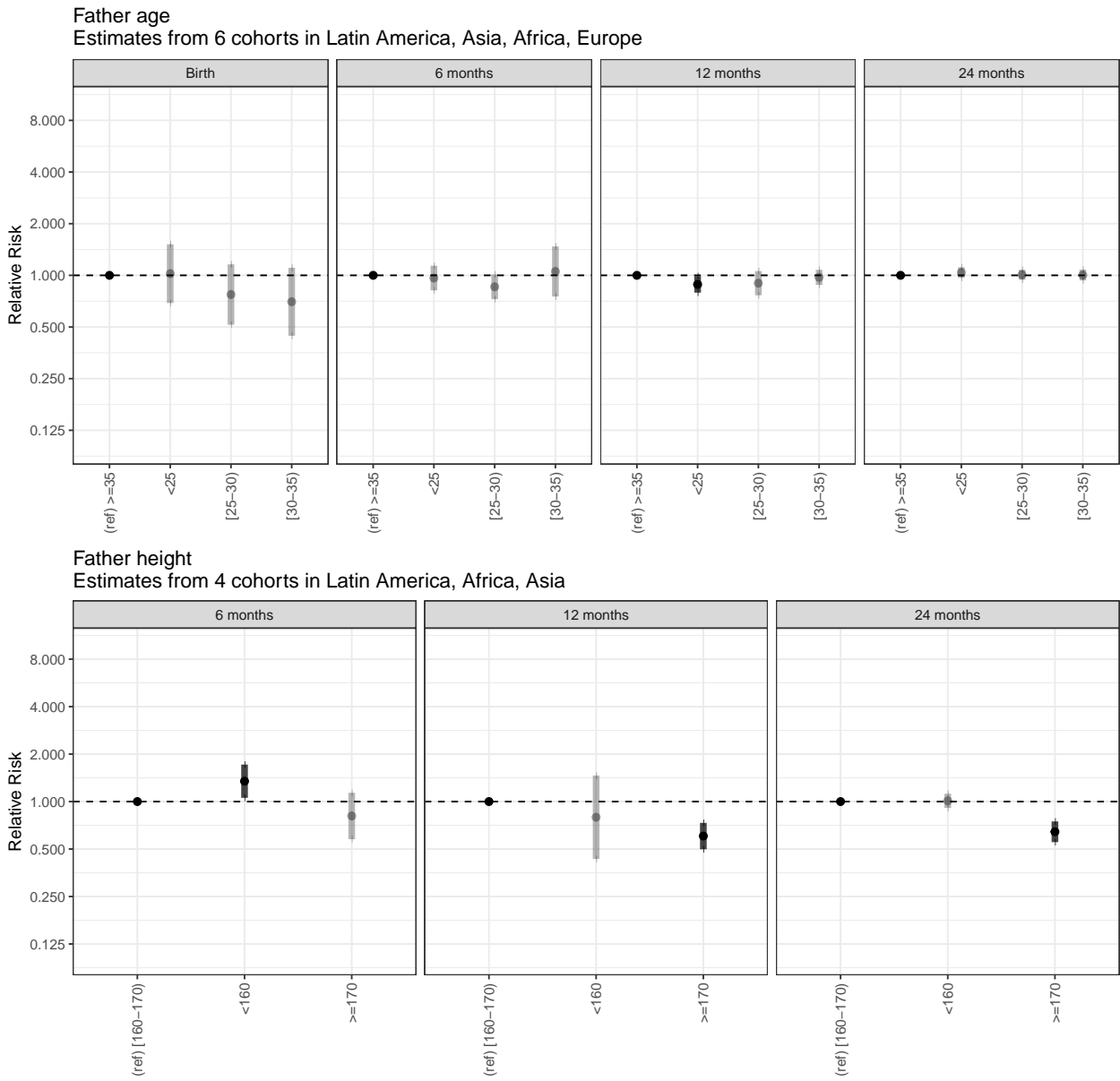
Mother is unmarried
Estimates from 8 cohorts in Latin America, Asia, Africa, Europe

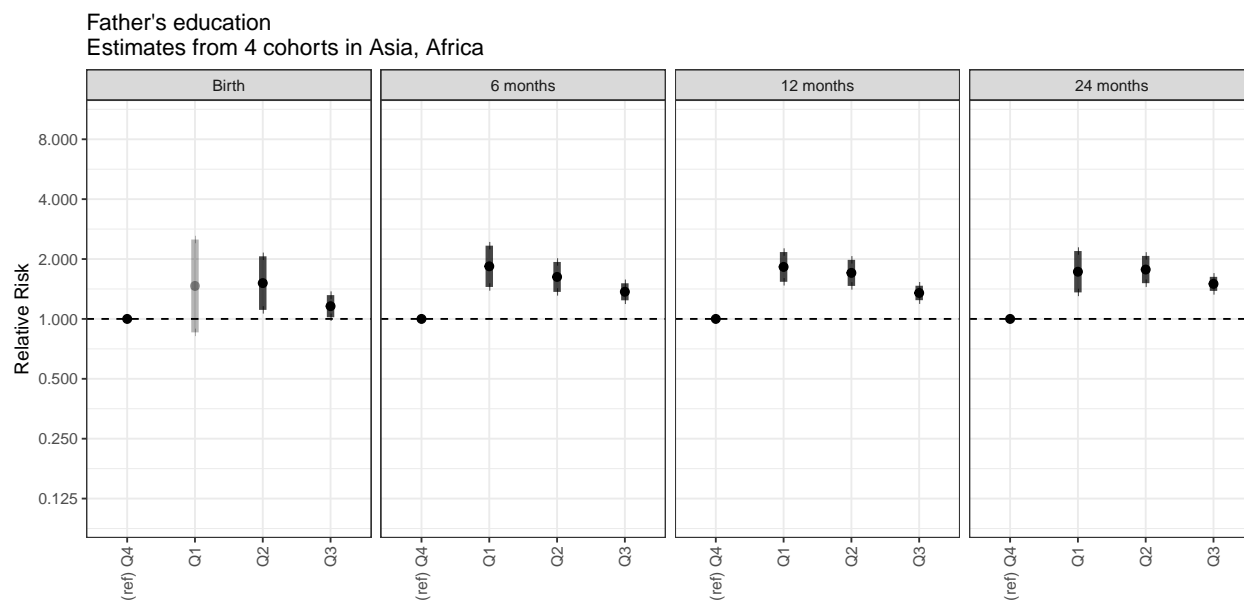


Mother's education
Estimates from 12 cohorts in Asia, Latin America, Africa



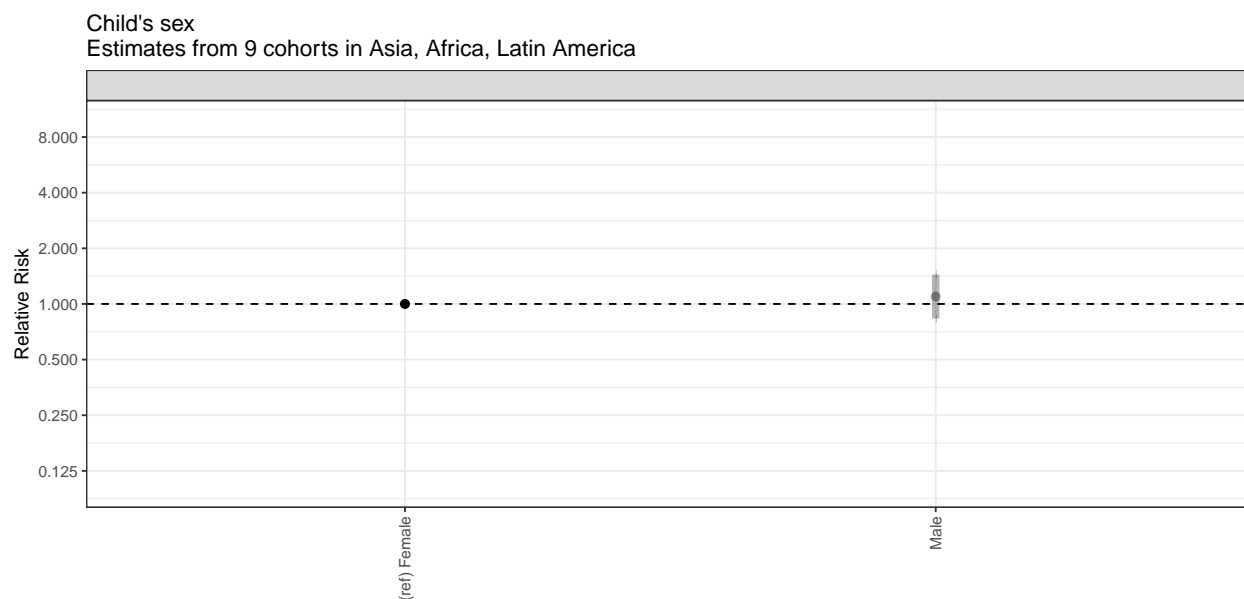
Paternal characteristics



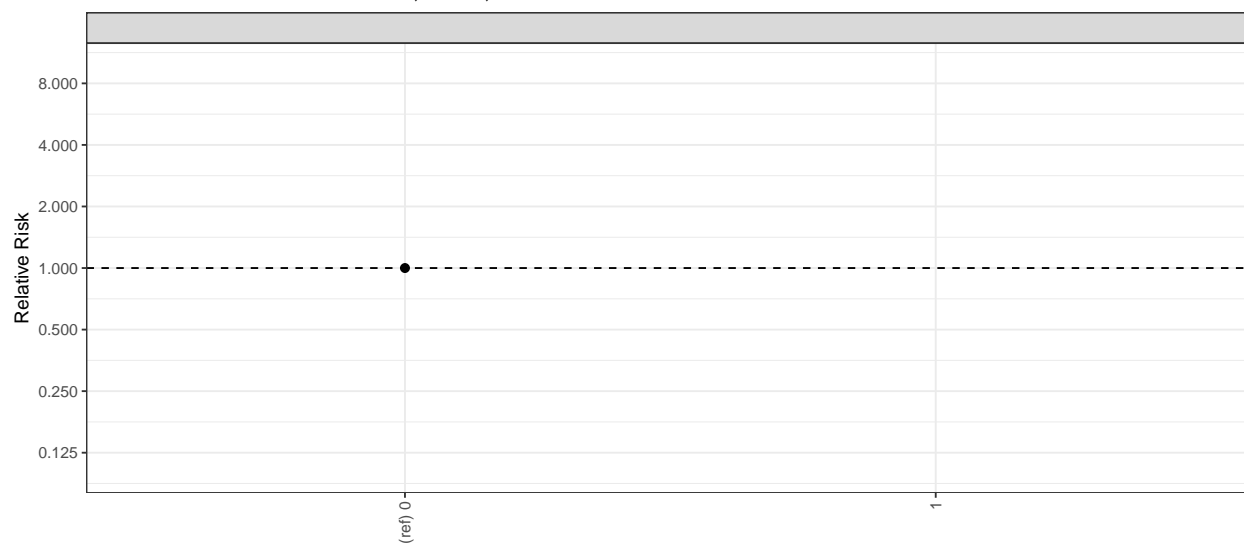


Proportion of children who were stunted between birth and 3 months who re-covered by 24 months

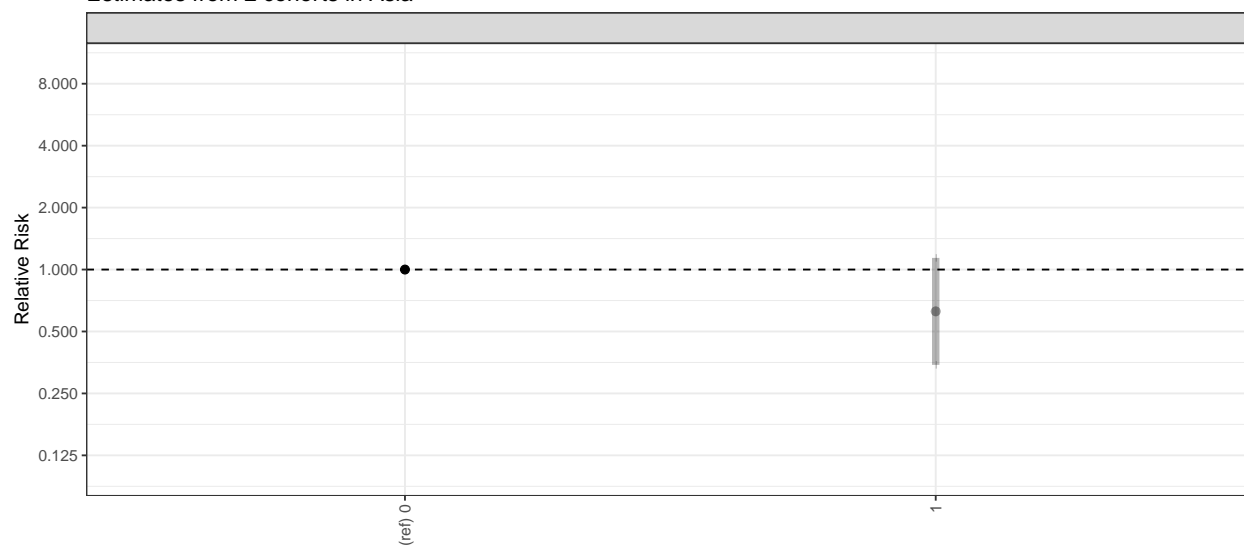
Child characteristics



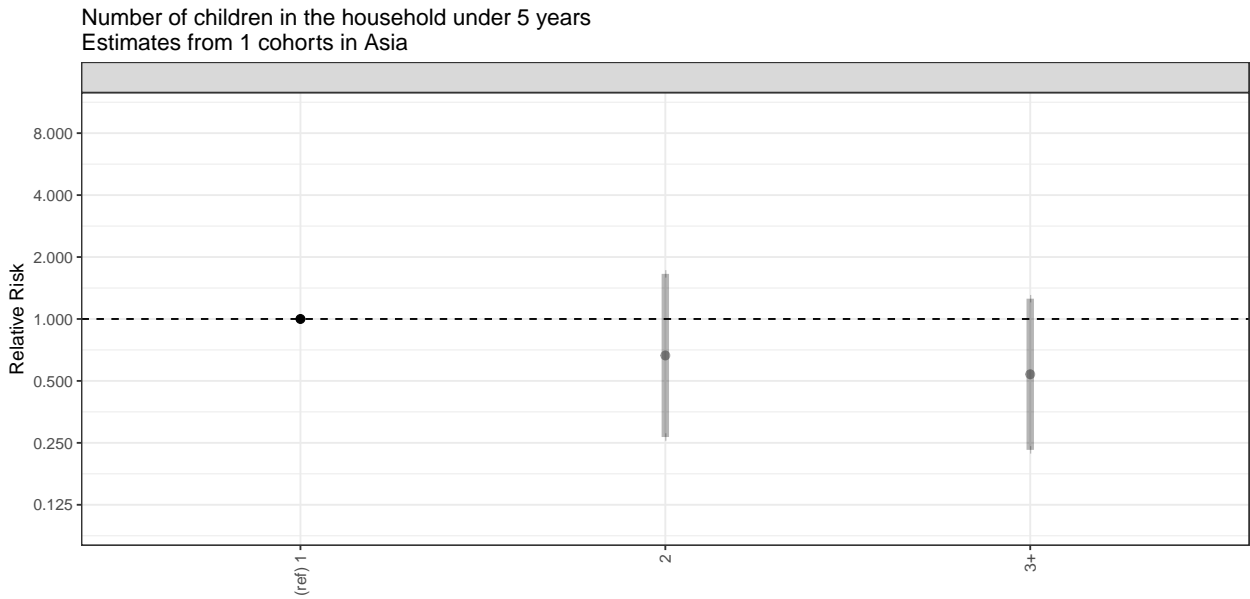
Stunted at enrollment
Estimates from 4 cohorts in Asia, Africa, Latin America



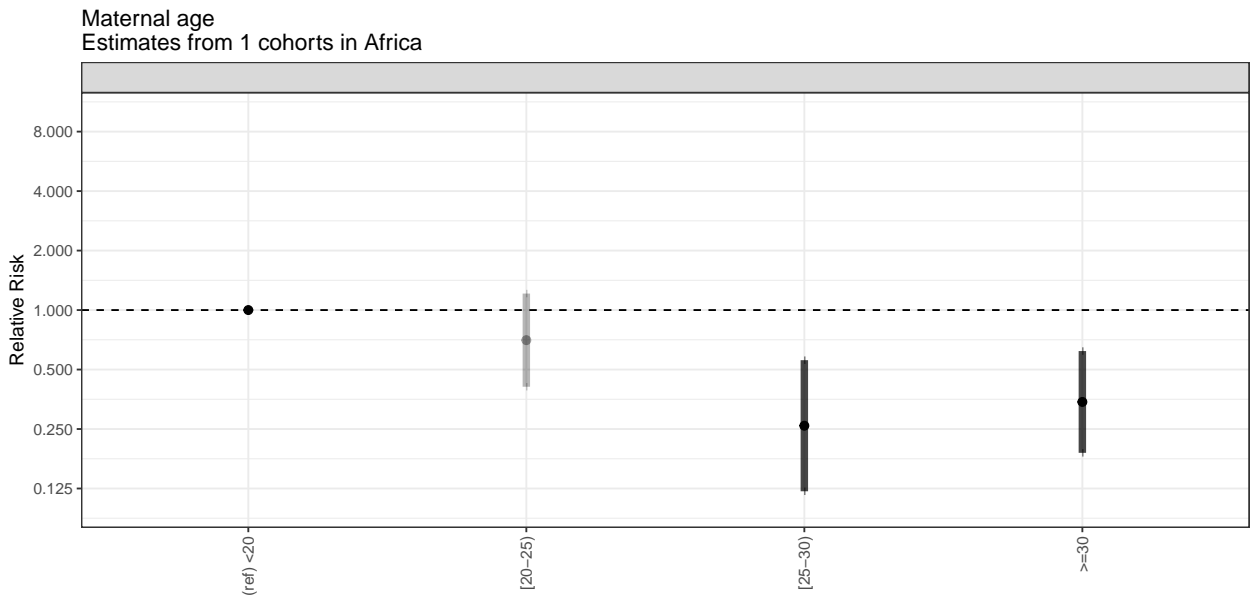
Vaginal delivery
Estimates from 2 cohorts in Asia



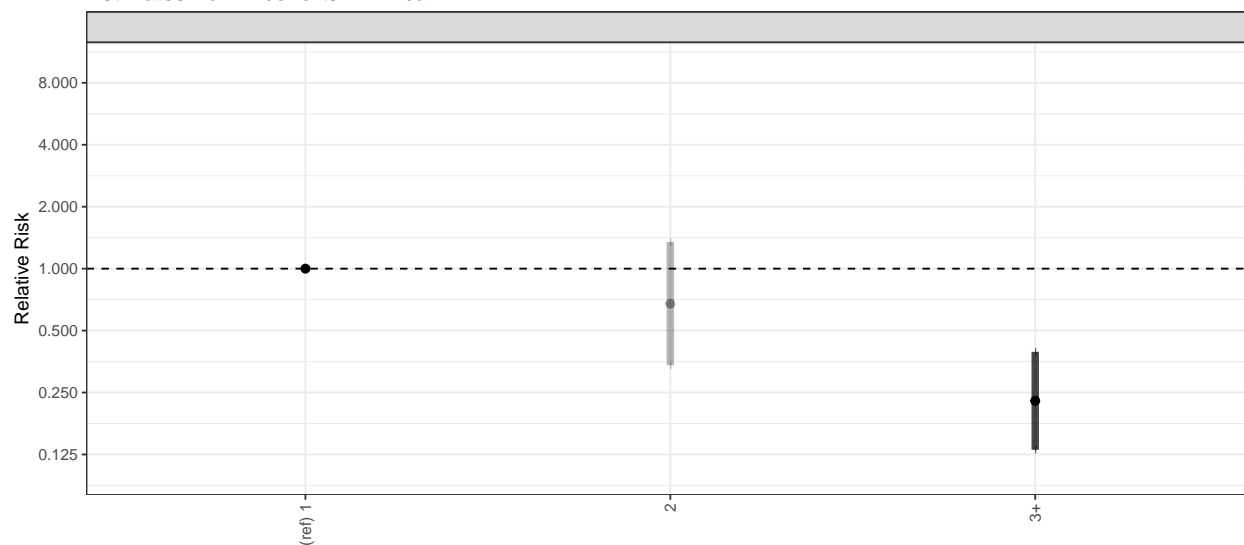
Household characteristics



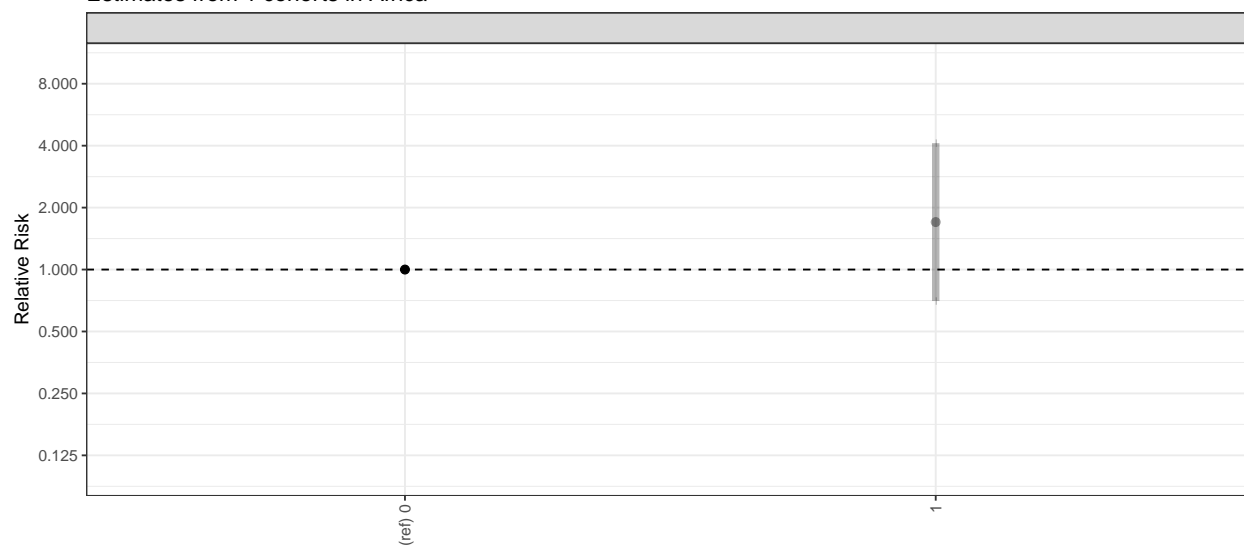
Maternal characteristics



Maternal parity
Estimates from 1 cohorts in Africa



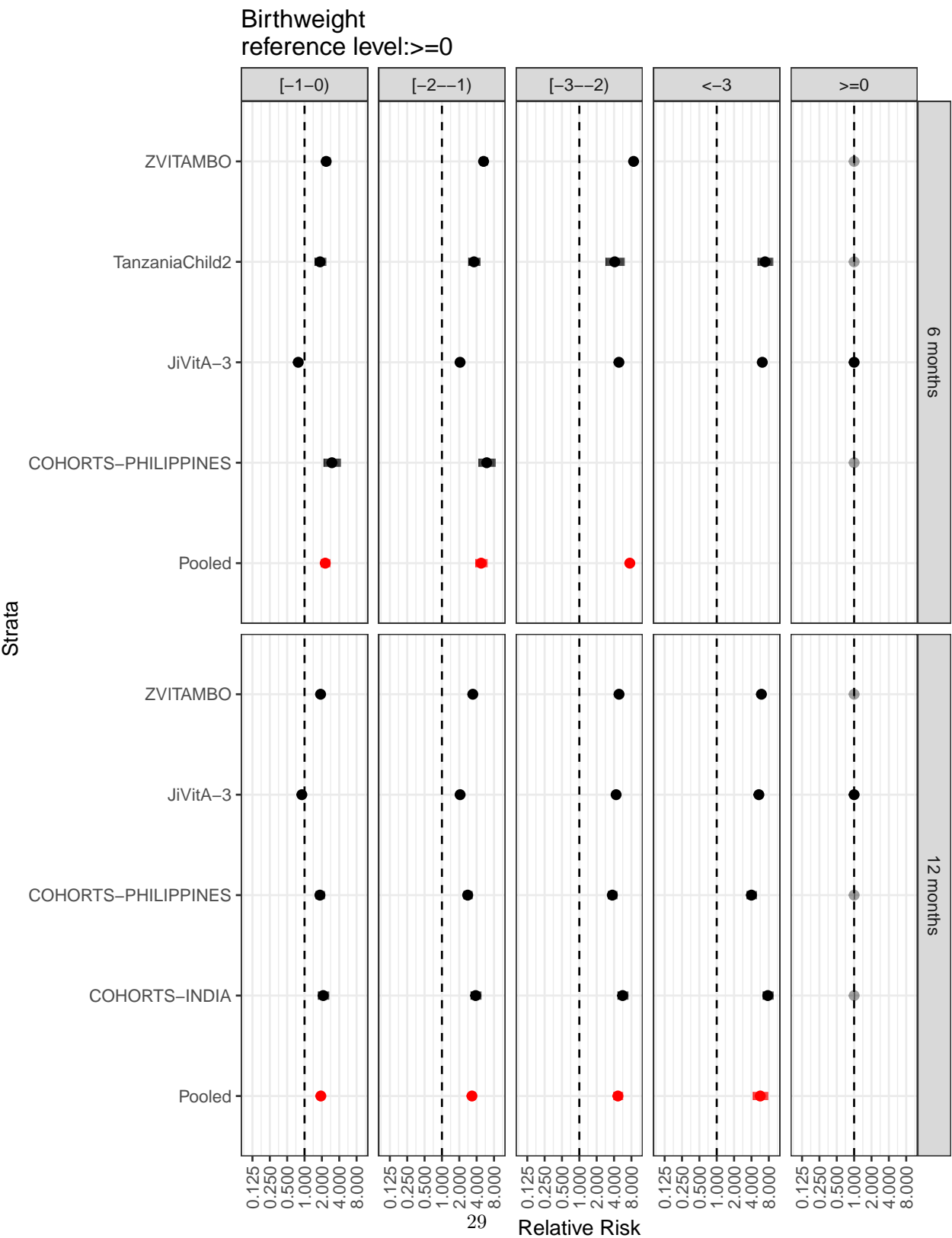
Mother is unmarried
Estimates from 1 cohorts in Africa

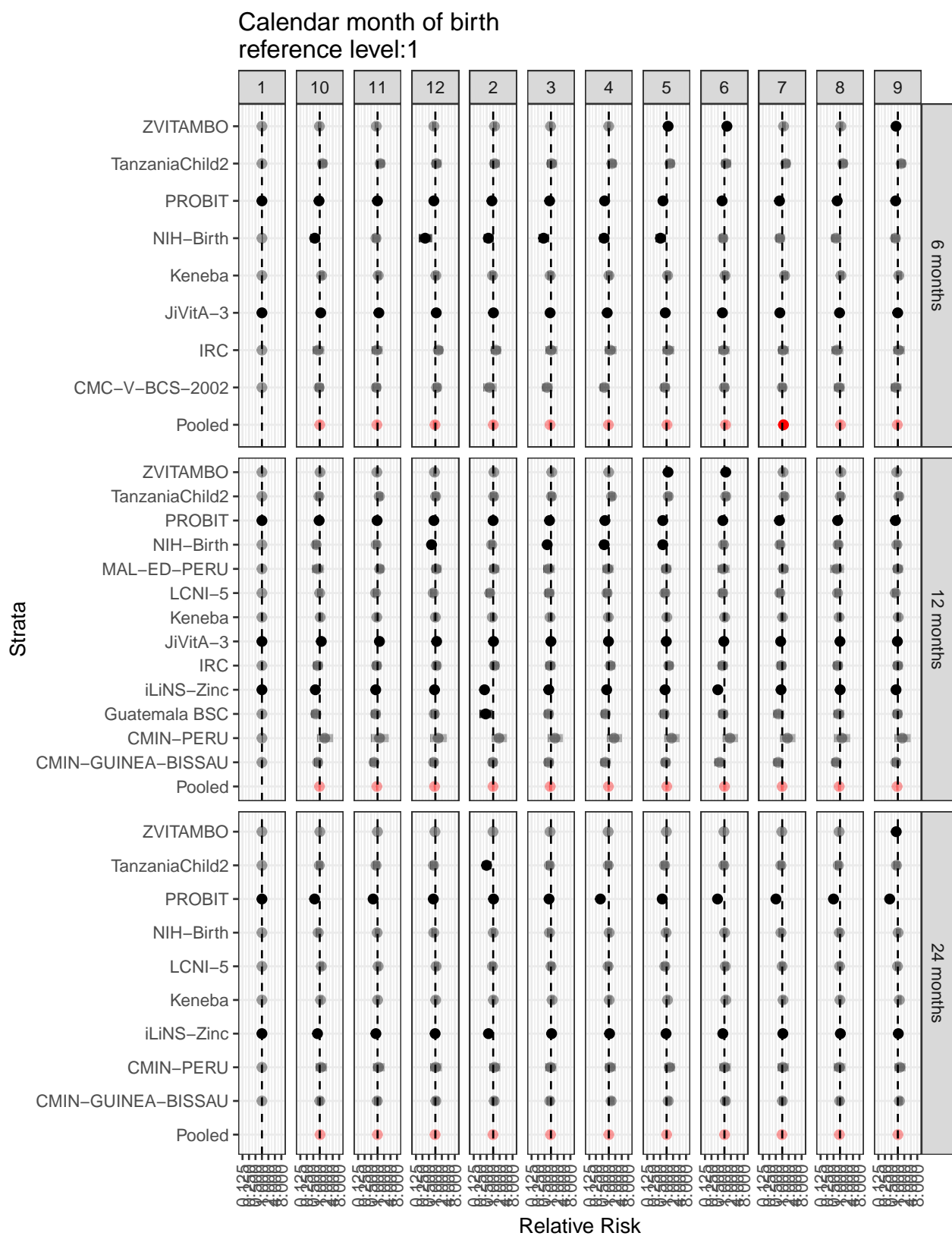


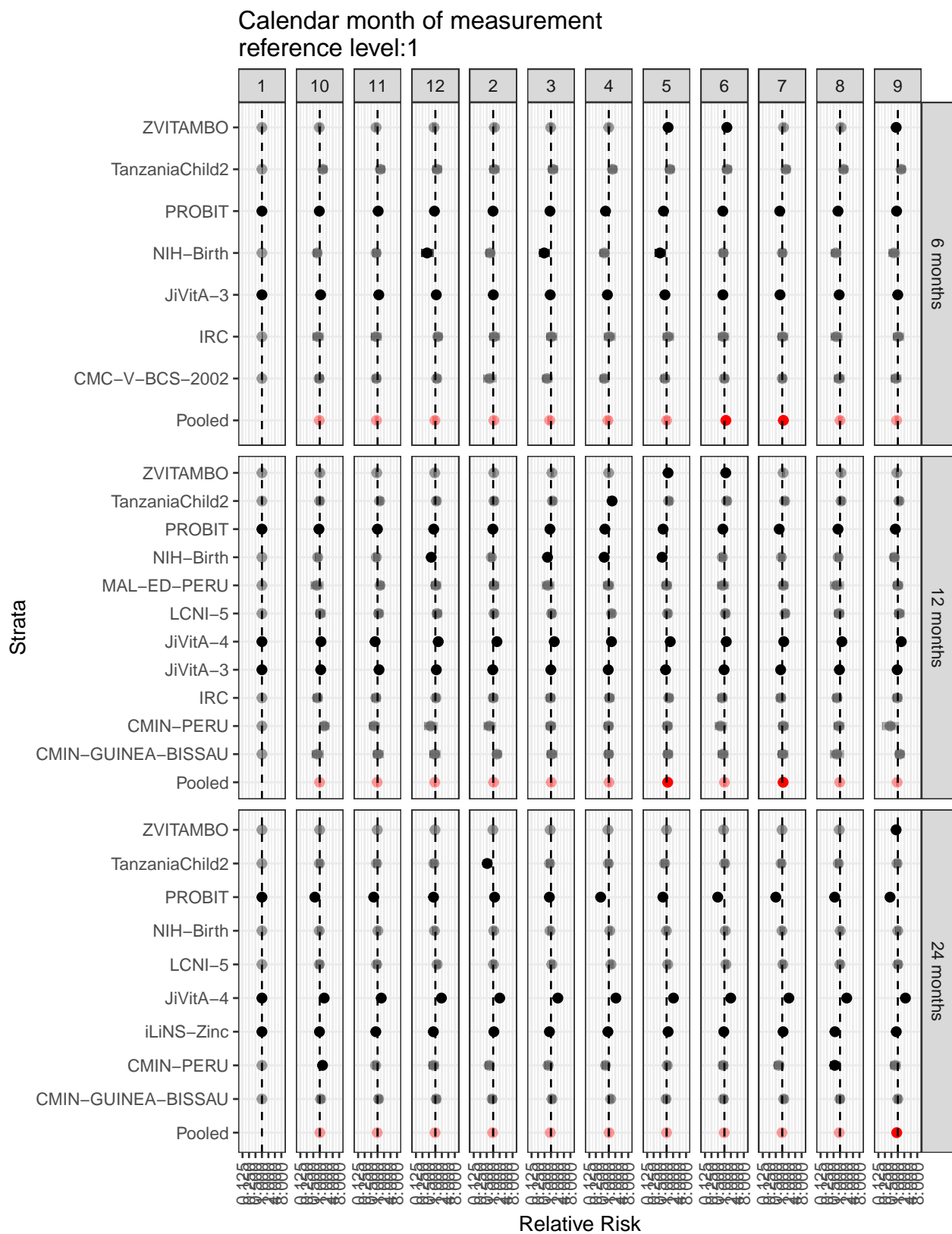
Appendix 1 - Relative risk stratified by cohort

Cumulative incidence of stunting from birth to 24 months

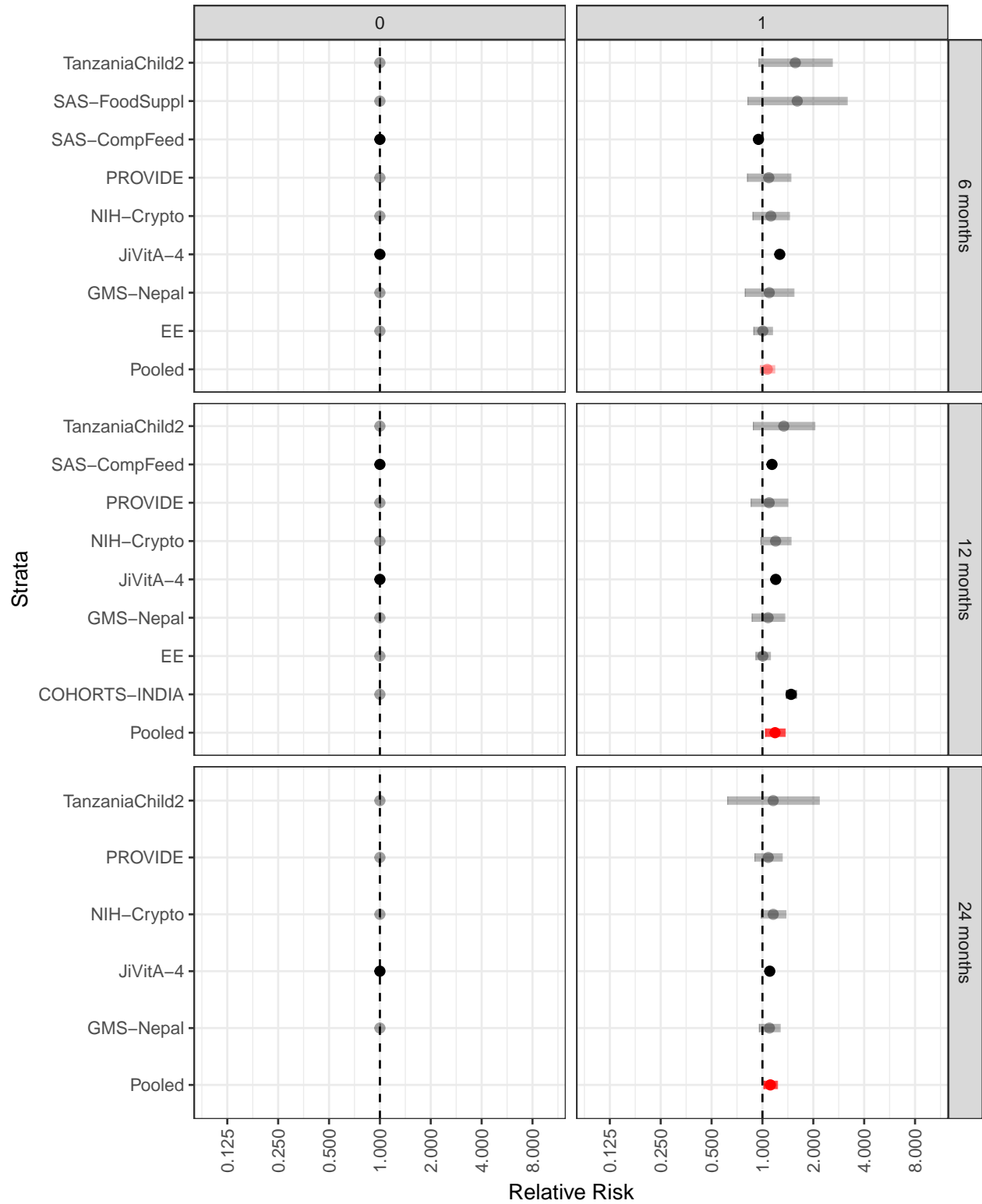
Child characteristics



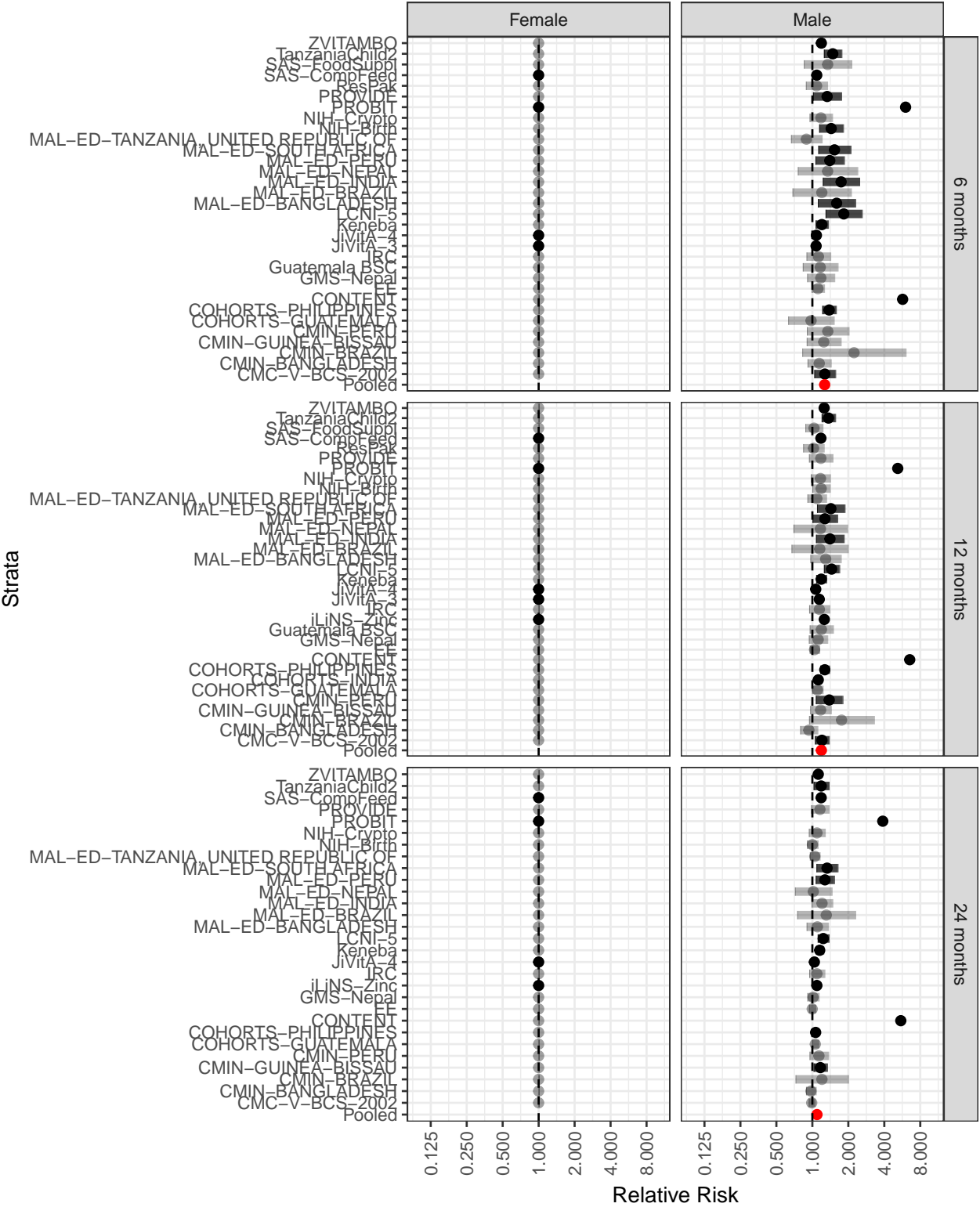




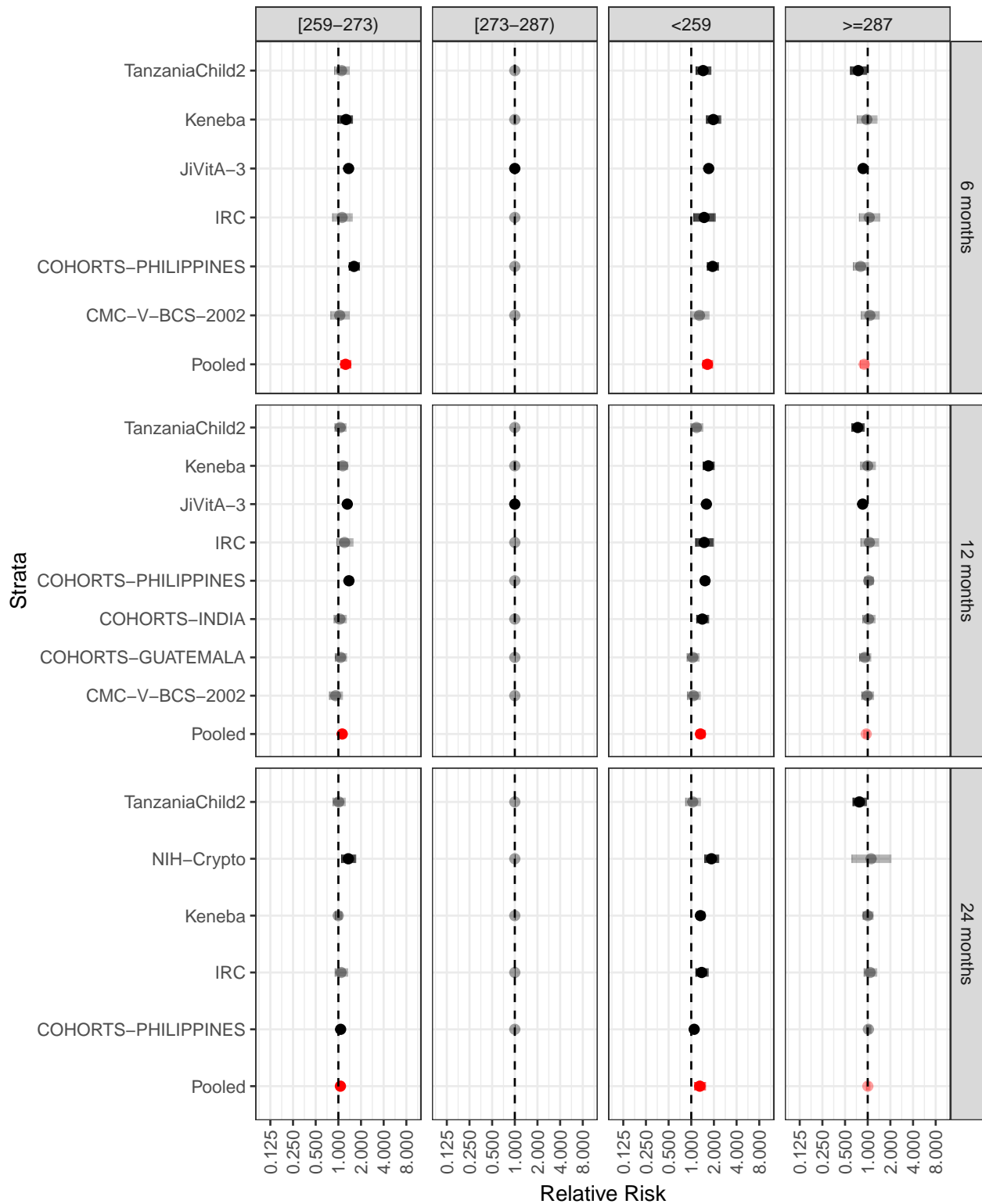
Child delivered at home
reference level:0



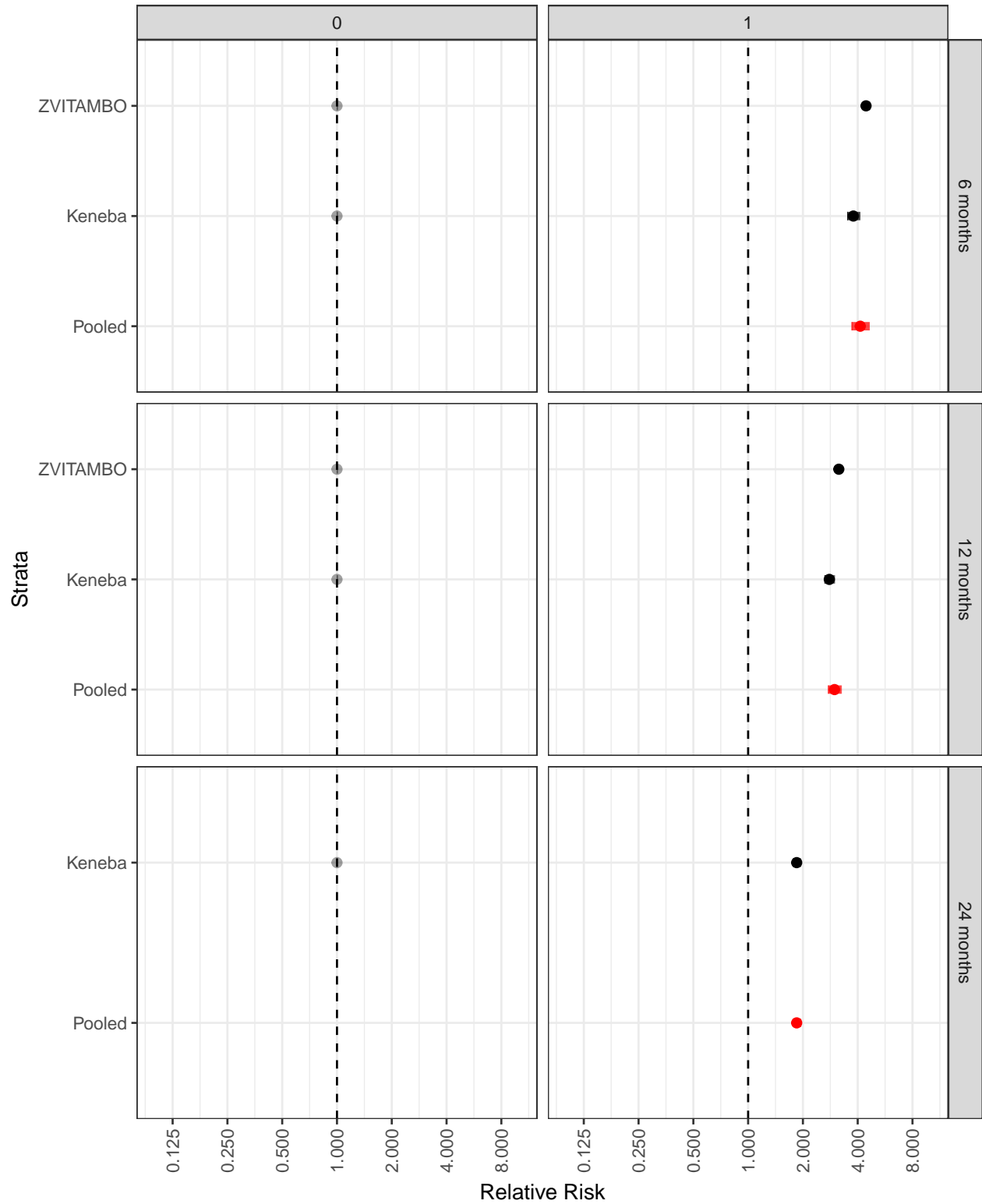
Child's sex
reference level:Female

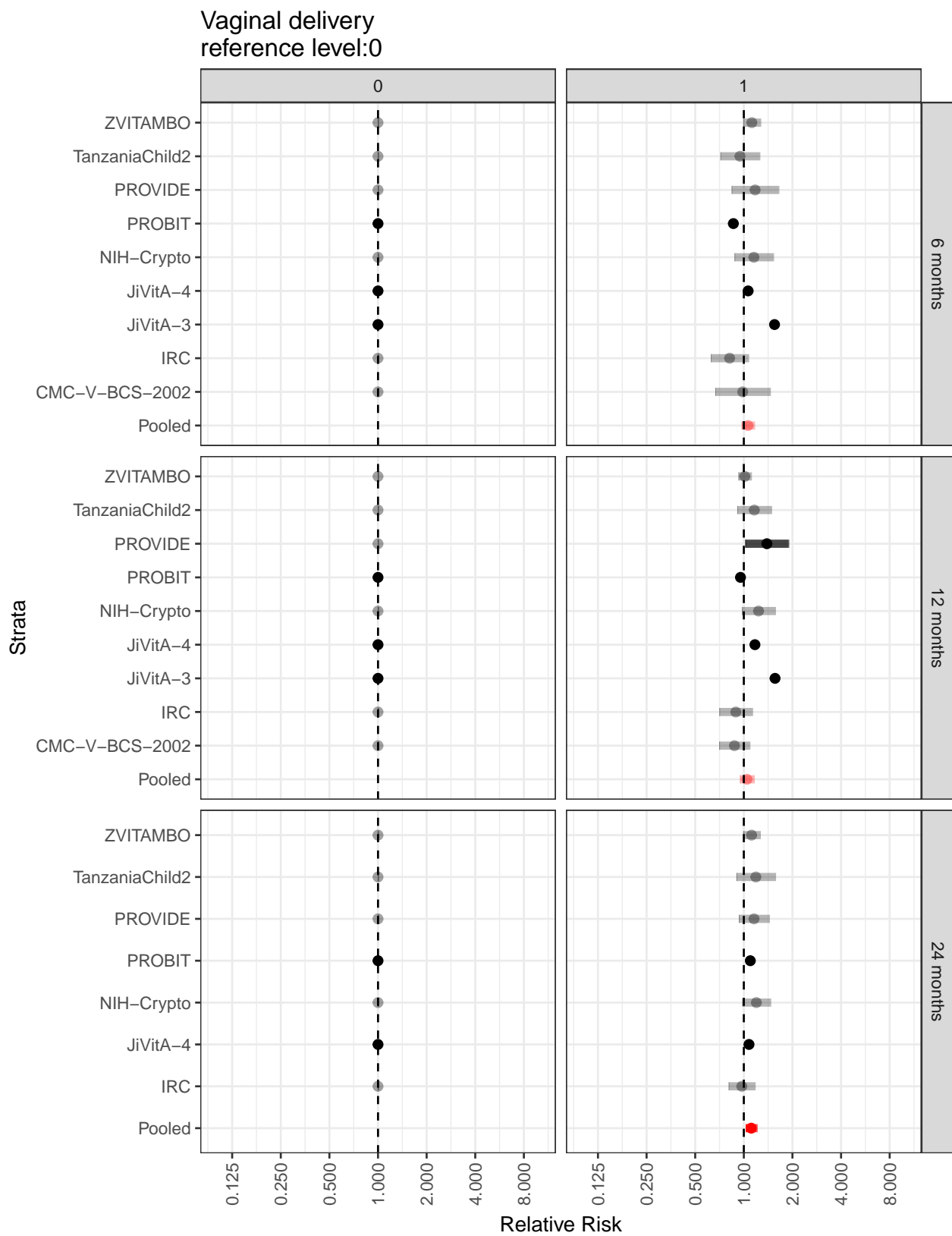


Gestational age at birth in days
reference level:[273–287)

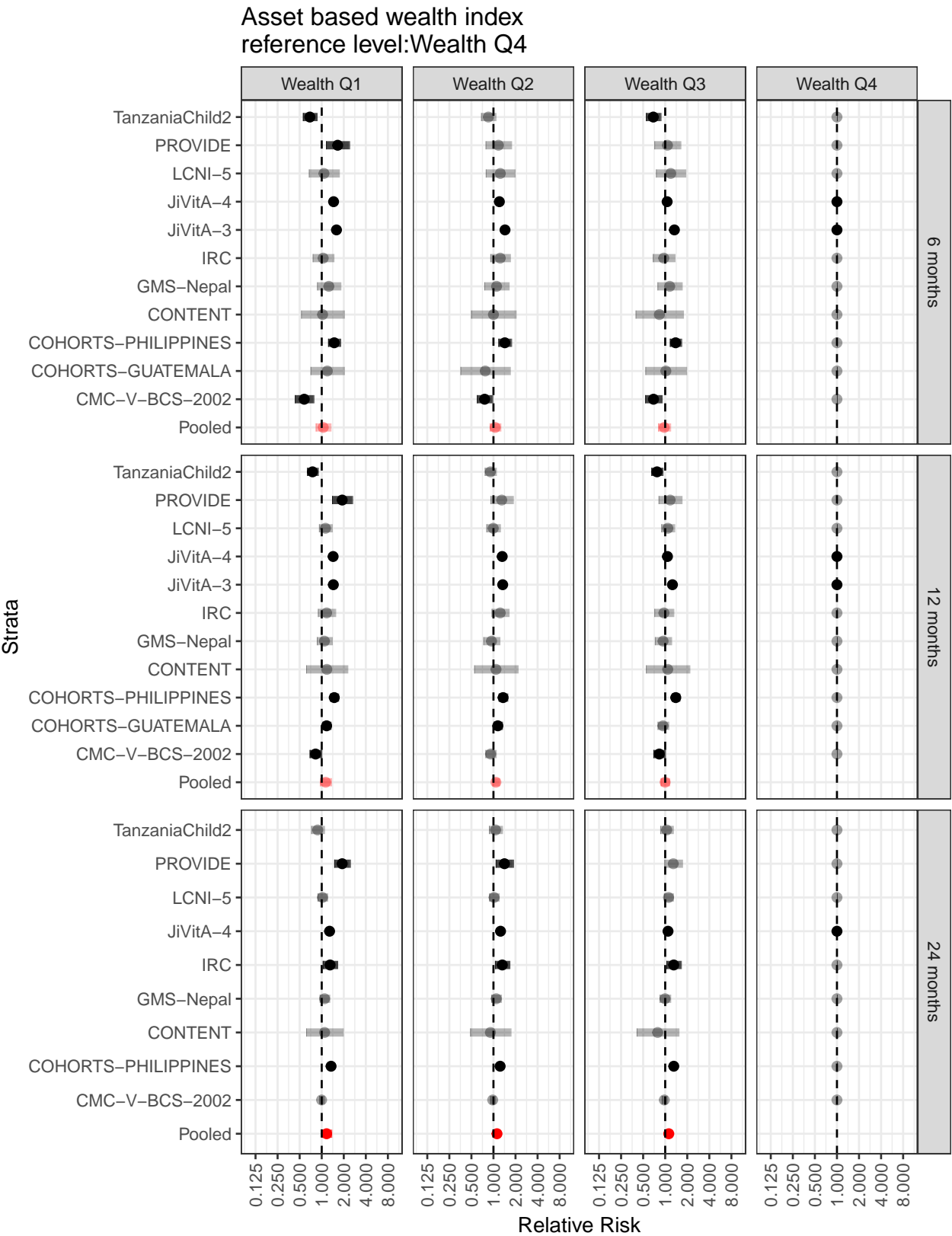


Stunted at enrollment
reference level:0

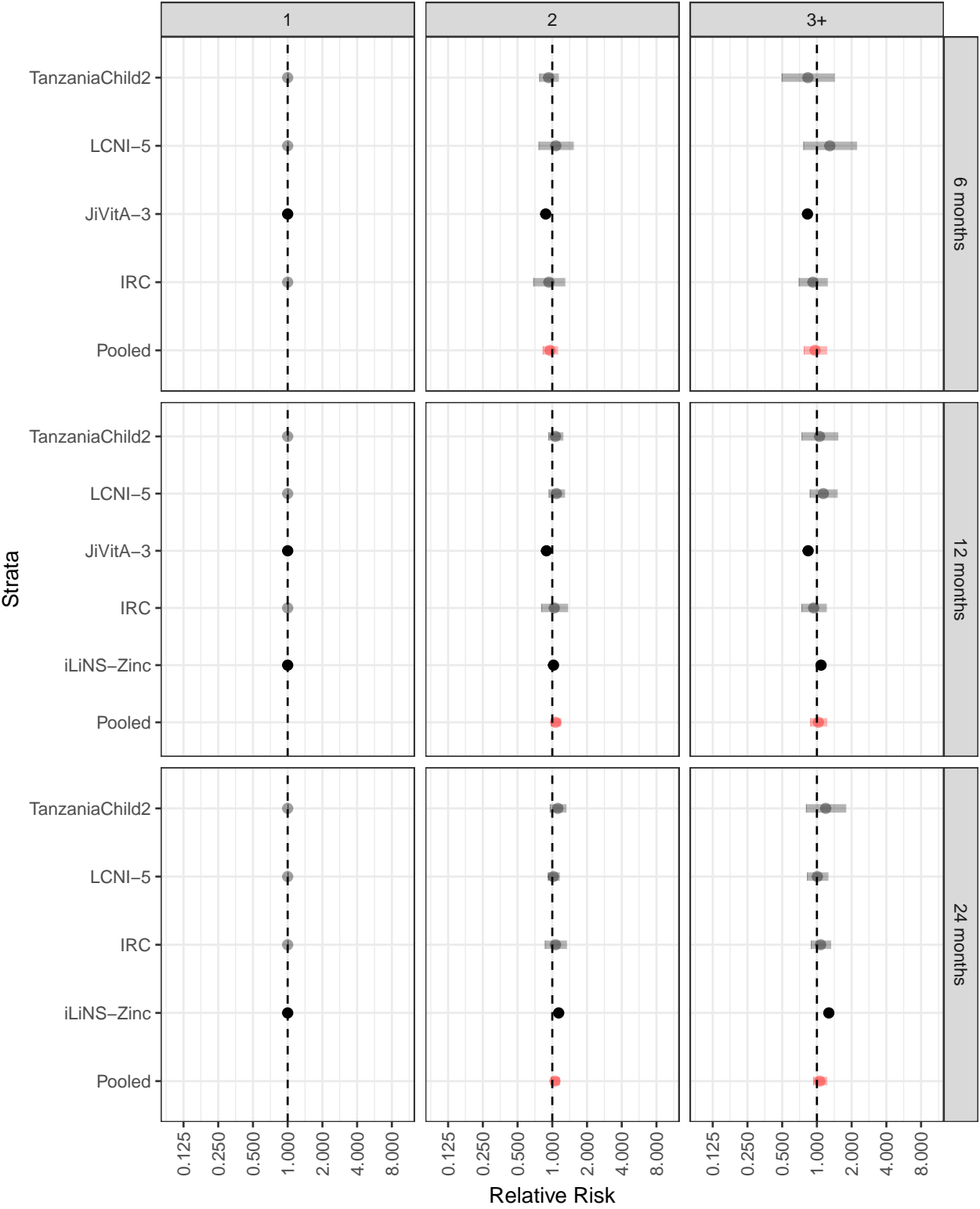




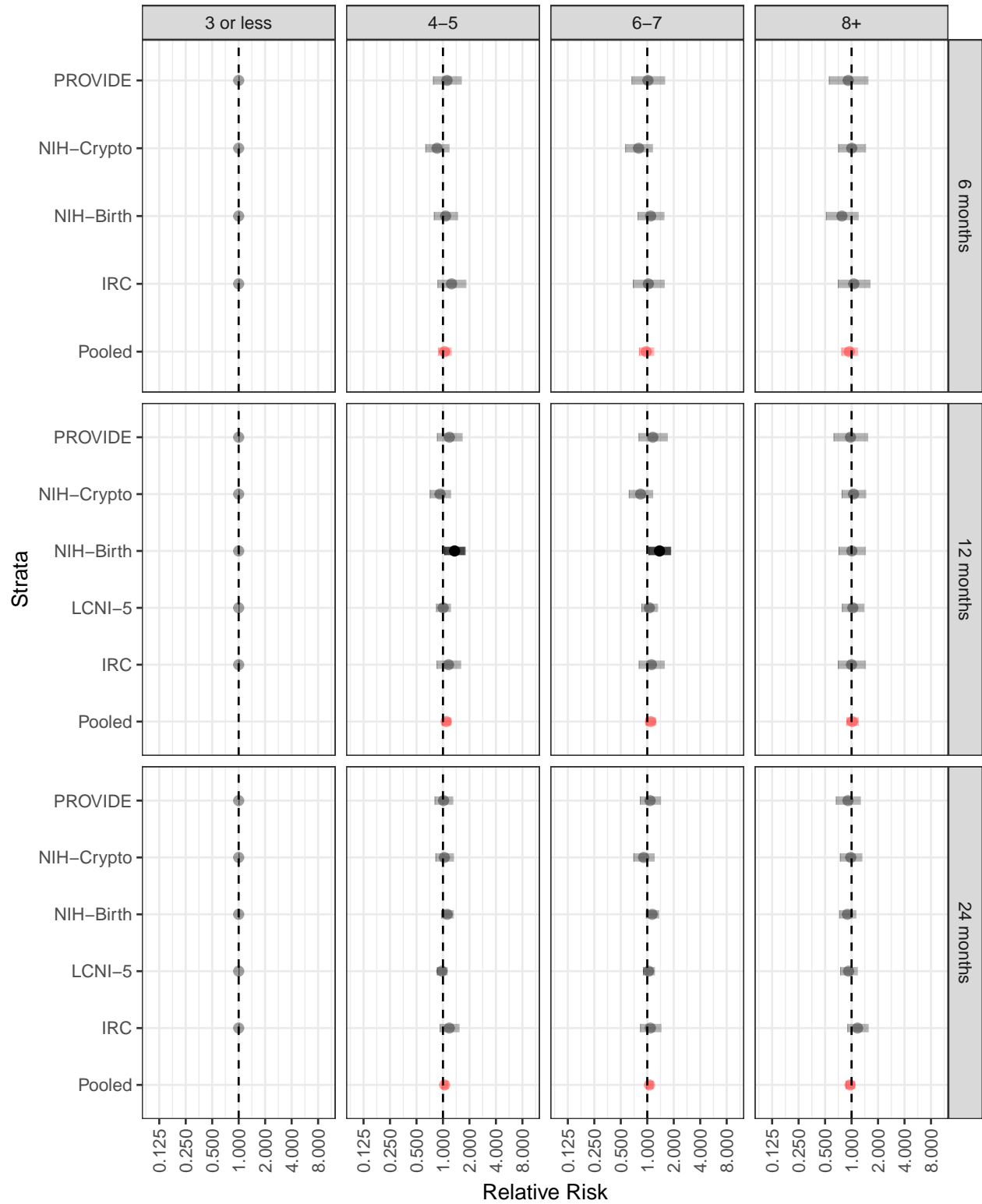
Household characteristics

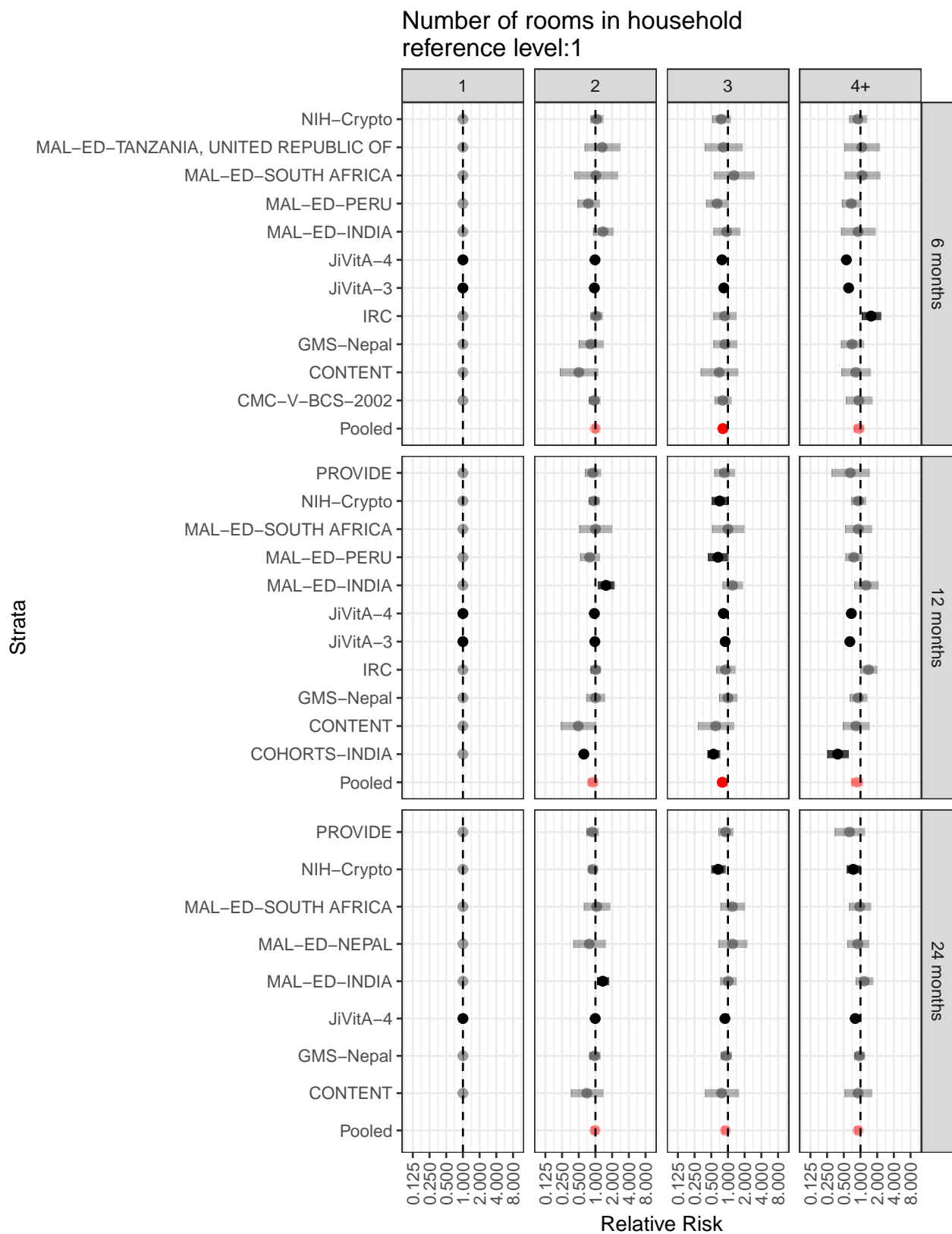


Number of children in the household under 5 years
reference level:1

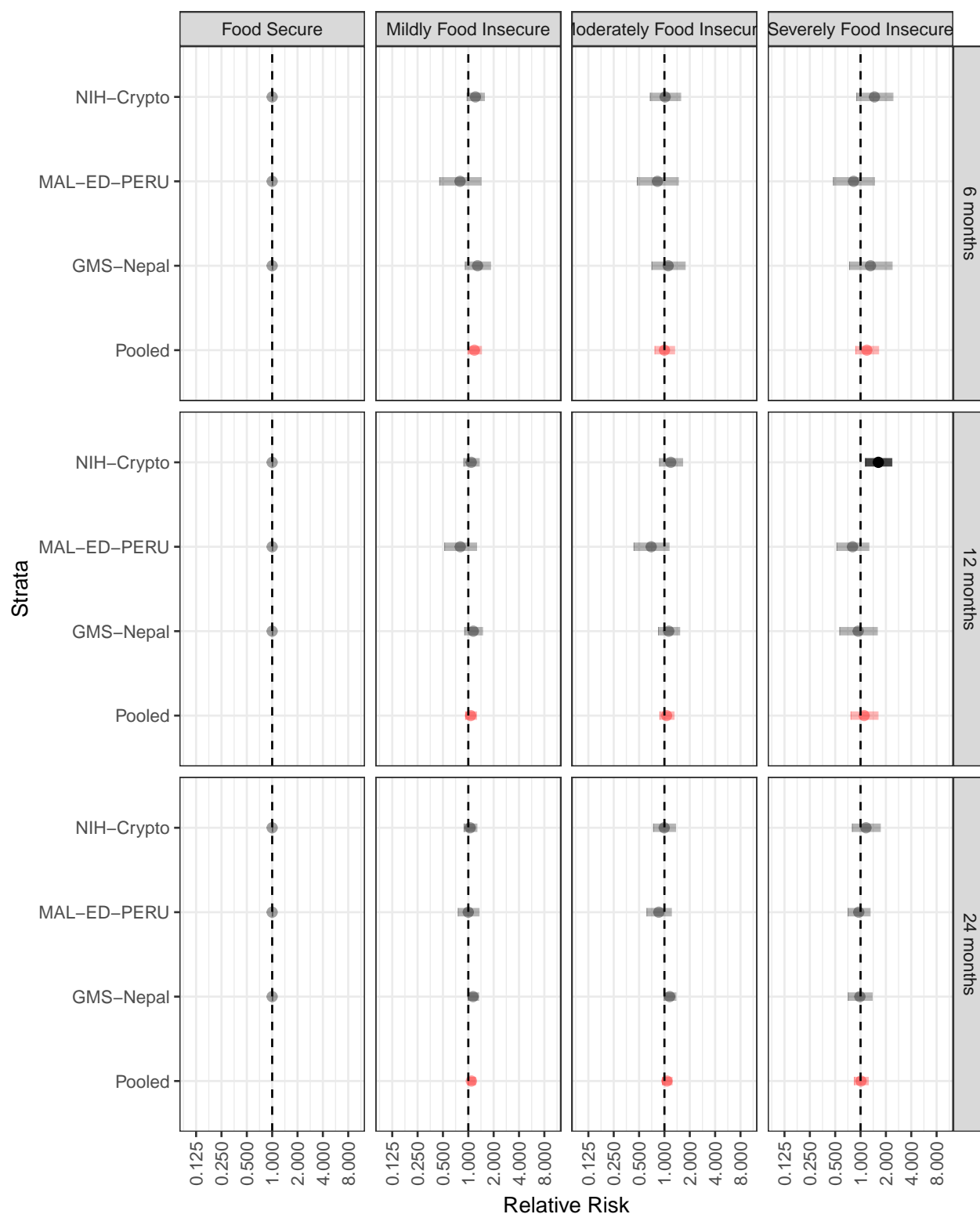


Number of people in the household
reference level:3 or less

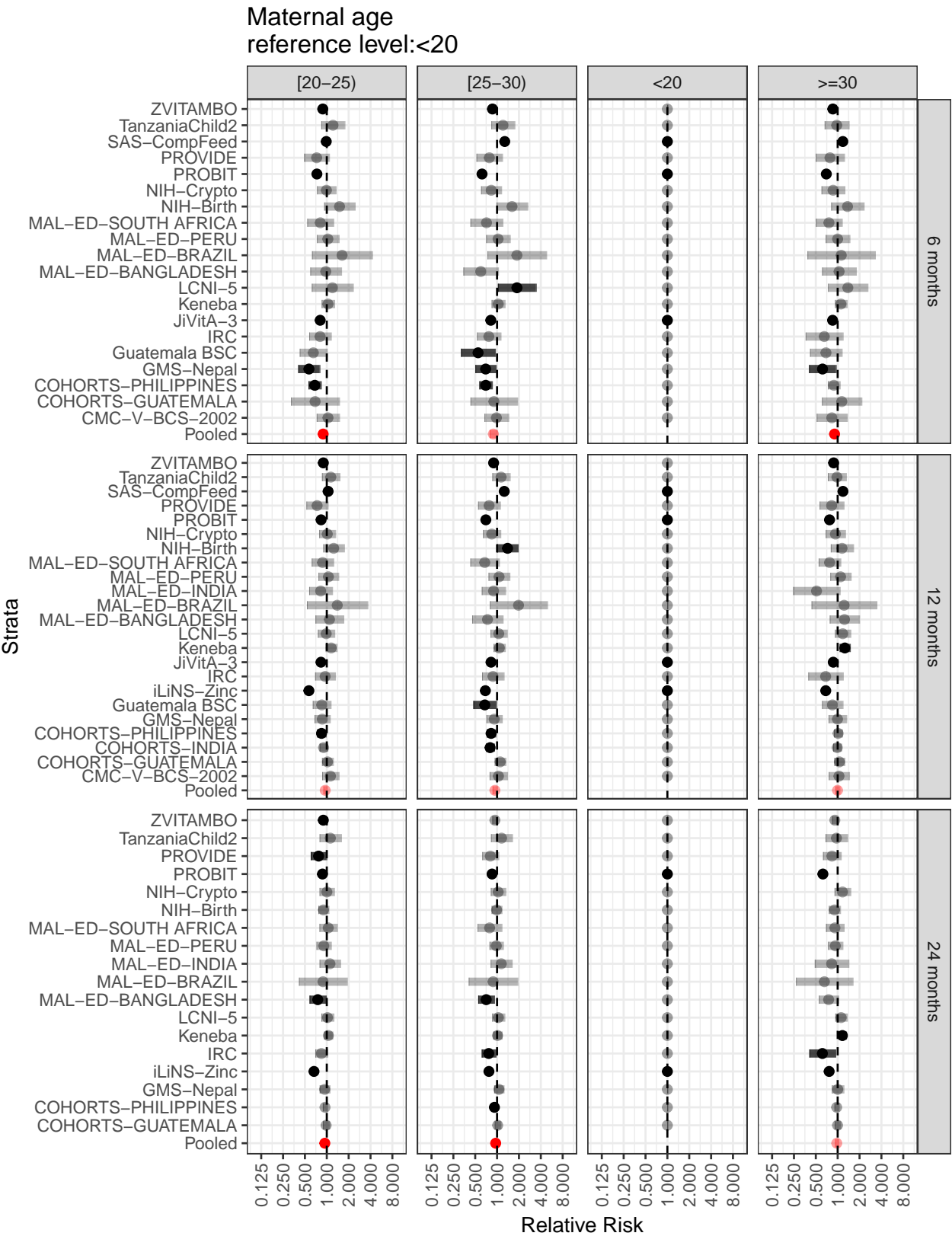




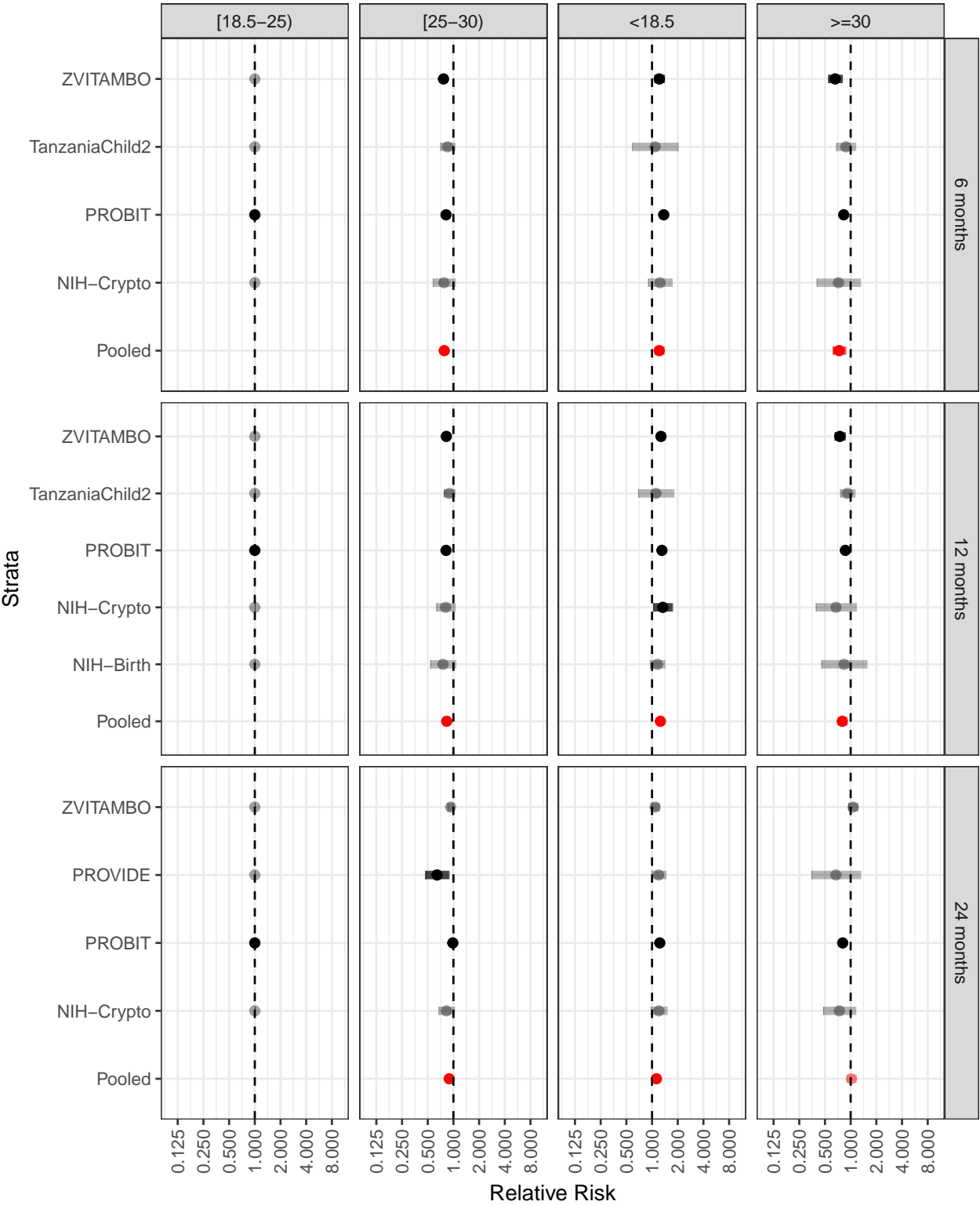
USAID Household Food Insecurity Access Scale (HFIAS) category reference level: Food Secure



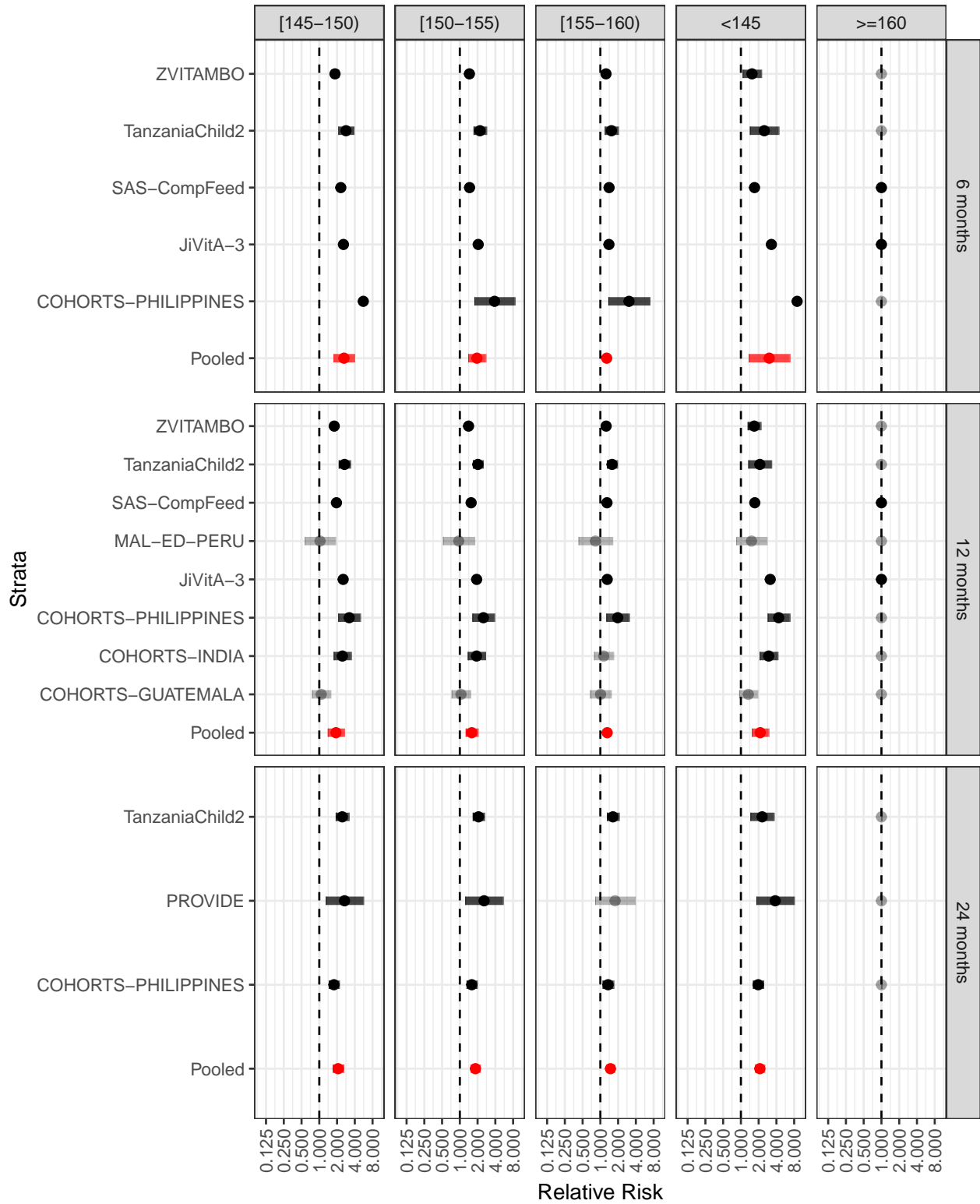
Maternal characteristics

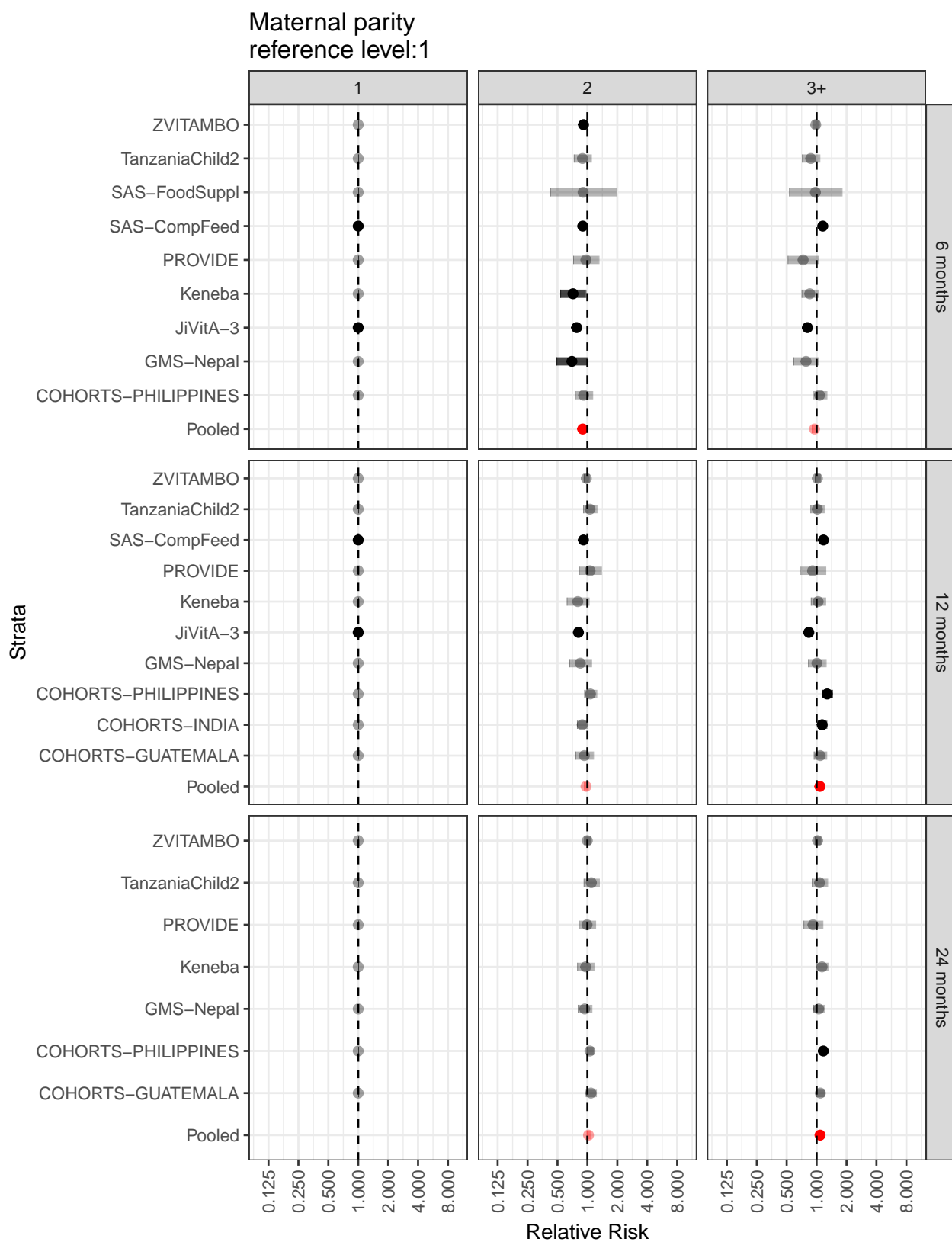


Maternal BMI
reference level:[18.5–25)

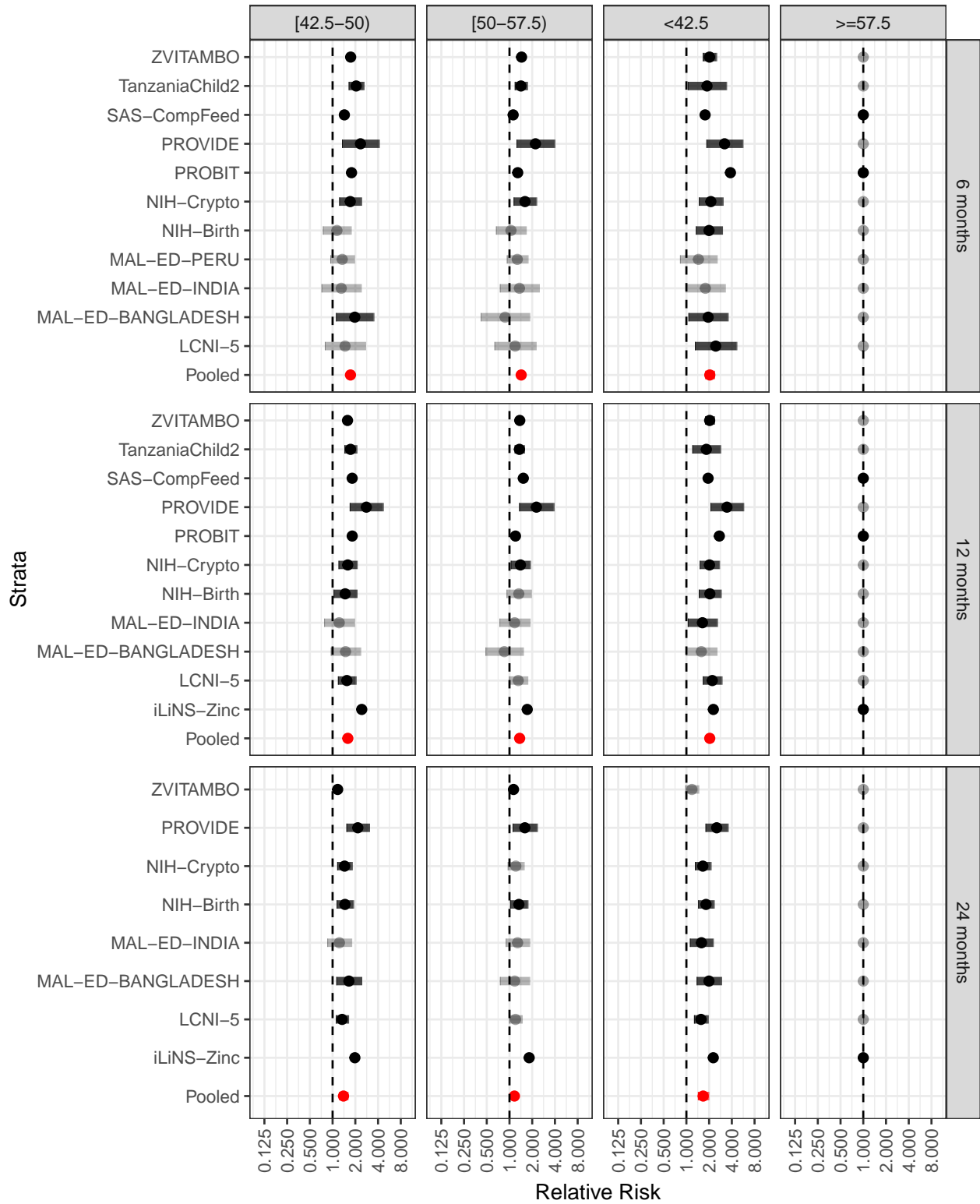


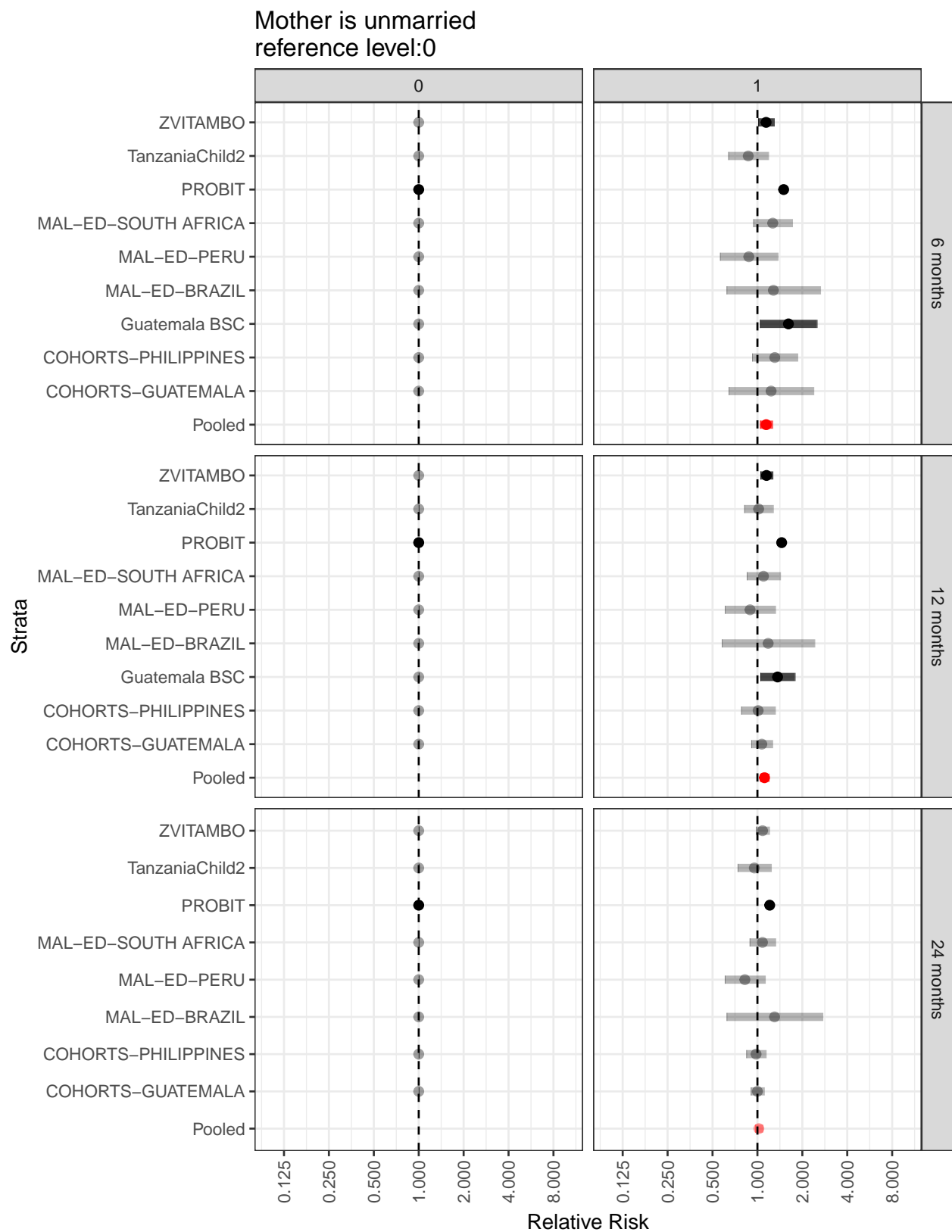
Maternal height
reference level: ≥ 160



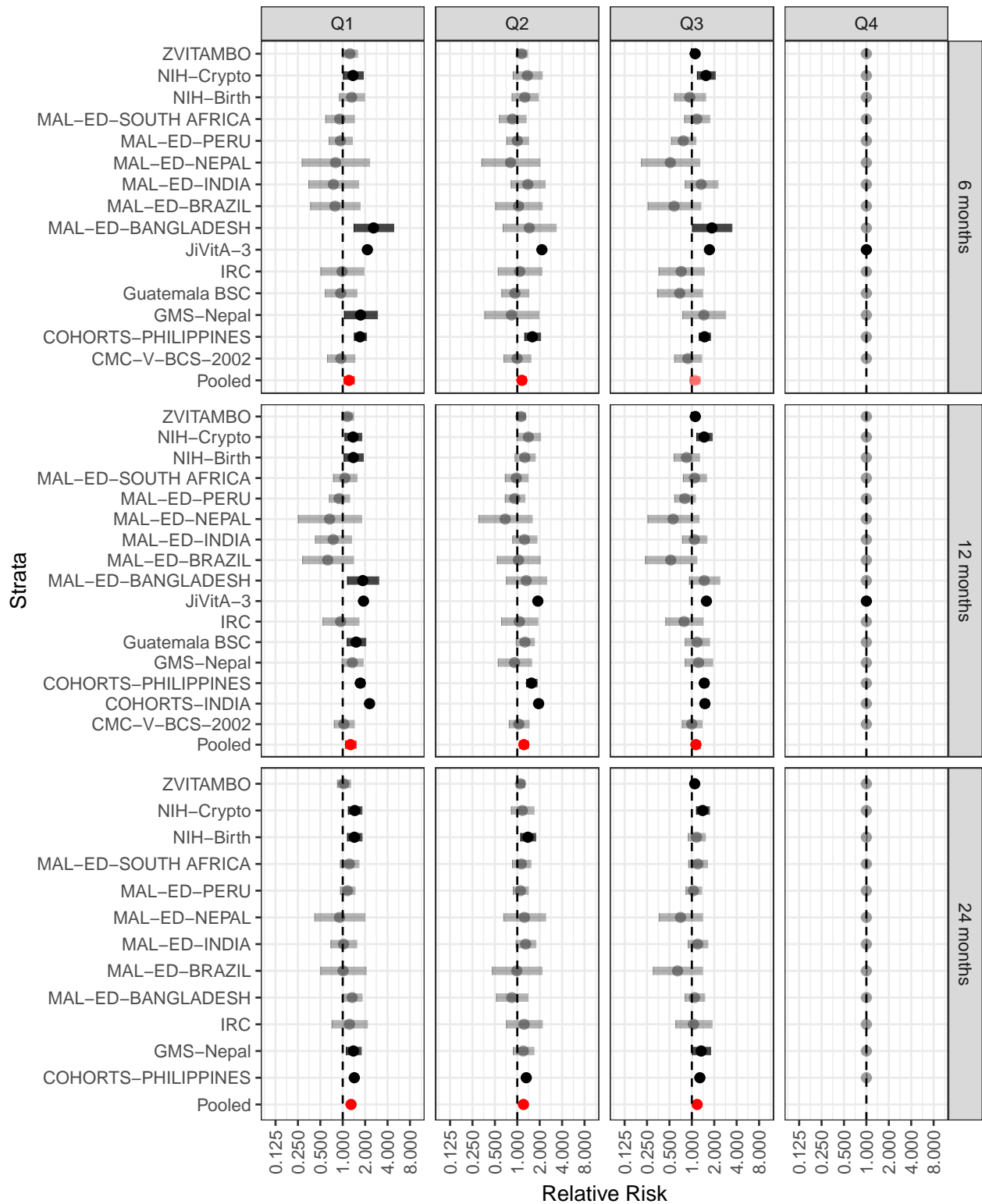


Maternal weight
reference level: ≥ 57.5

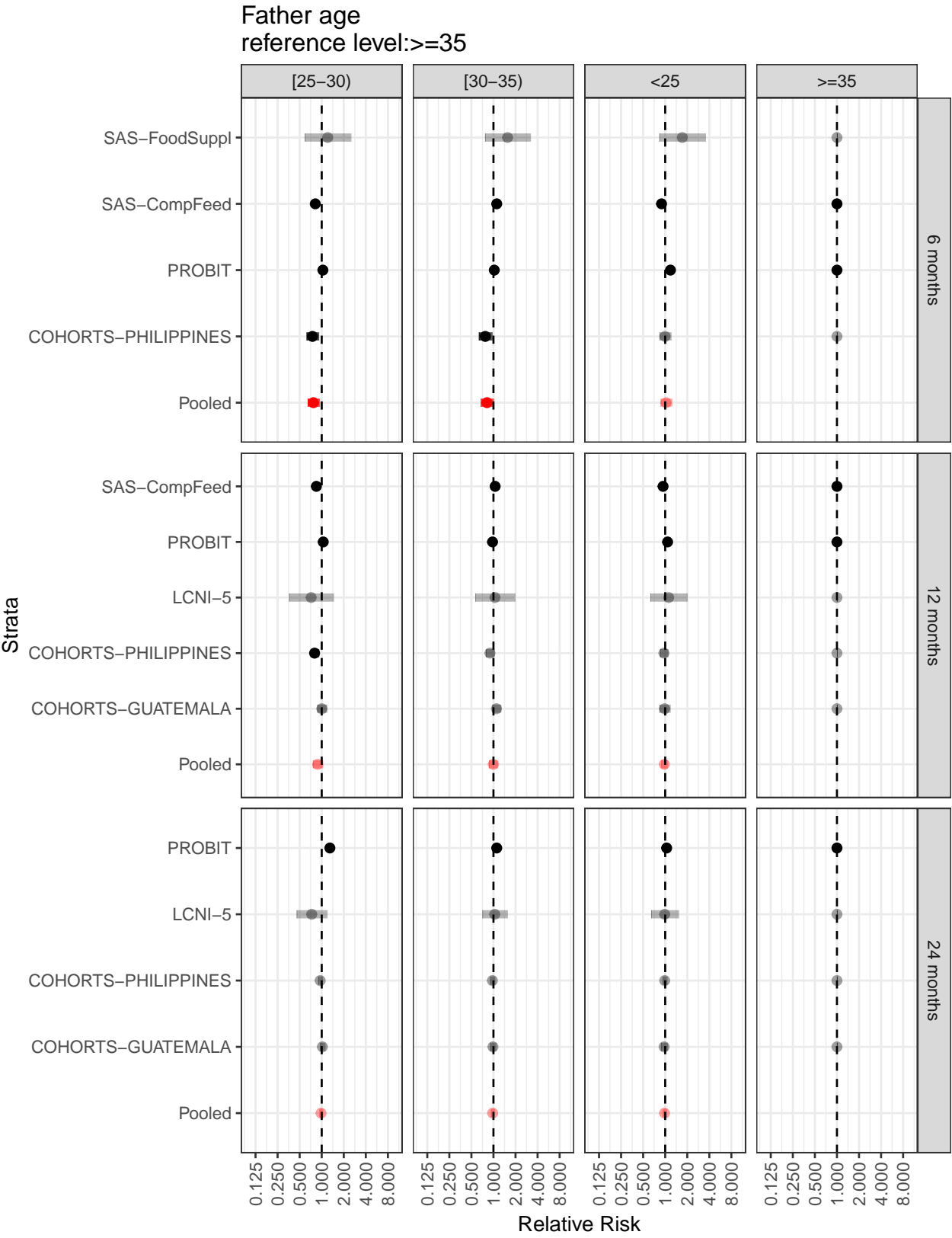




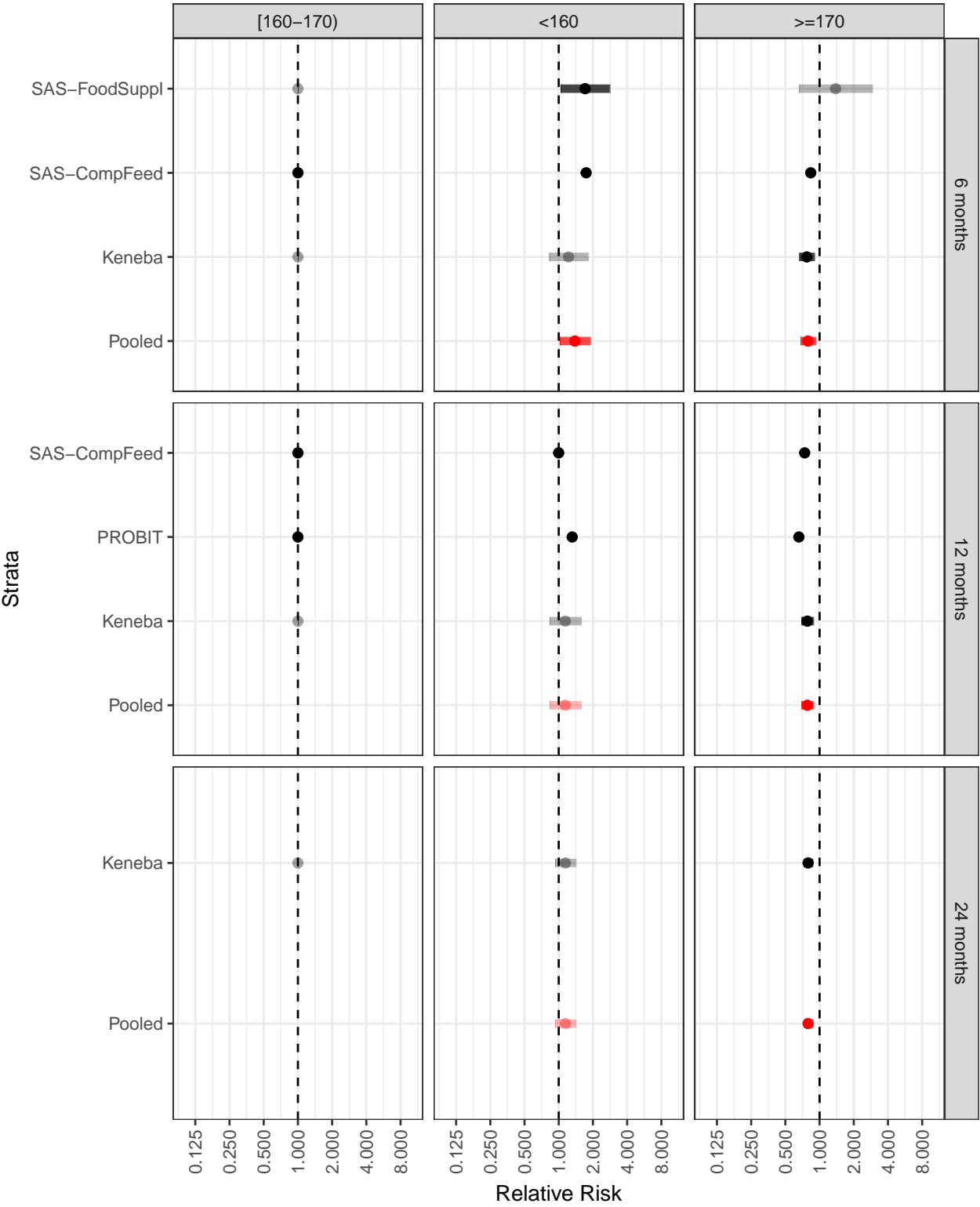
Mother's education
reference level:Q4



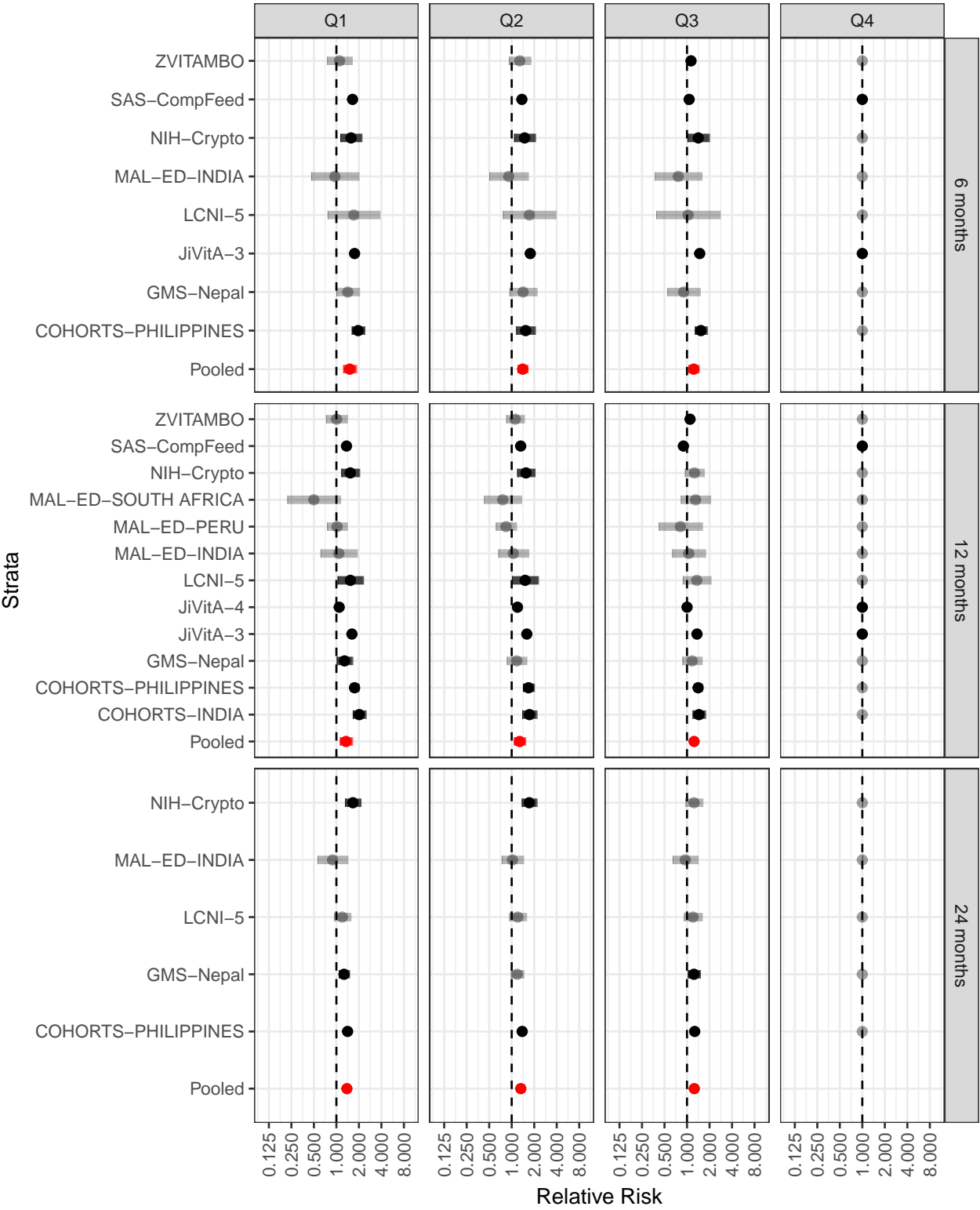
Paternal characteristics



Father height
reference level:[160–170)

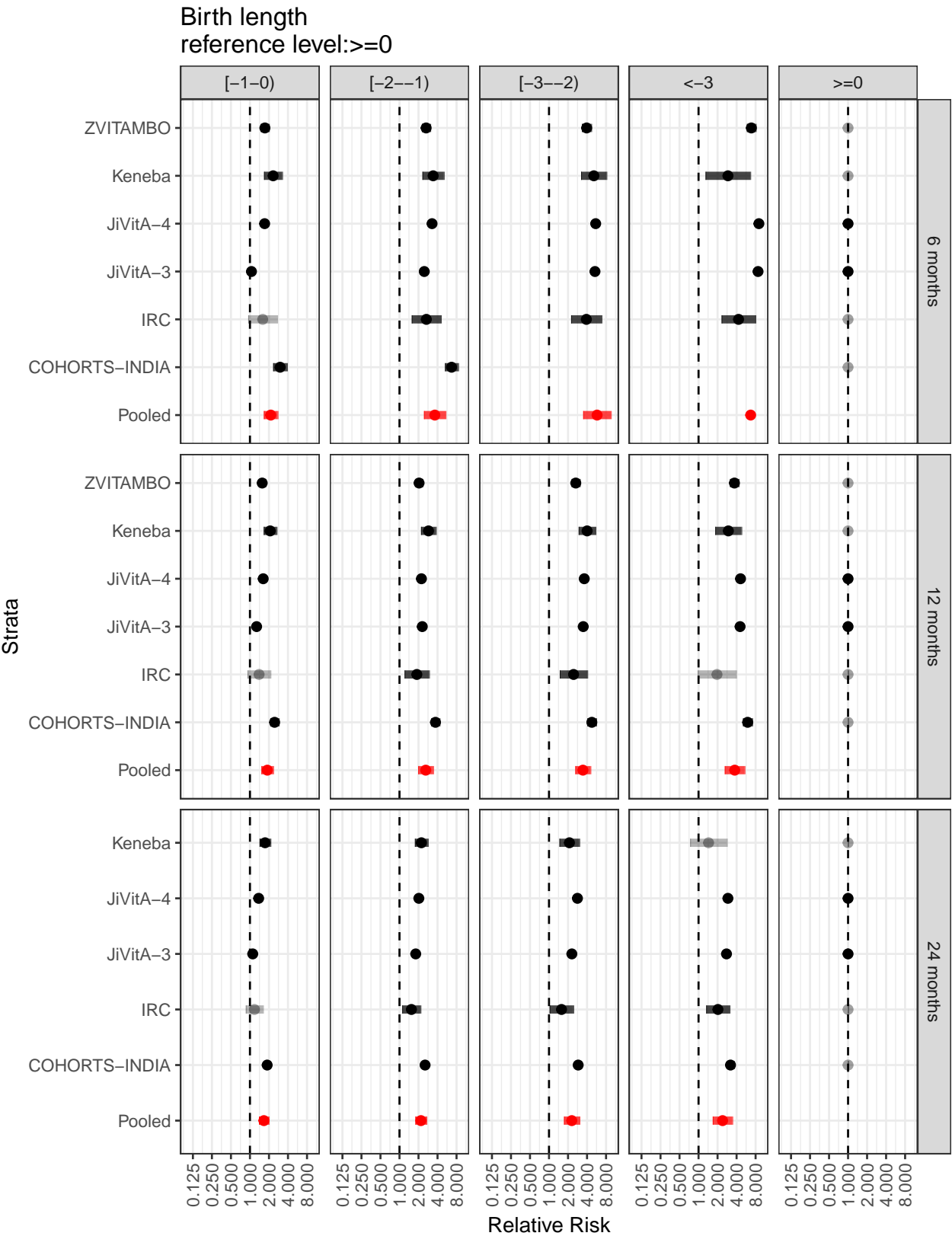


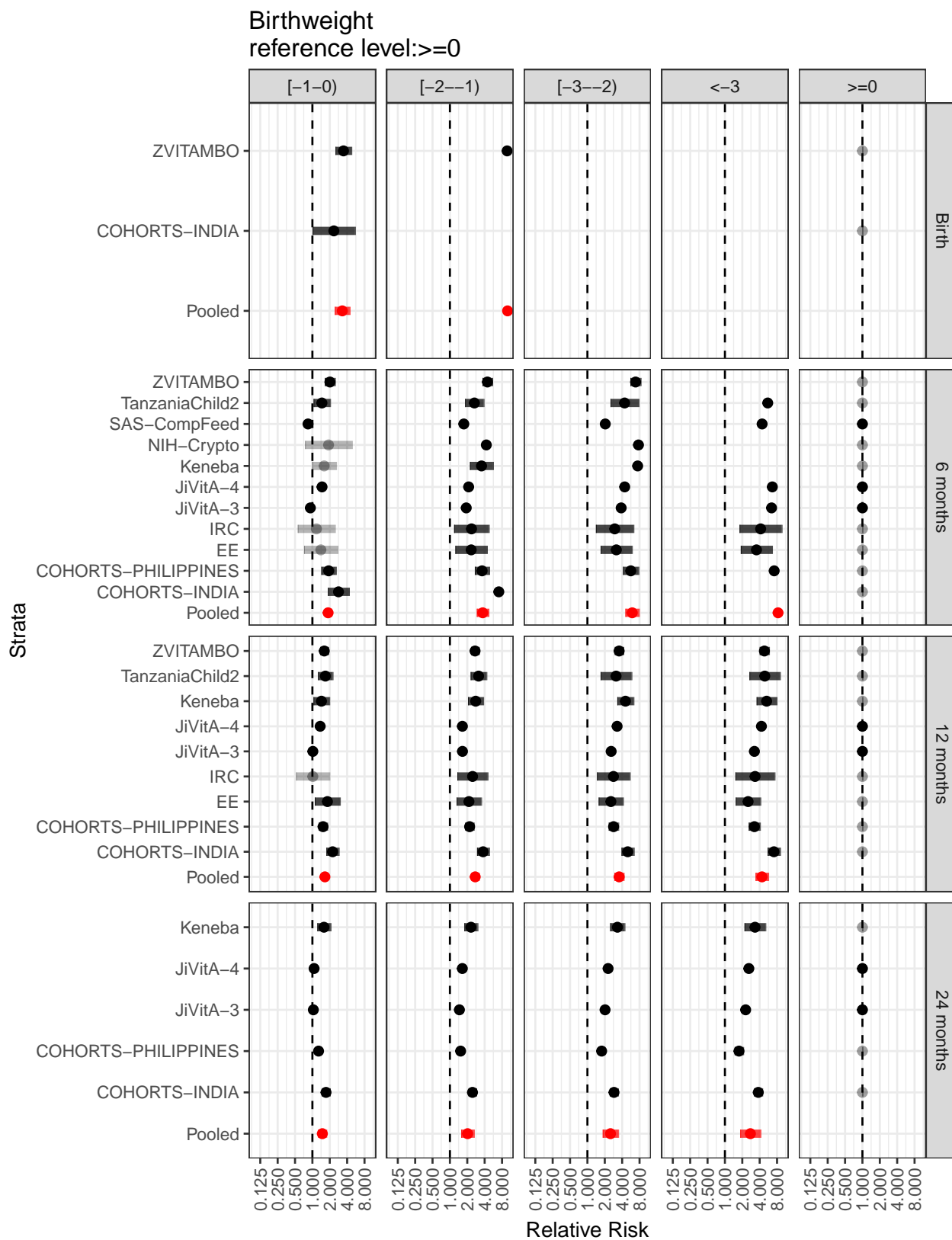
Father's education
reference level:Q4

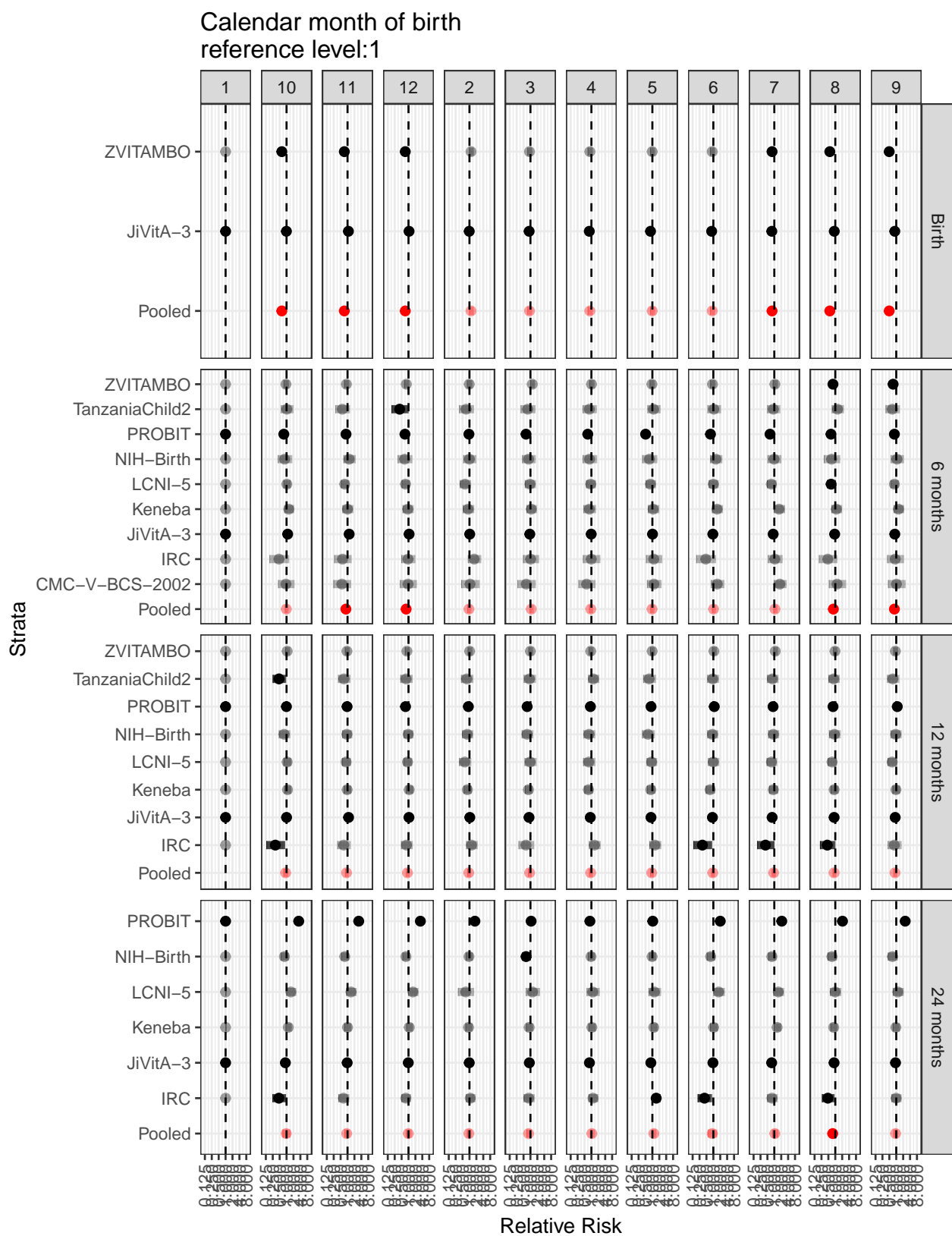


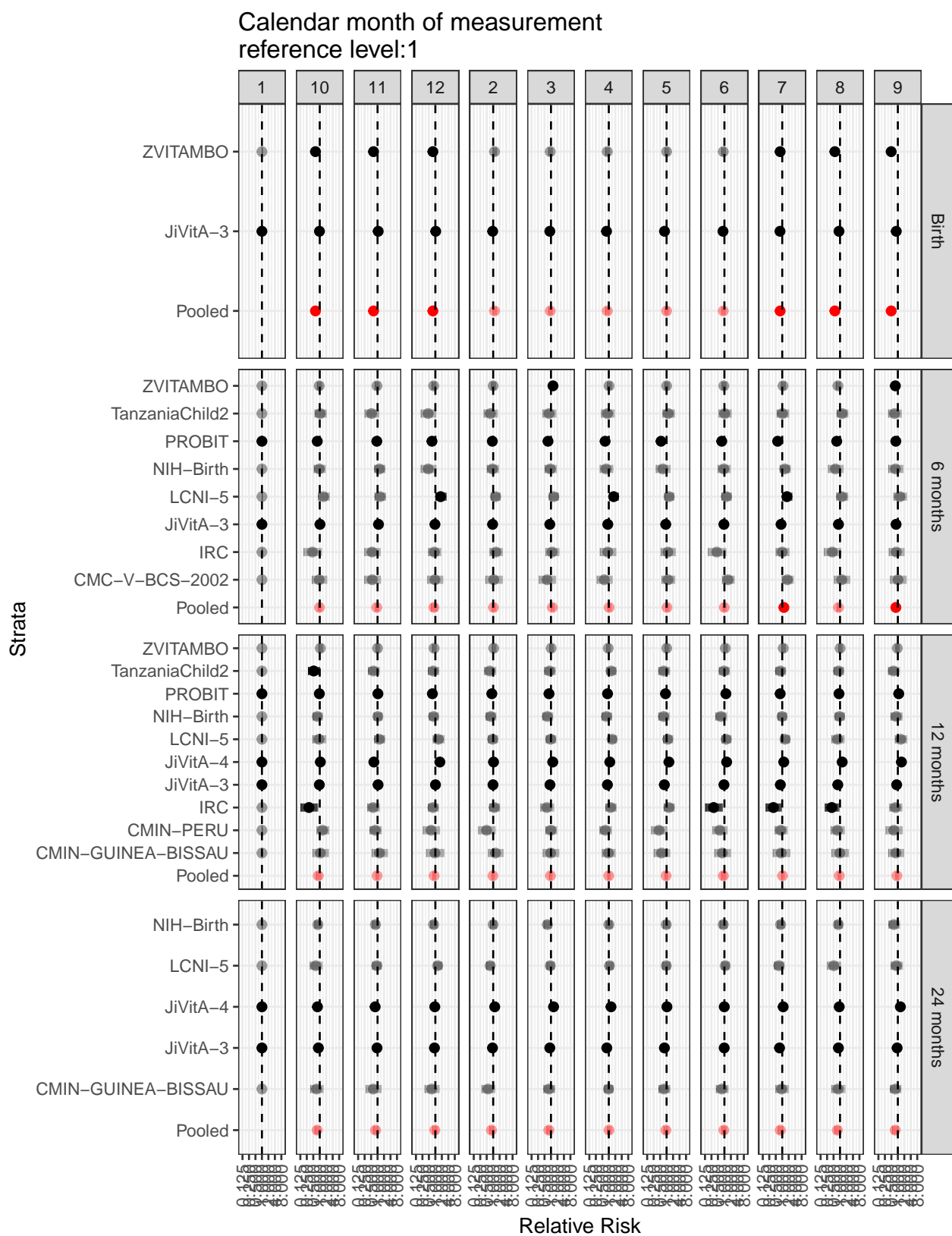
Point prevalence of stunting

Child characteristics

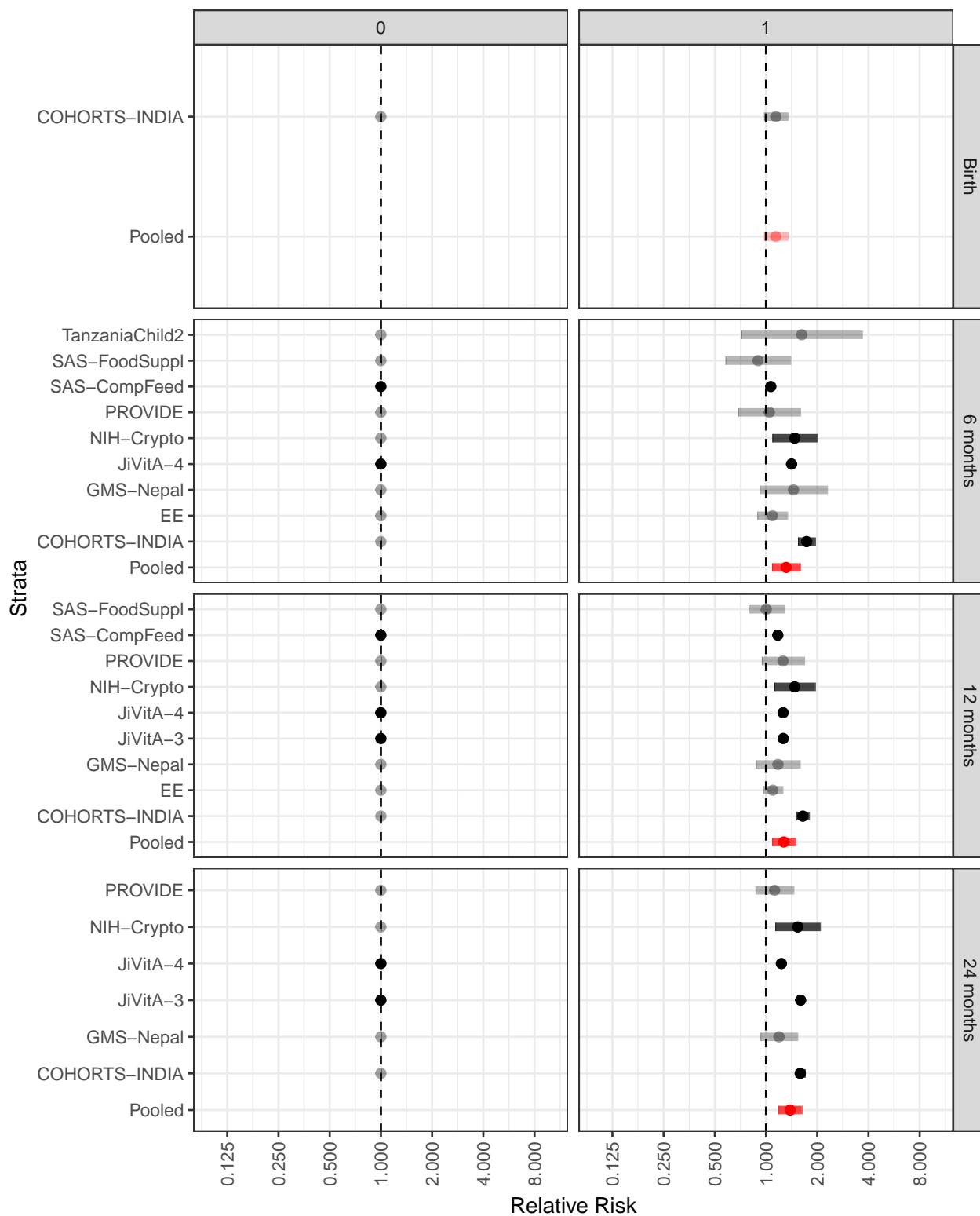




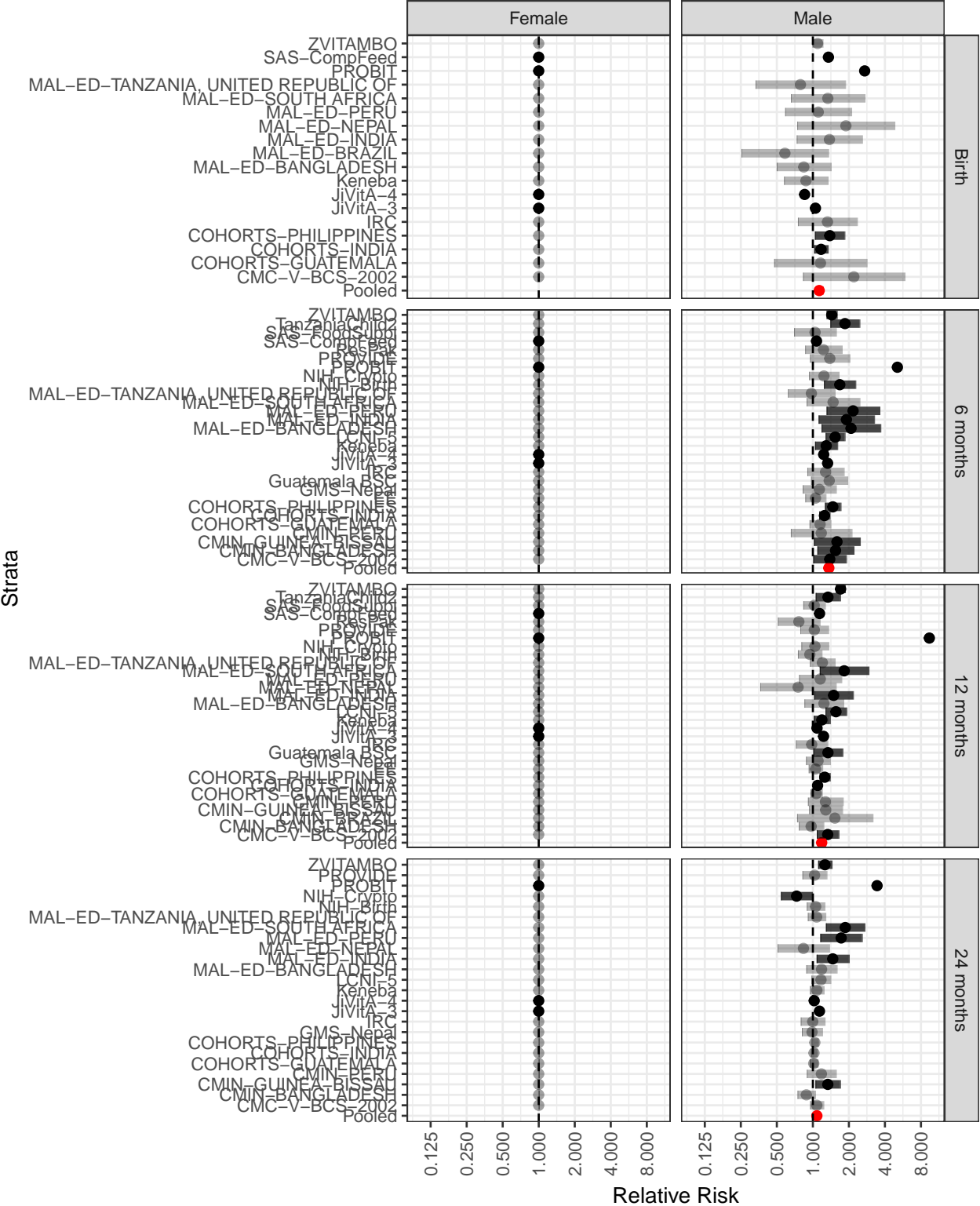




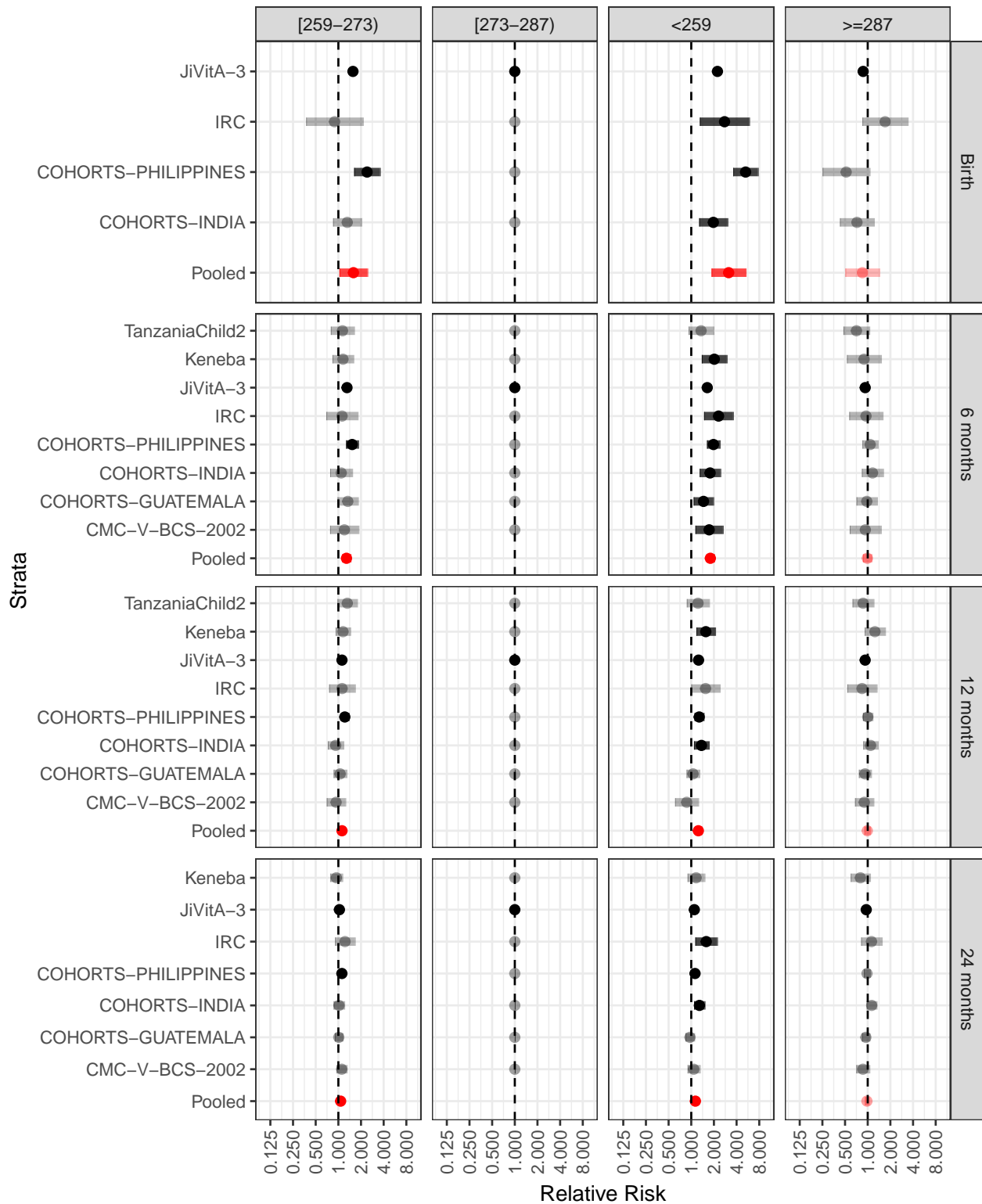
Child delivered at home
reference level:0



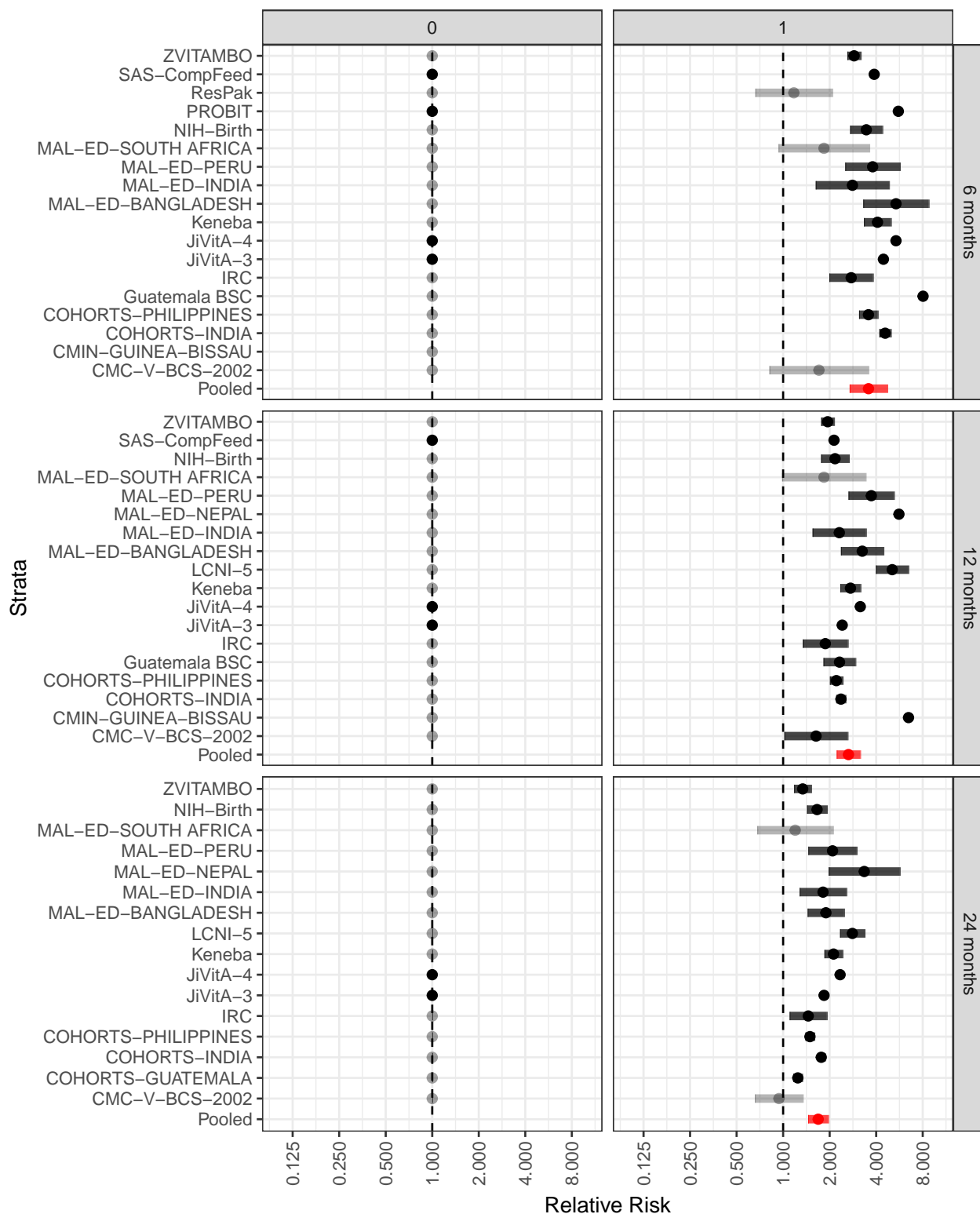
Child's sex
reference level:Female

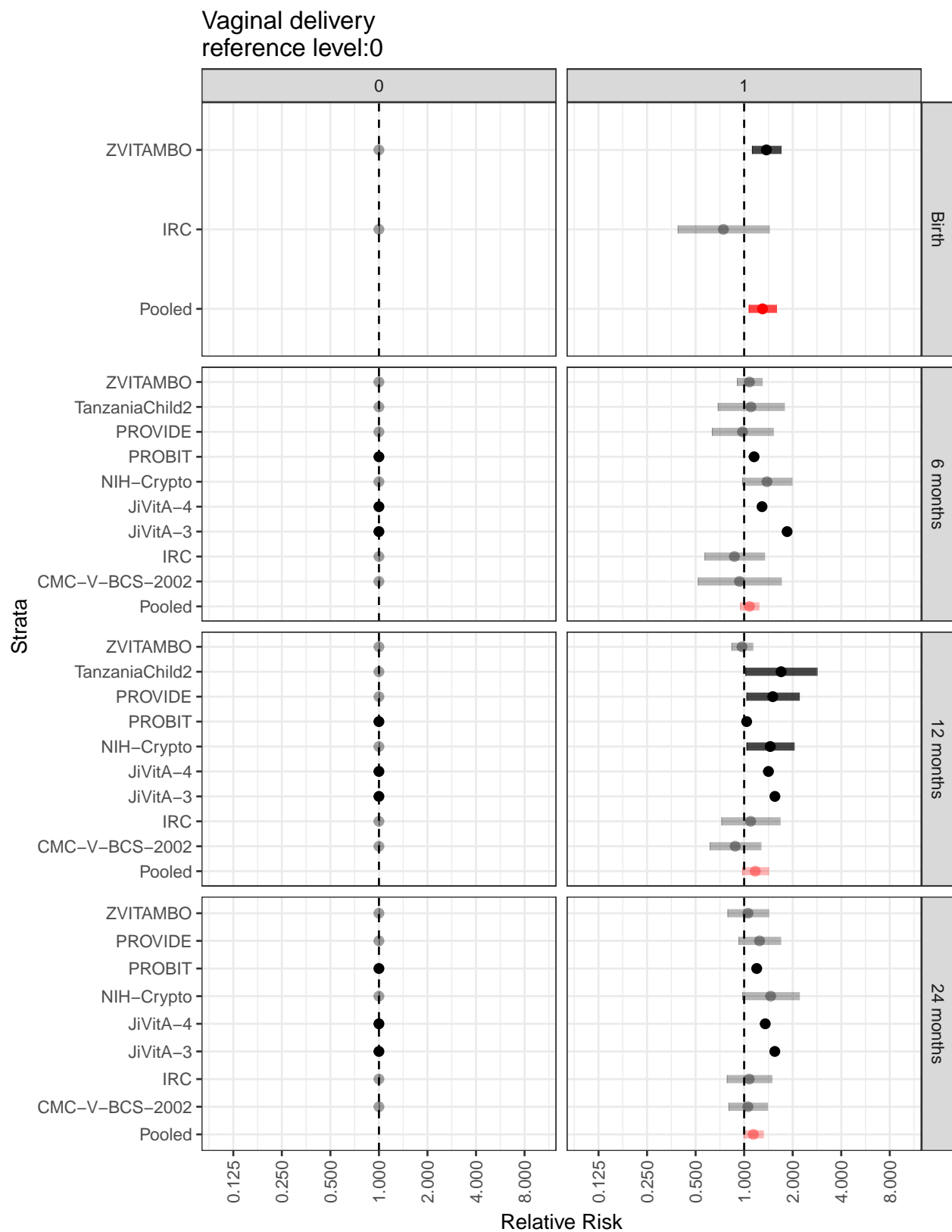


Gestational age at birth in days
reference level:[273–287)

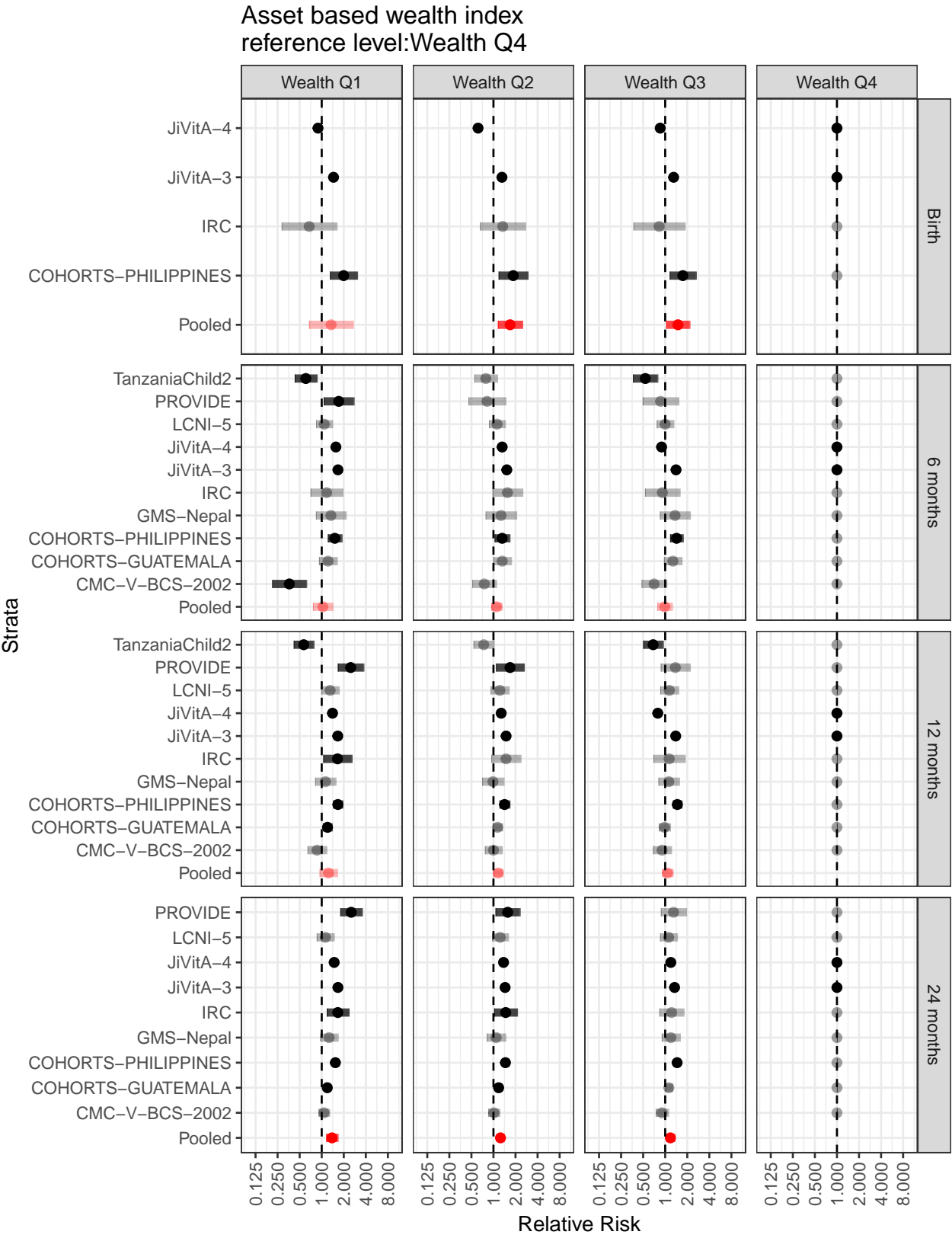


Stunted at enrollment
reference level:0

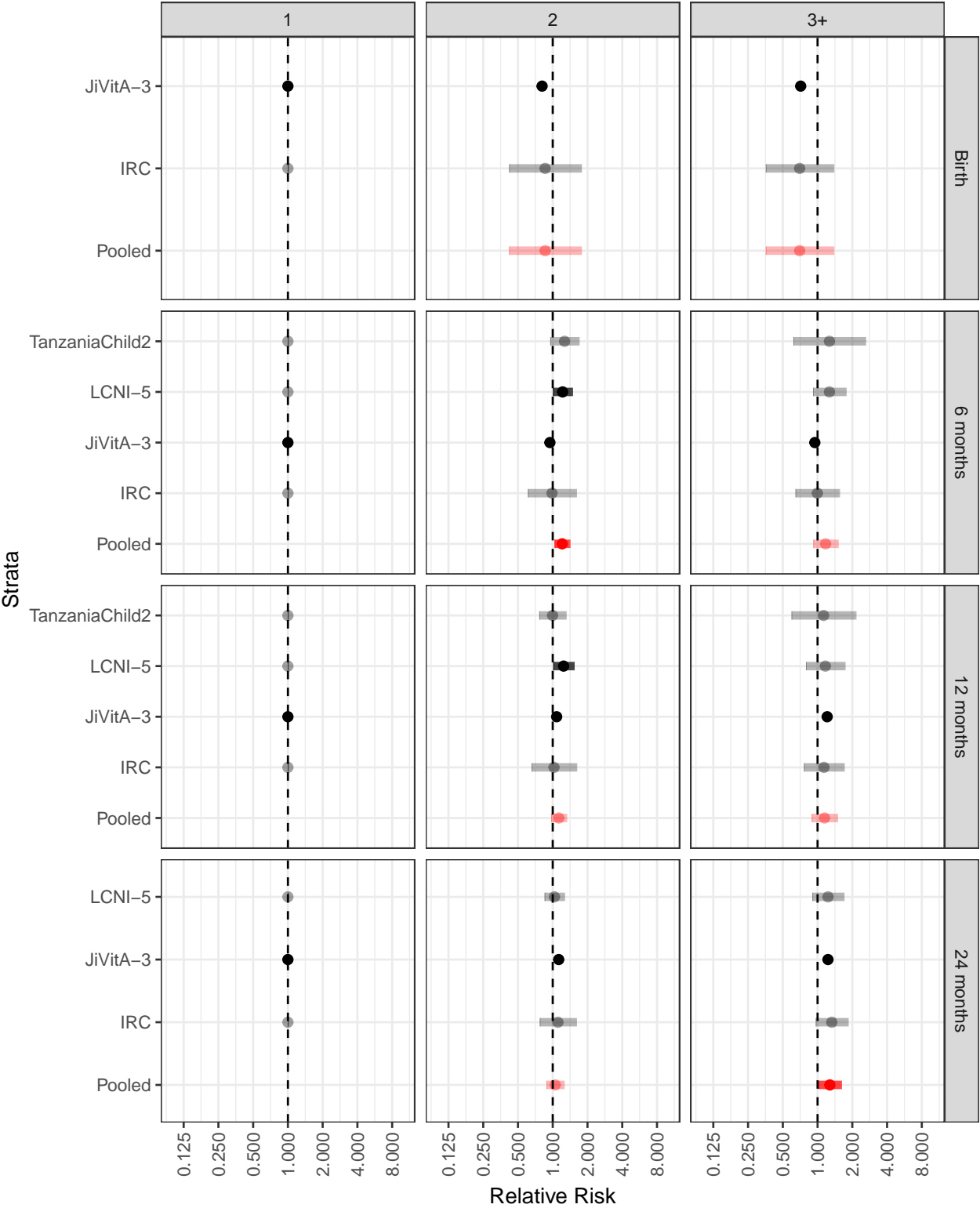




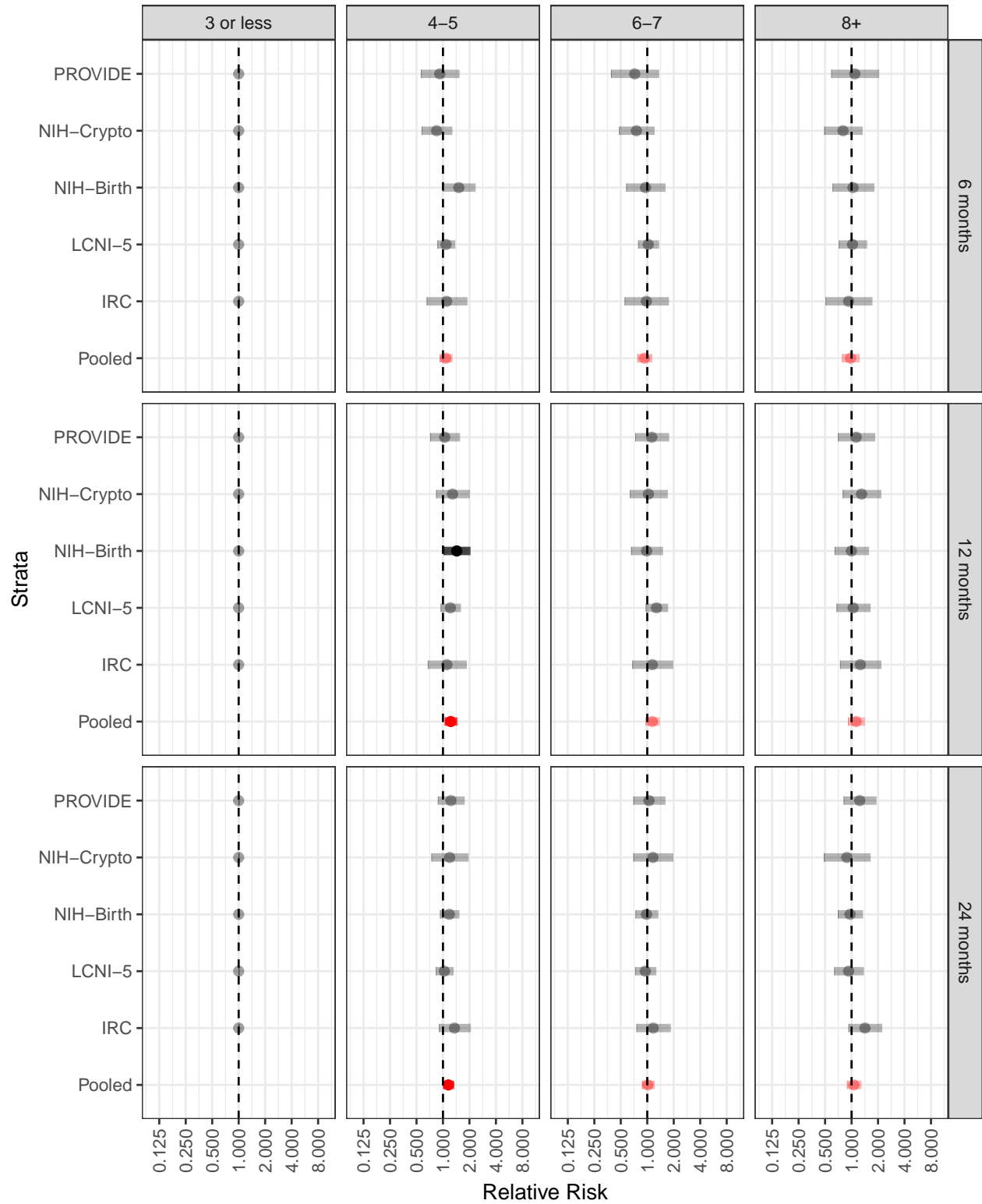
Household characteristics



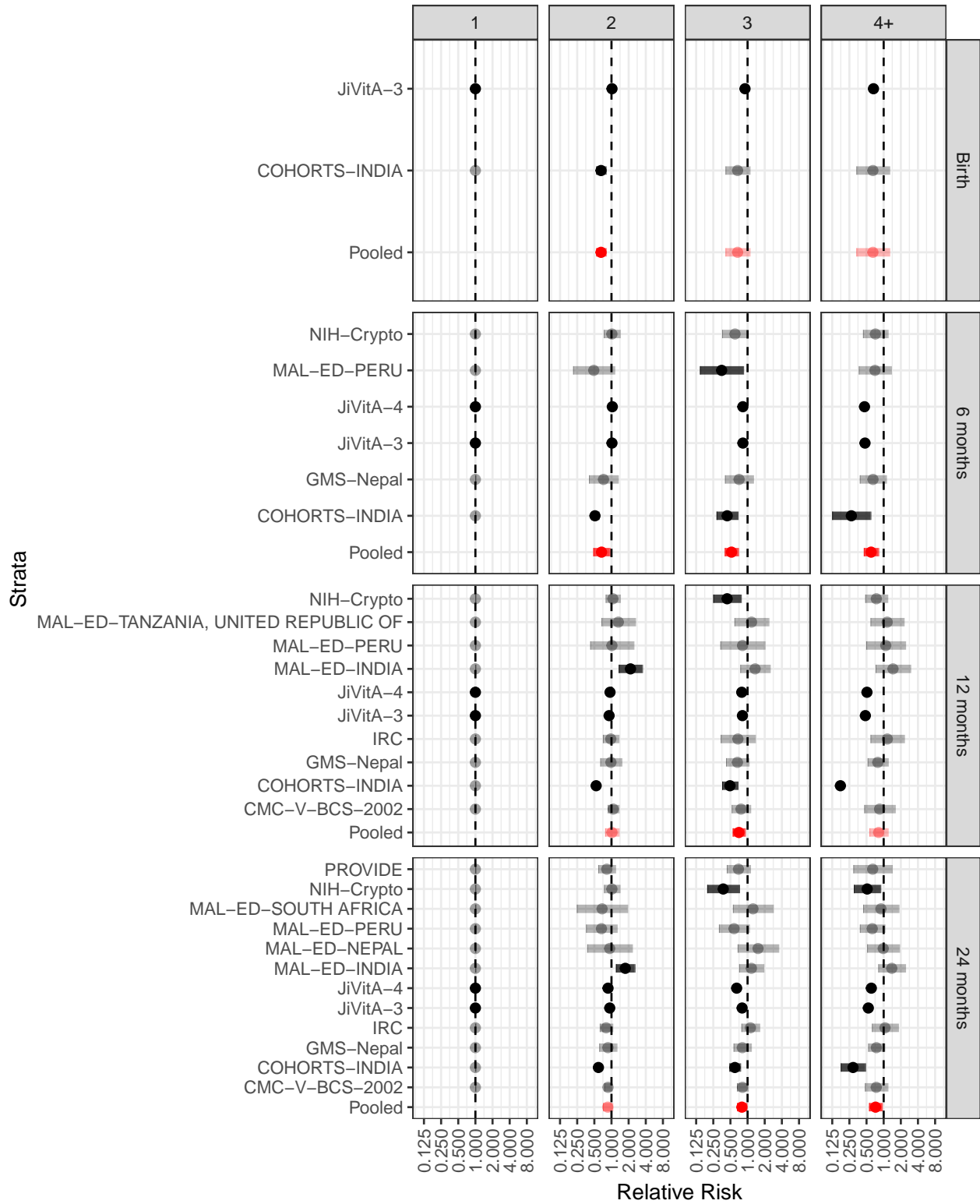
Number of children in the household under 5 years
reference level:1



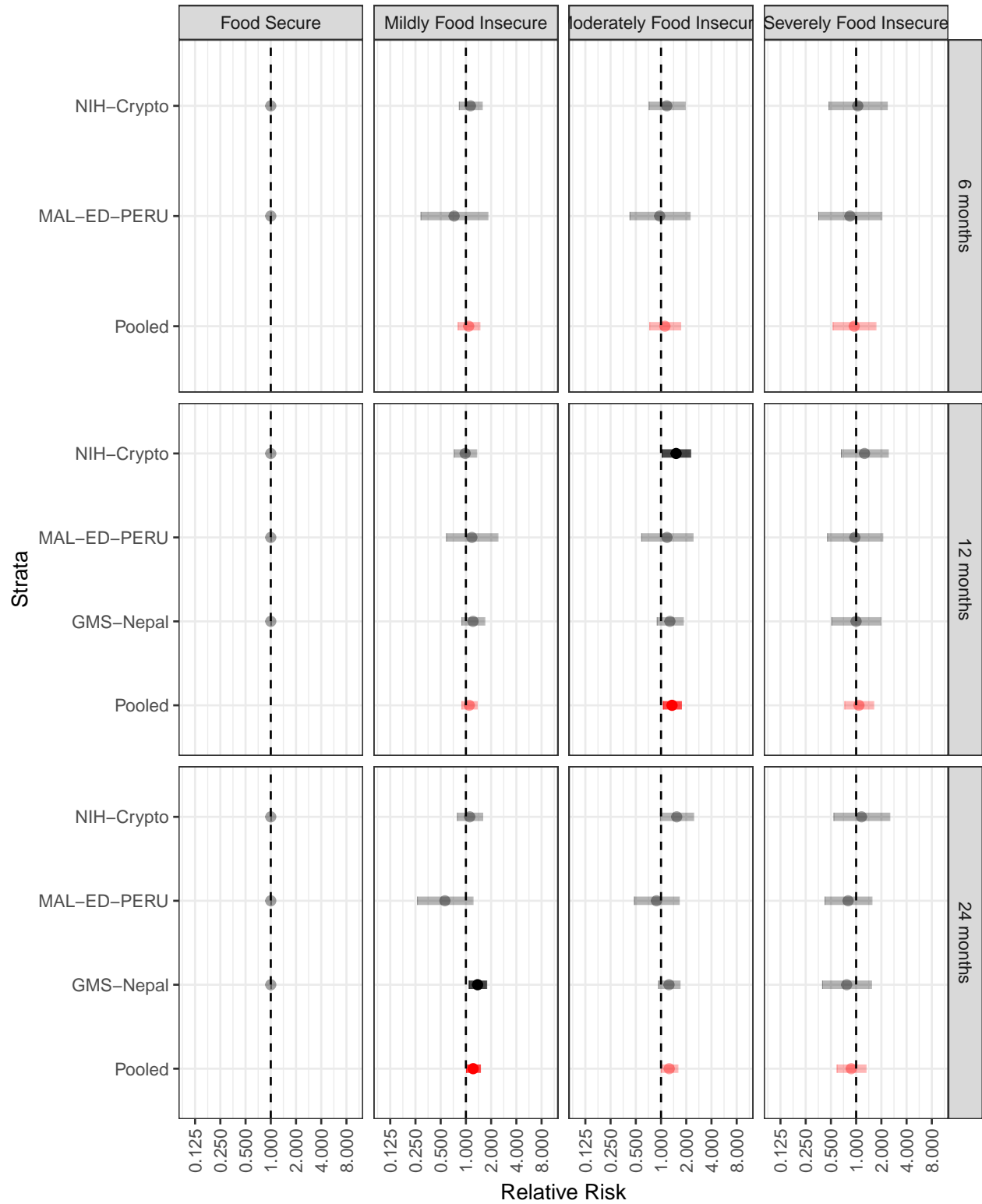
Number of people in the household
reference level:3 or less



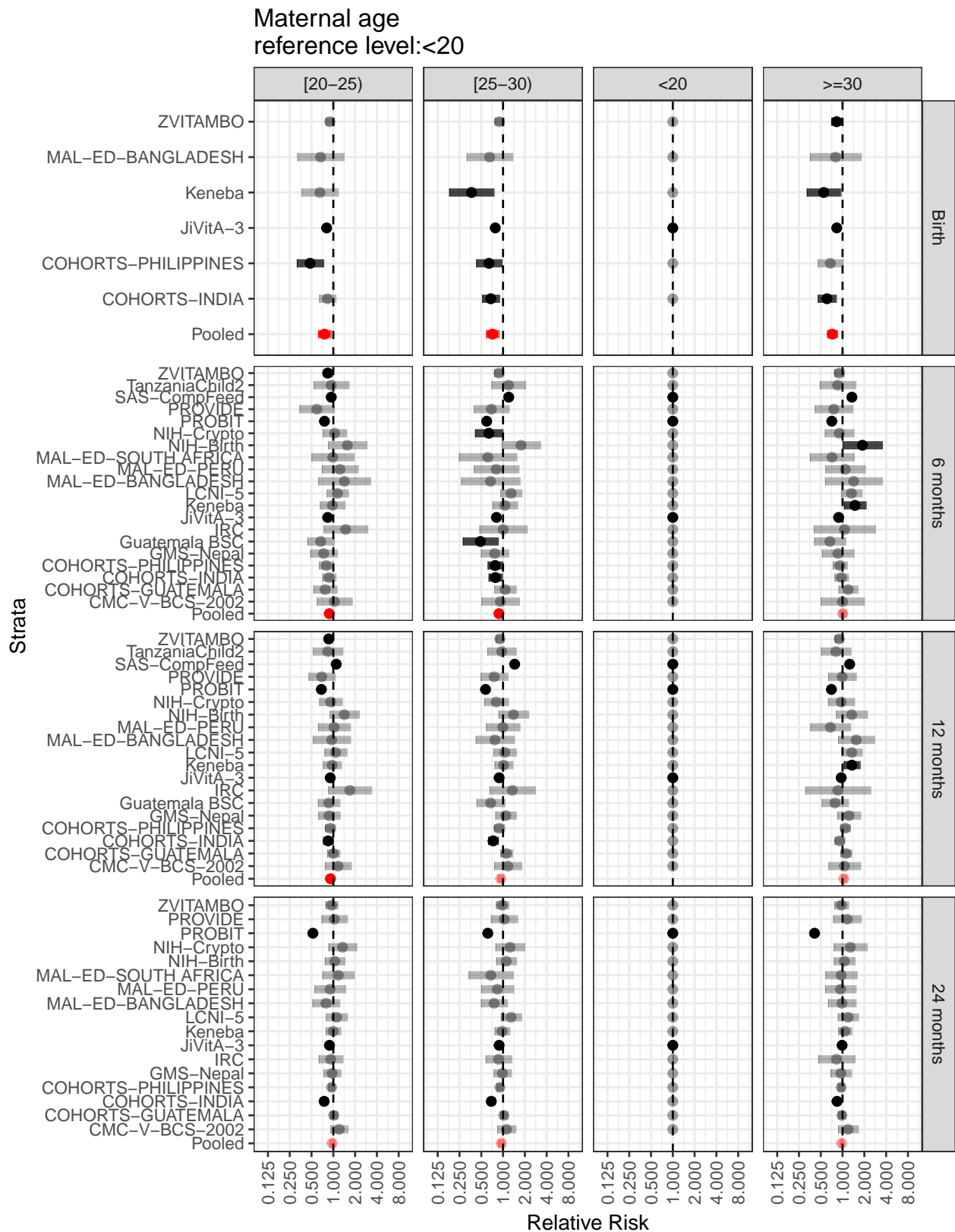
Number of rooms in household
reference level:1



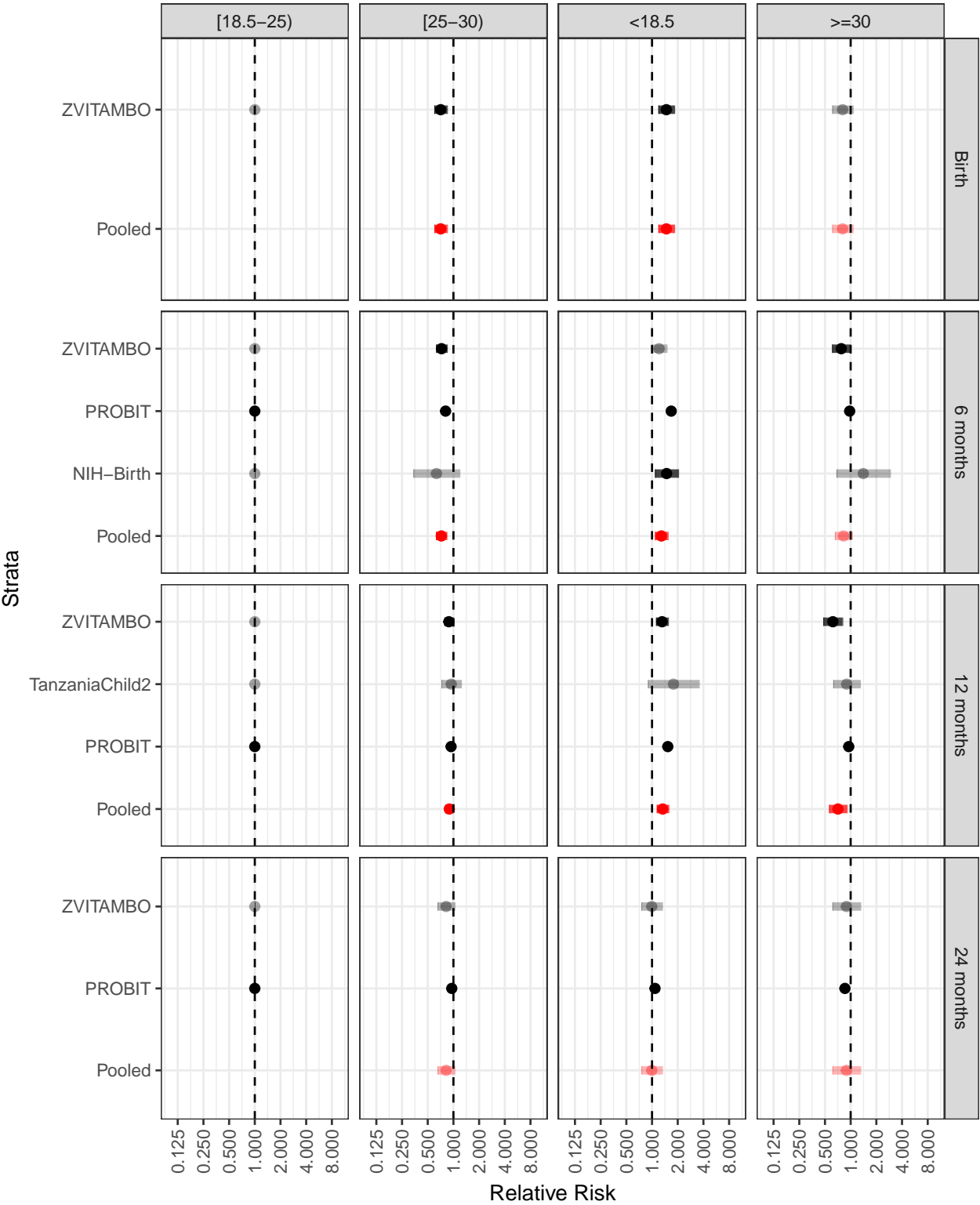
USAID Household Food Insecurity Access Scale (HFIAS) category
reference level: Food Secure



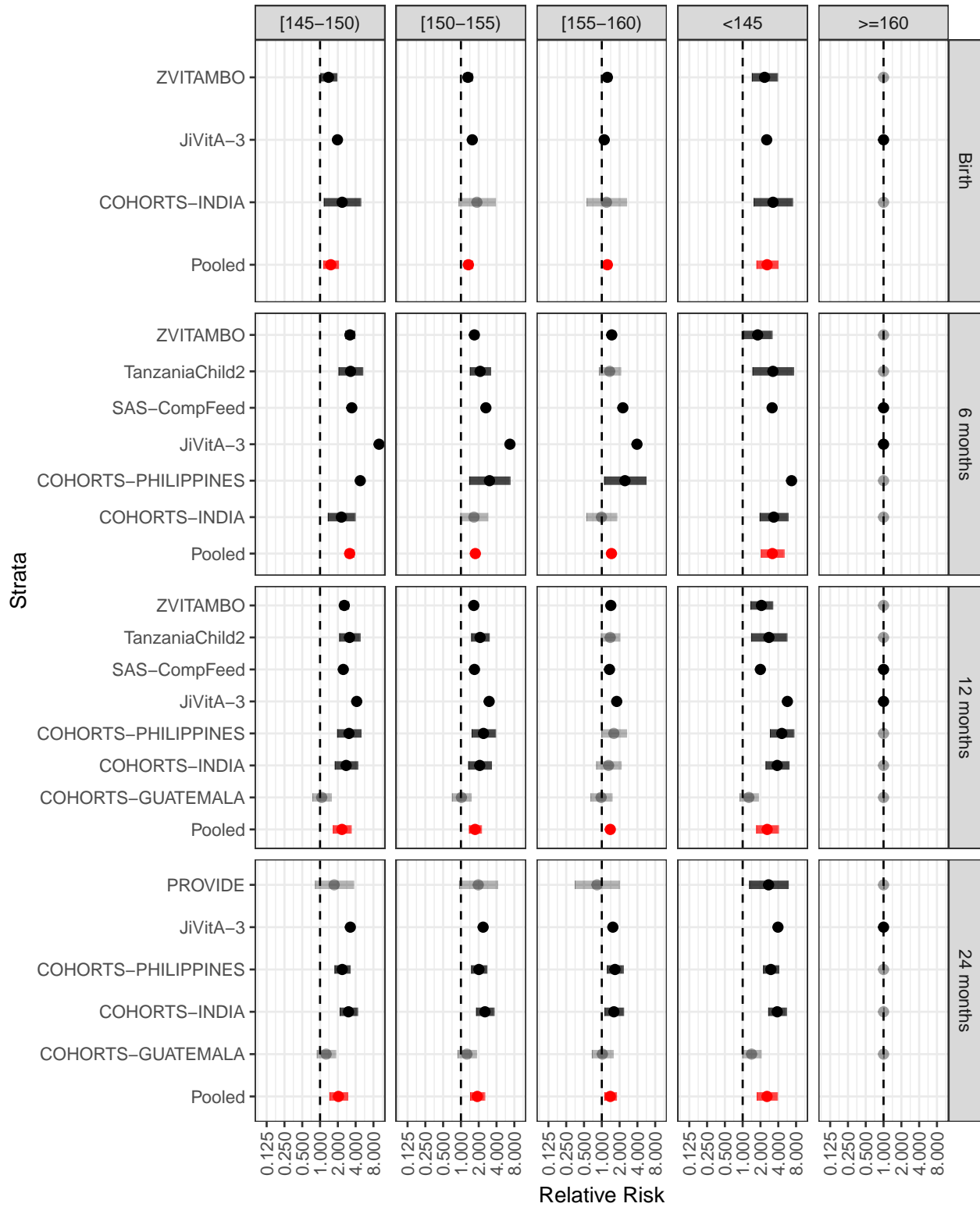
Maternal characteristics

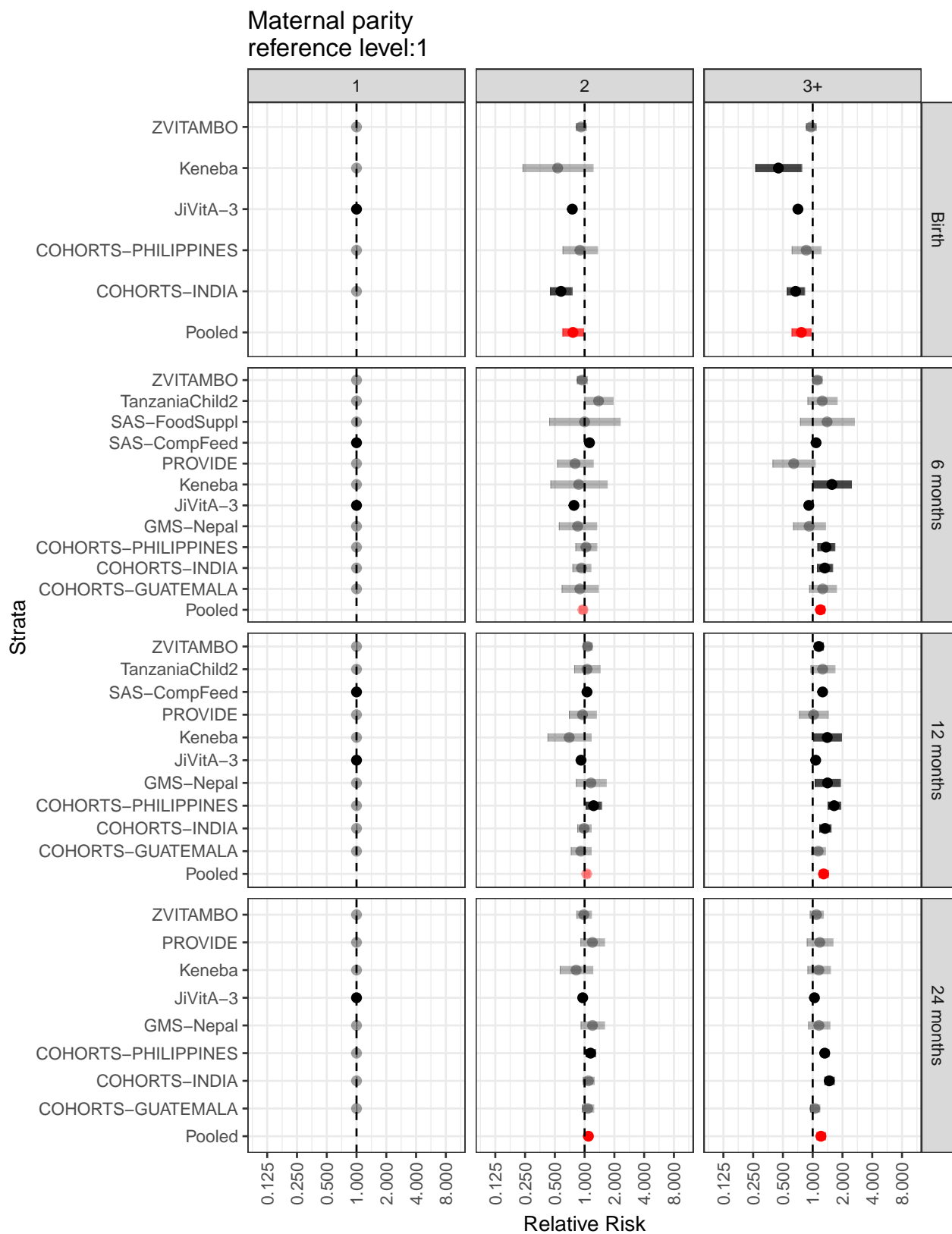


Maternal BMI
reference level:[18.5–25)

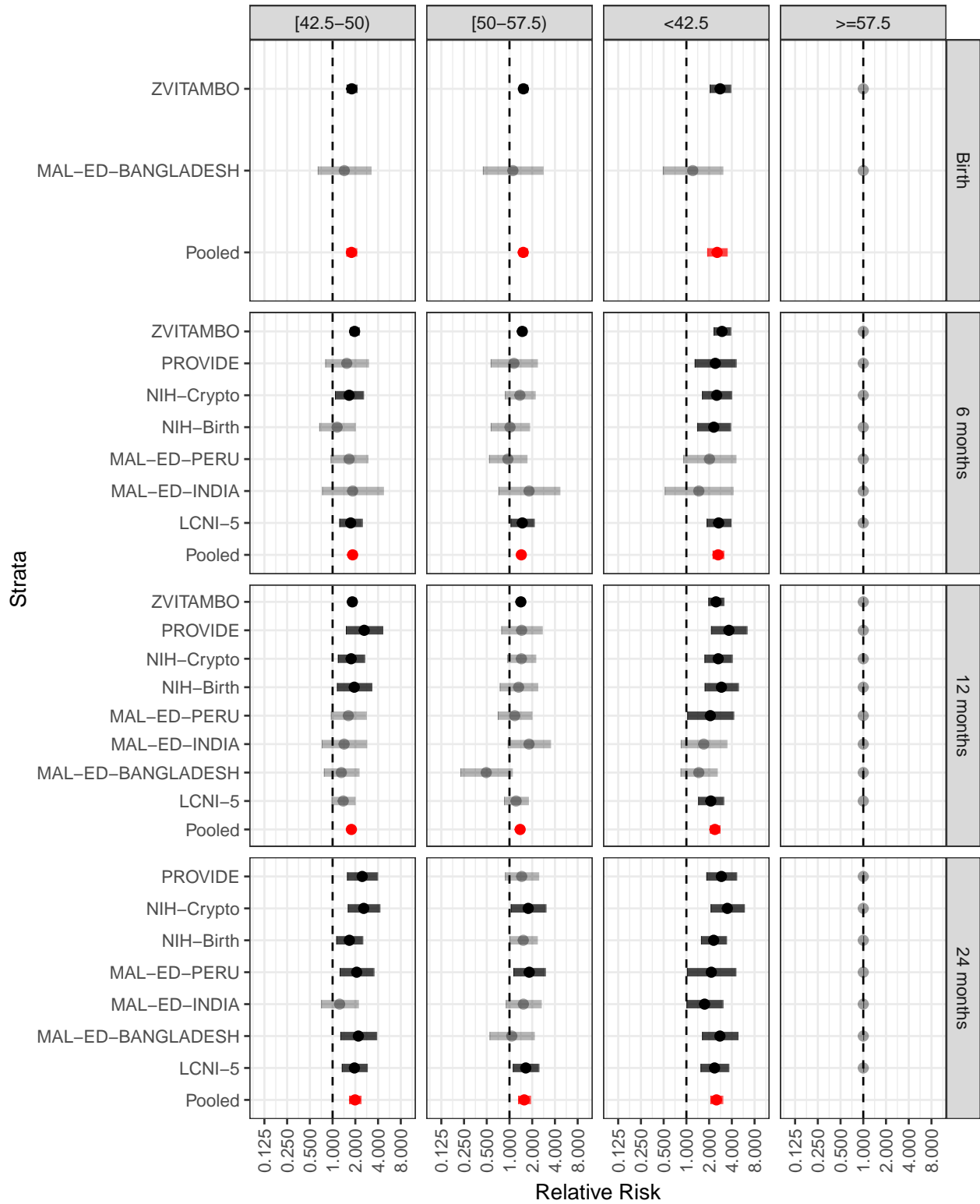


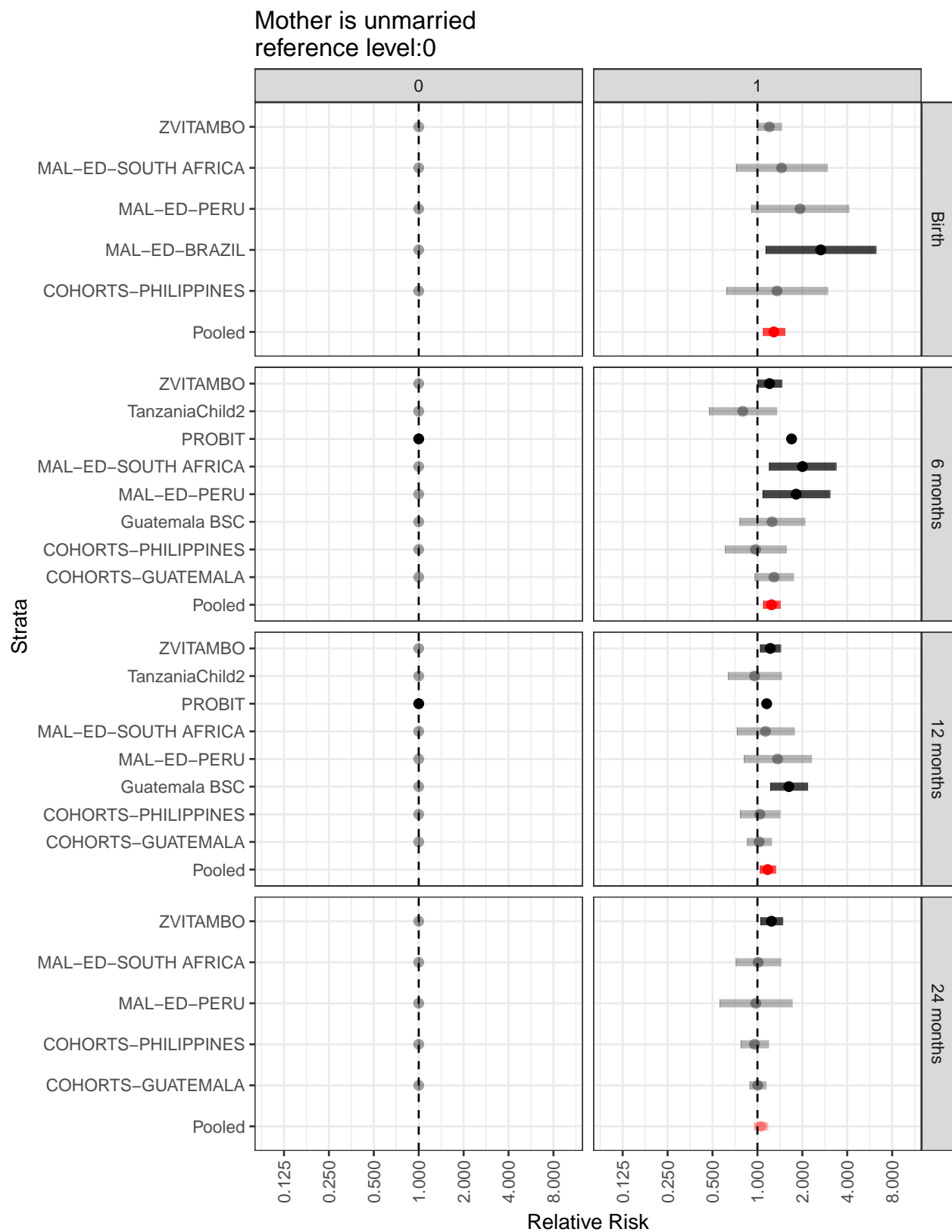
Maternal height
reference level: ≥ 160



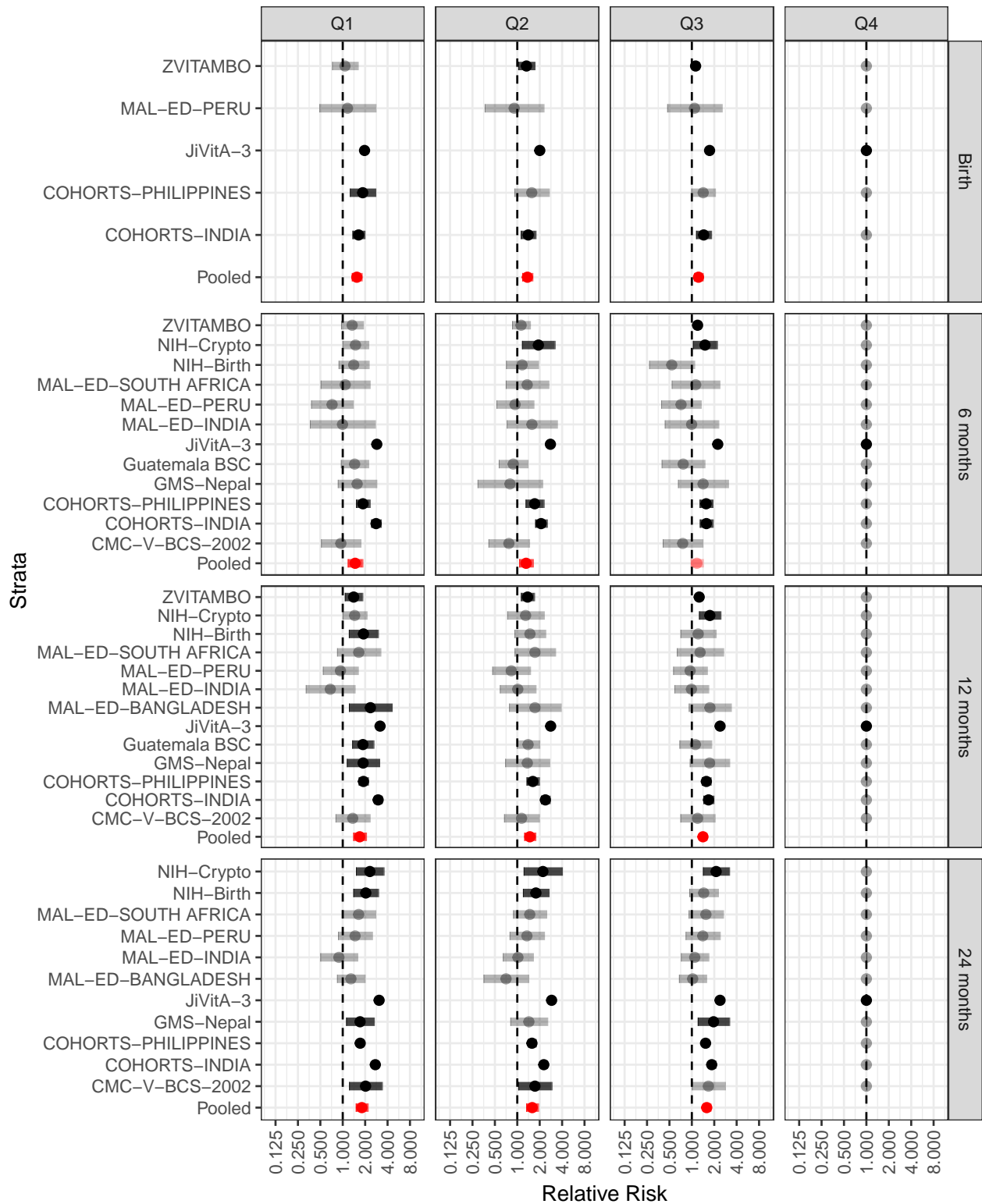


Maternal weight
reference level: ≥ 57.5

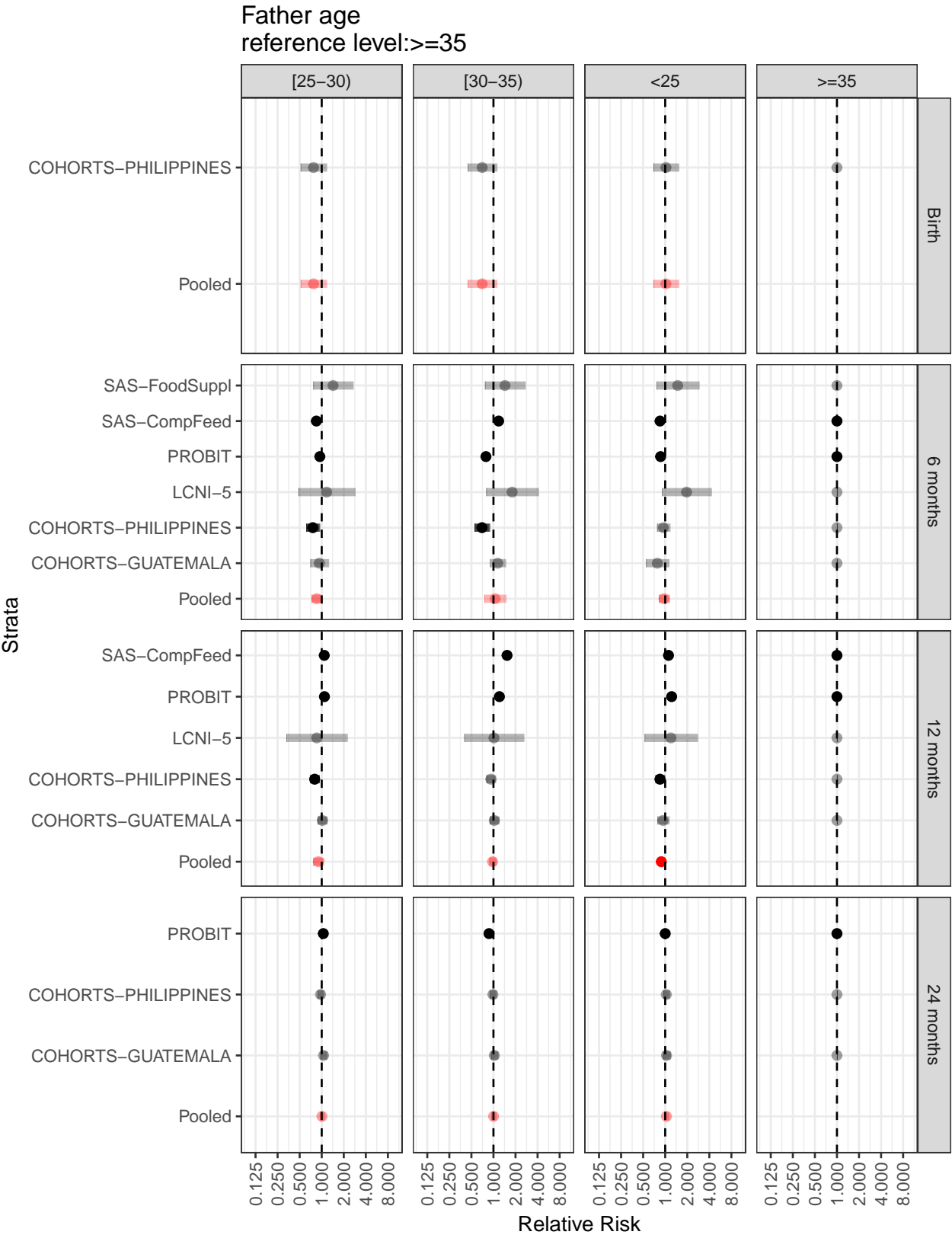




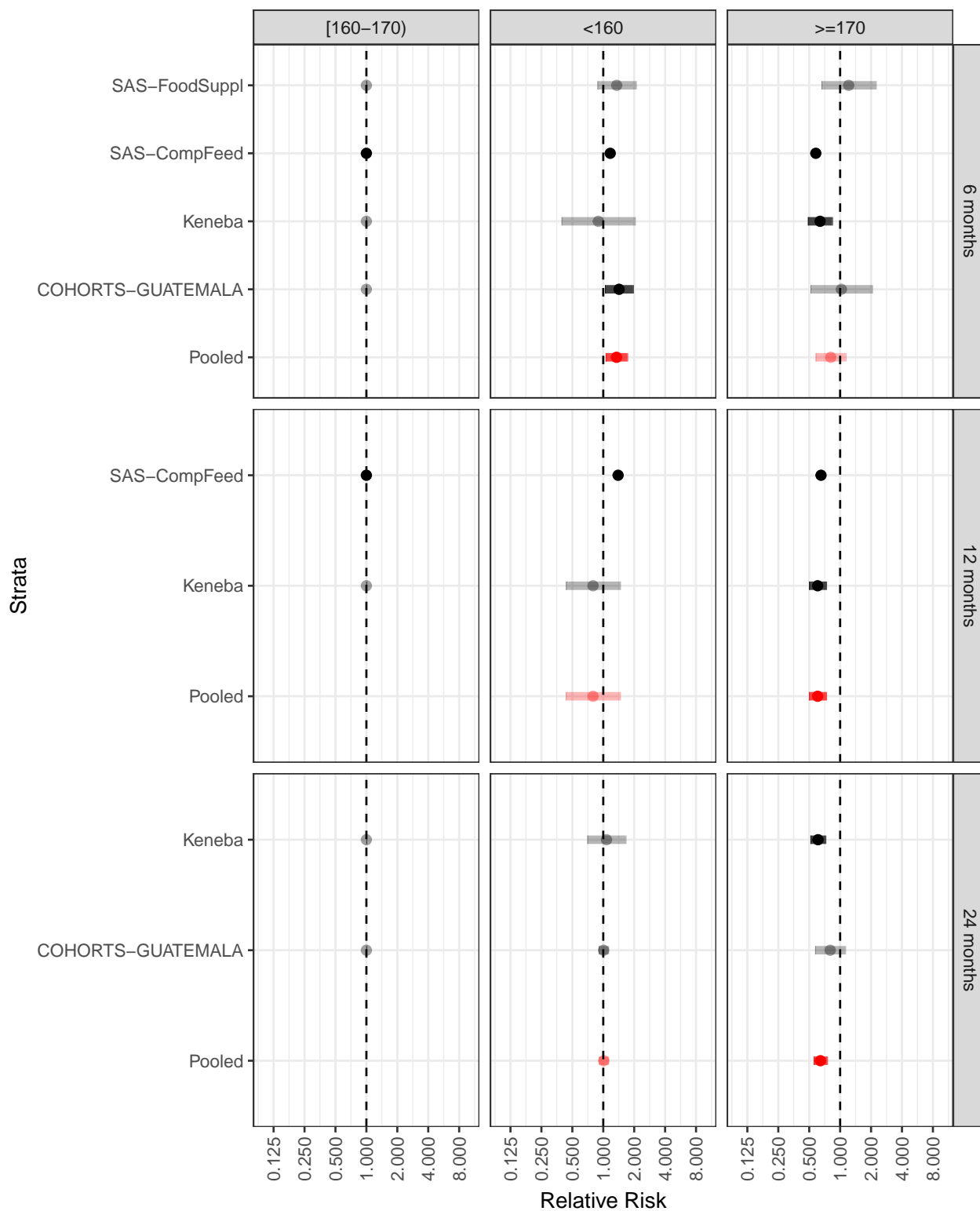
Mother's education
reference level:Q4

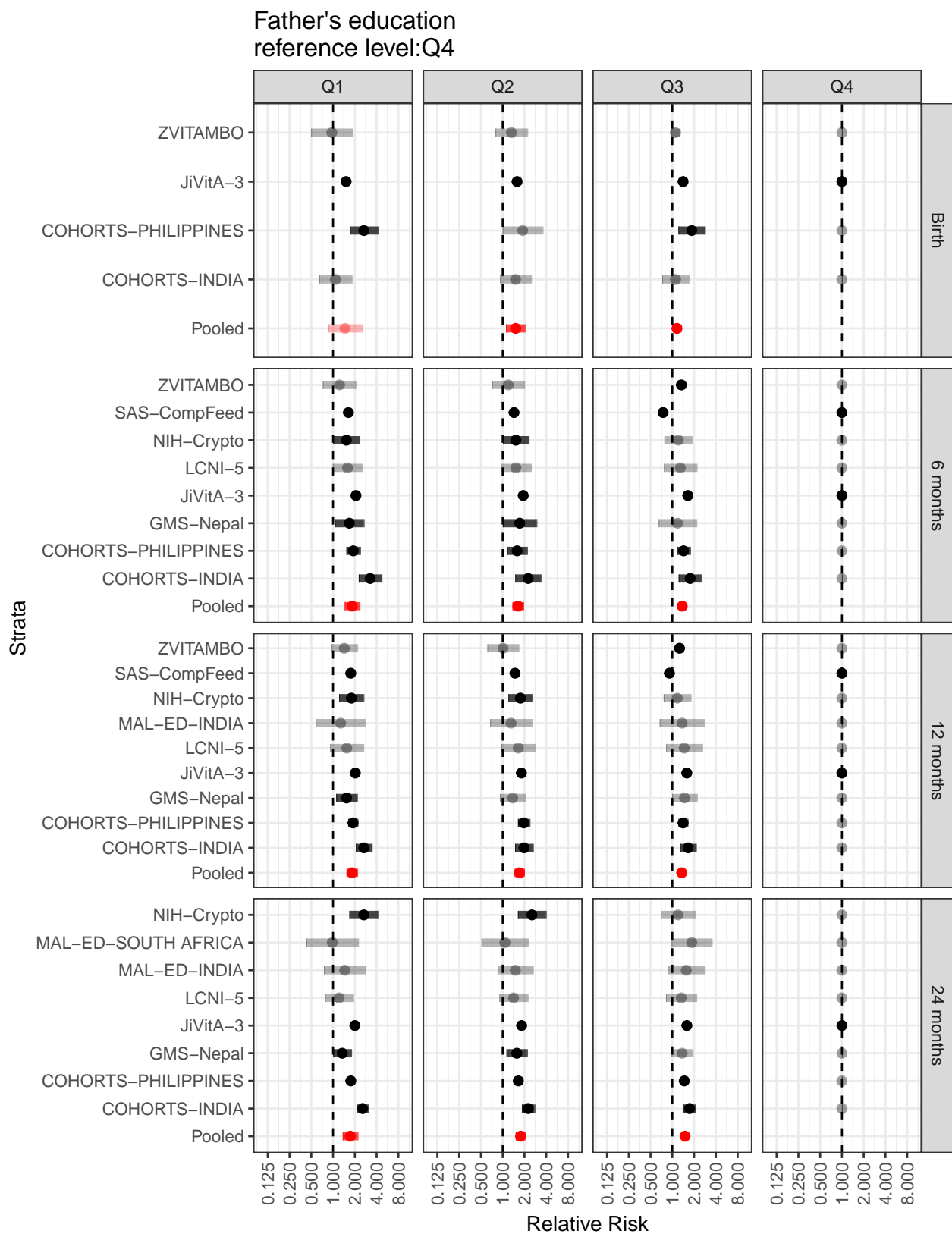


Paternal characteristics



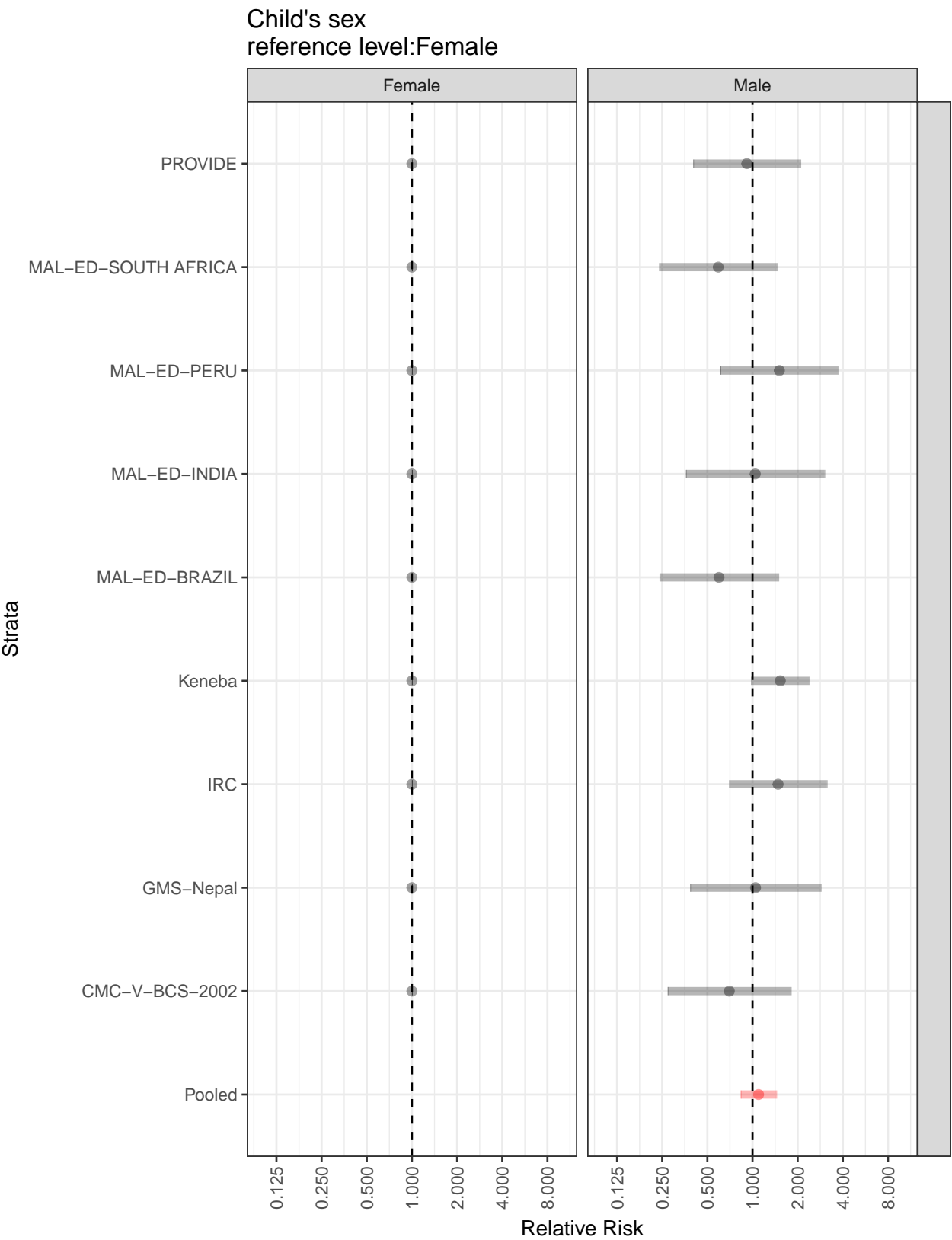
Father height
reference level:[160–170)

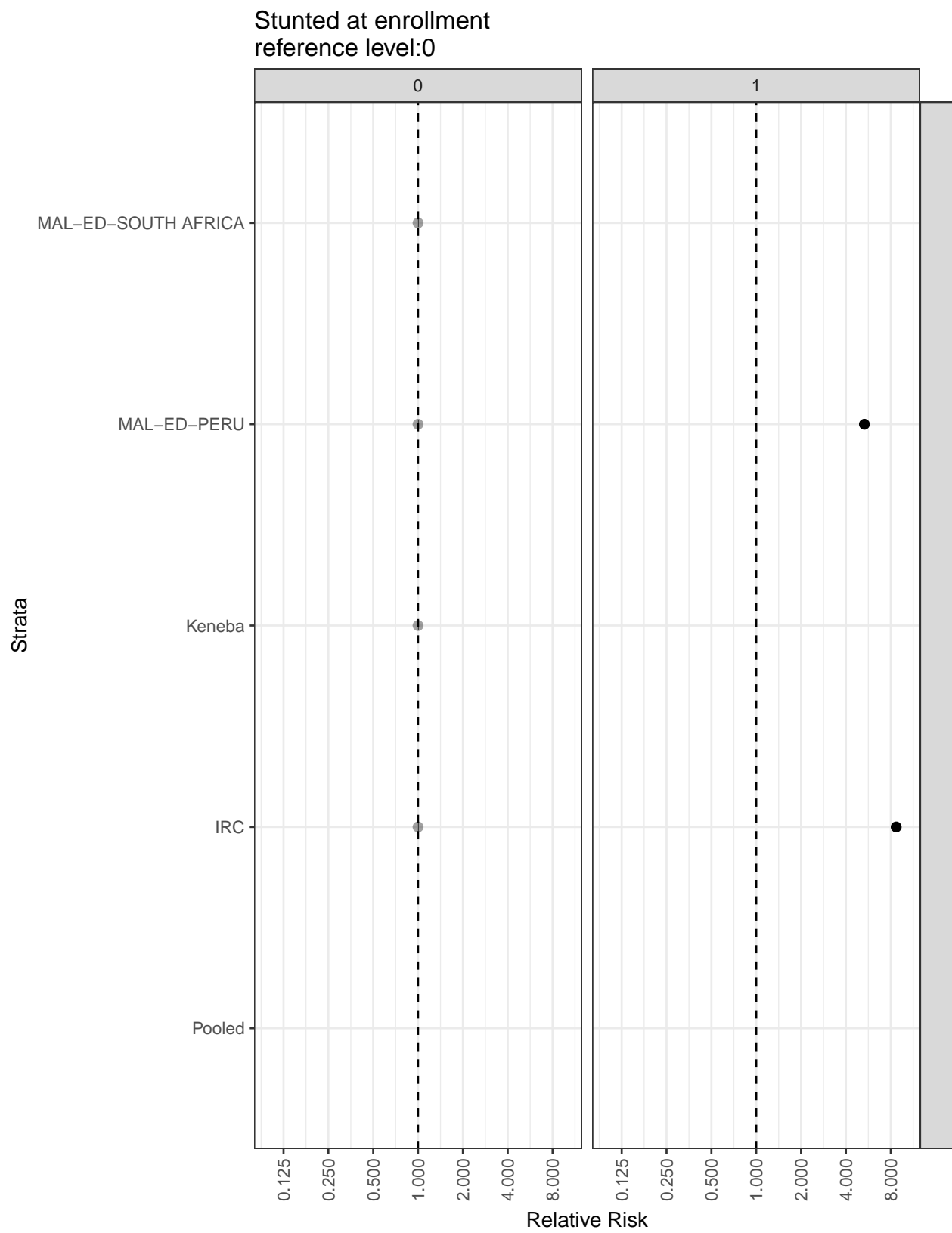




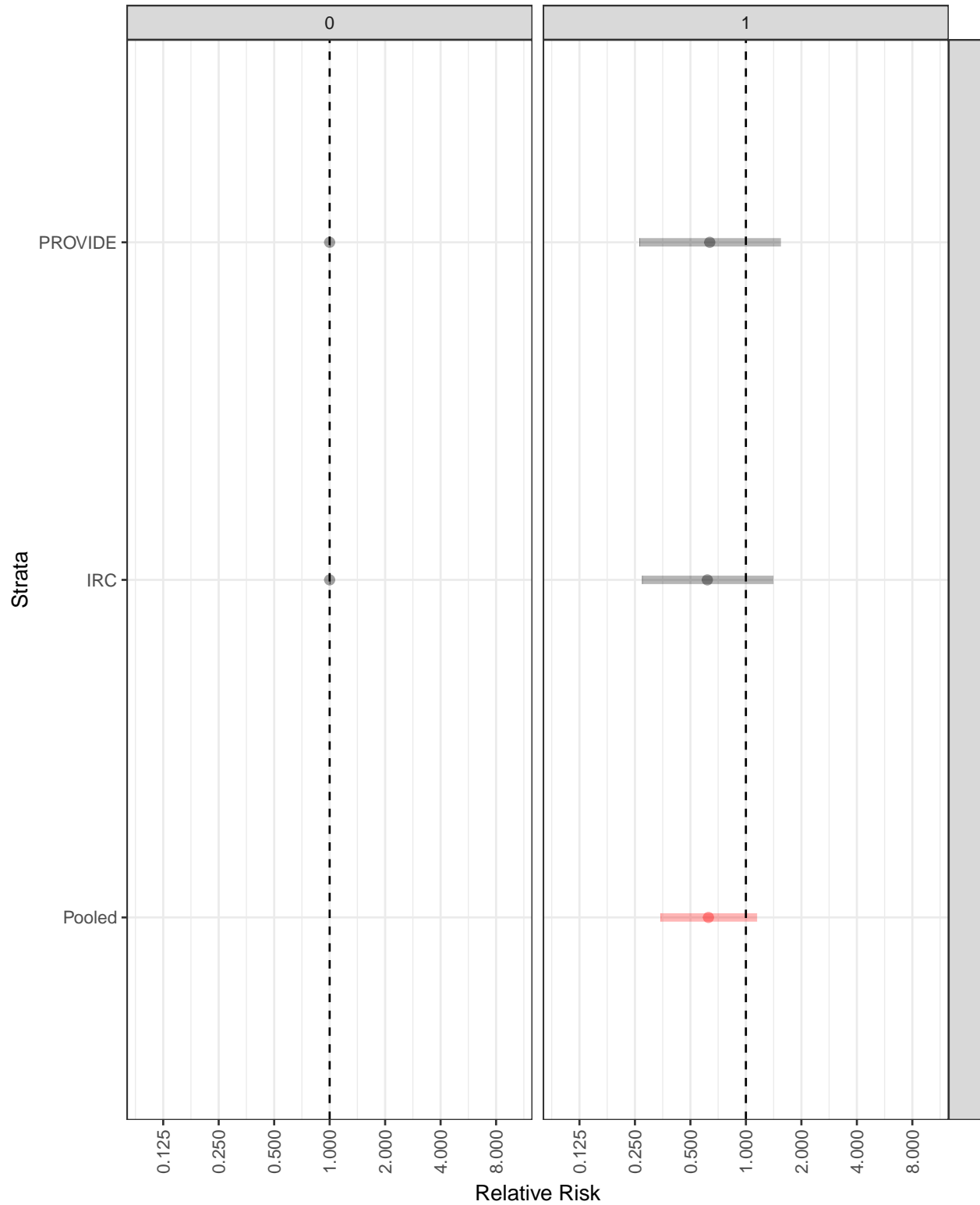
Proportion of children who were stunted between birth and 3 months who recovered by 24 months

Child characteristics



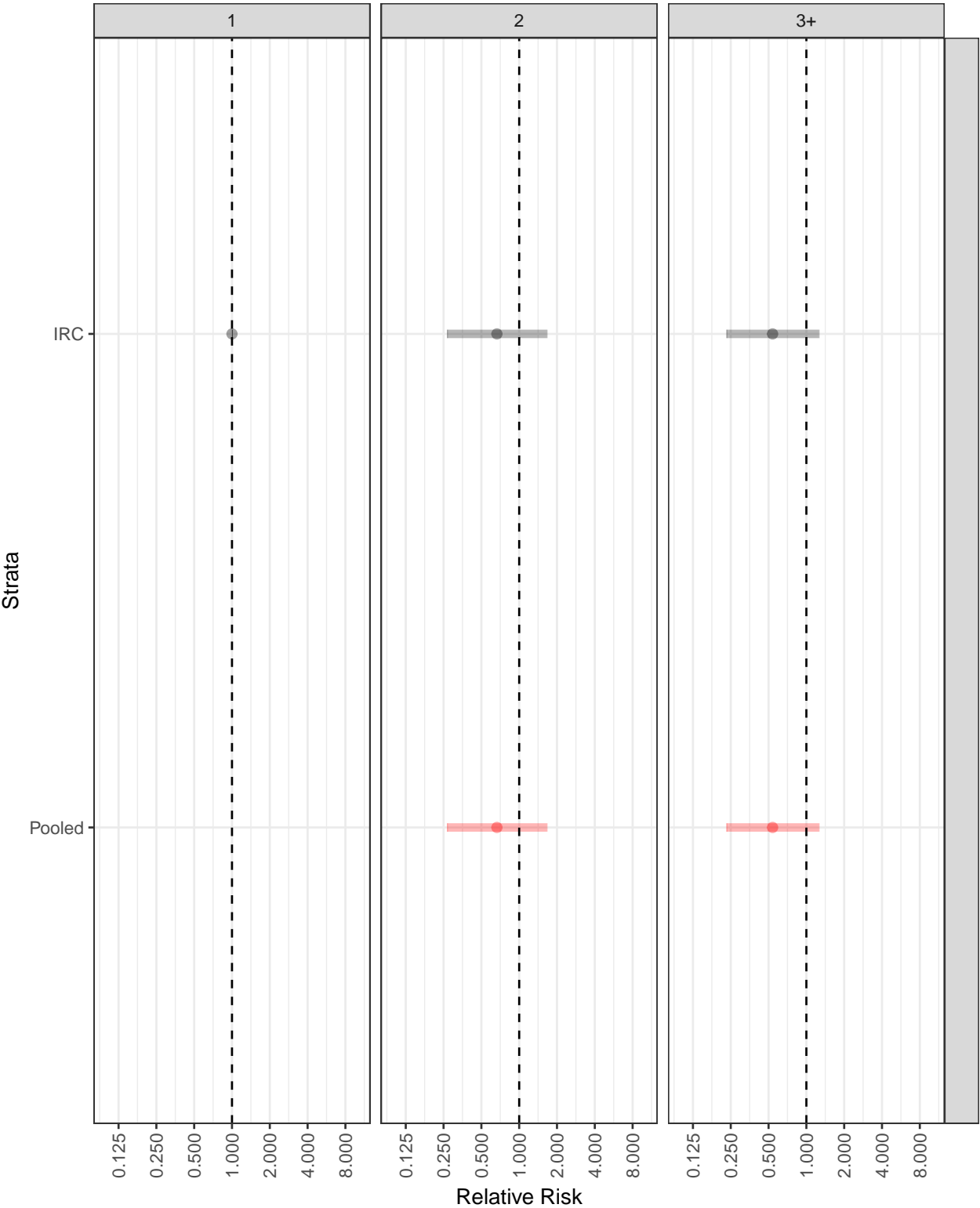


Vaginal delivery
reference level:0

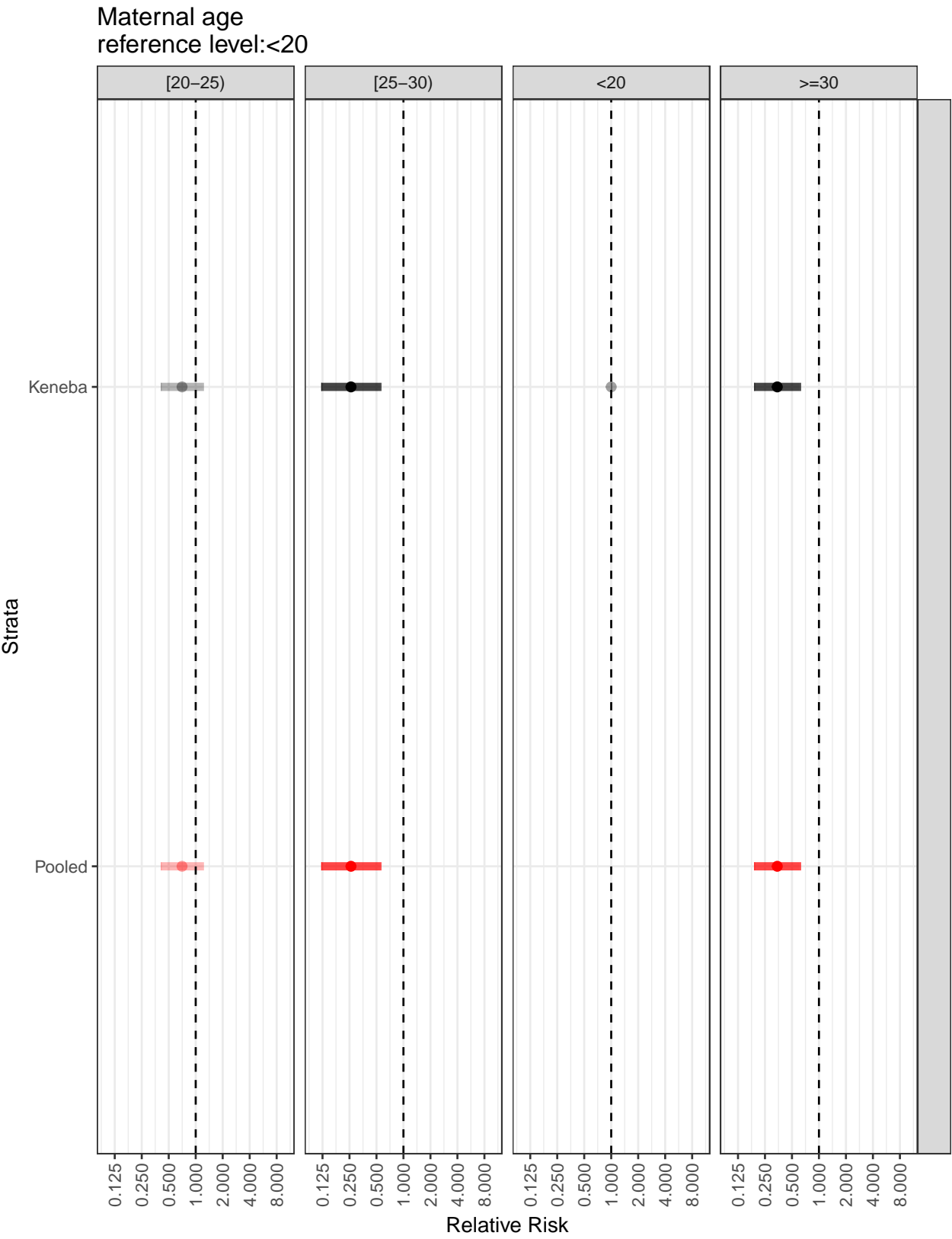


Household characteristics

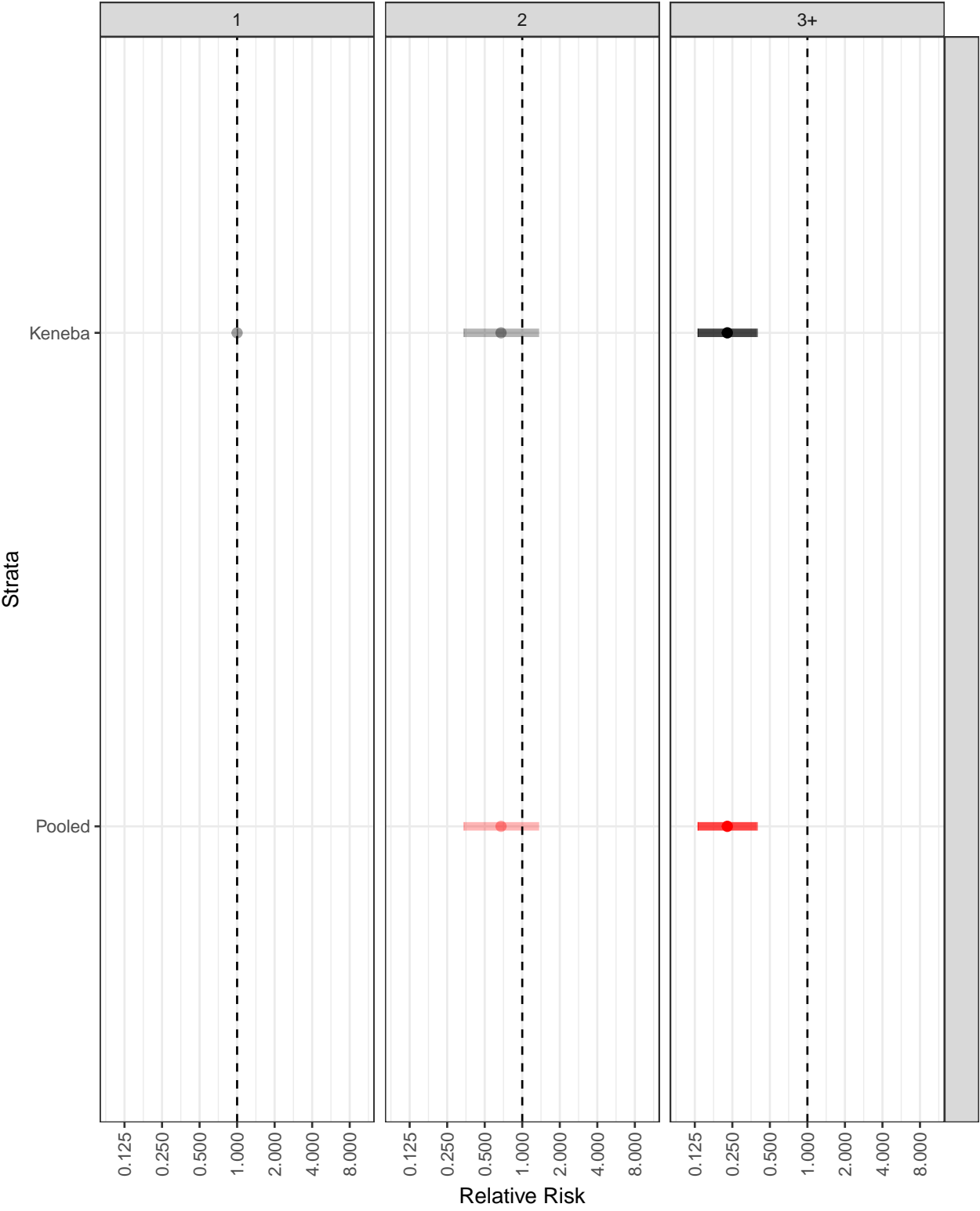
Number of children in the household under 5 years
reference level:1



Maternal characteristics



Maternal parity
reference level:1



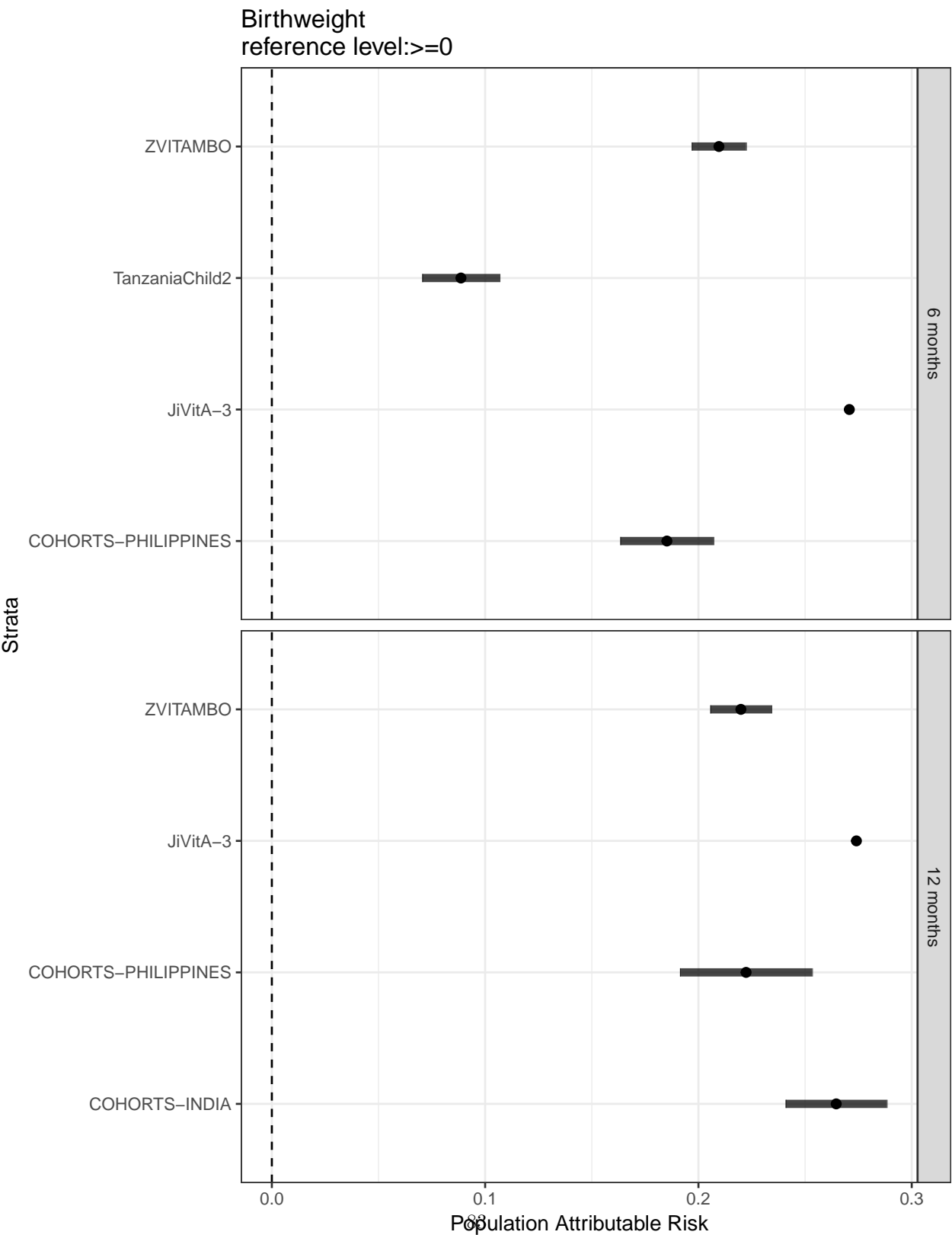
Mother is unmarried
reference level:0

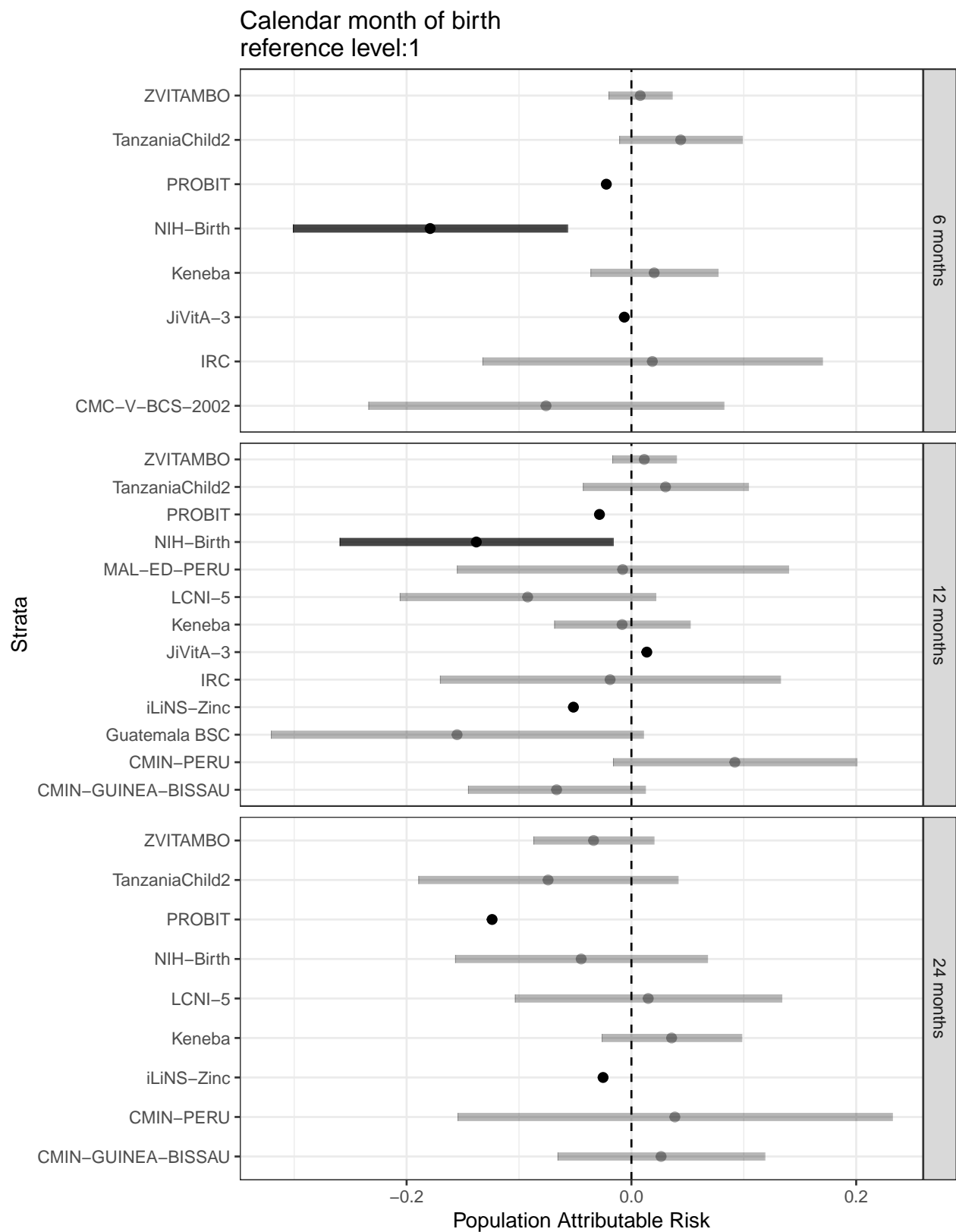


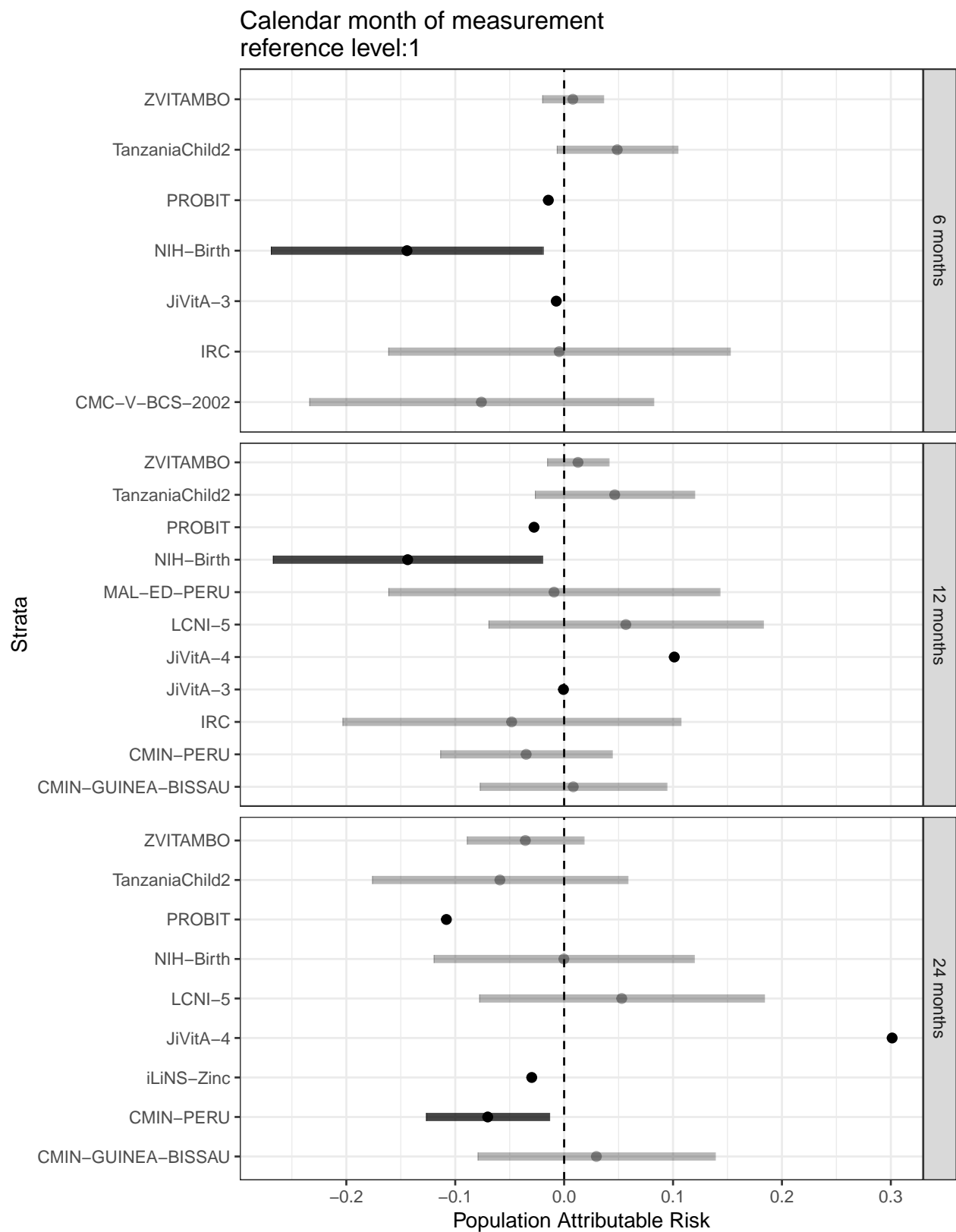
Appendix 2 - Population Attributable Risk stratified by cohort

Cumulative incidence of stunting from birth to 24 months

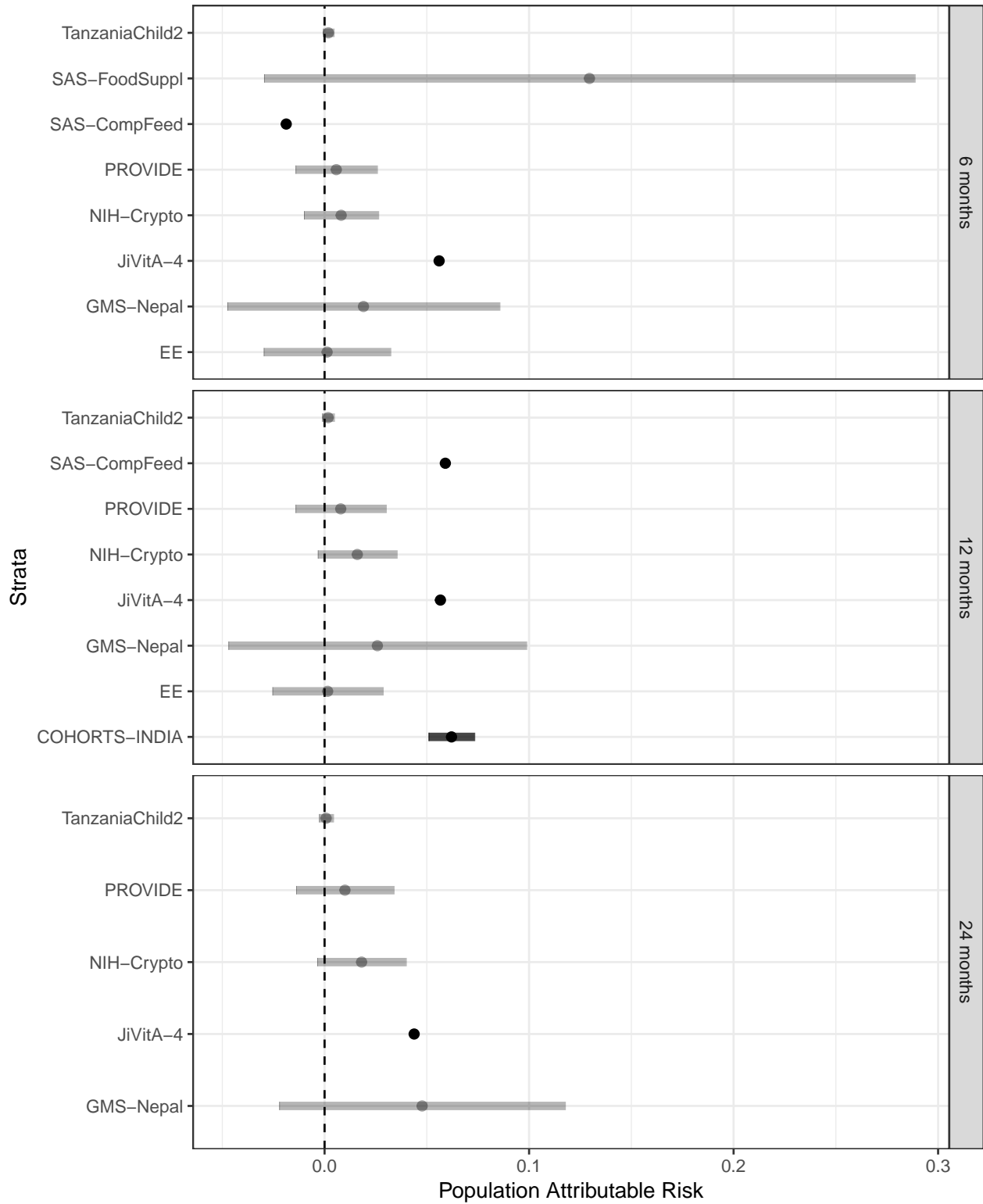
Child characteristics

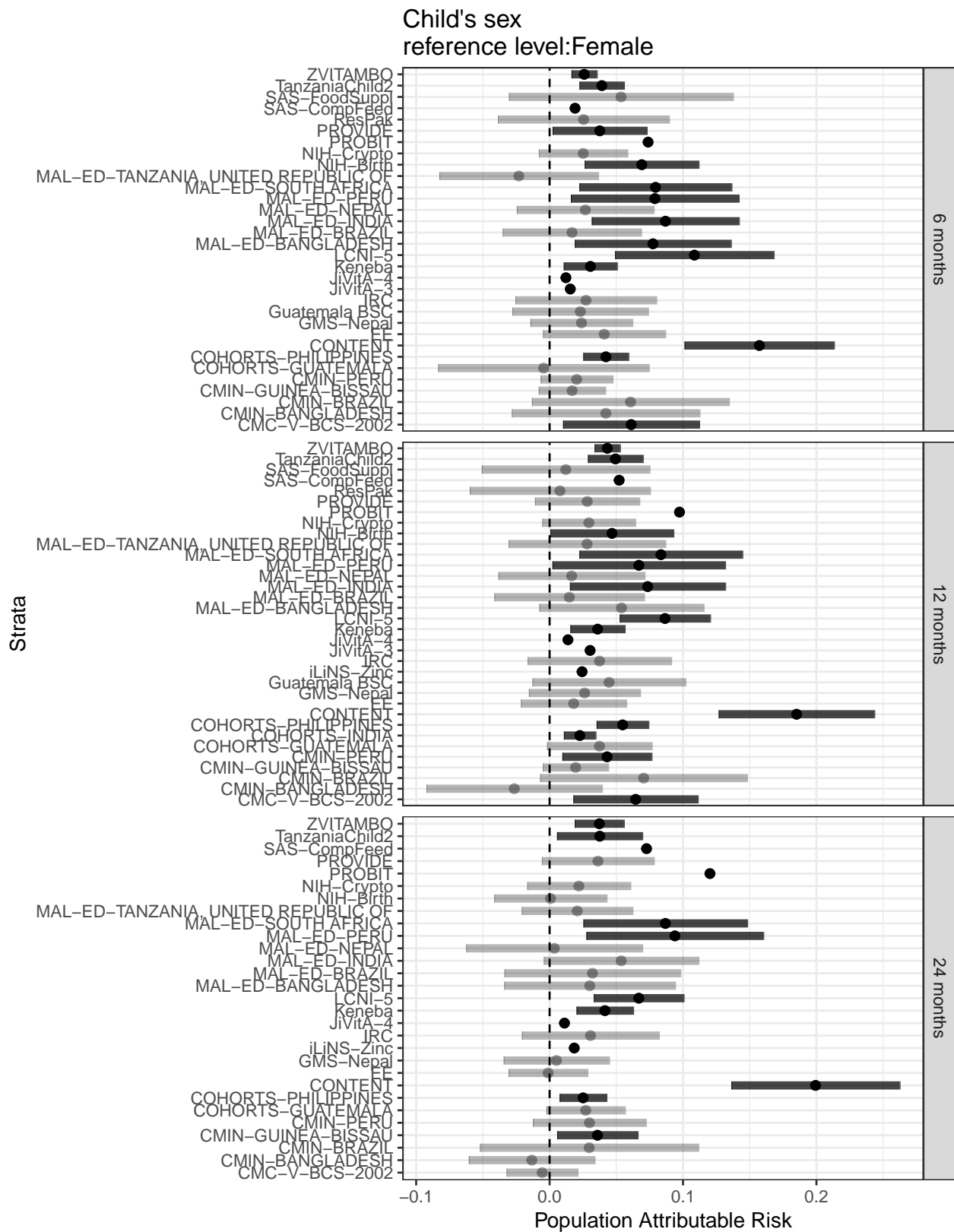




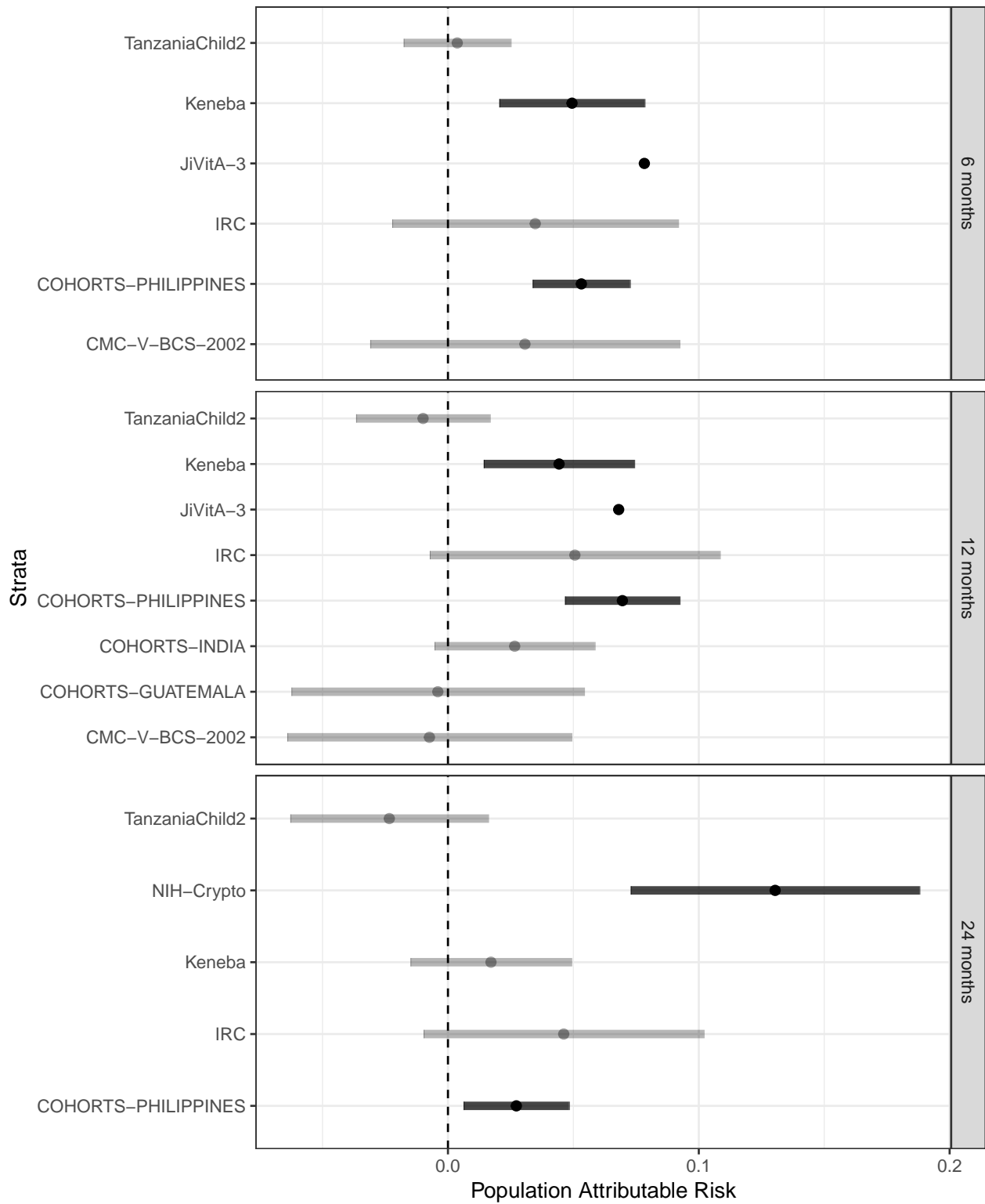


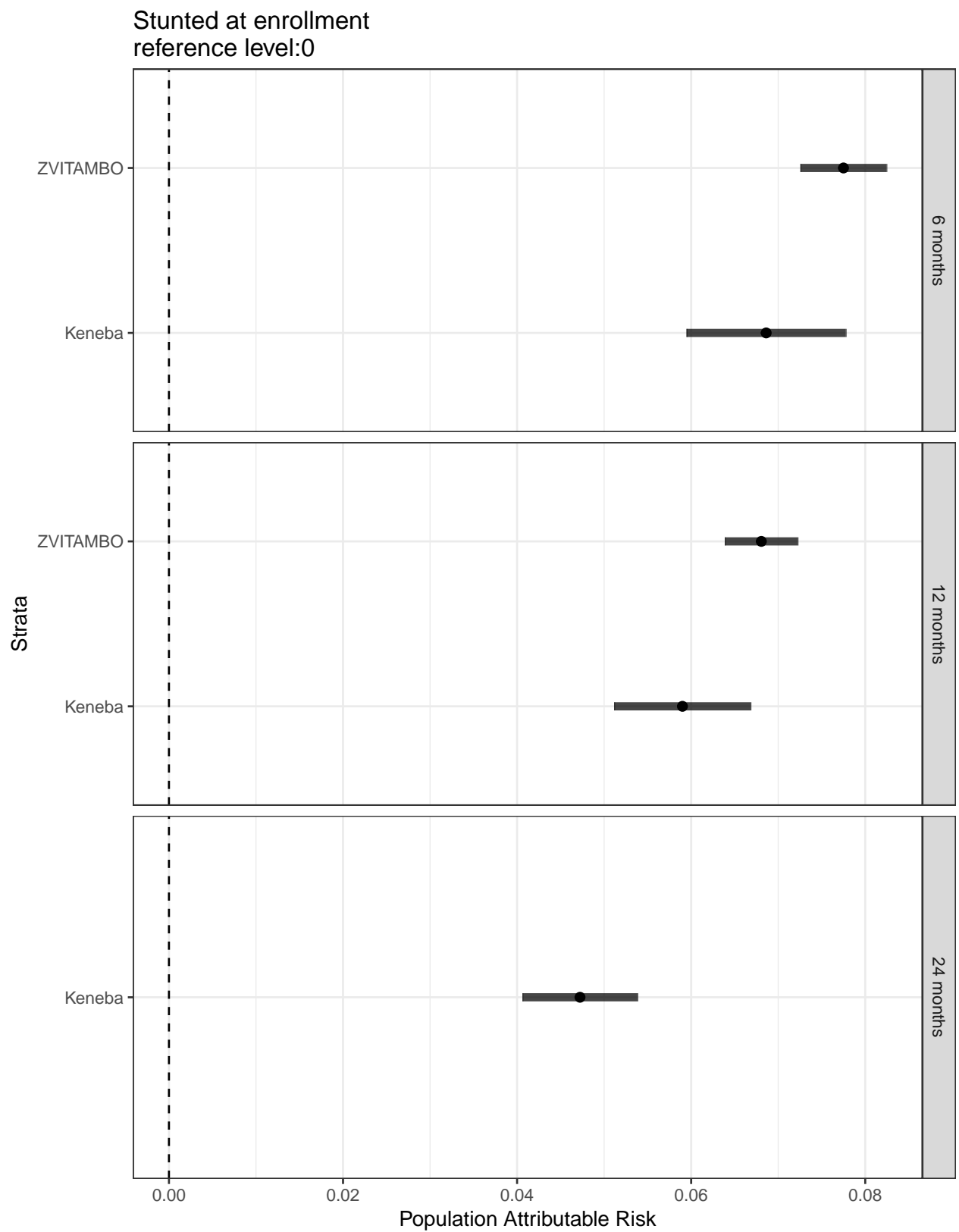
Child delivered at home
reference level:0

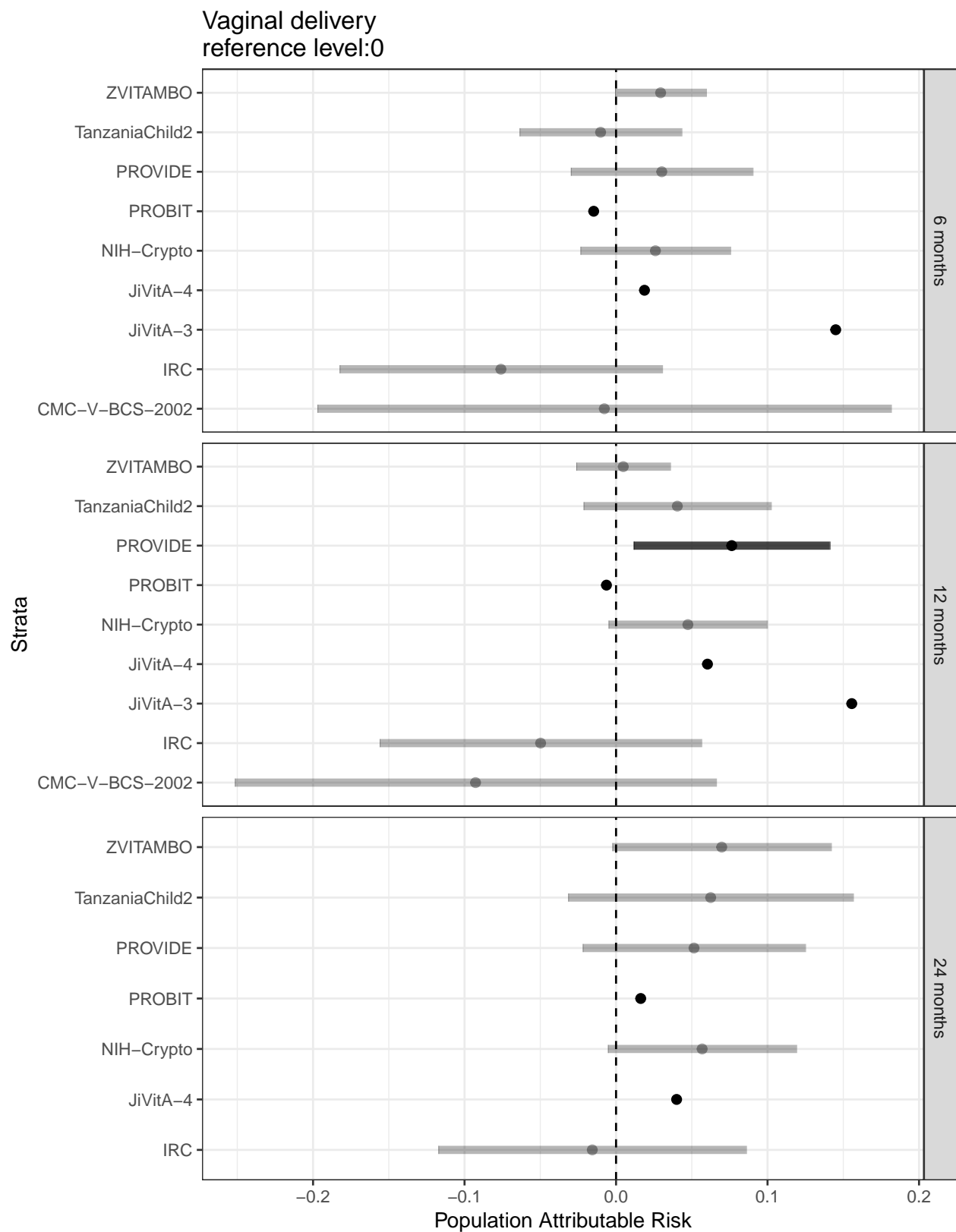




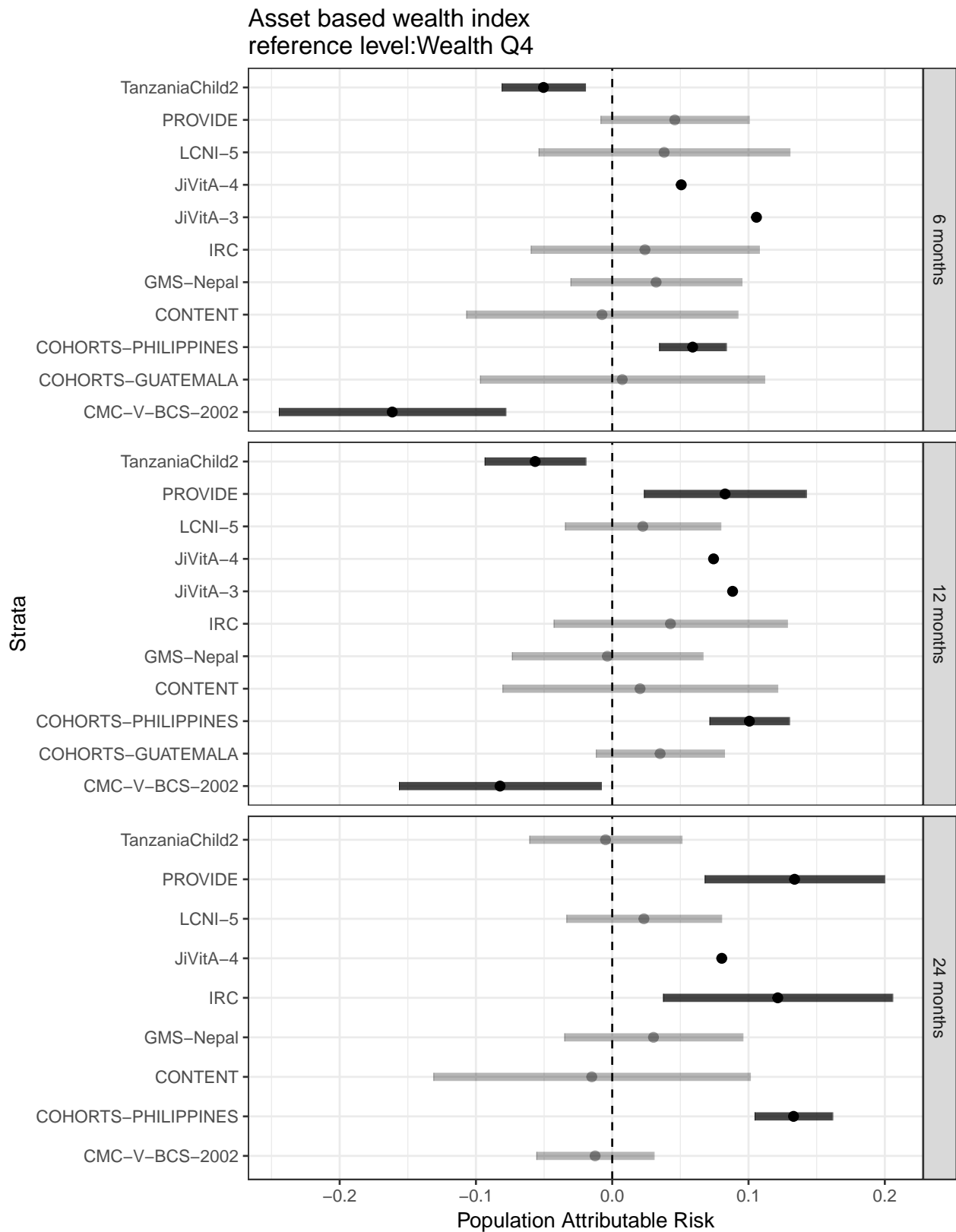
Gestational age at birth in days
reference level:[273–287)



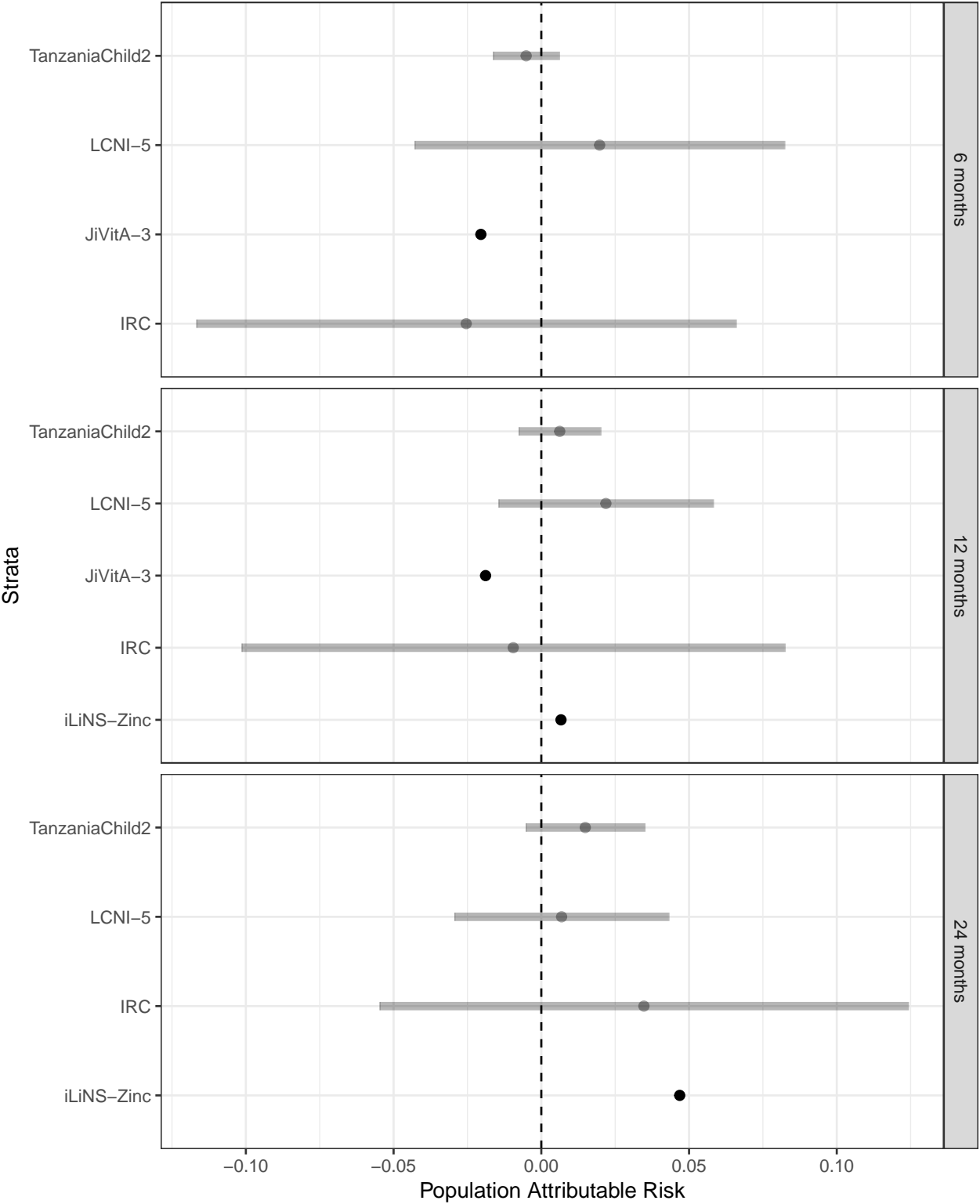




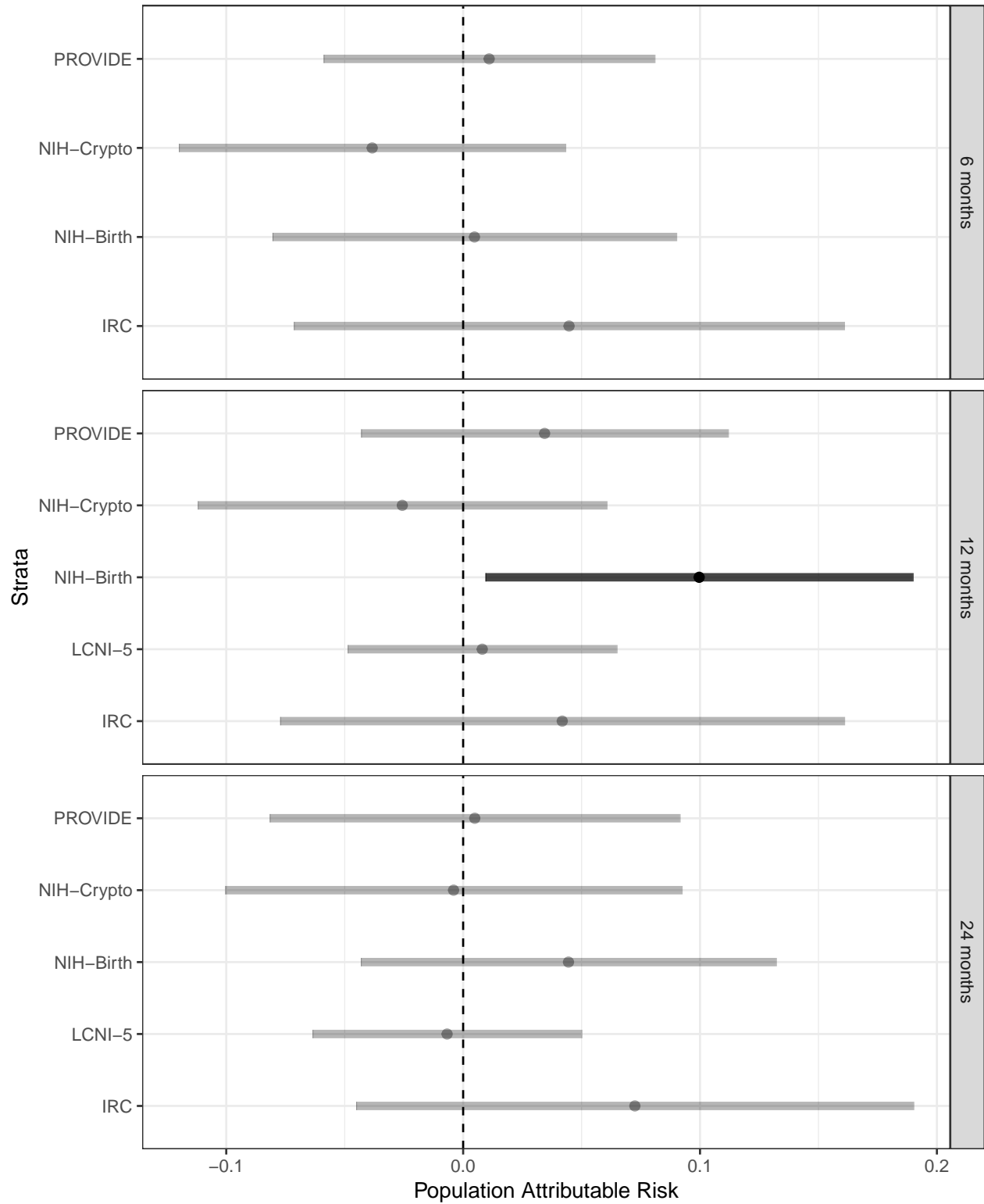
Household characteristics

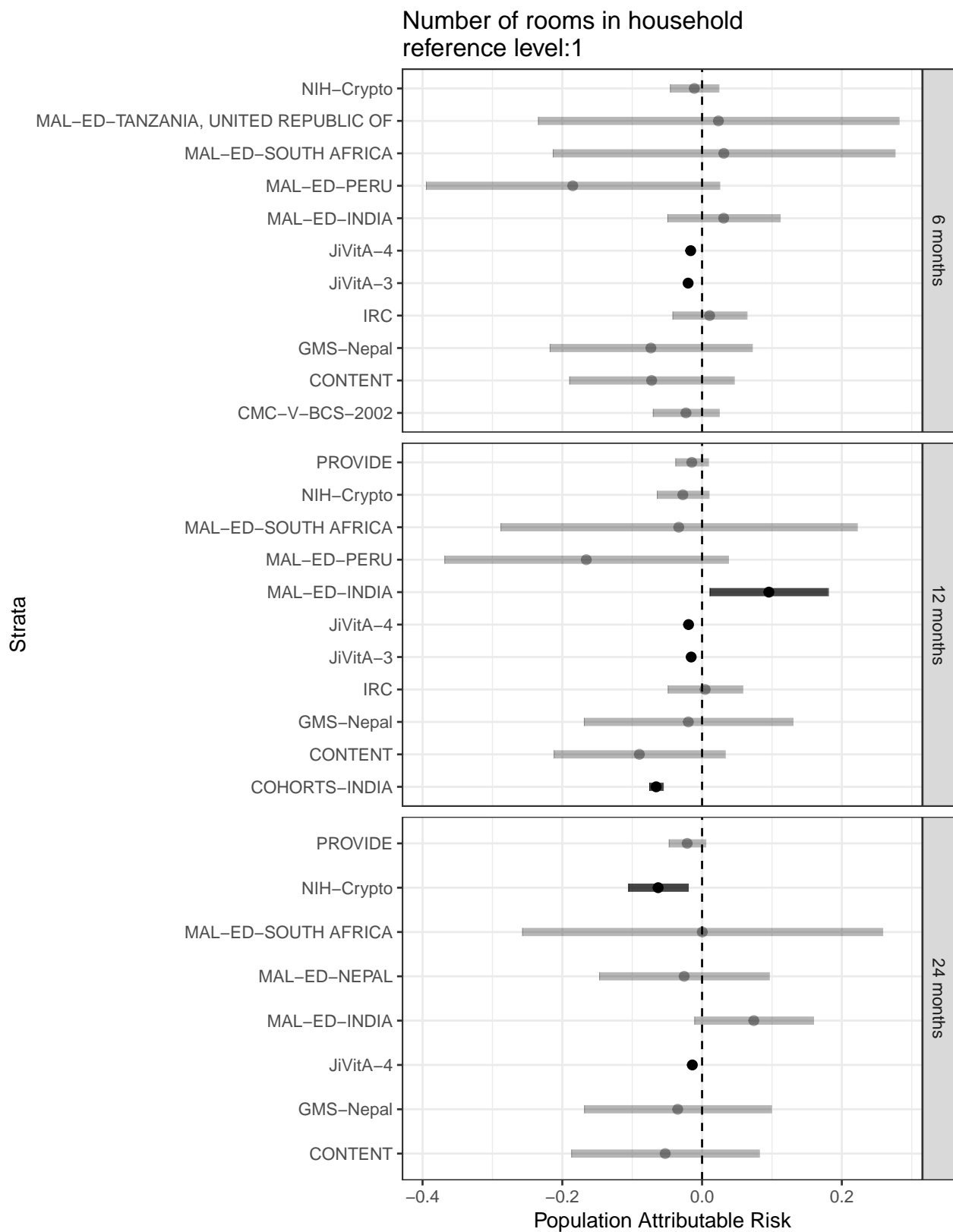


Number of children in the household under 5 years
reference level:1

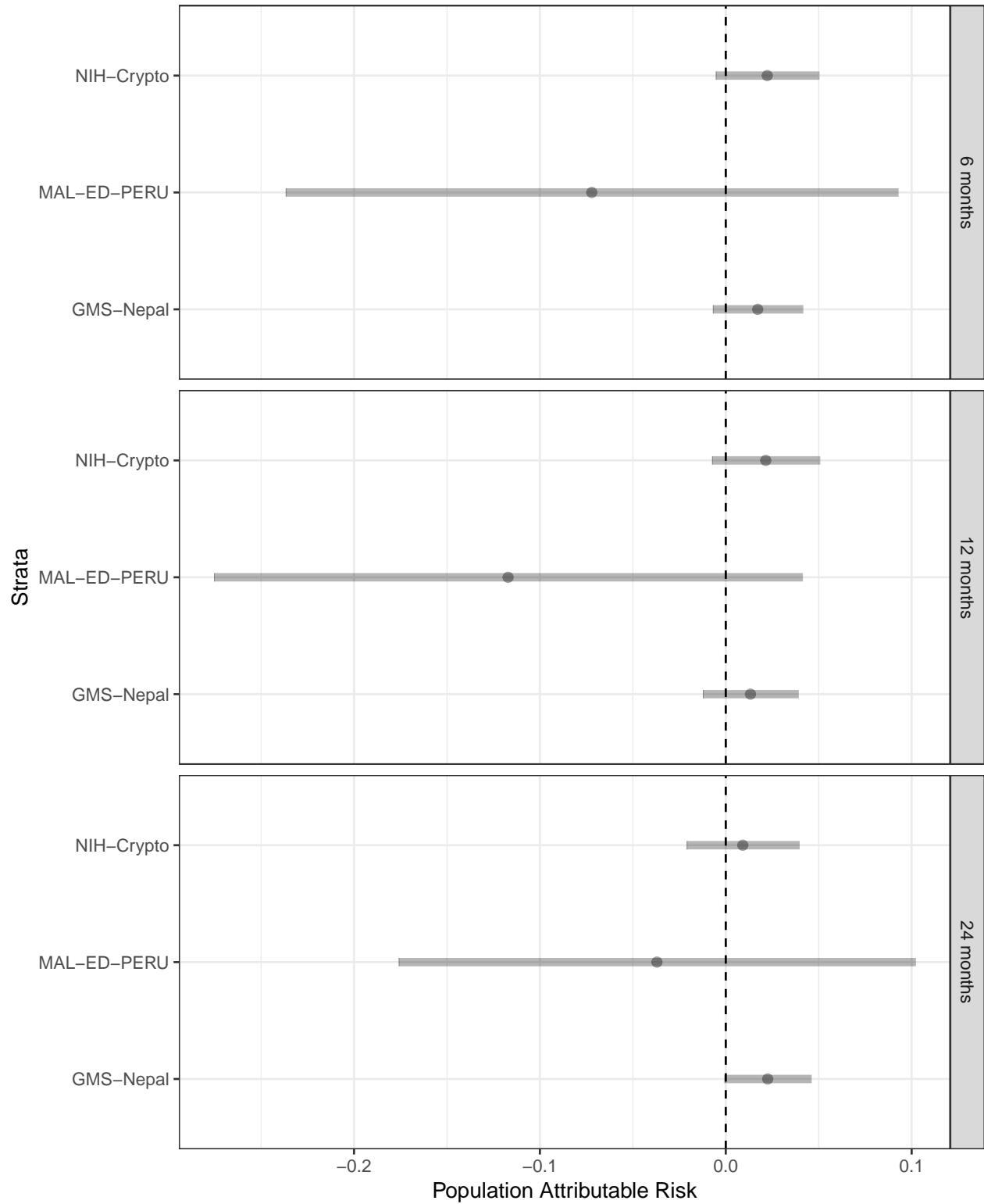


Number of people in the household
reference level:3 or less

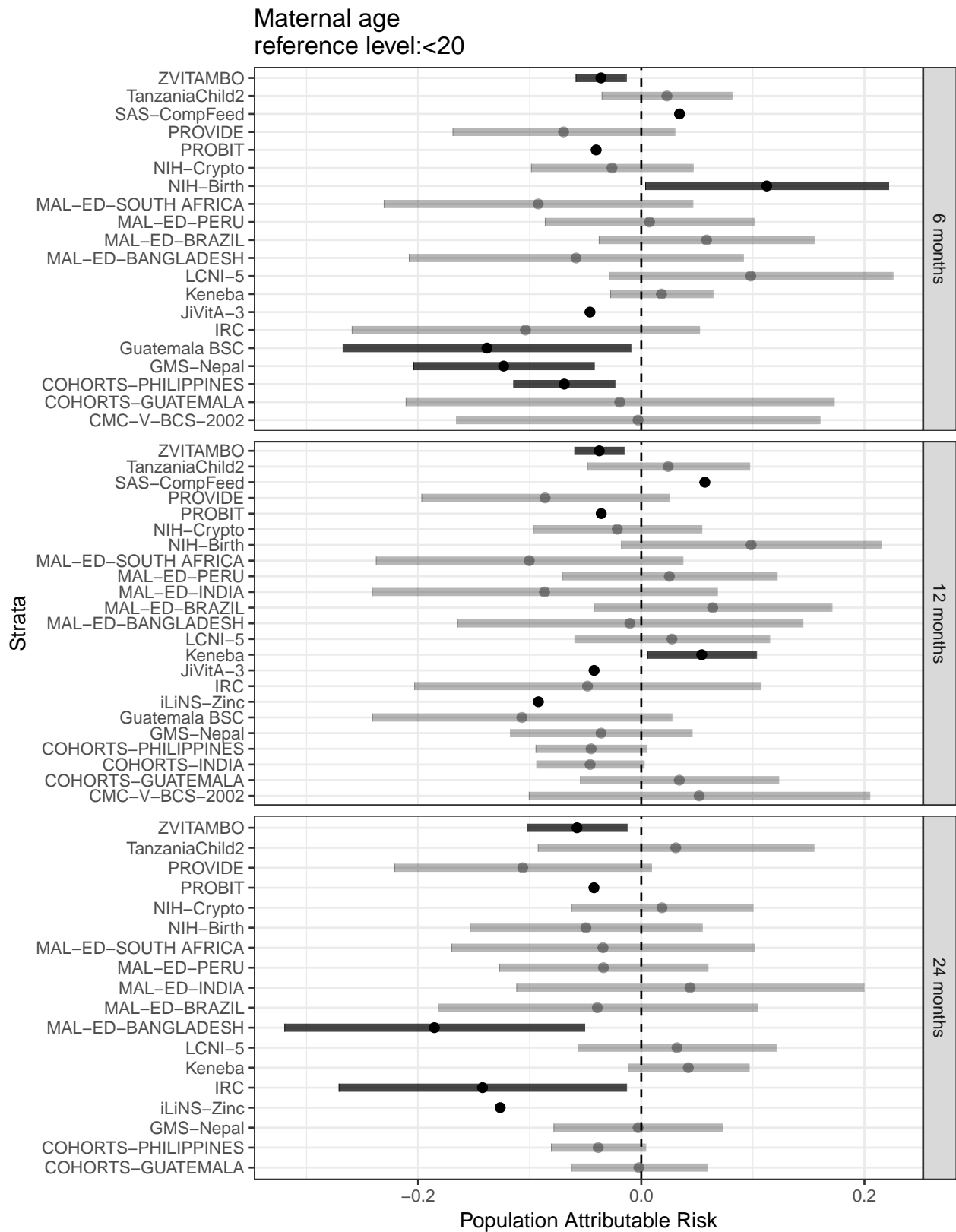




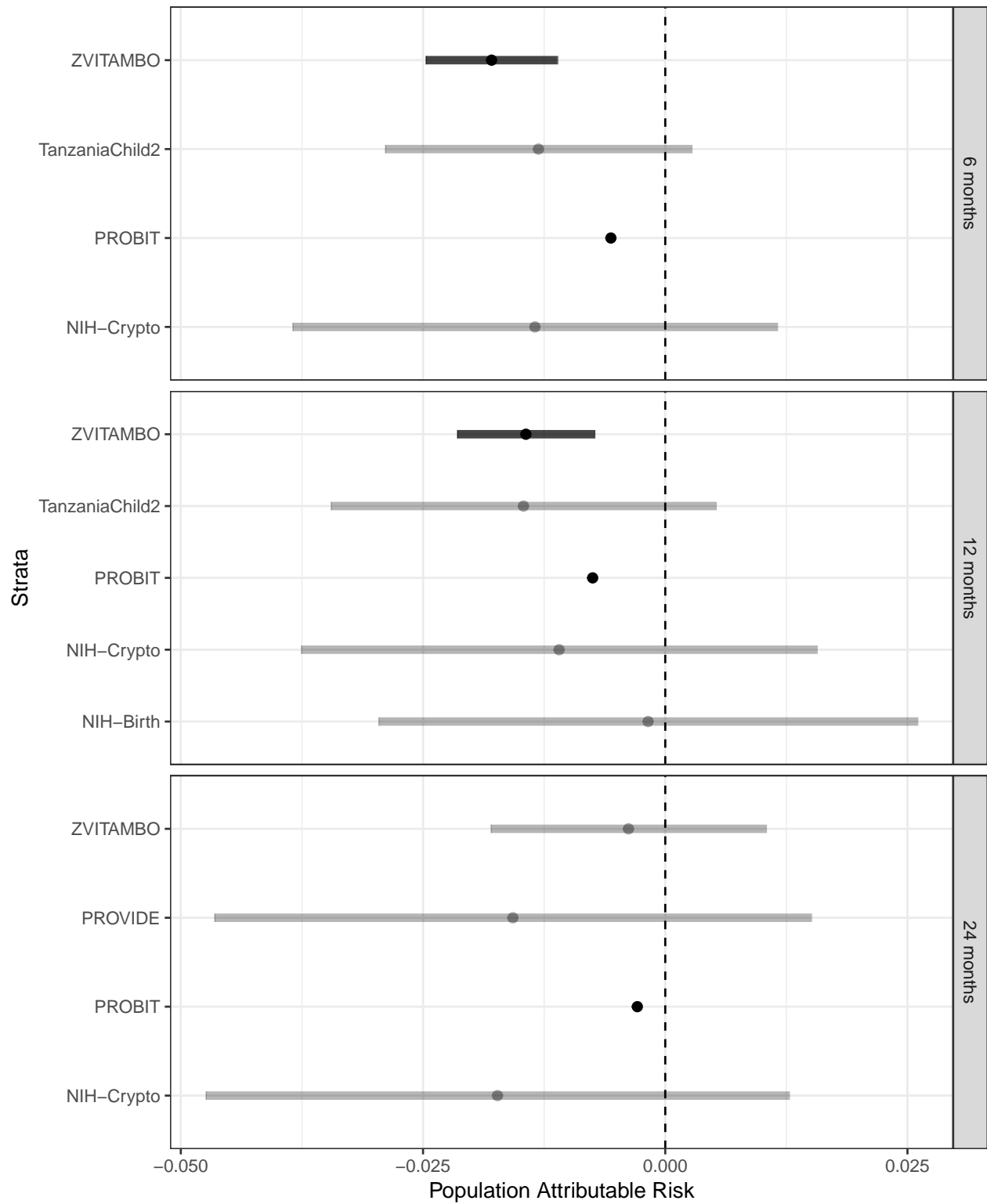
USAID Household Food Insecurity Access Scale (HFIAS) category
reference level: Food Secure

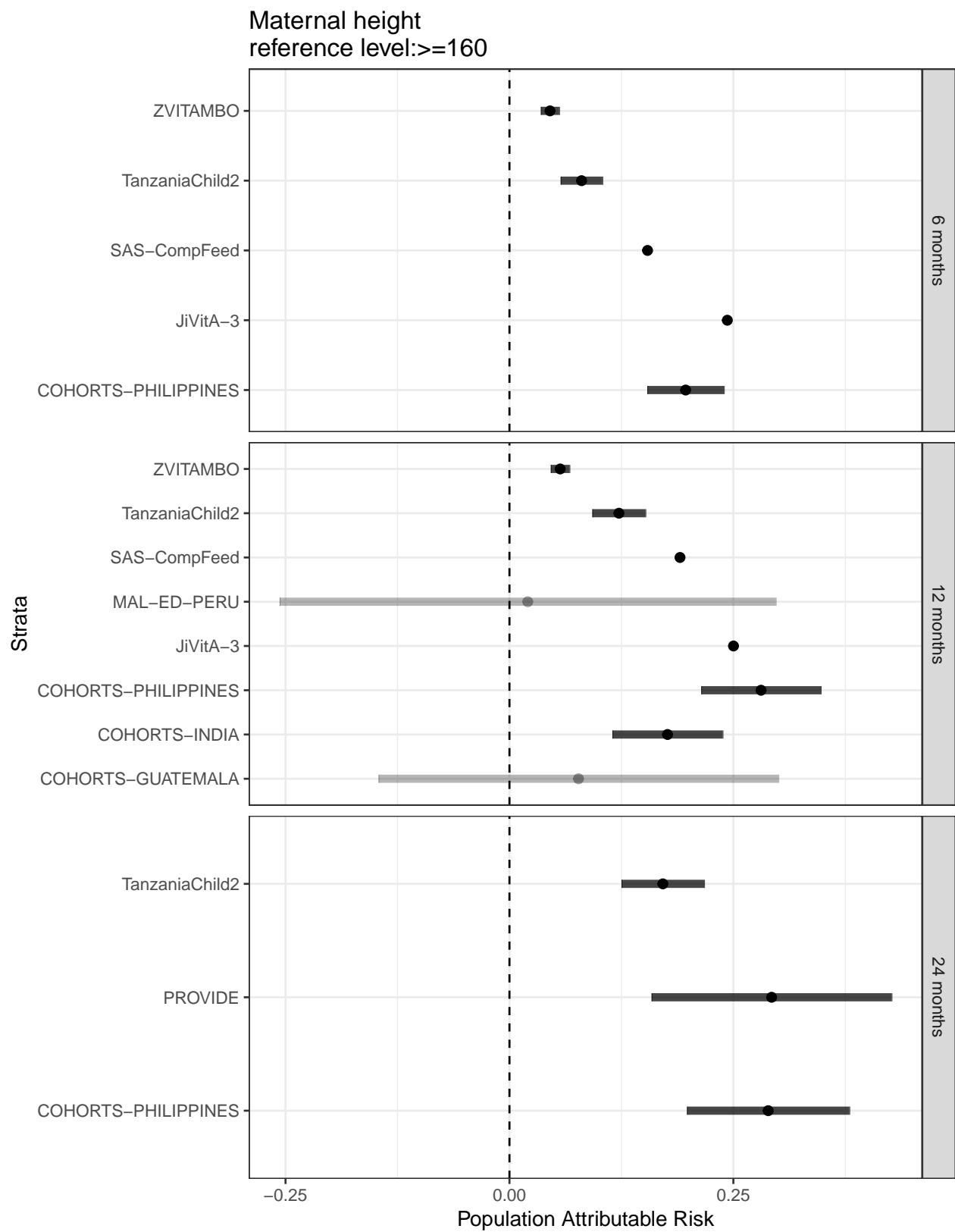


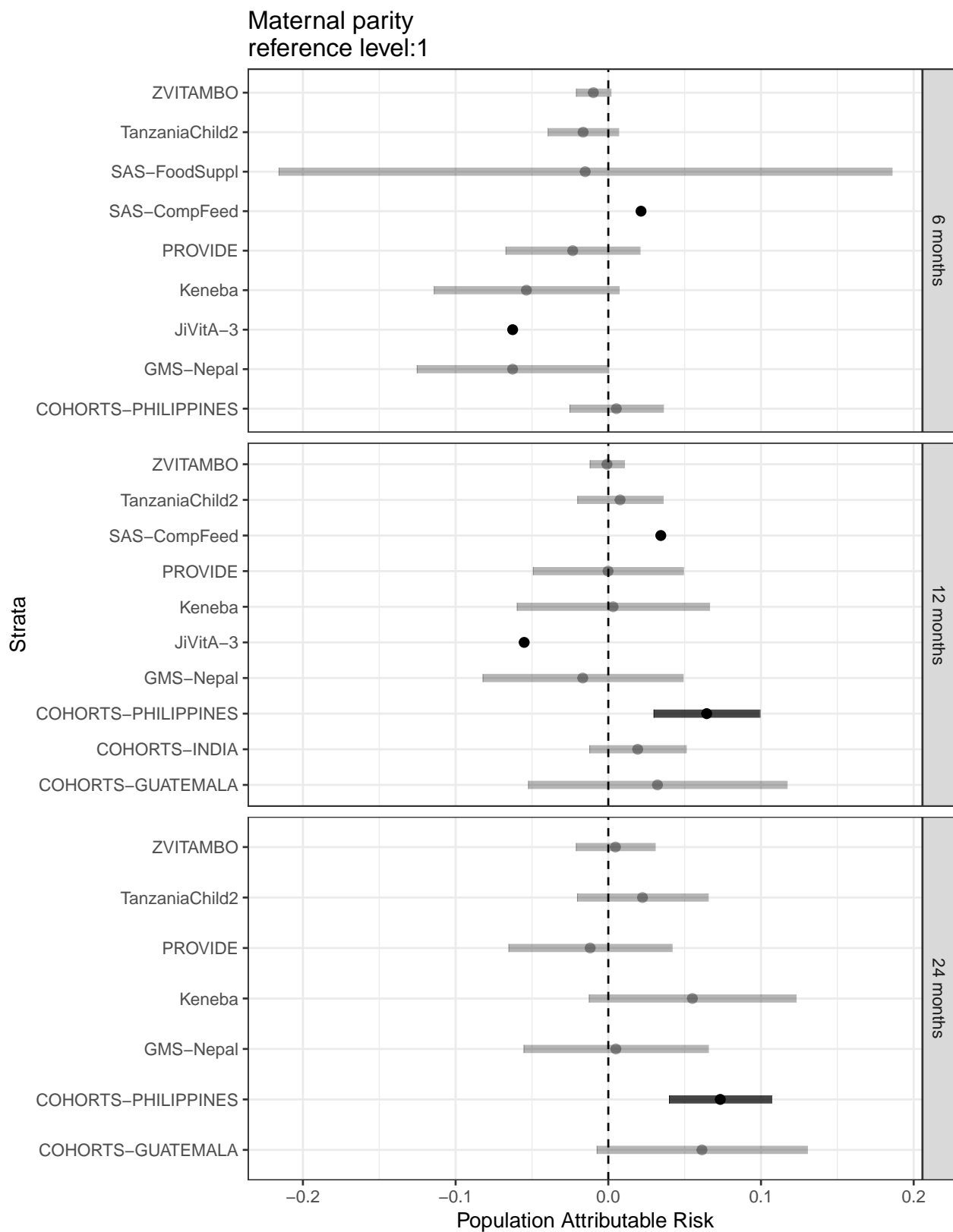
Maternal characteristics



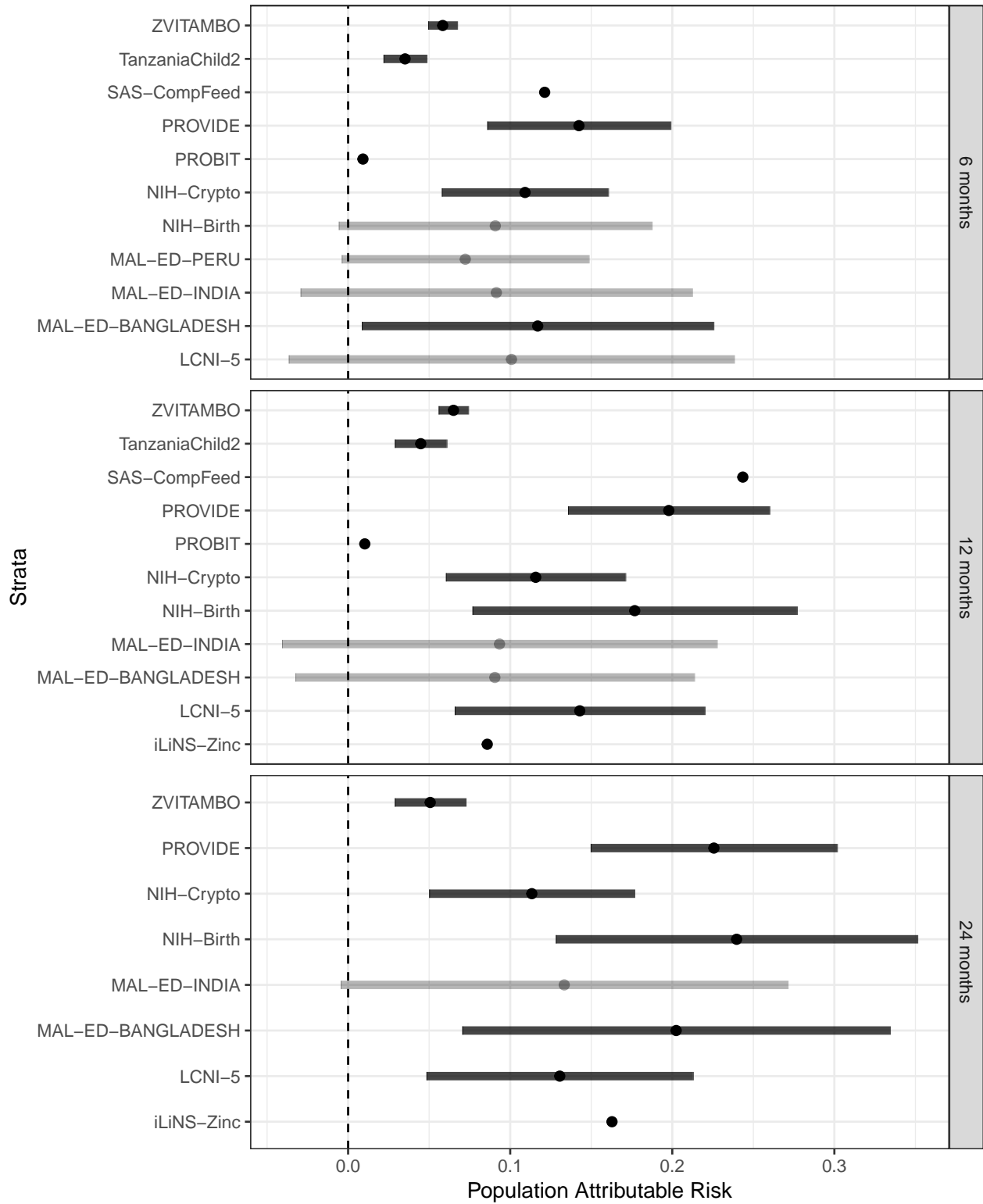
Maternal BMI
reference level:[18.5–25)

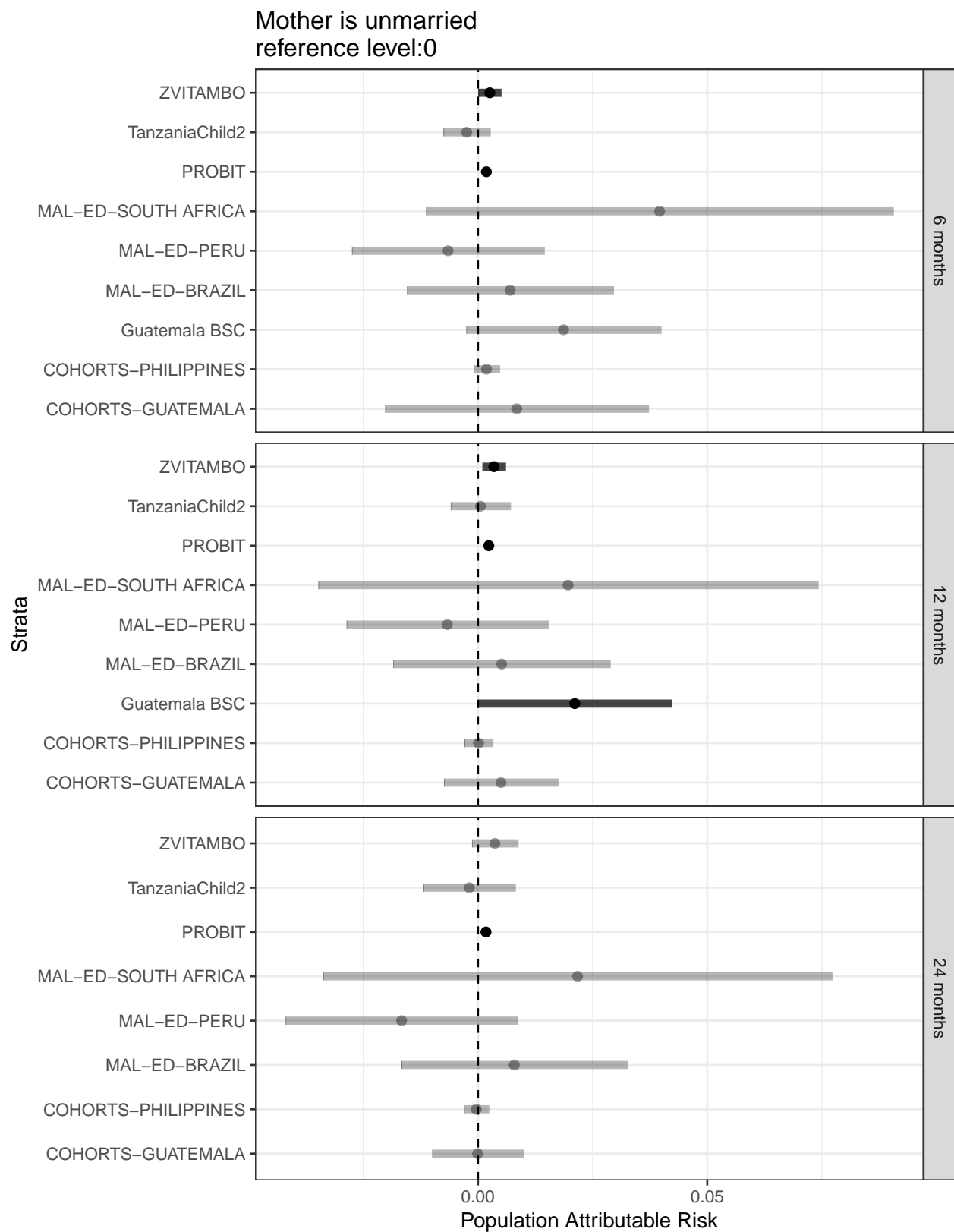




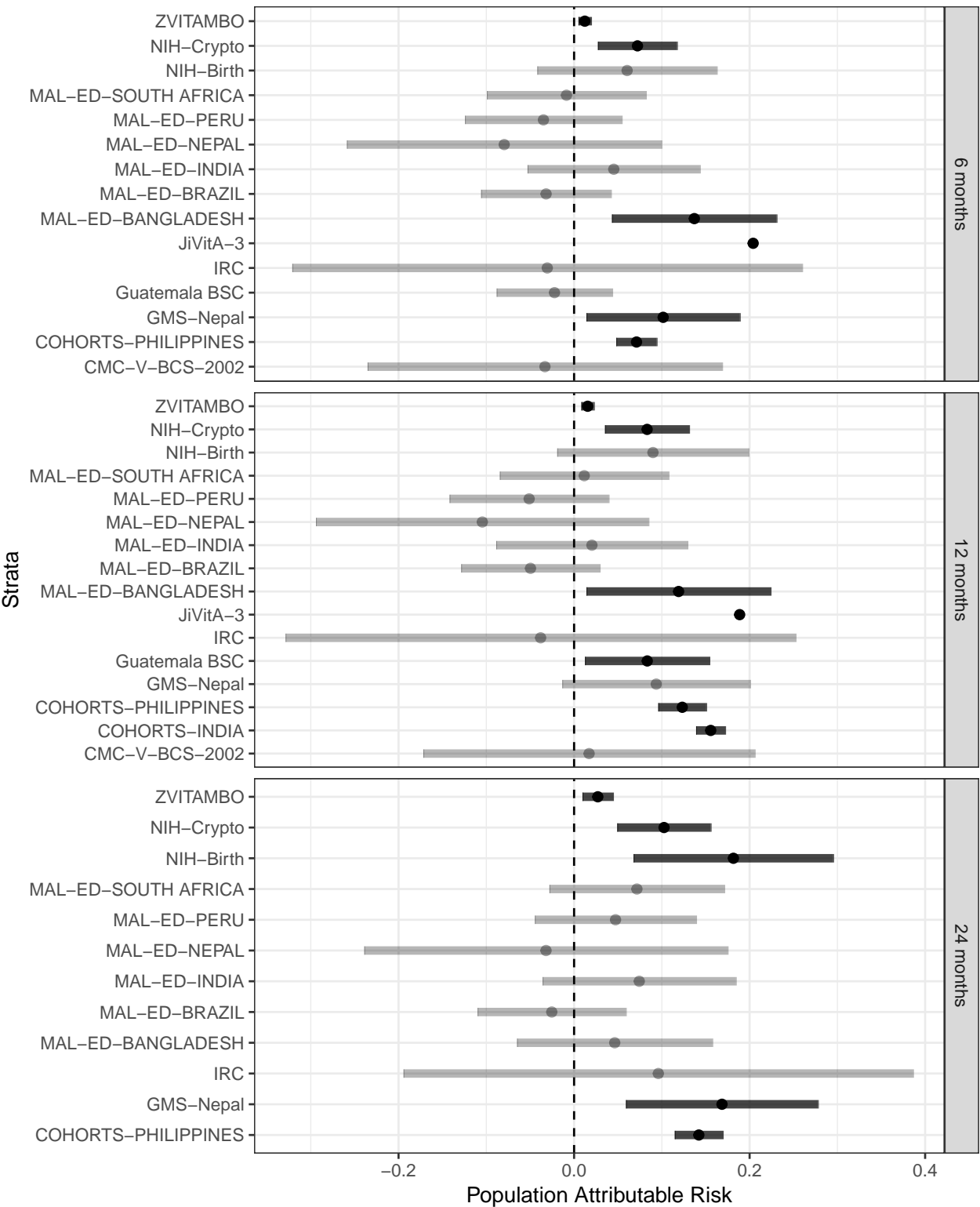


Maternal weight
reference level: ≥ 57.5

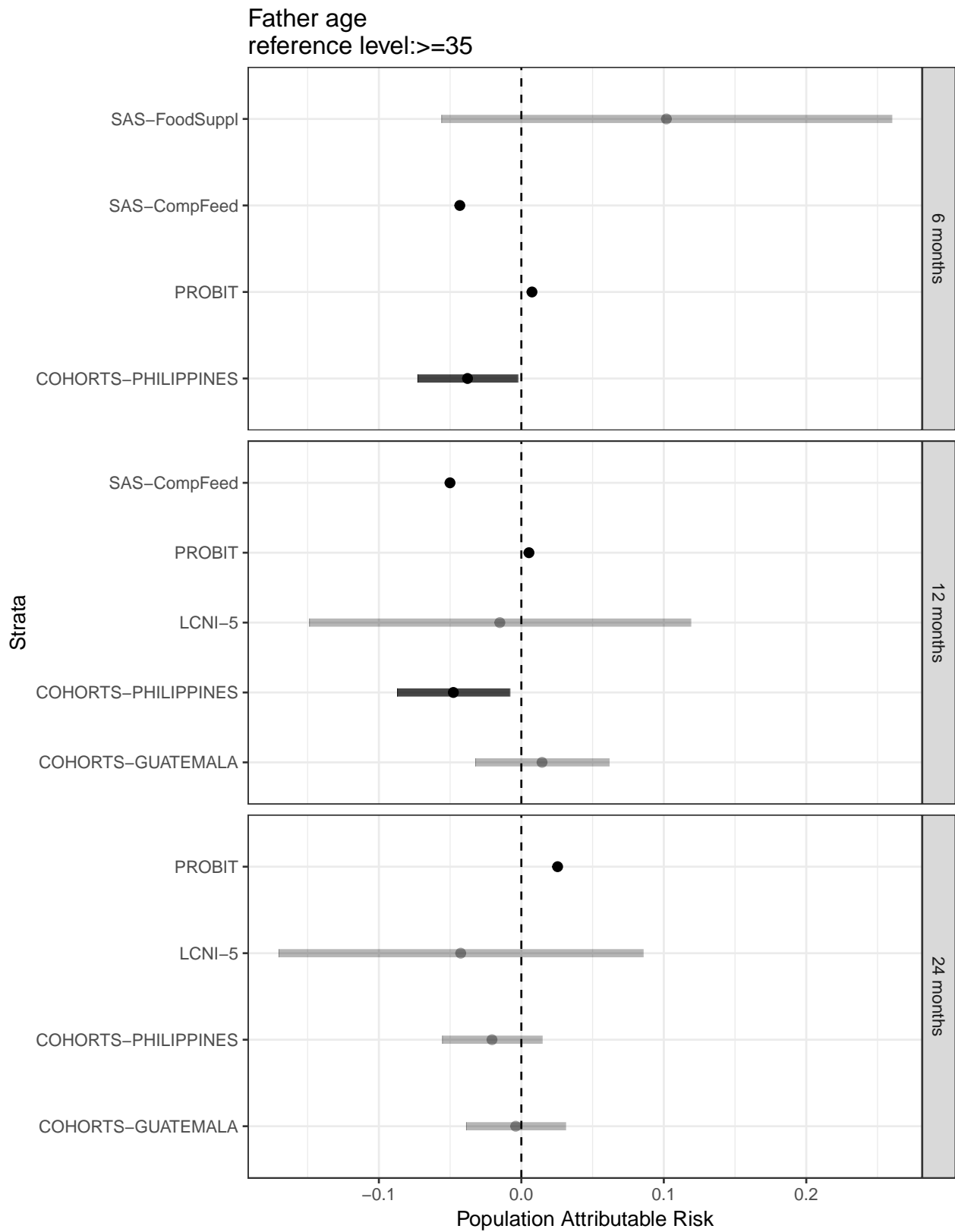




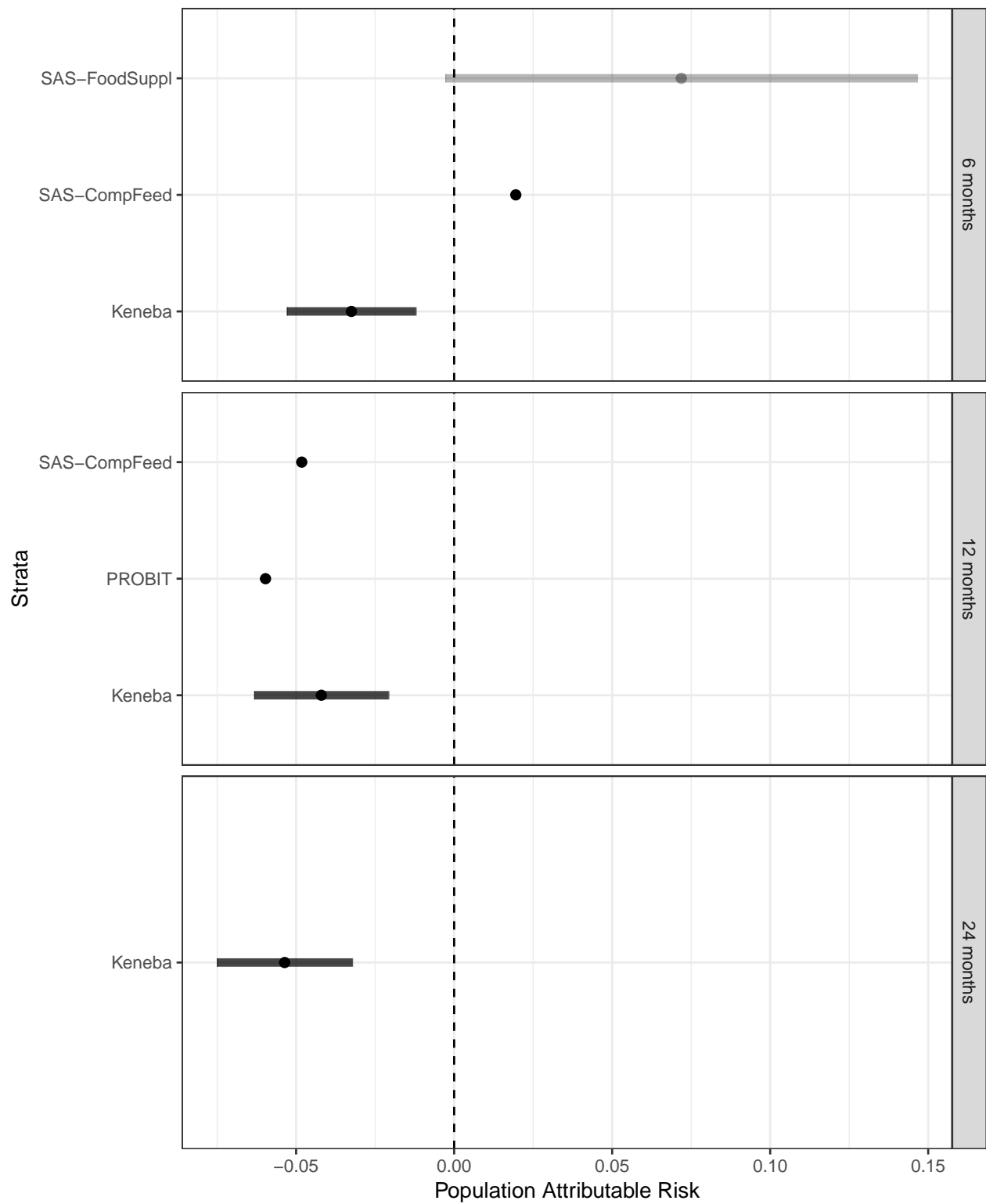
Mother's education
reference level:Q4

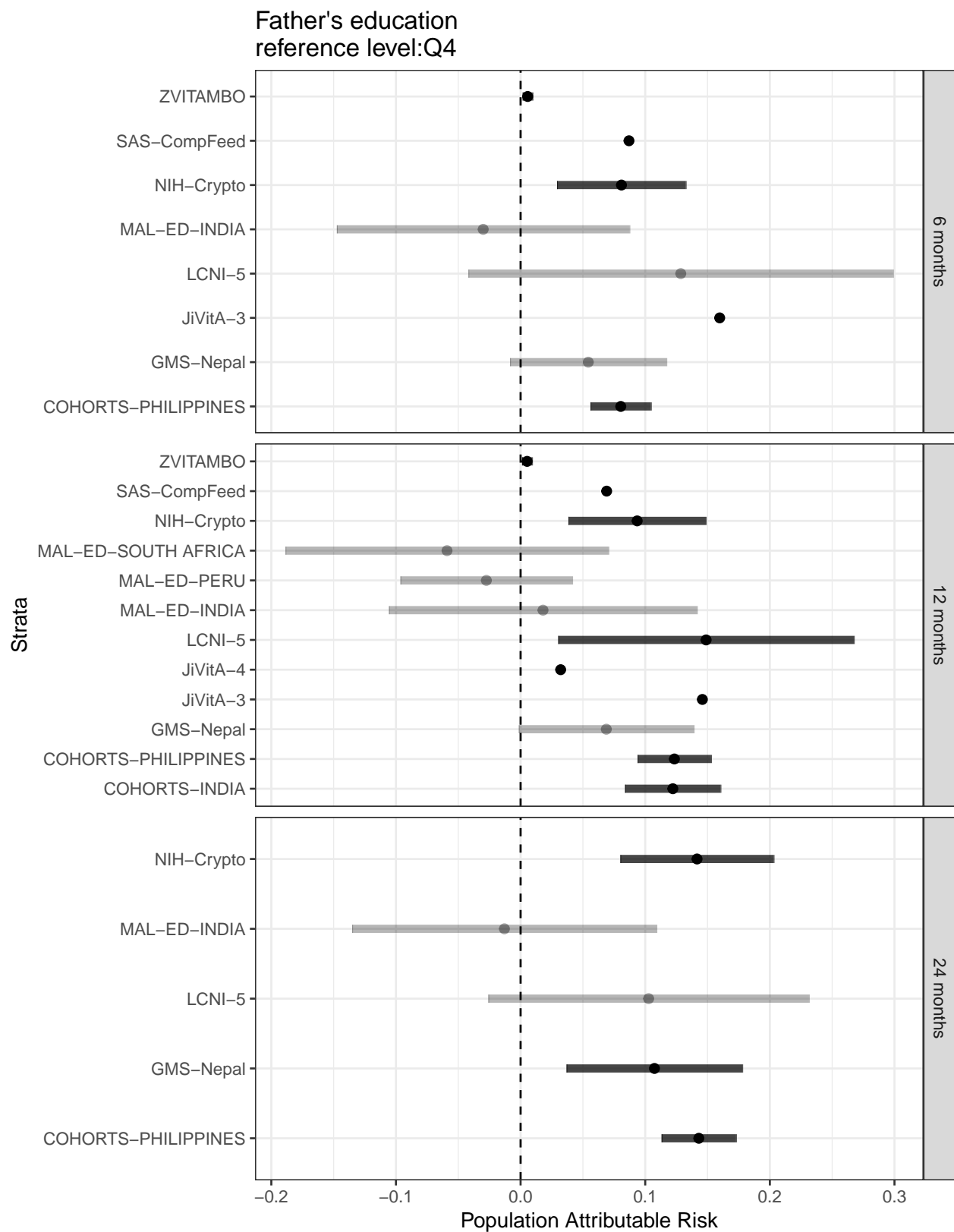


Paternal characteristics



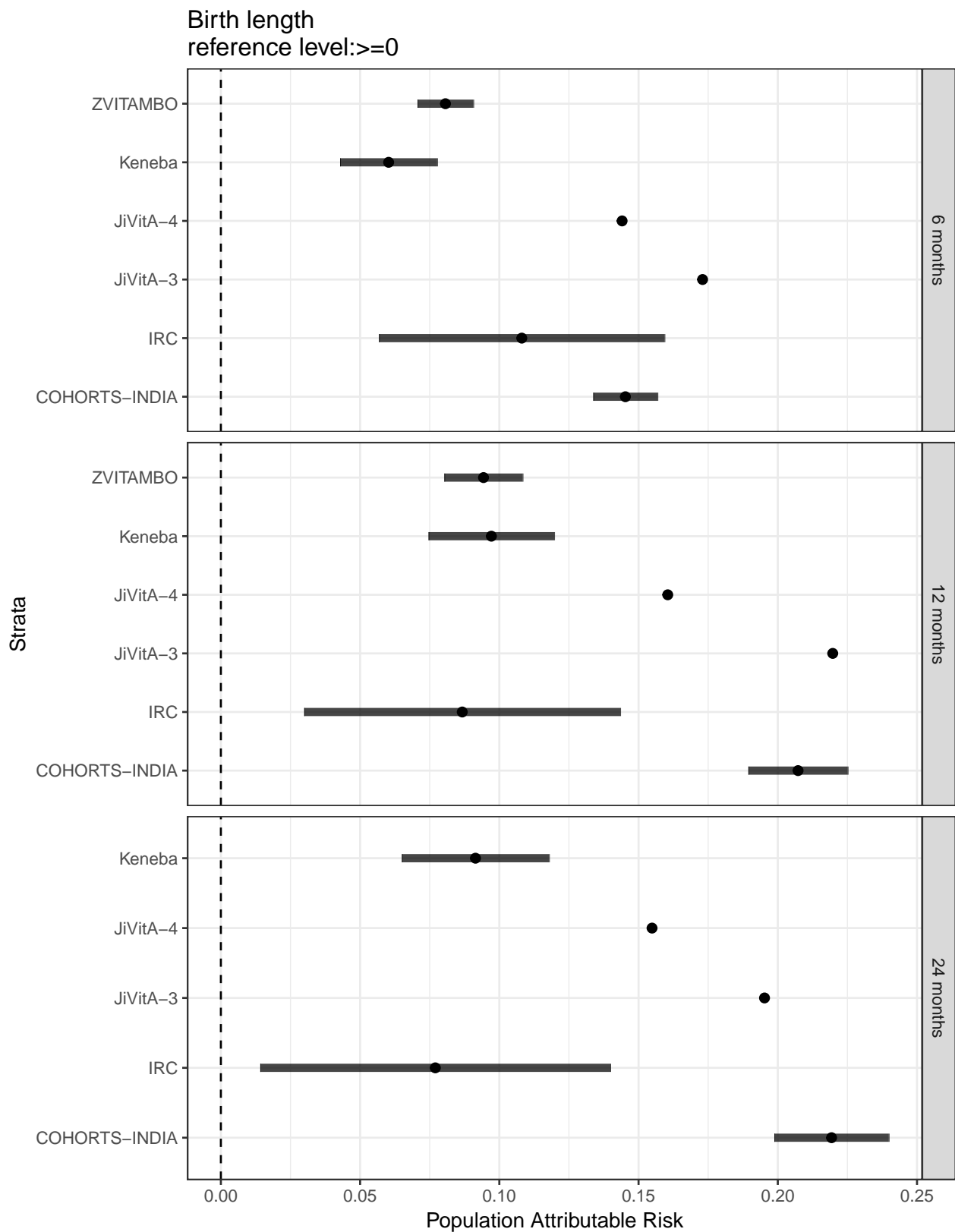
Father height
reference level:[160–170)

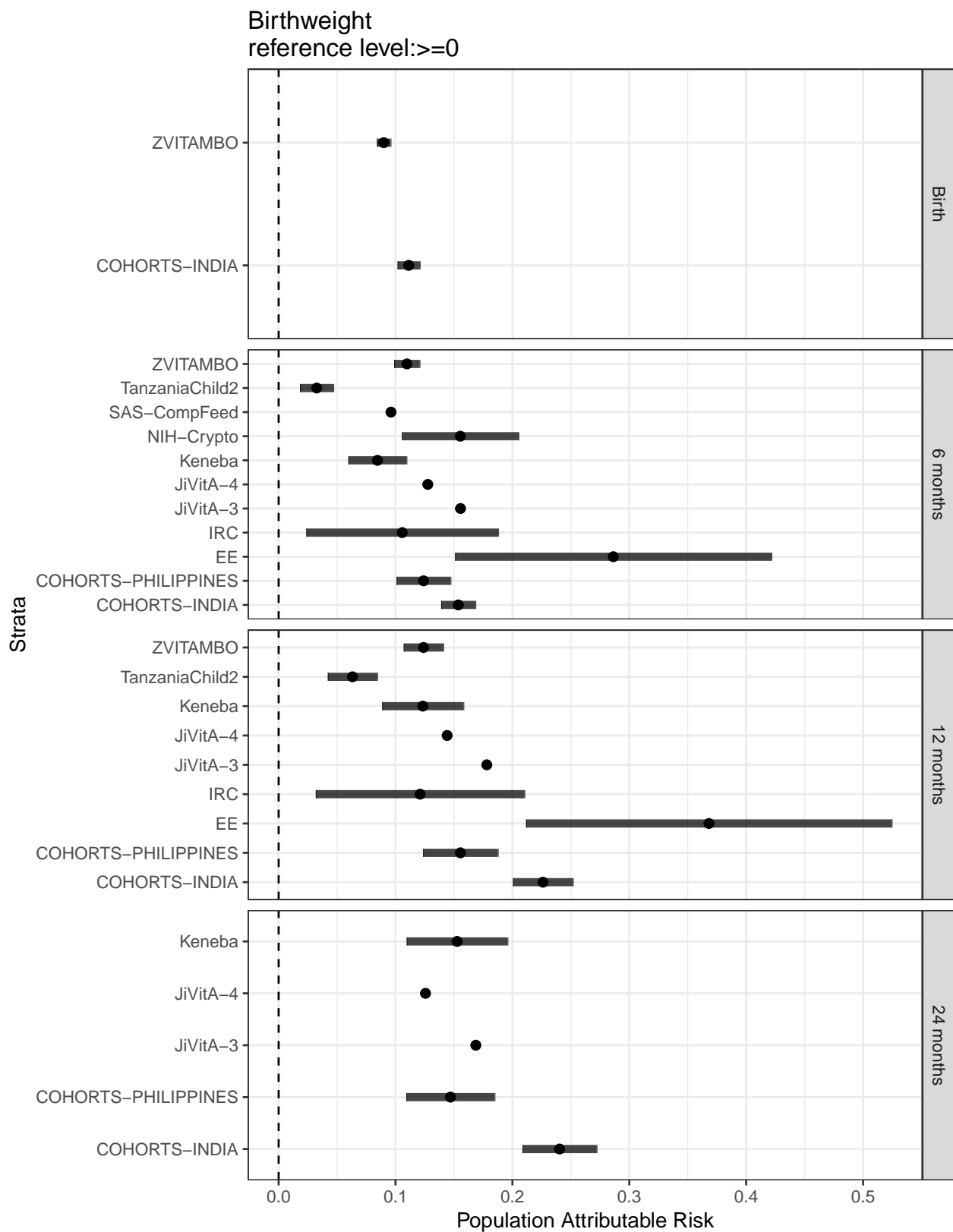




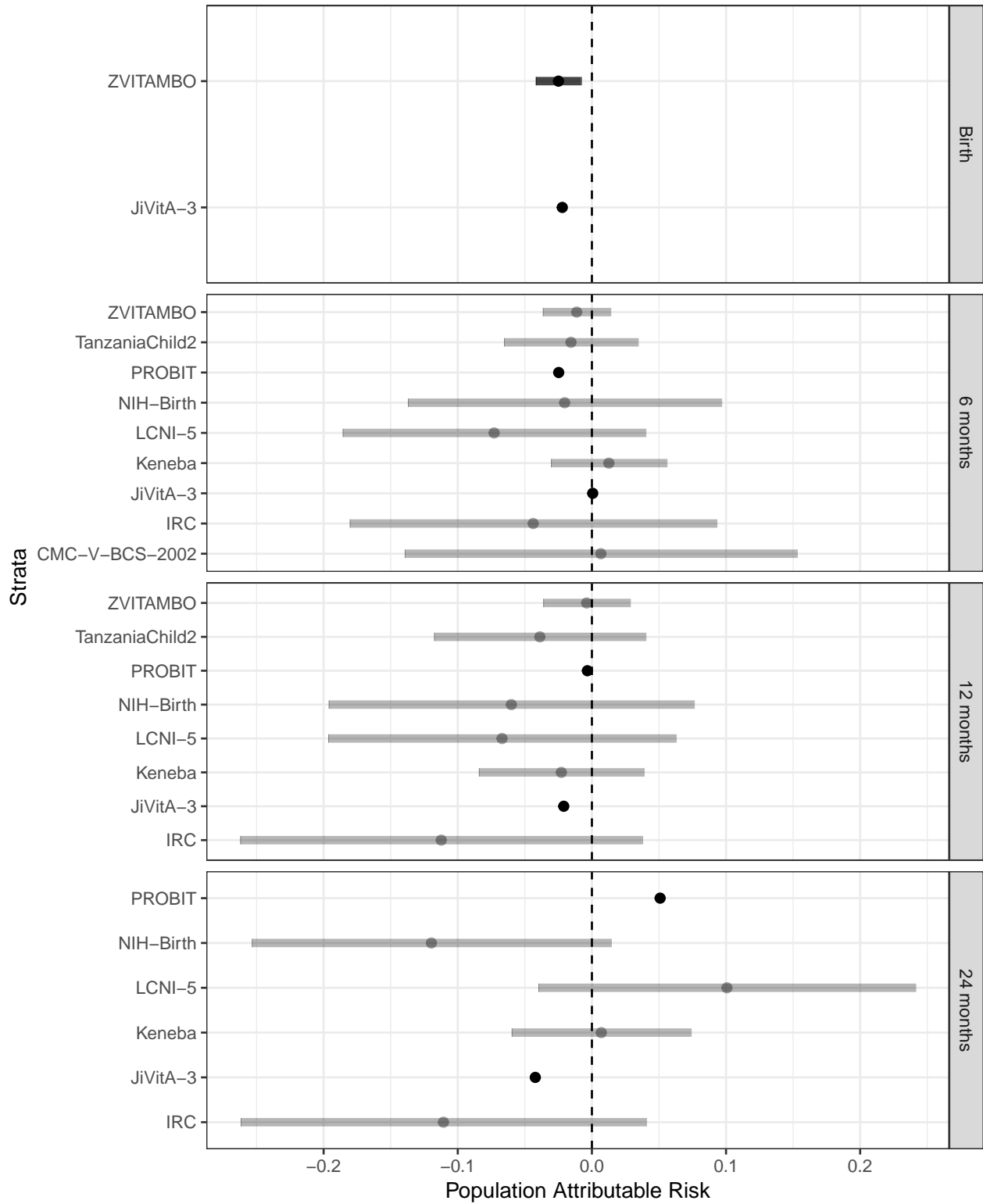
Point prevalence of stunting

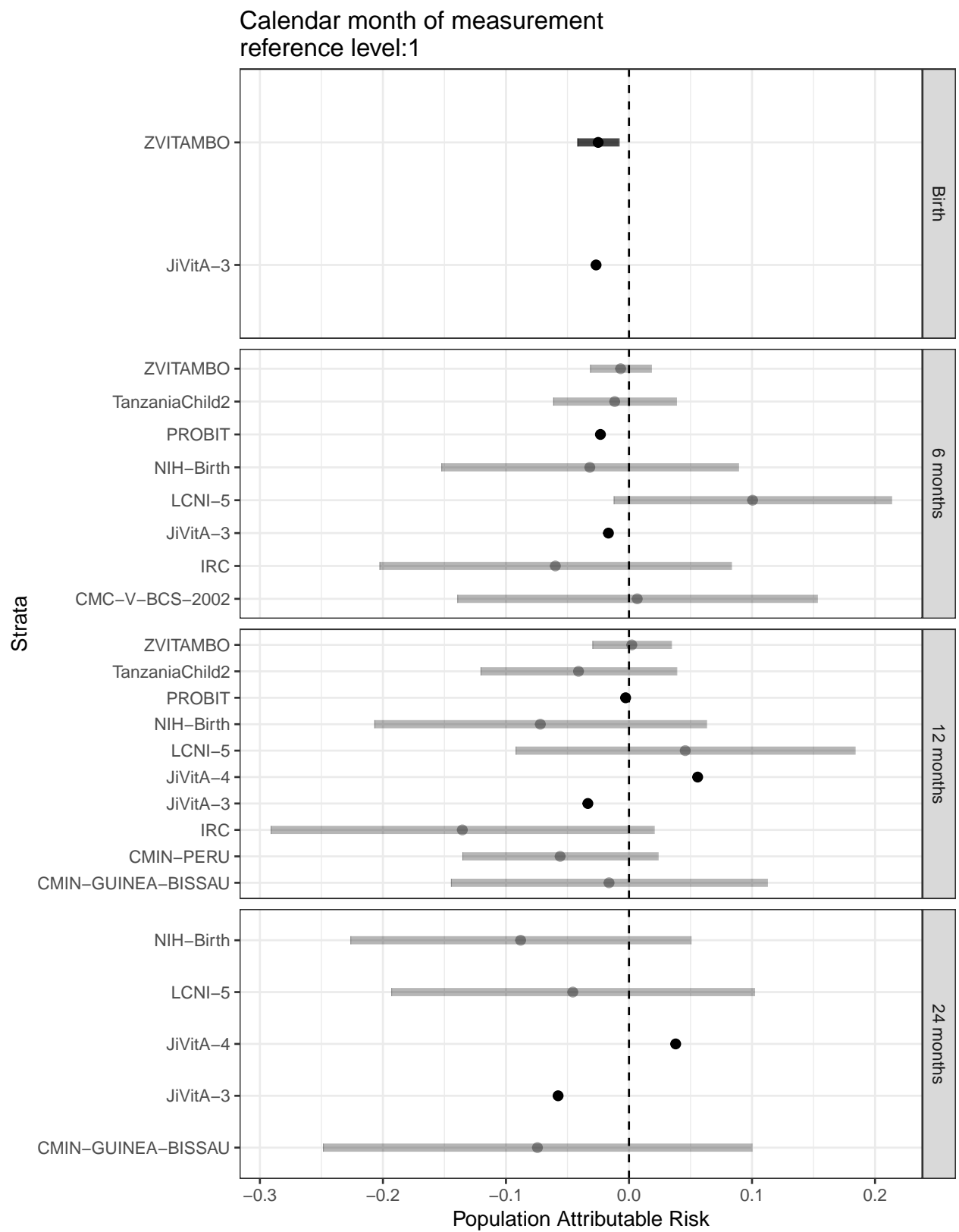
Child characteristics



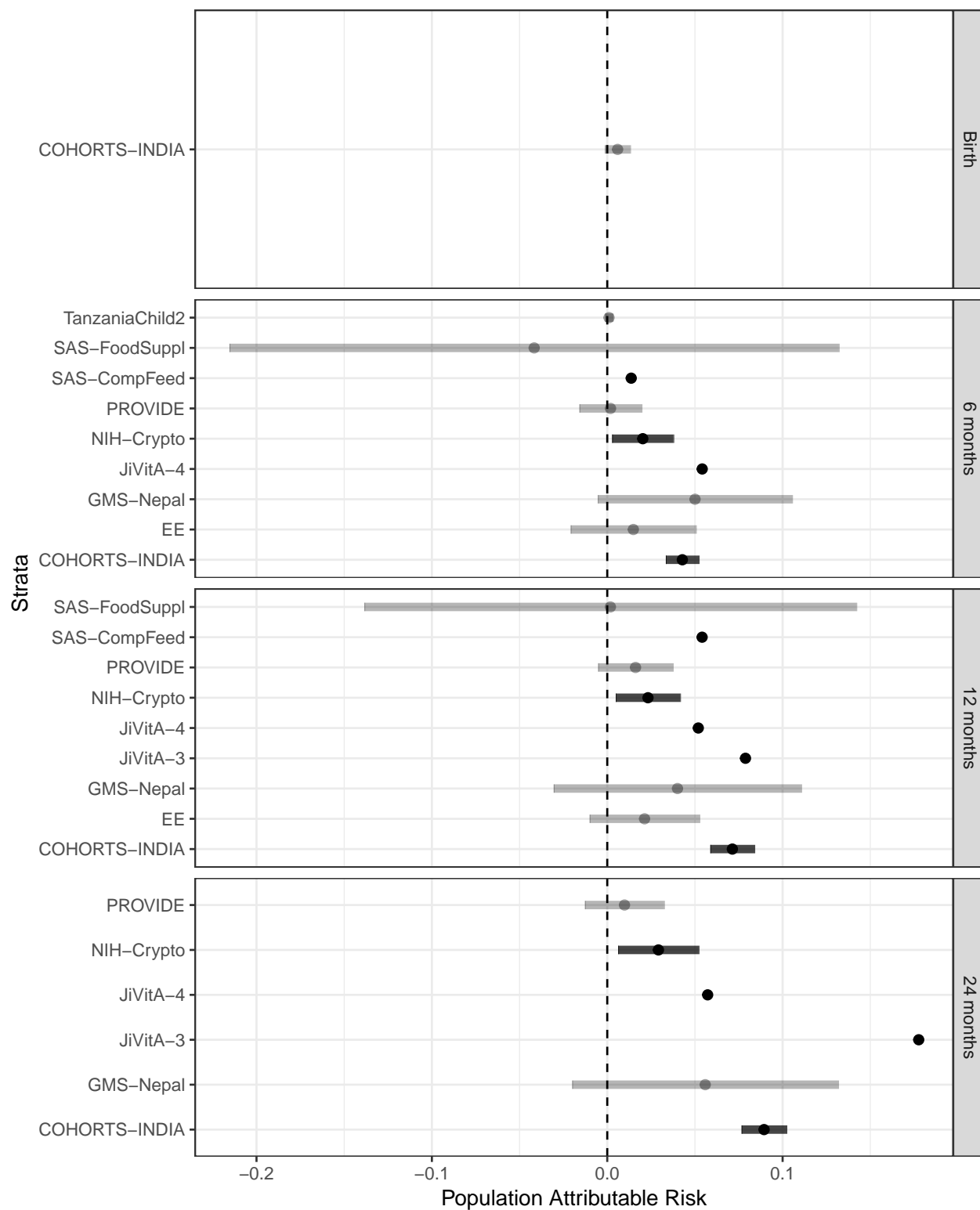


Calendar month of birth
reference level:1

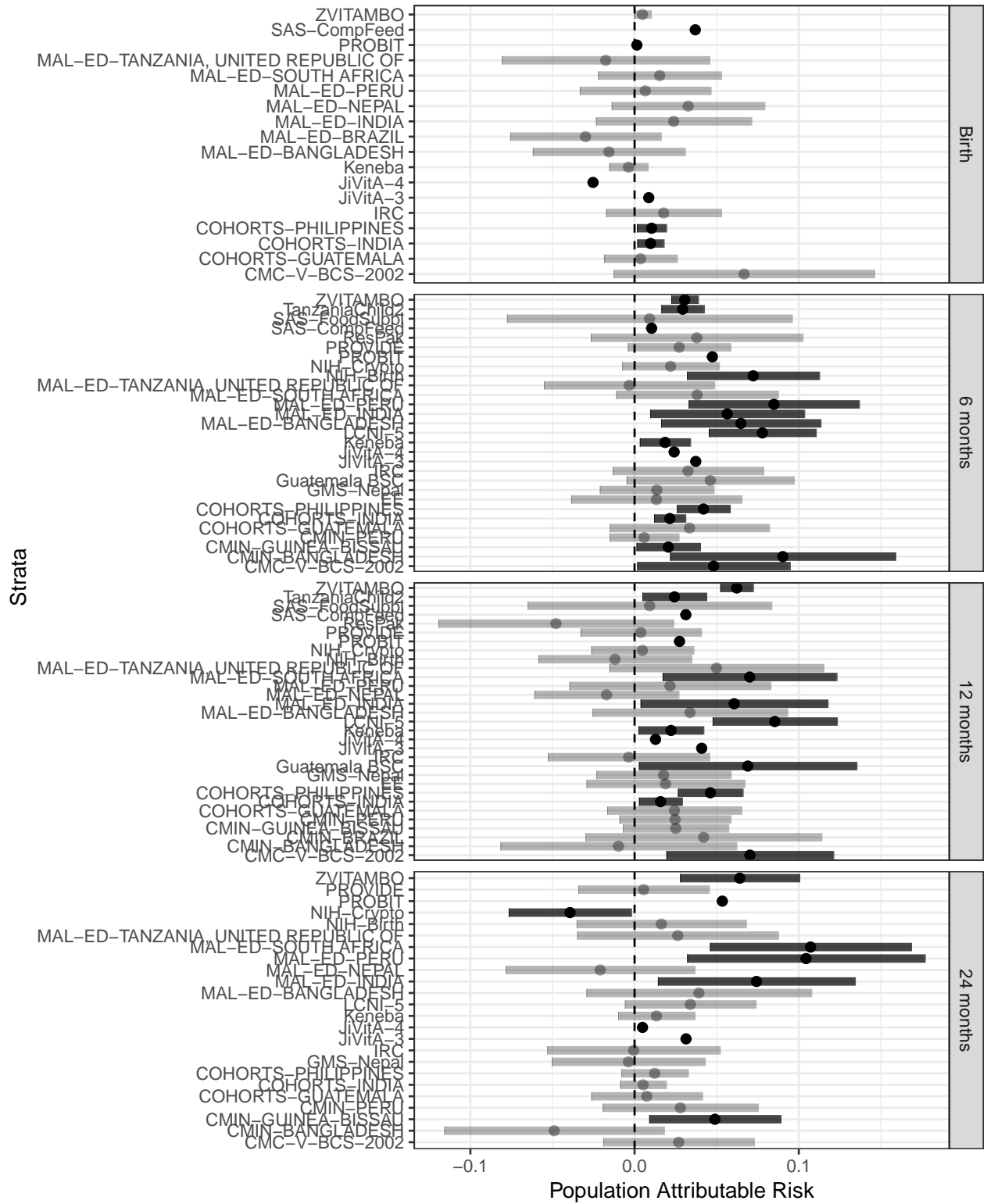




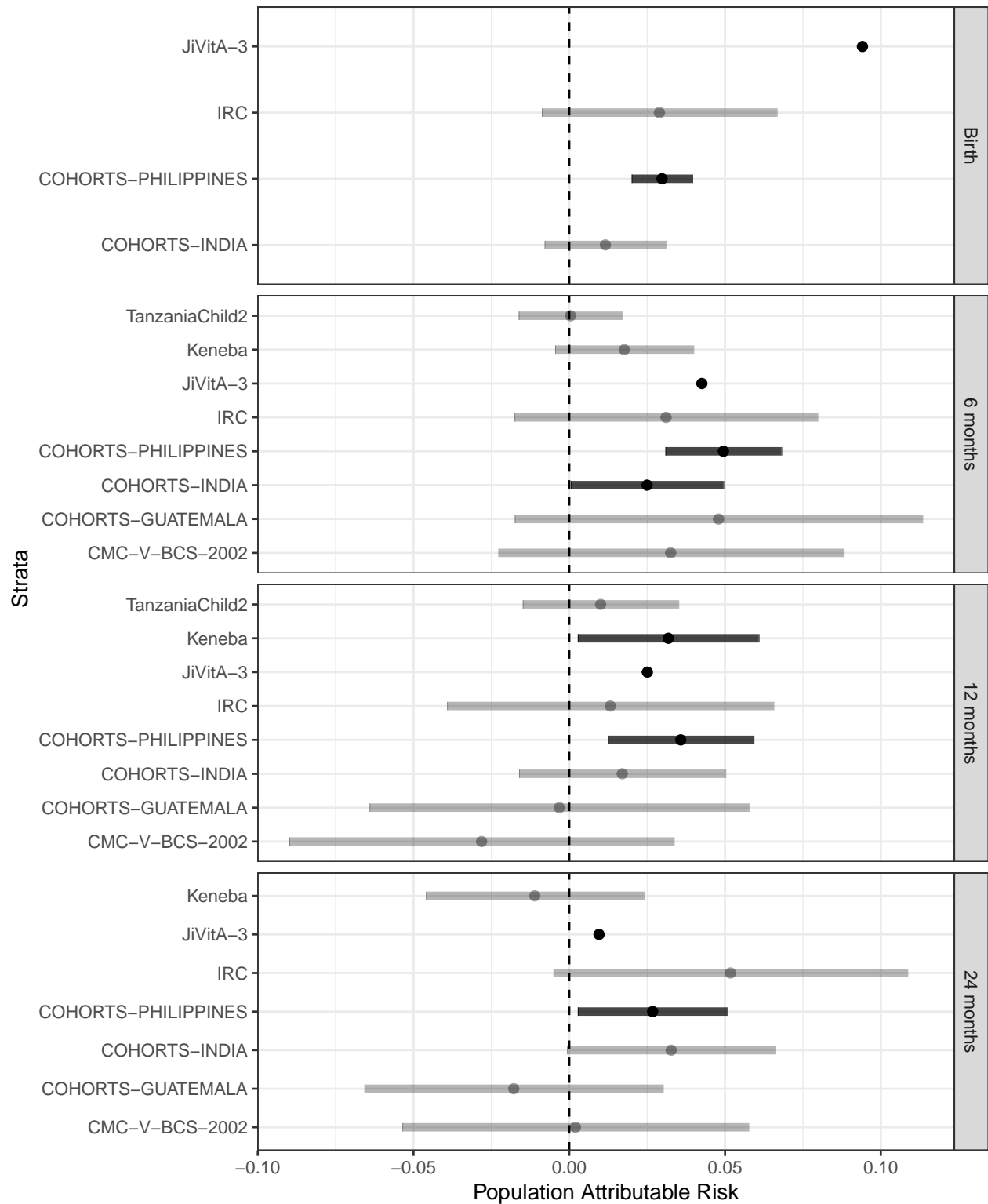
Child delivered at home
reference level:0



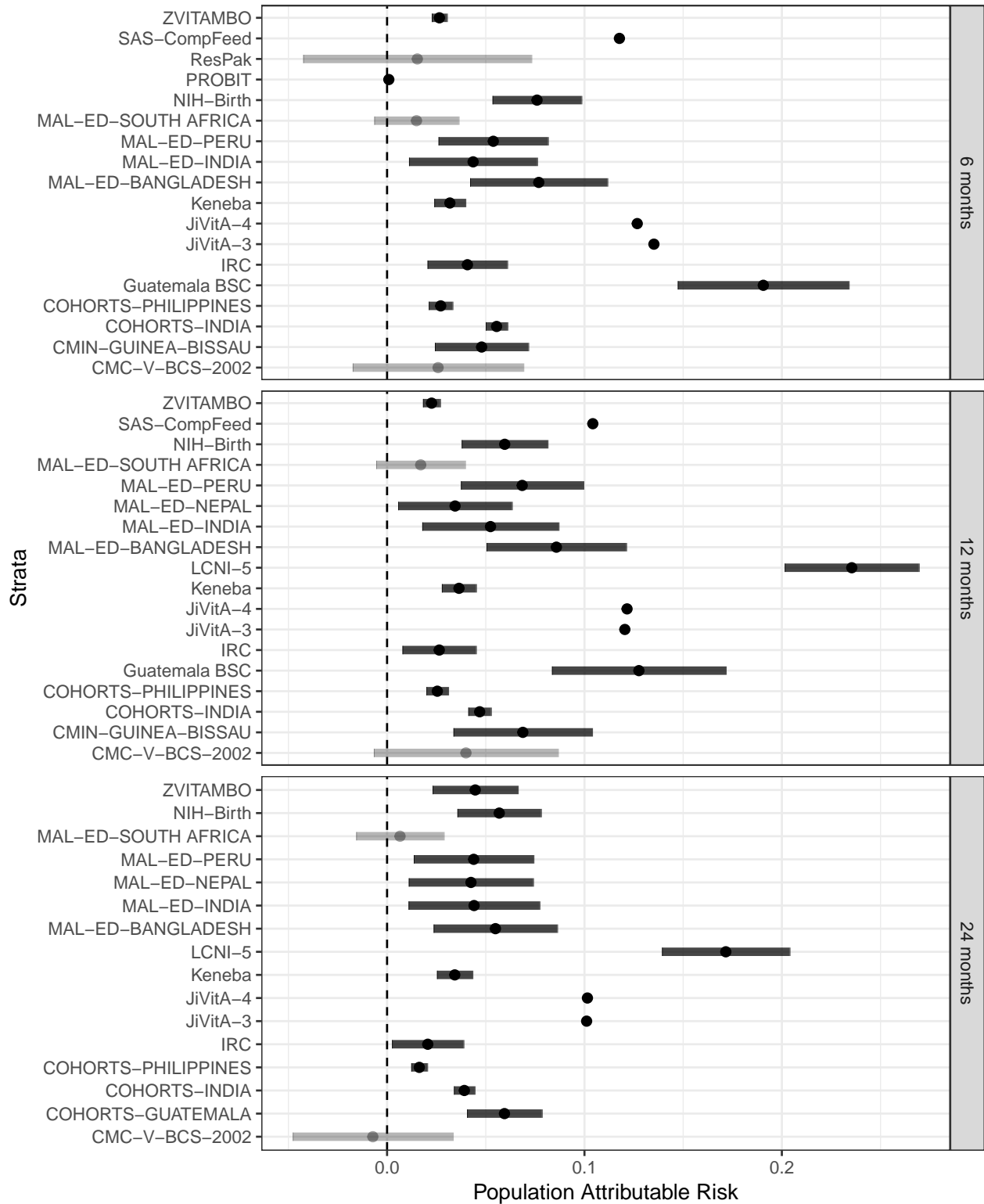
Child's sex
reference level:Female



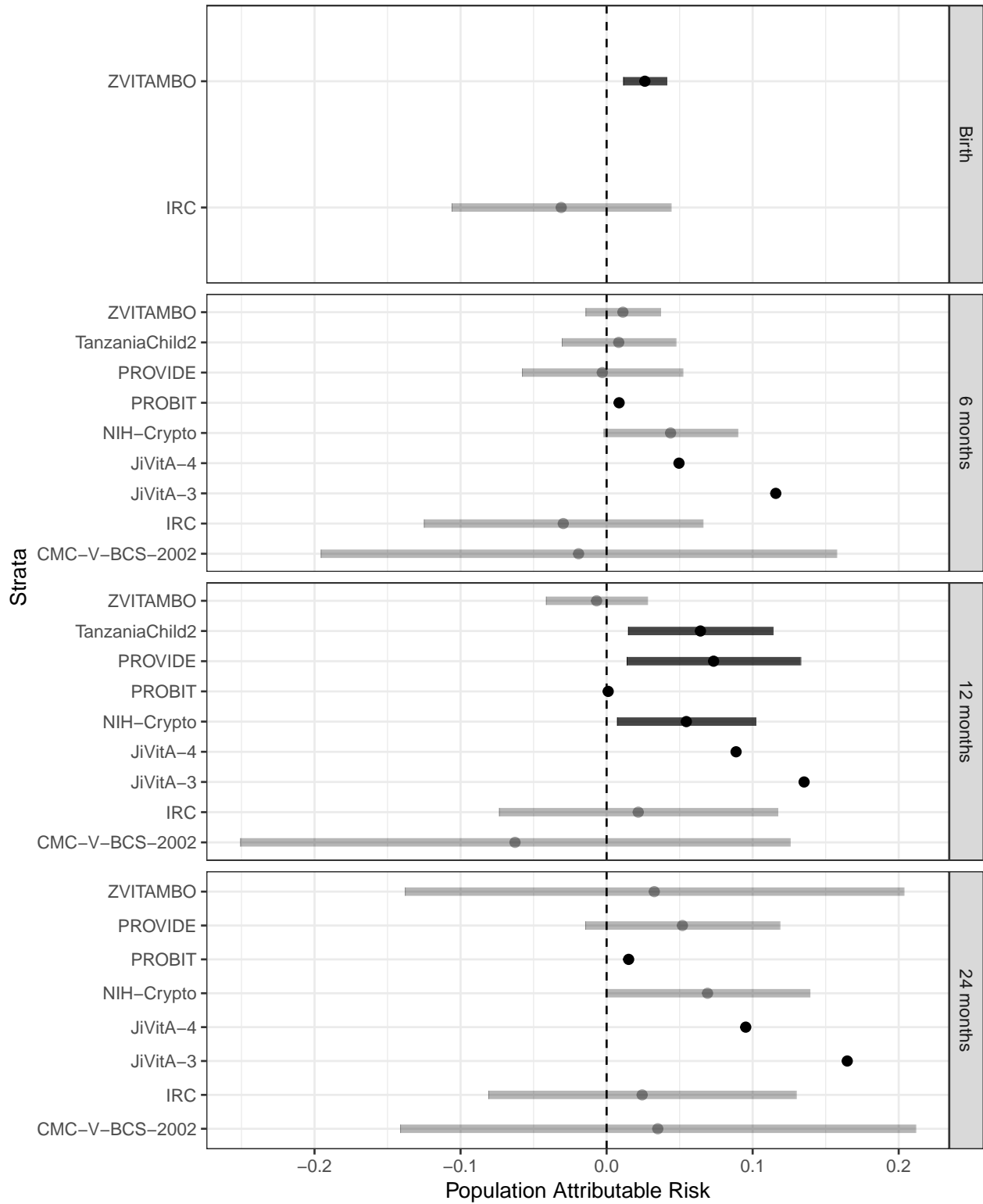
Gestational age at birth in days
reference level:[273–287)



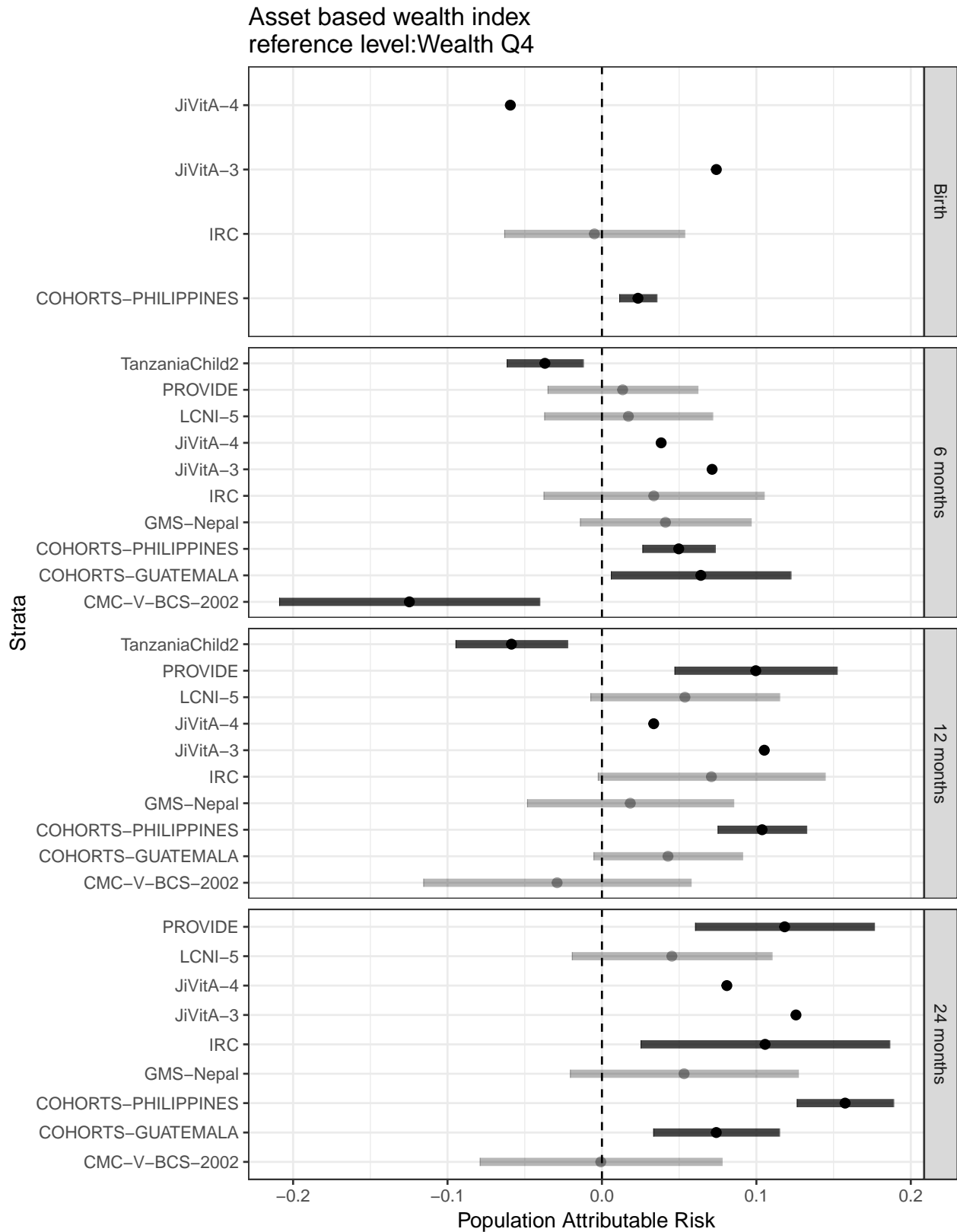
Stunted at enrollment
reference level:0



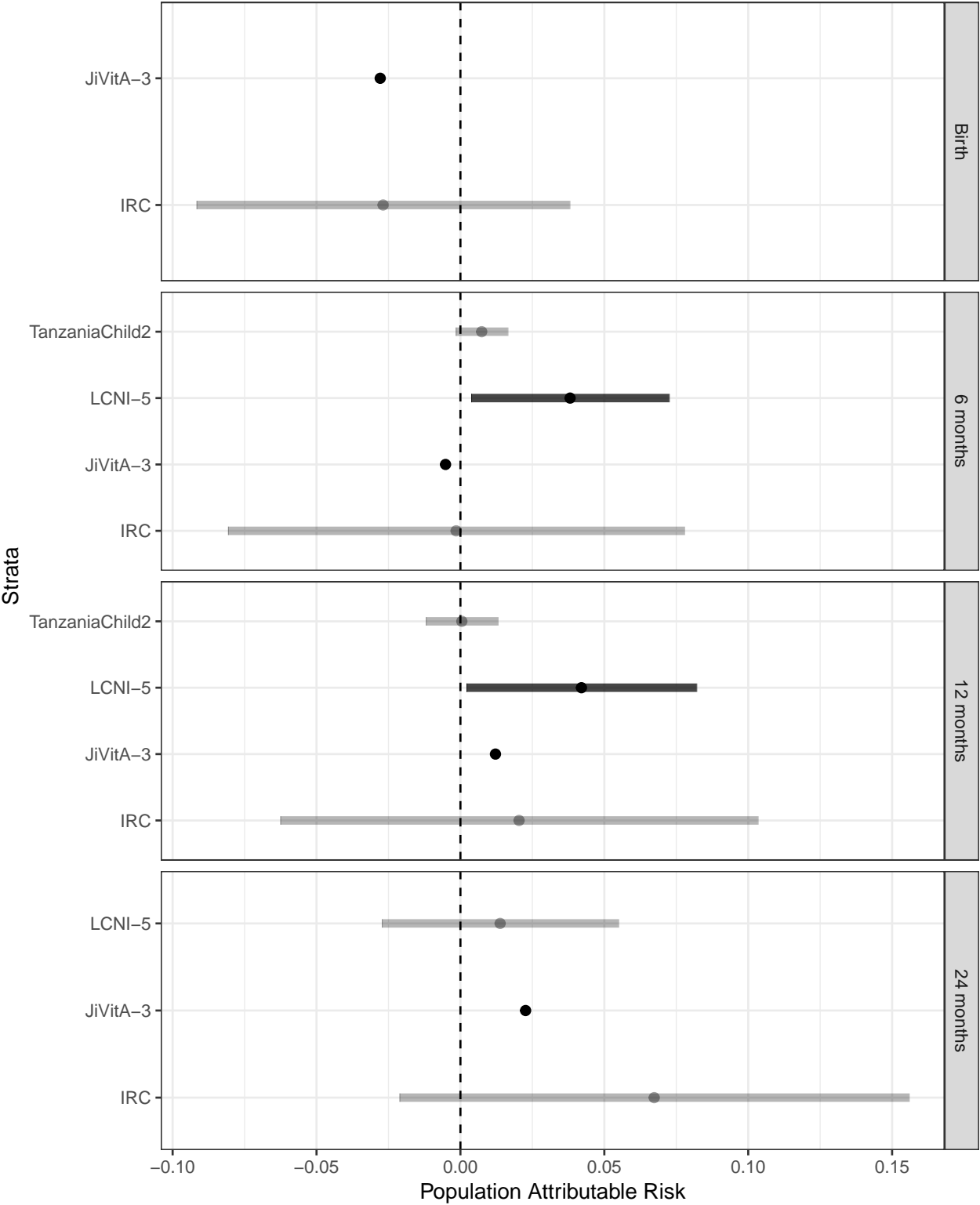
Vaginal delivery
reference level:0



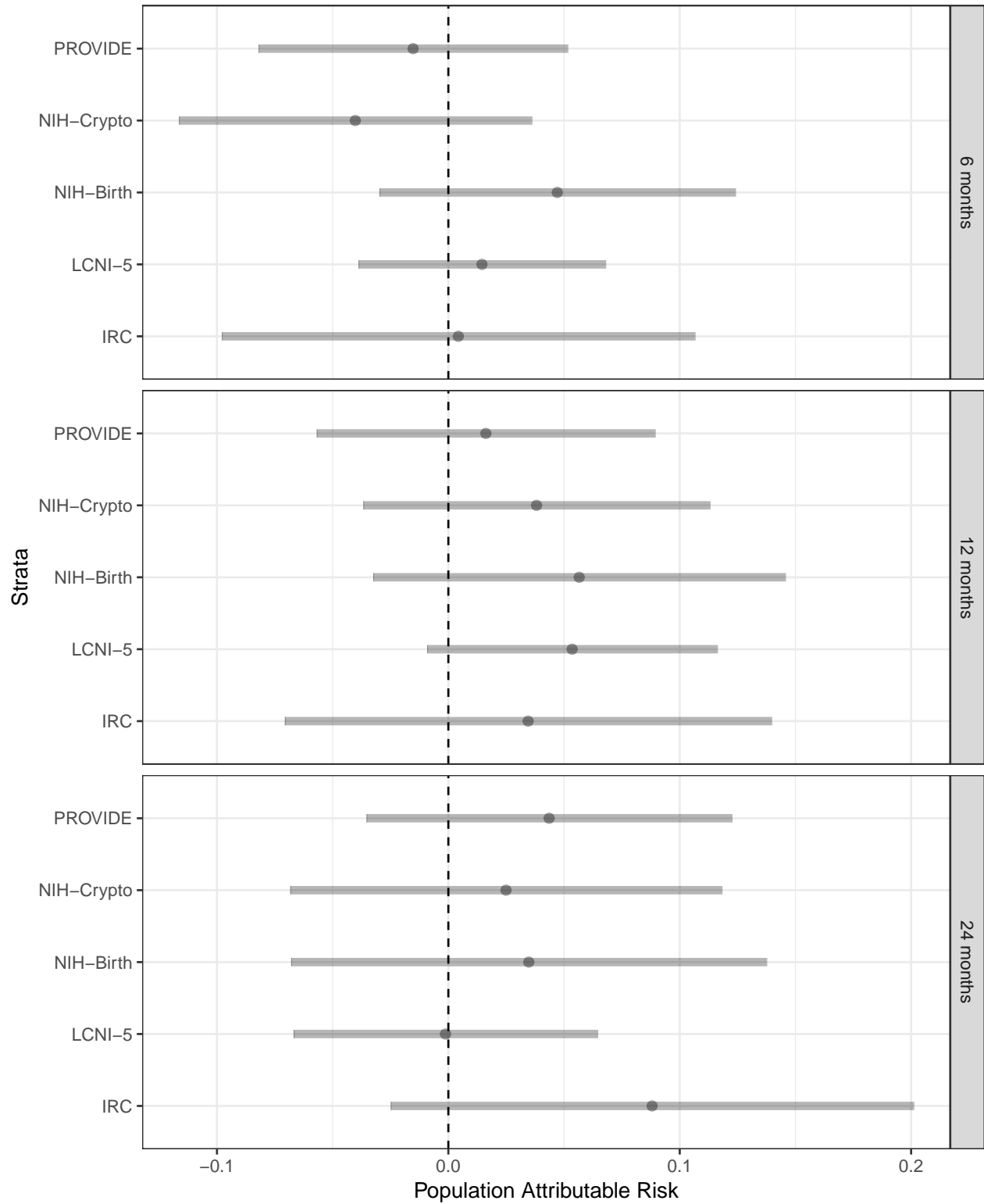
Household characteristics

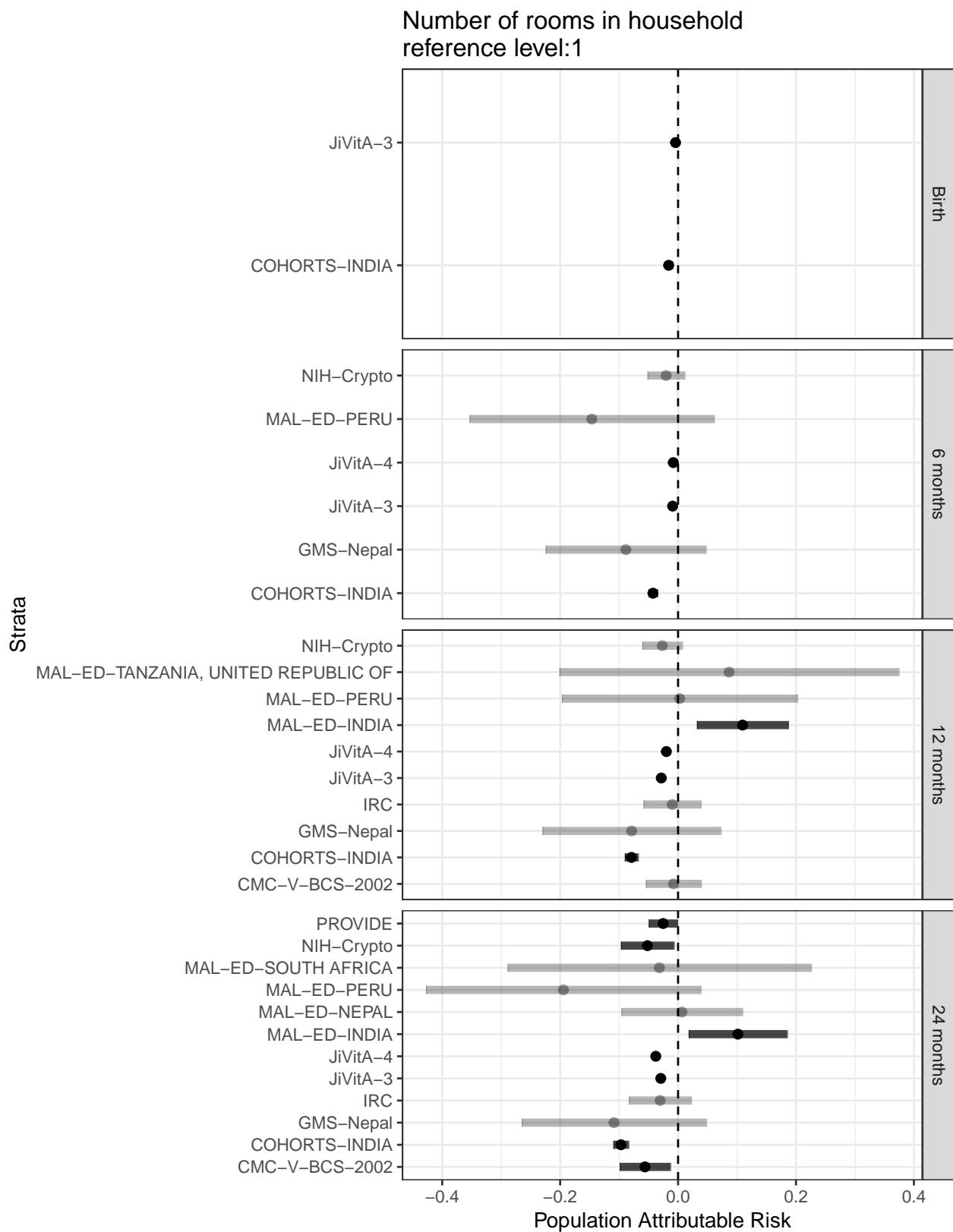


Number of children in the household under 5 years
reference level:1

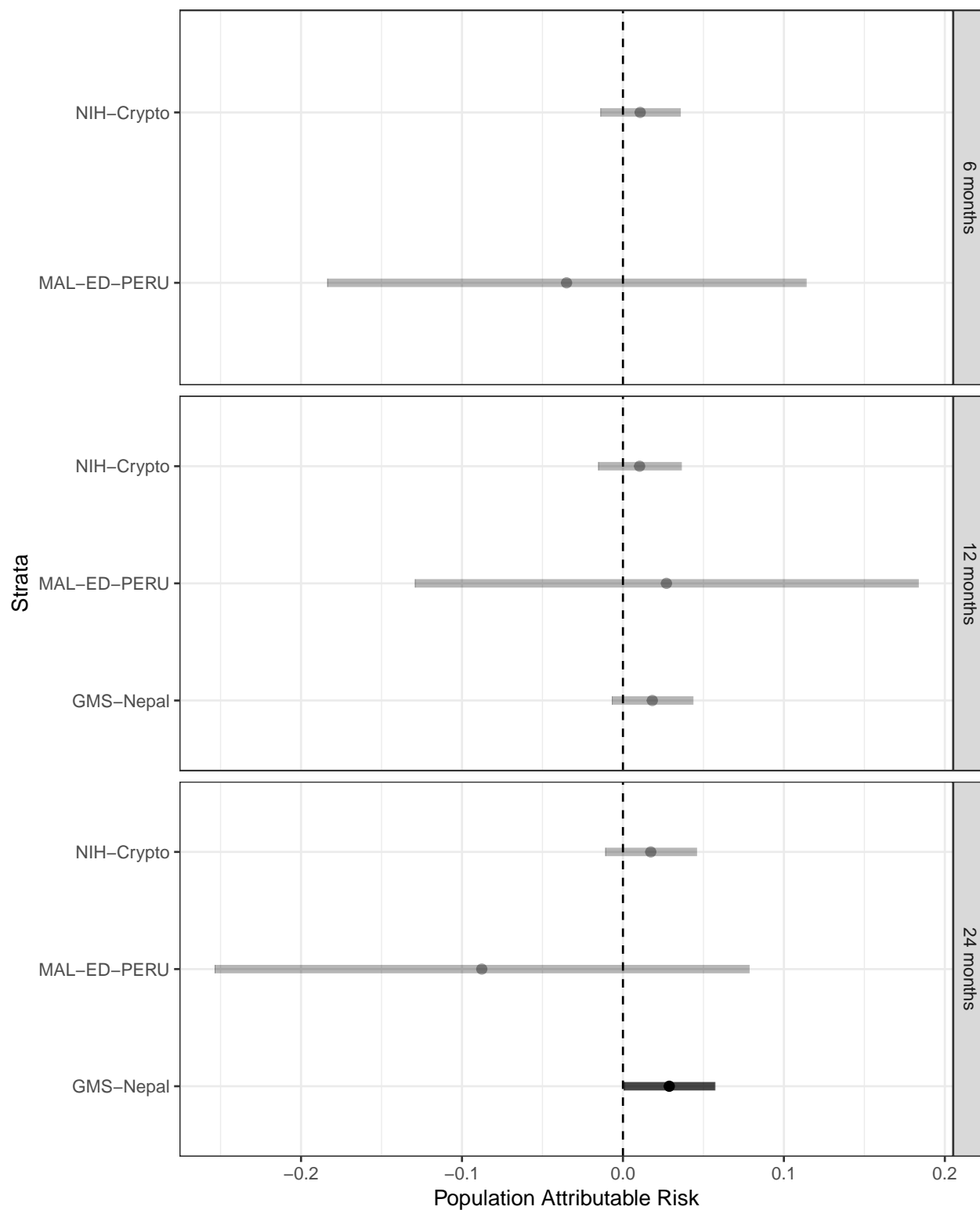


Number of people in the household
reference level:3 or less

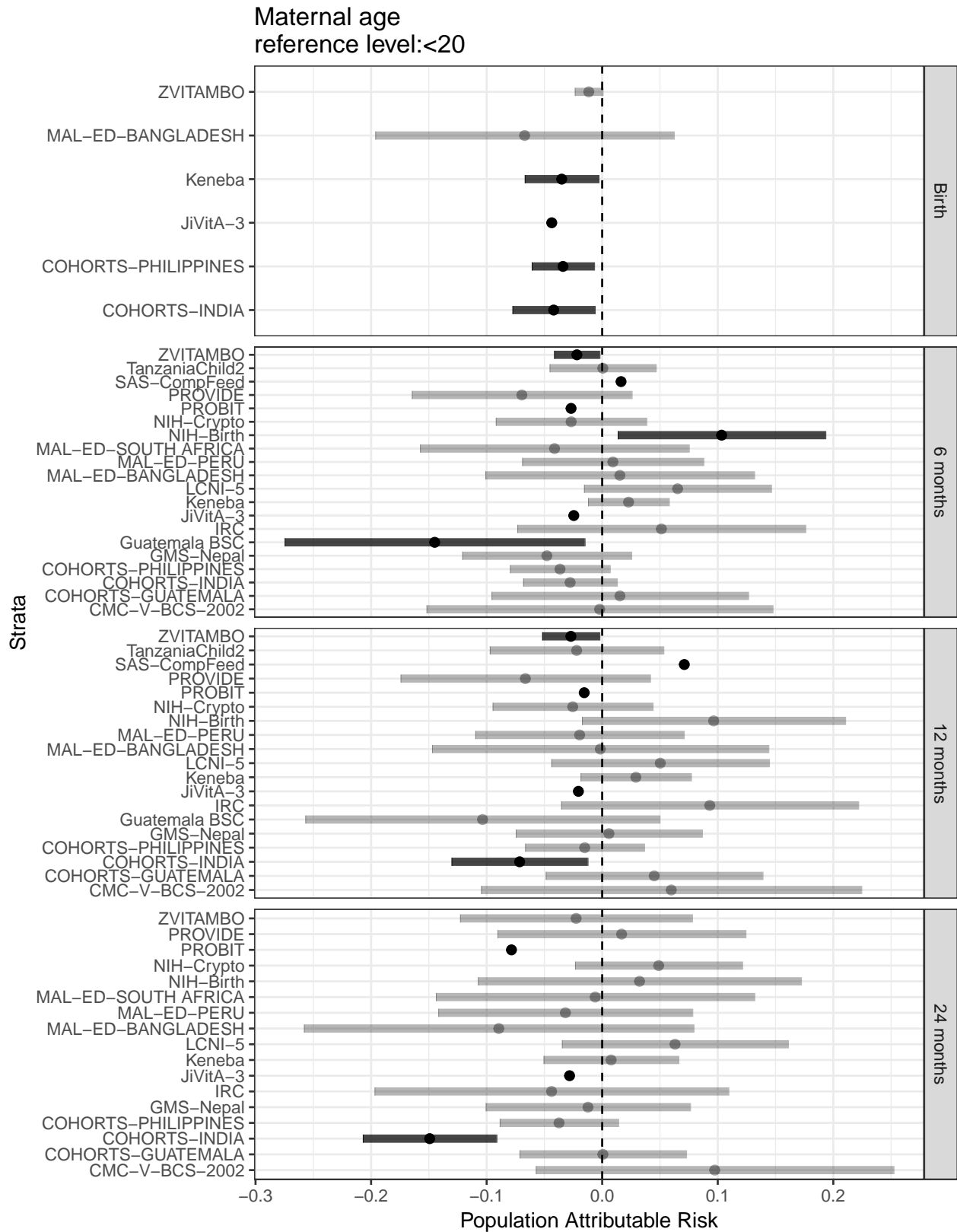




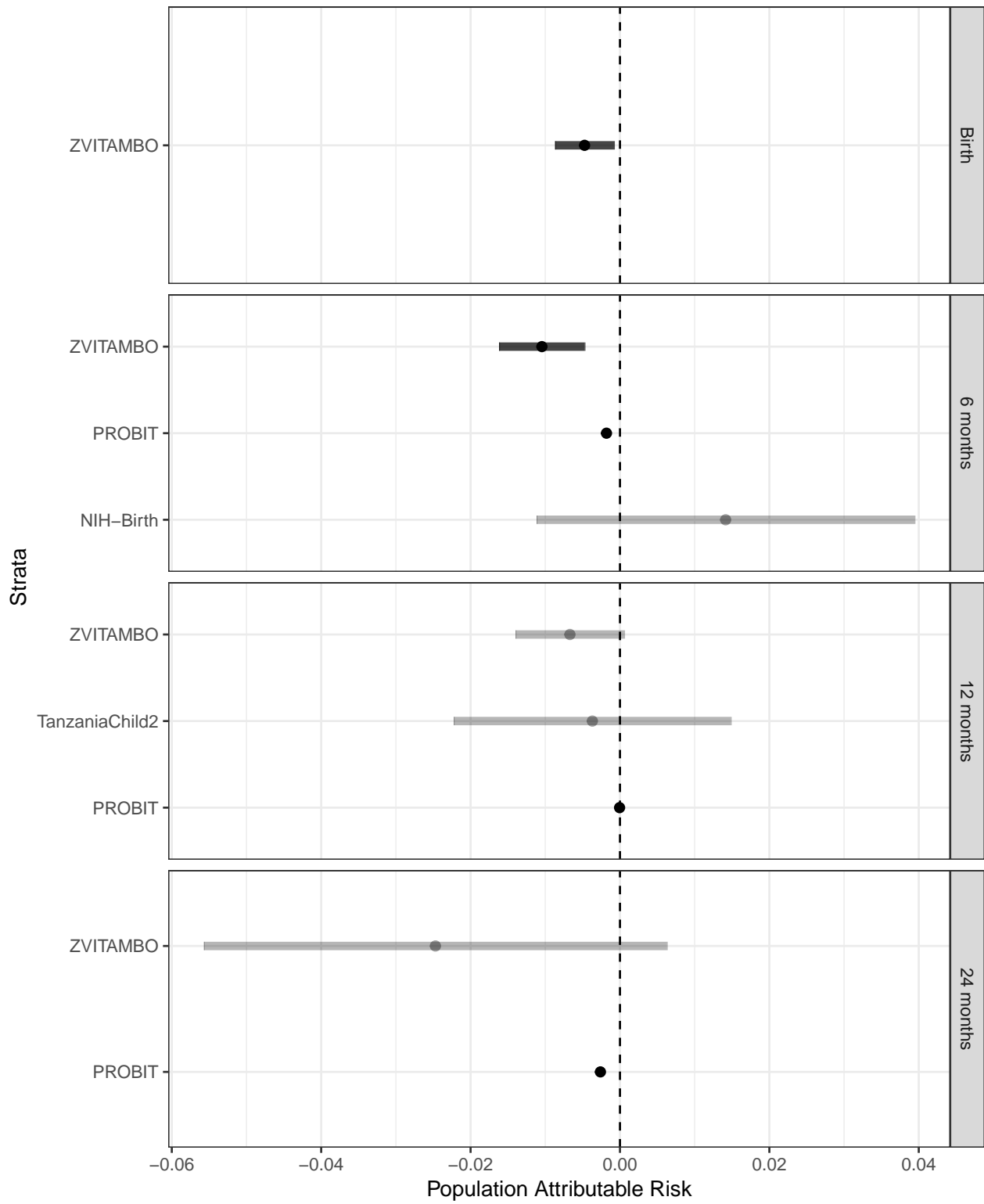
USAID Household Food Insecurity Access Scale (HFIAS) category
reference level: Food Secure

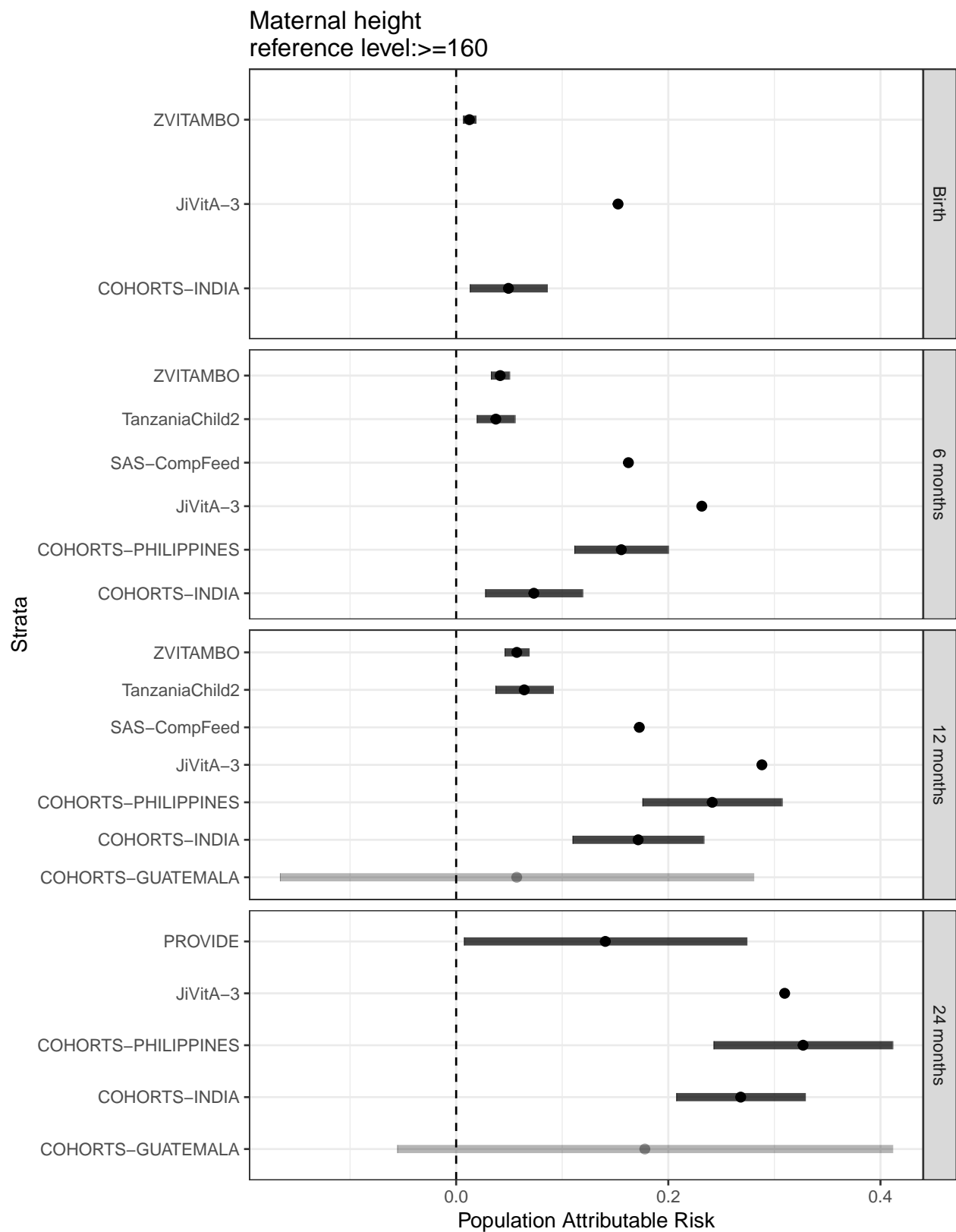


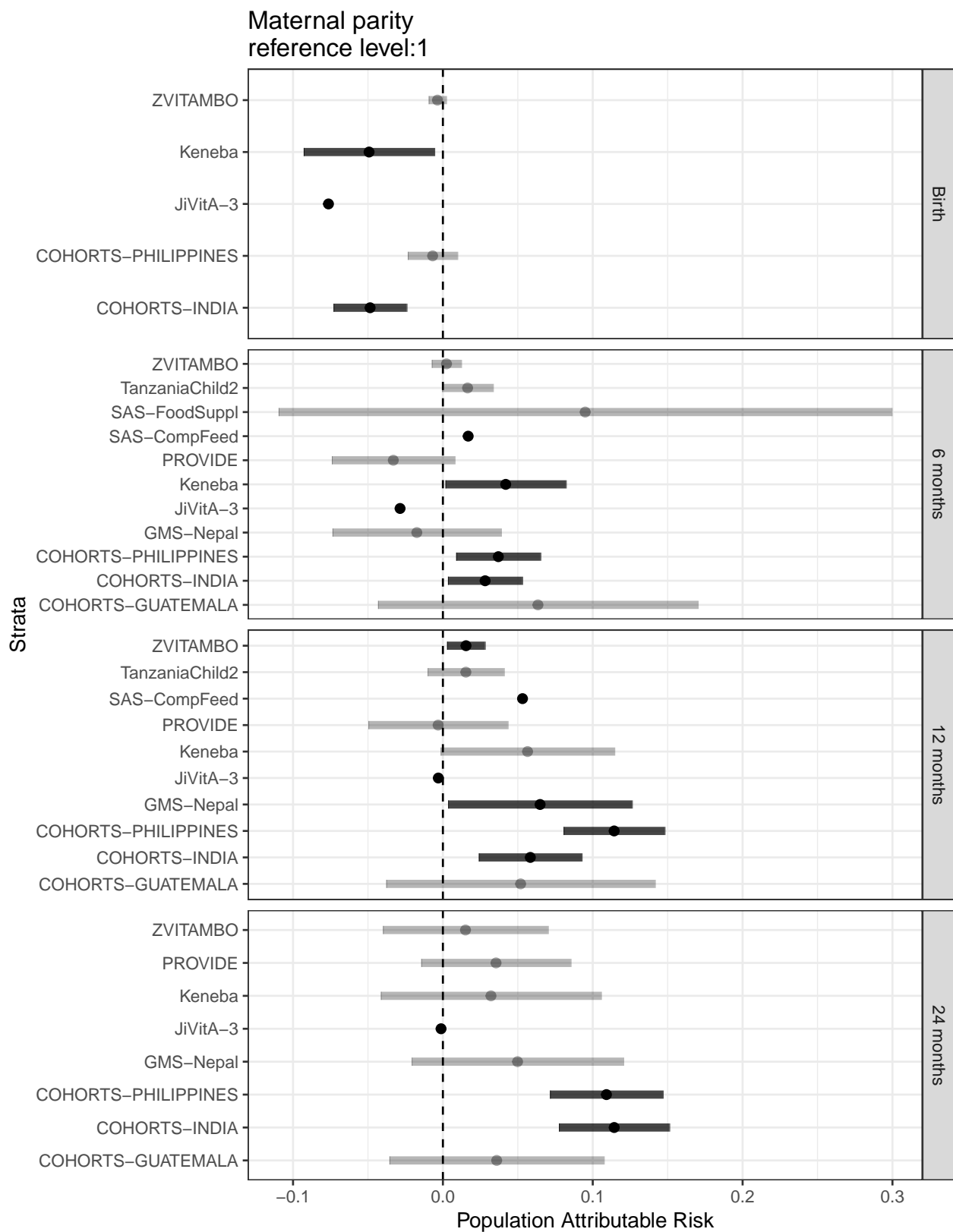
Maternal characteristics

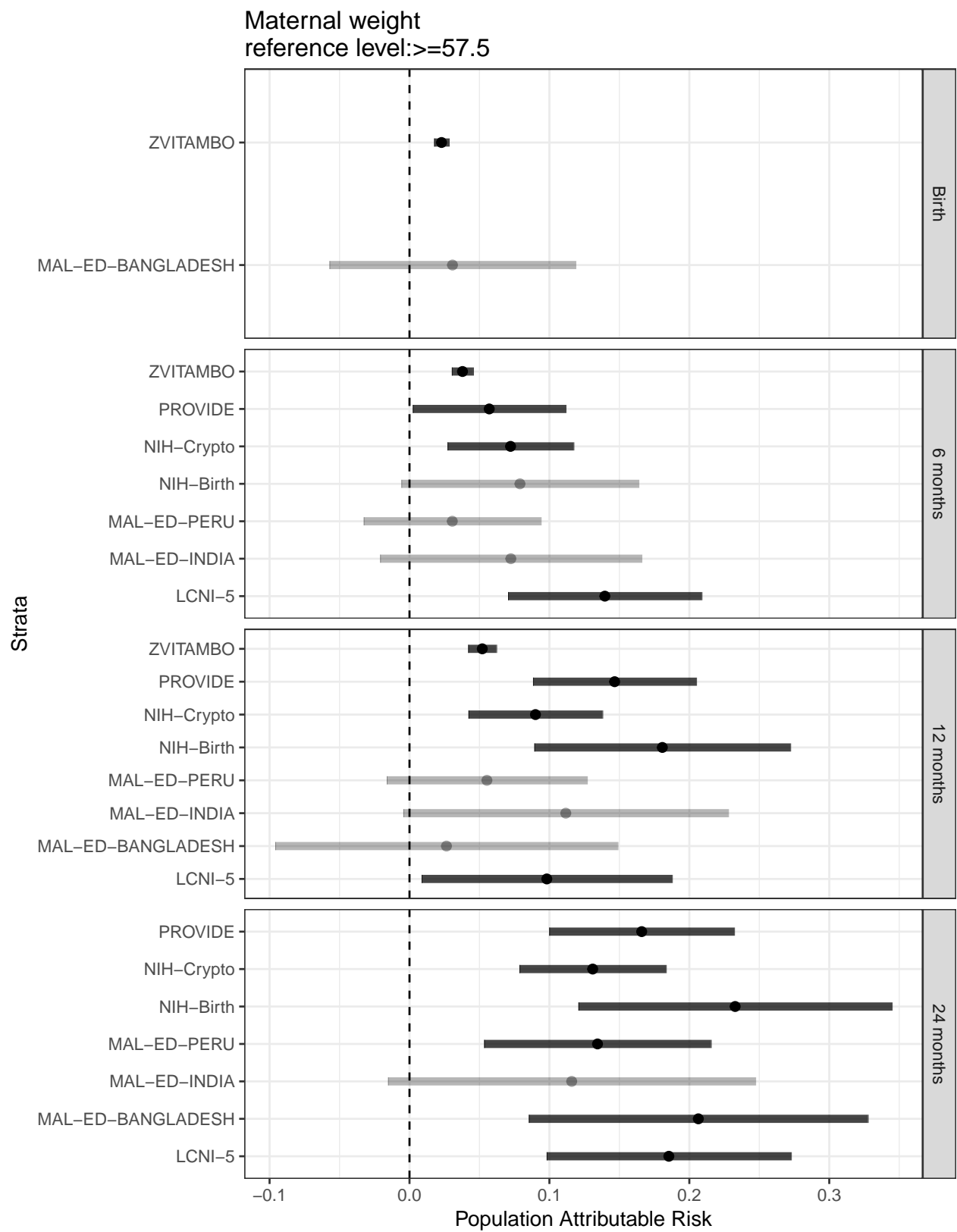


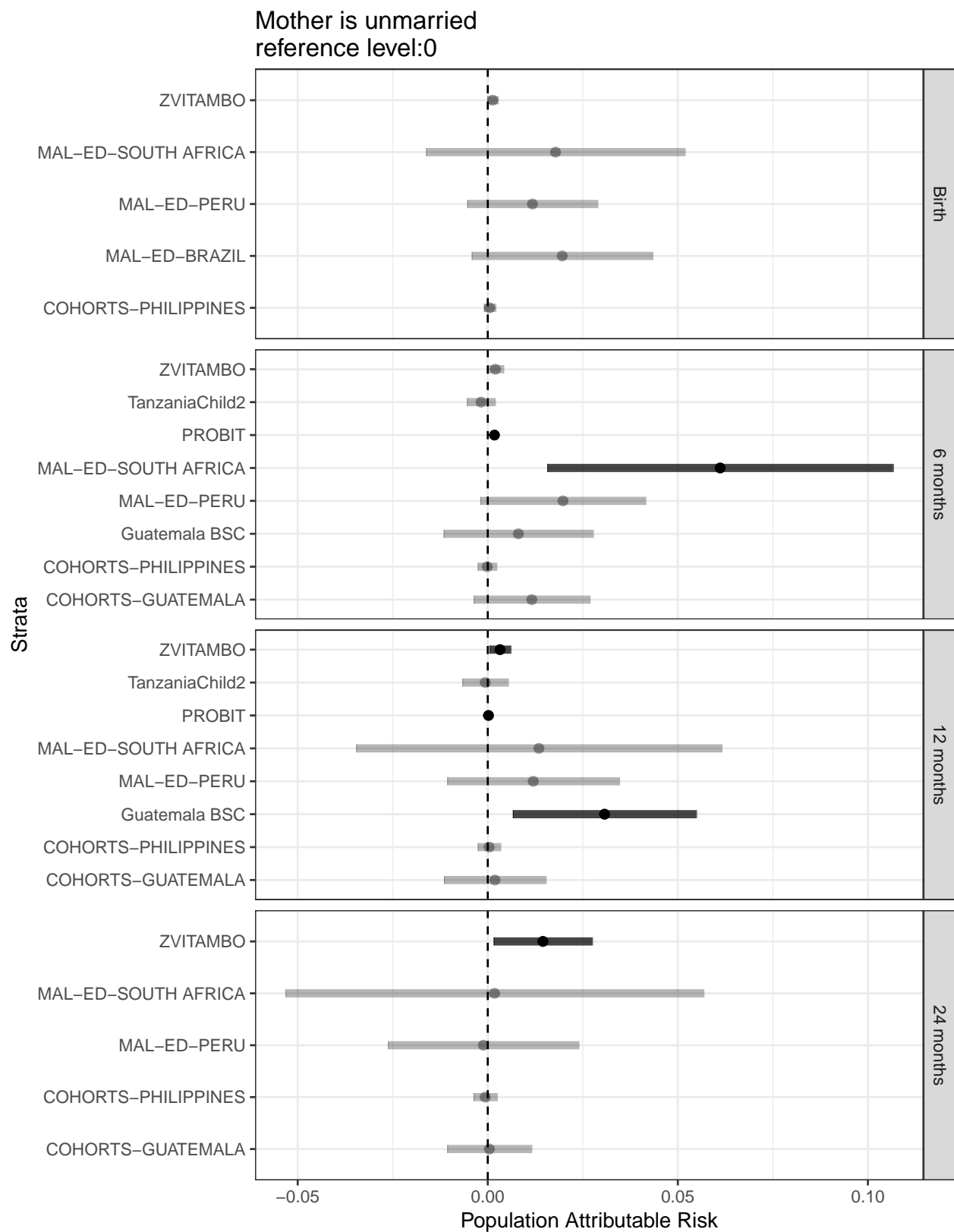
Maternal BMI
reference level:[18.5–25)

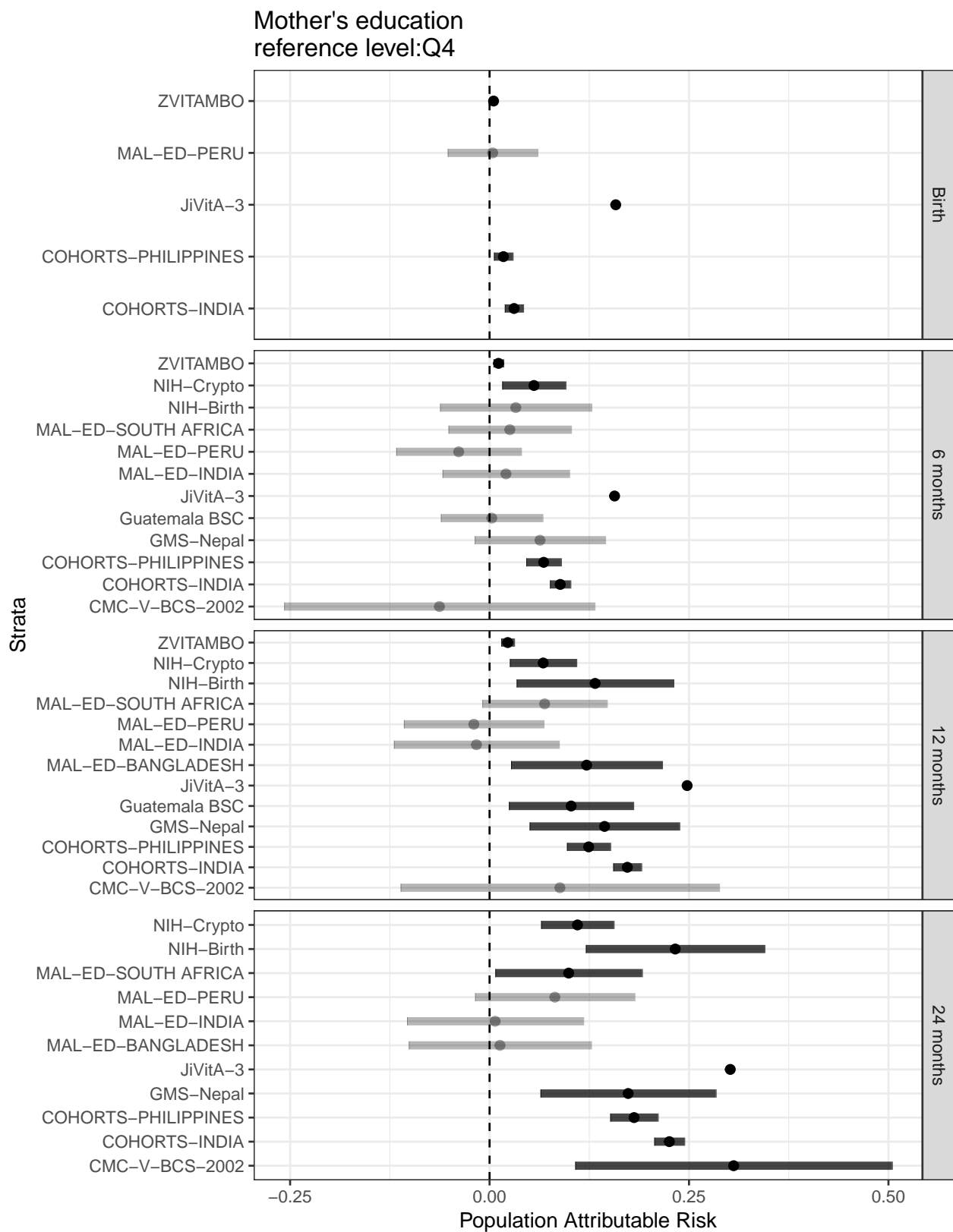






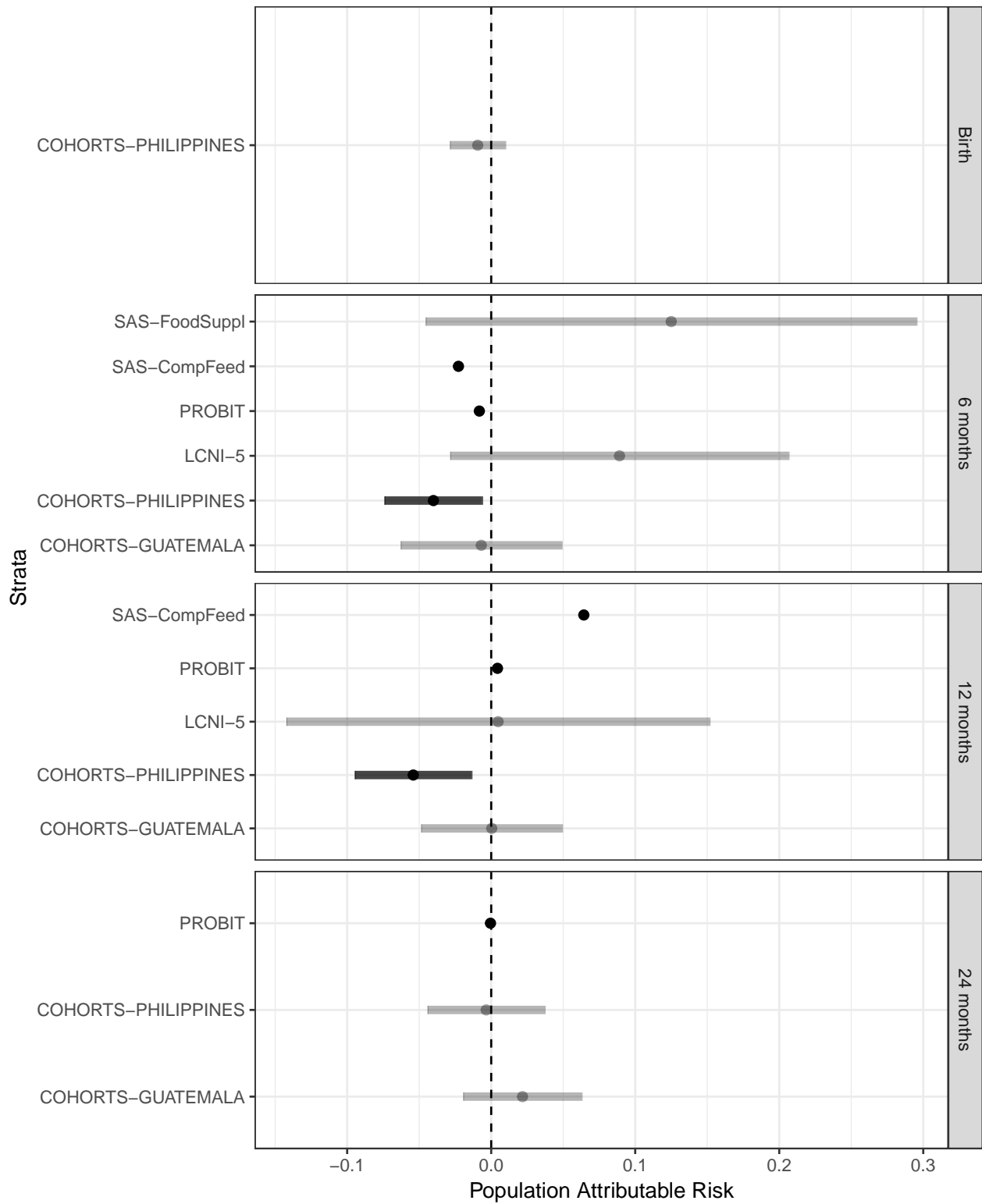


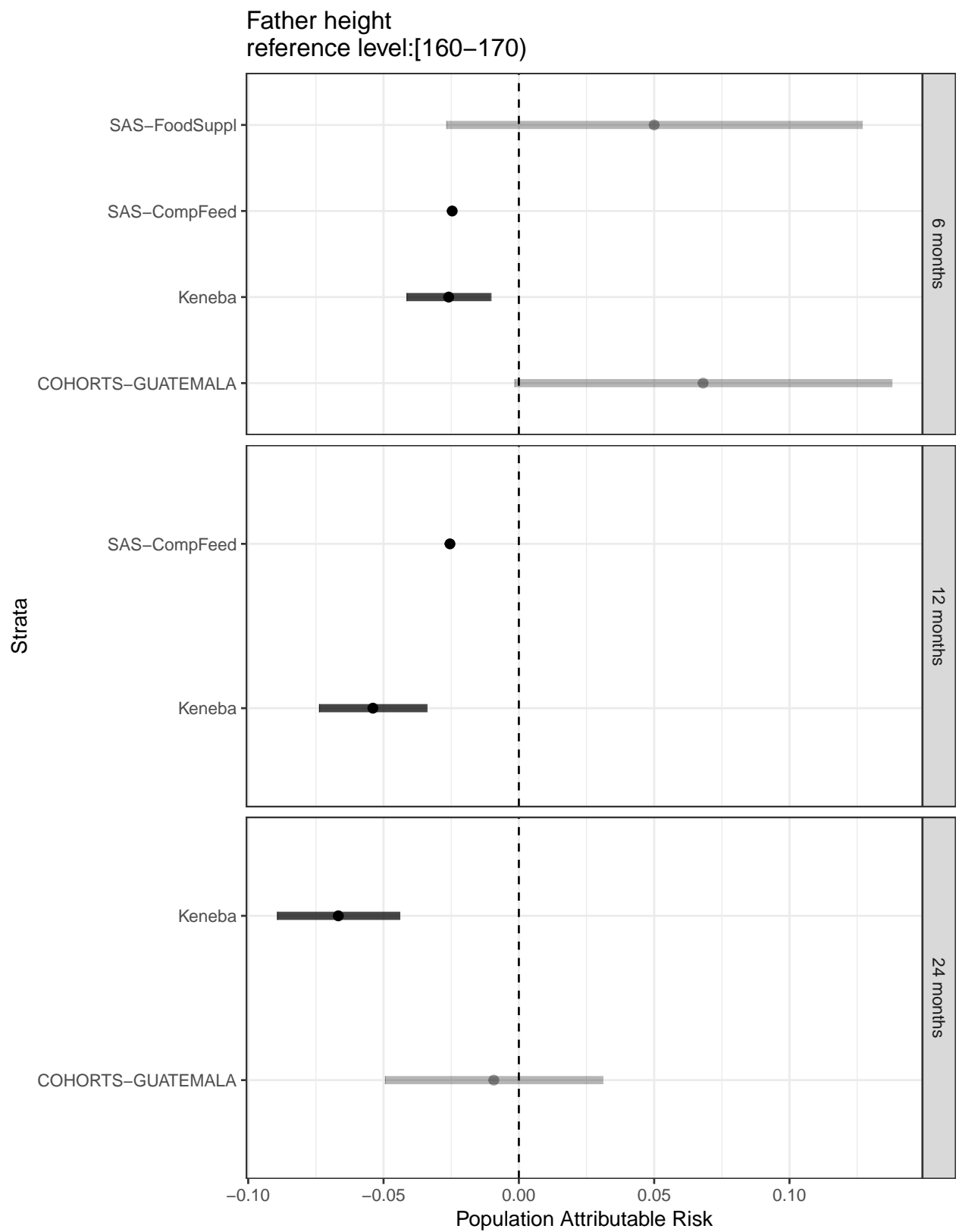


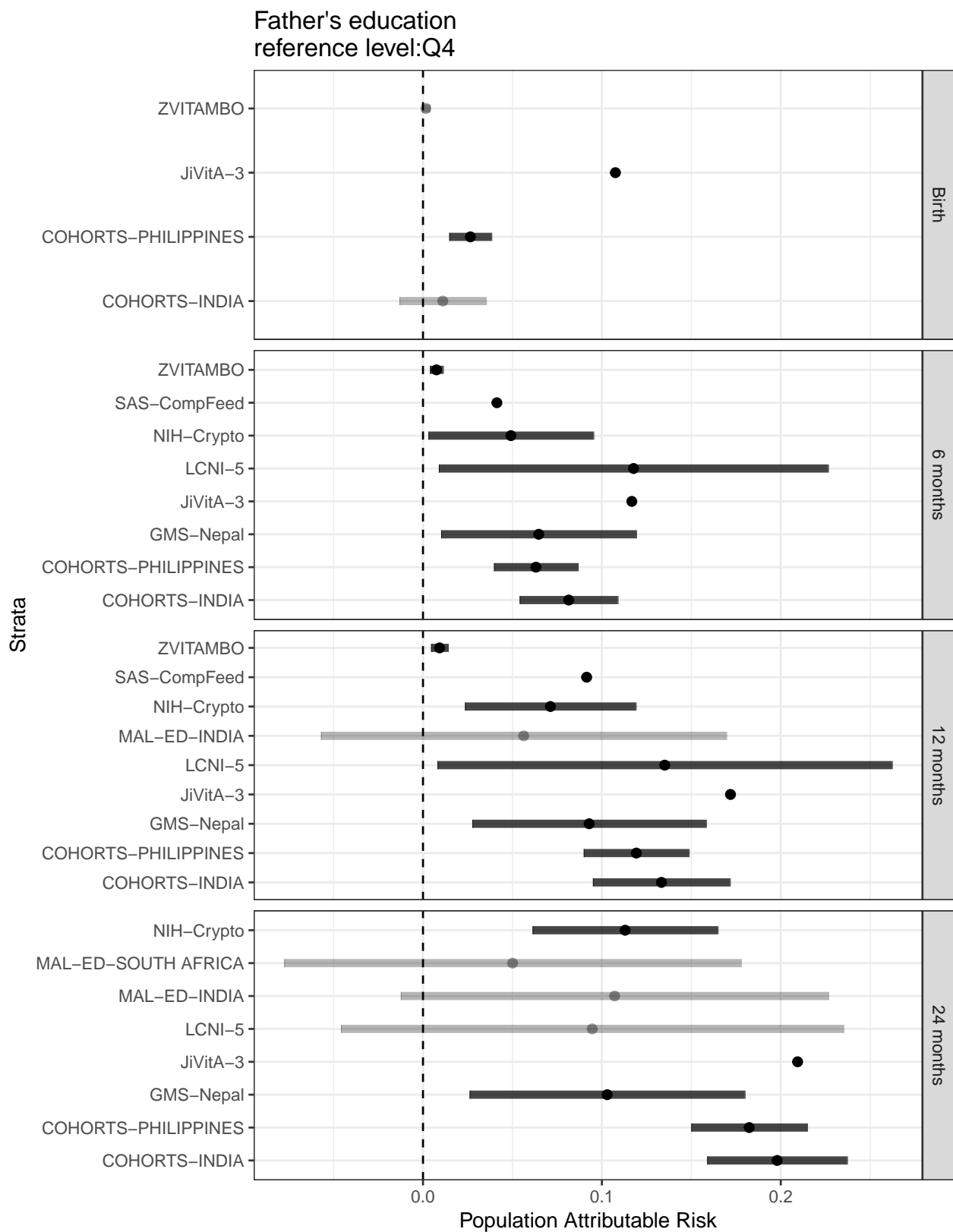


Paternal characteristics

Father age
reference level: ≥ 35

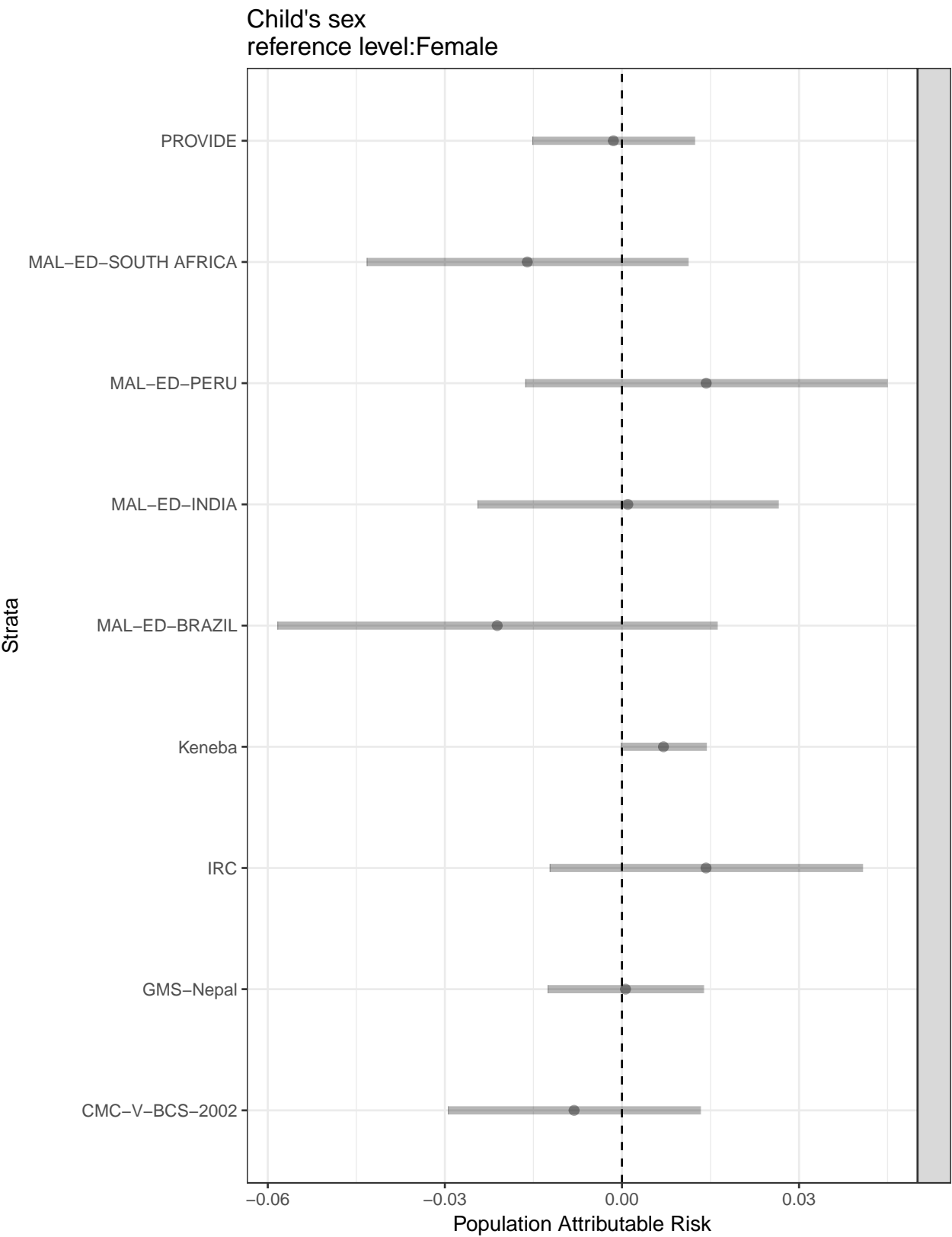


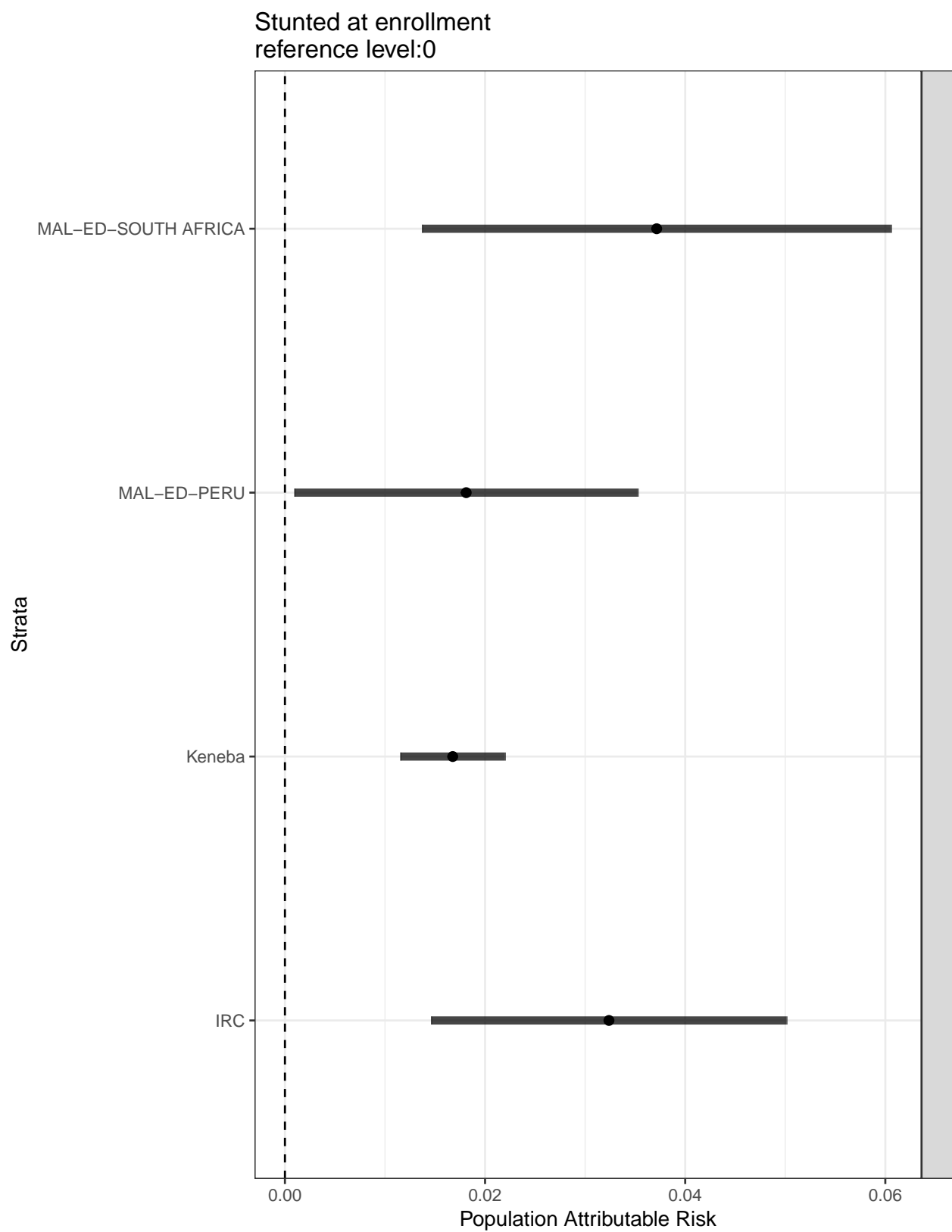


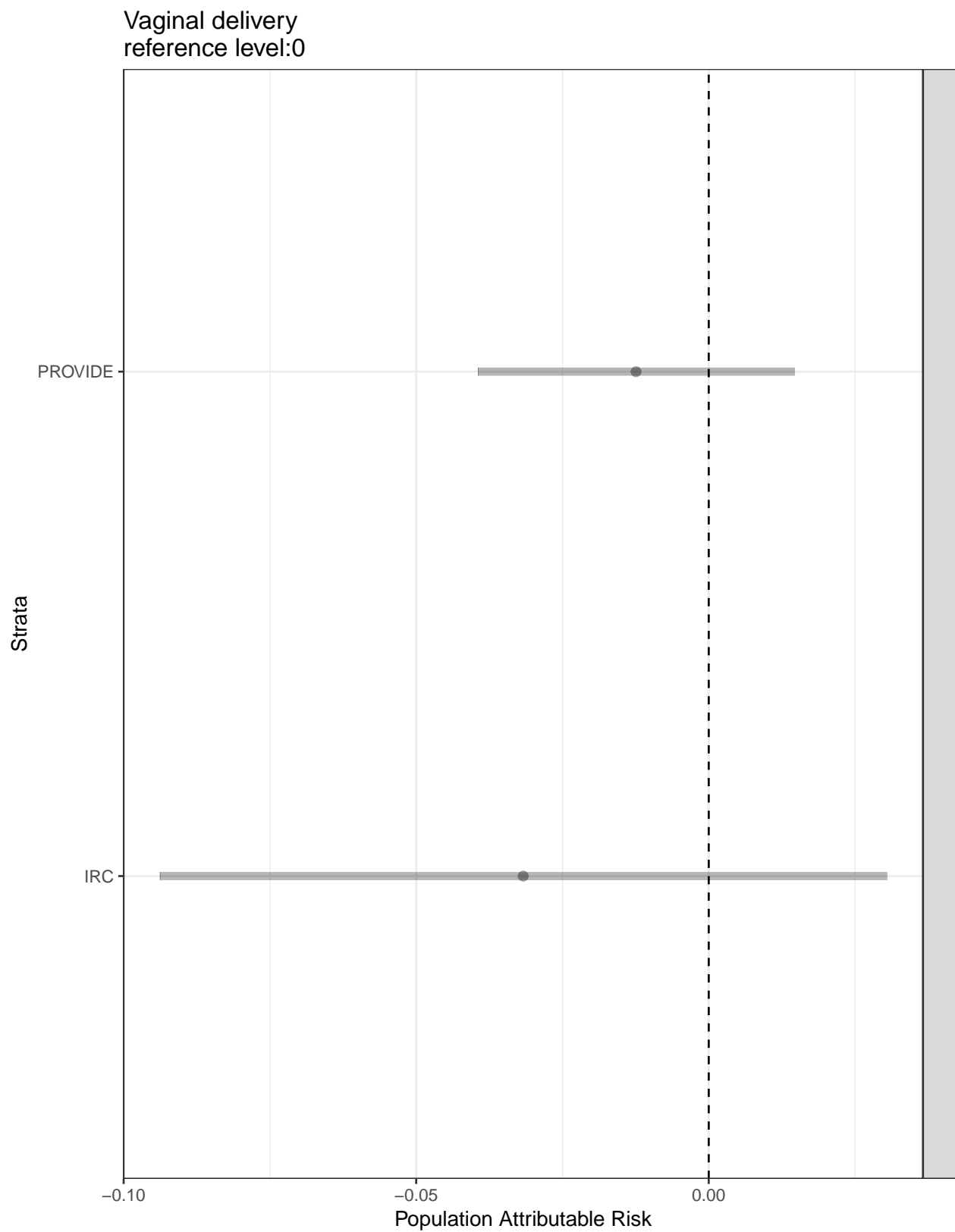


Proportion of children who were stunted between birth and 3 months who recovered by 24 months

Child characteristics

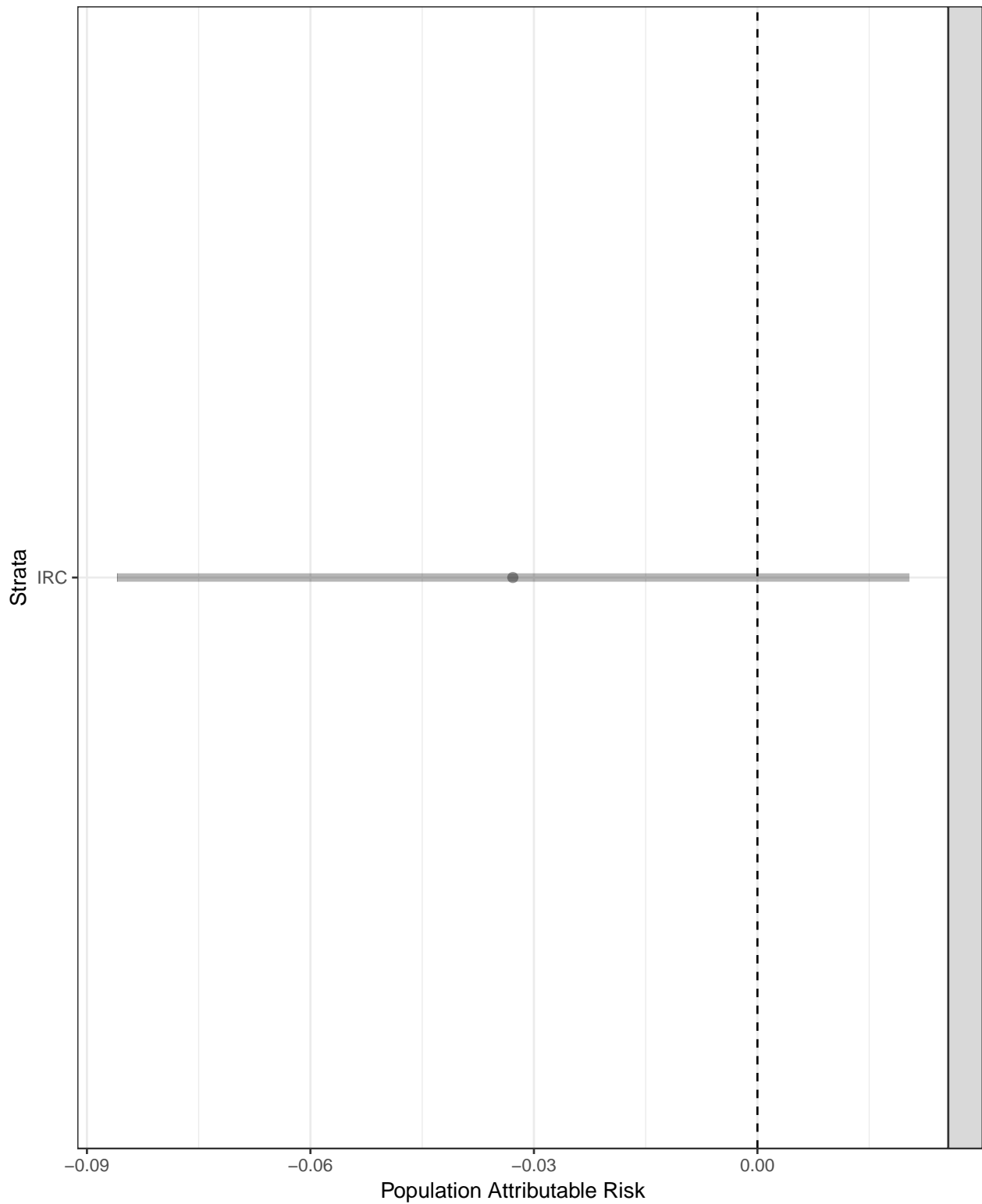






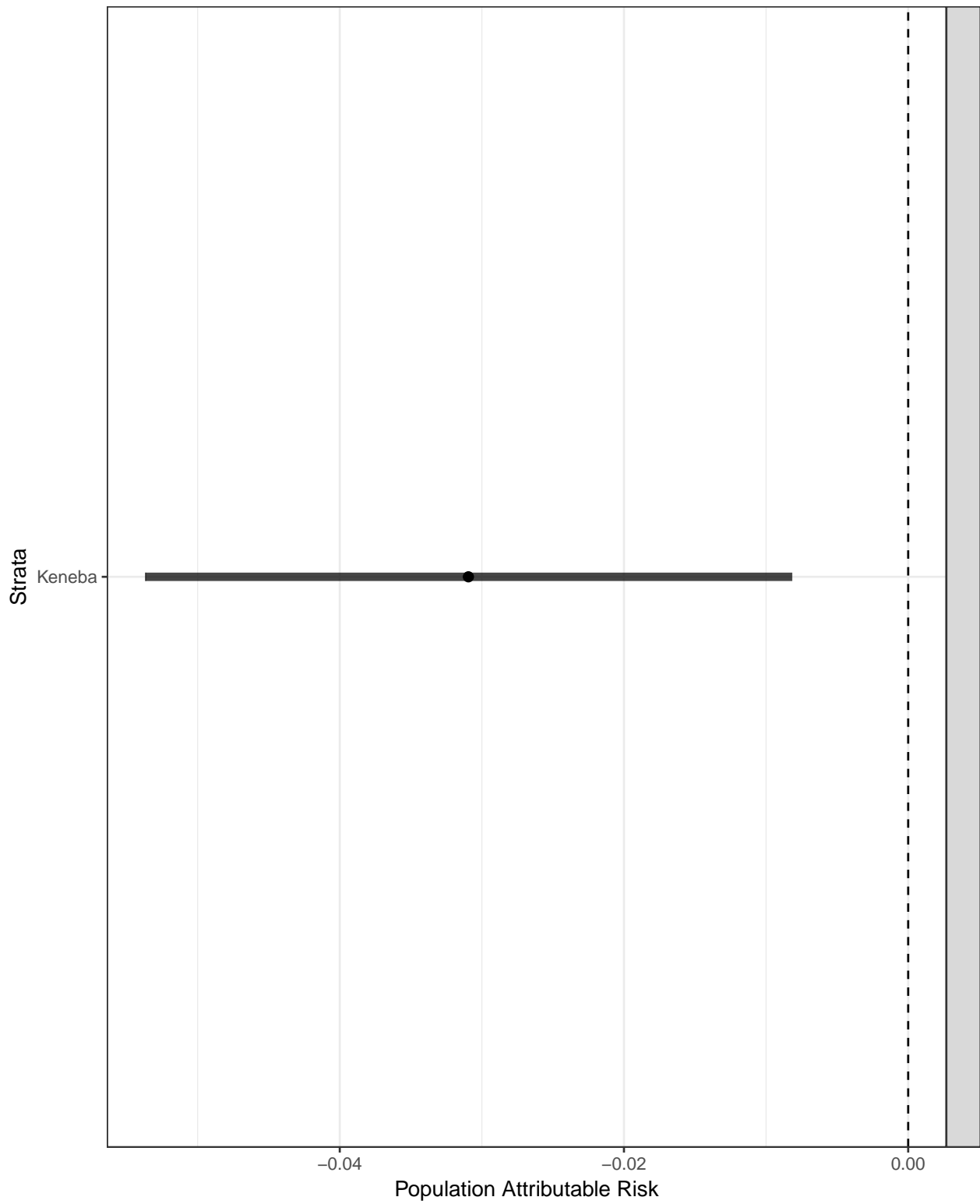
Household characteristics

Number of children in the household under 5 years
reference level:1

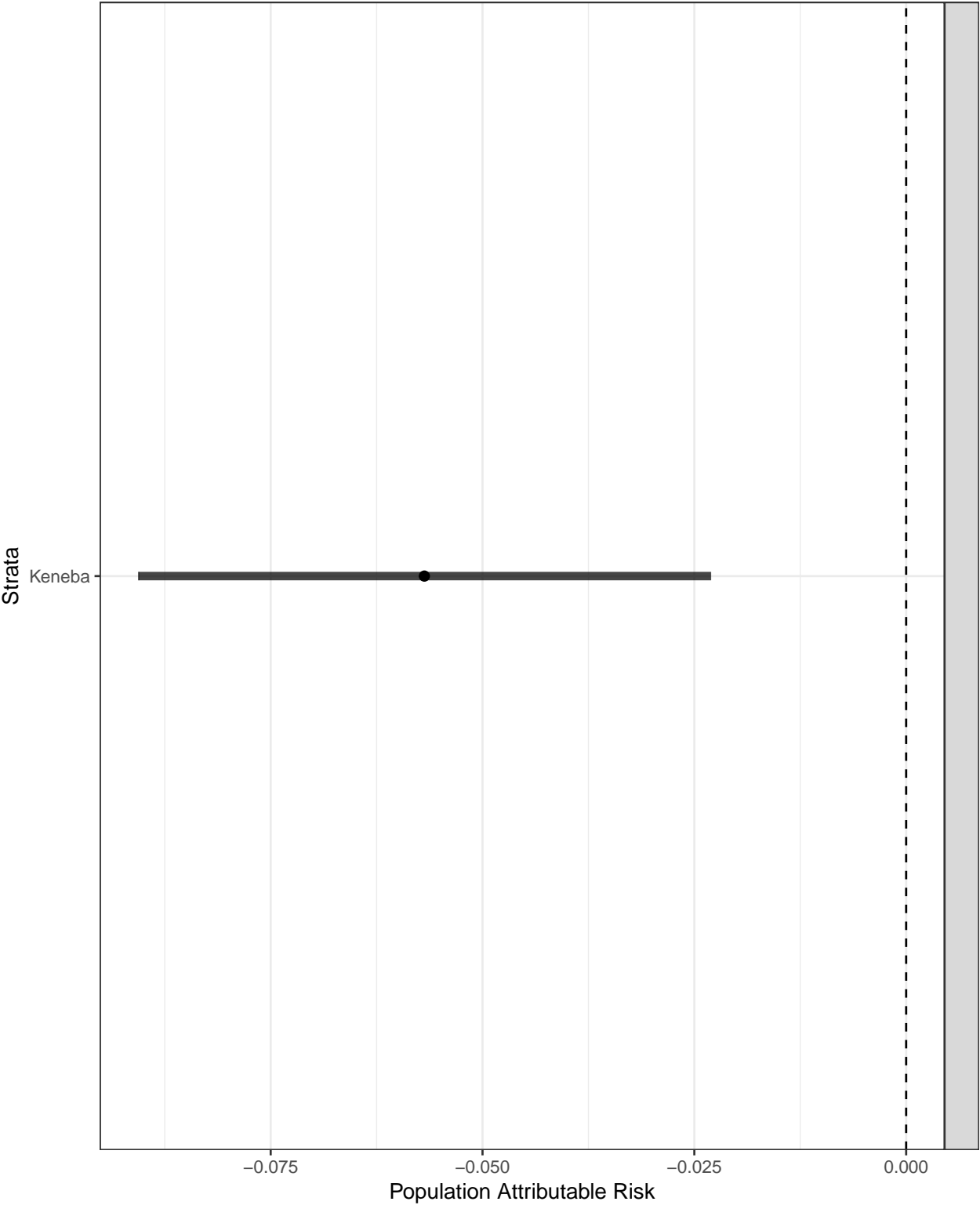


Maternal characteristics

Maternal age
reference level:<20



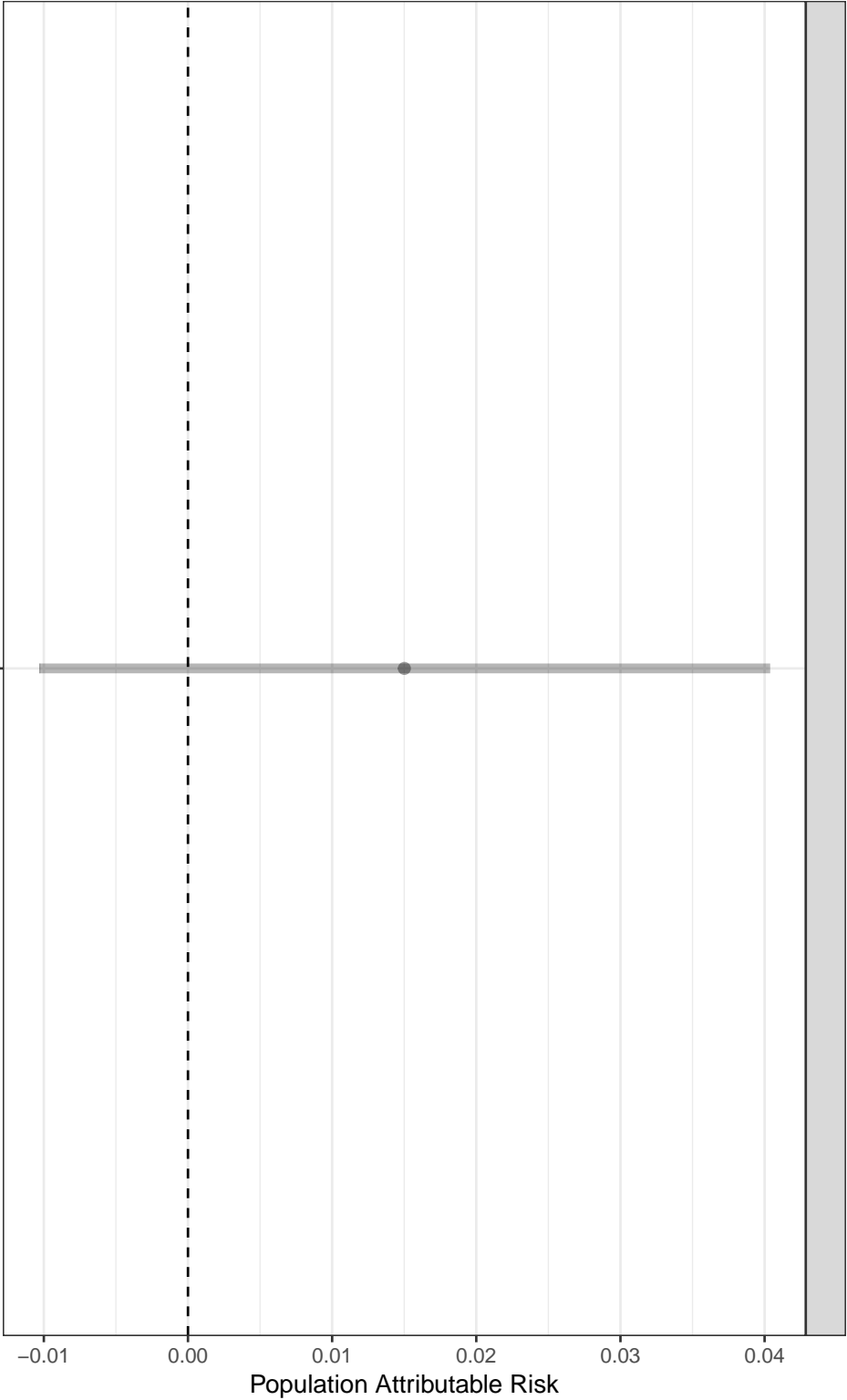
Maternal parity
reference level:1



Mother is unmarried
reference level:0

Strata

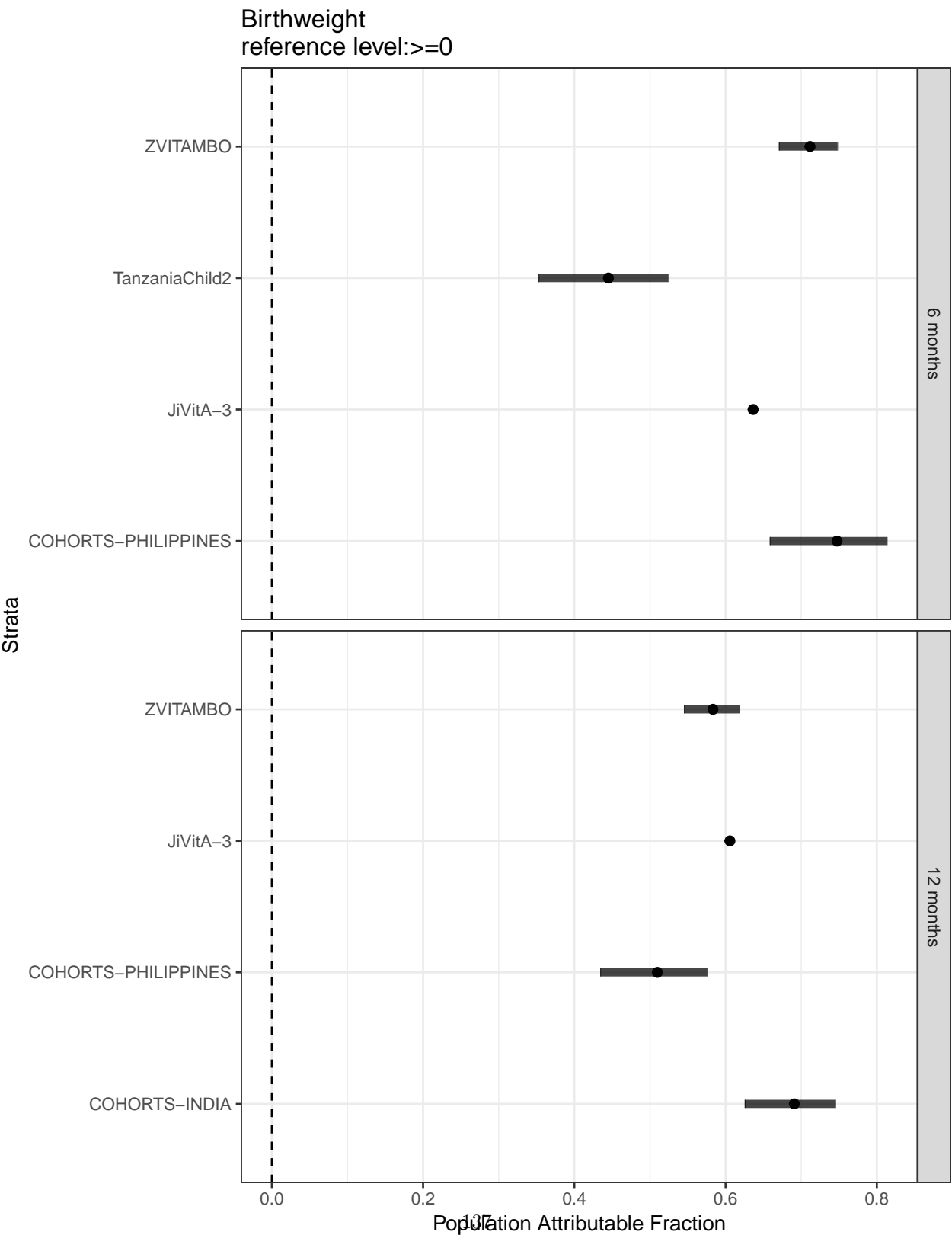
MAL-ED-SOUTH AFRICA

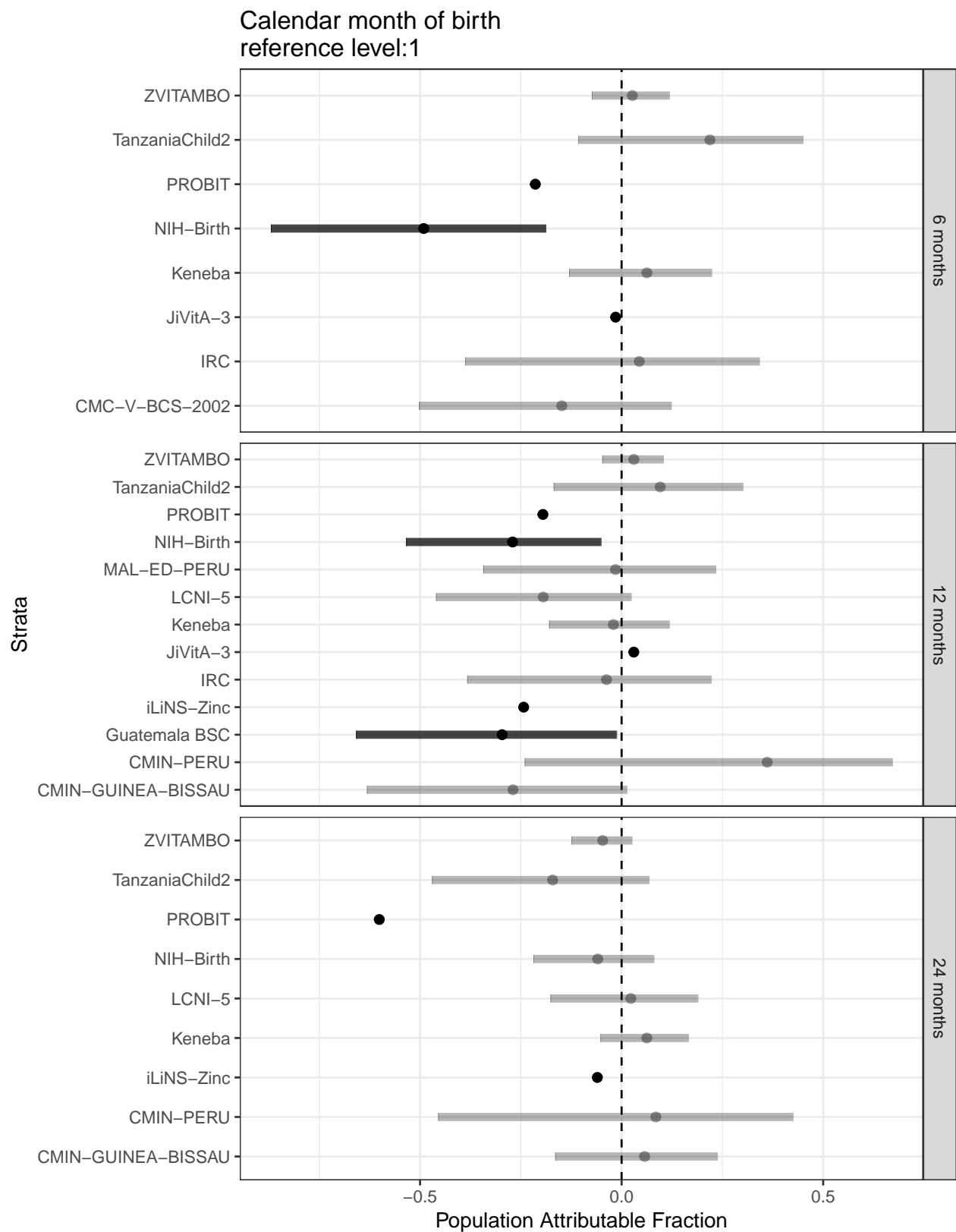


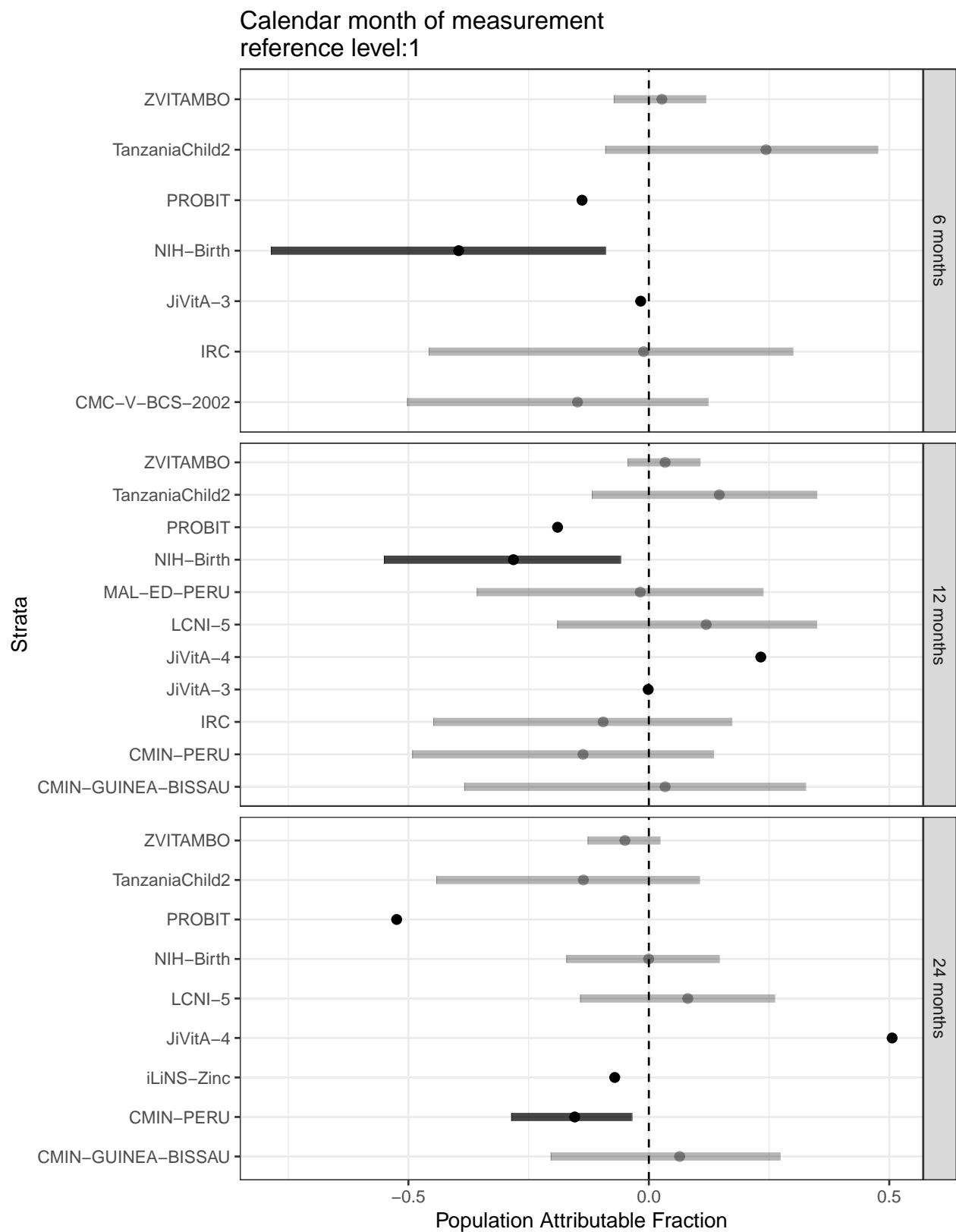
Appendix 3 - Population Attributable Fraction stratified by cohort

Cumulative incidence of stunting from birth to 24 months

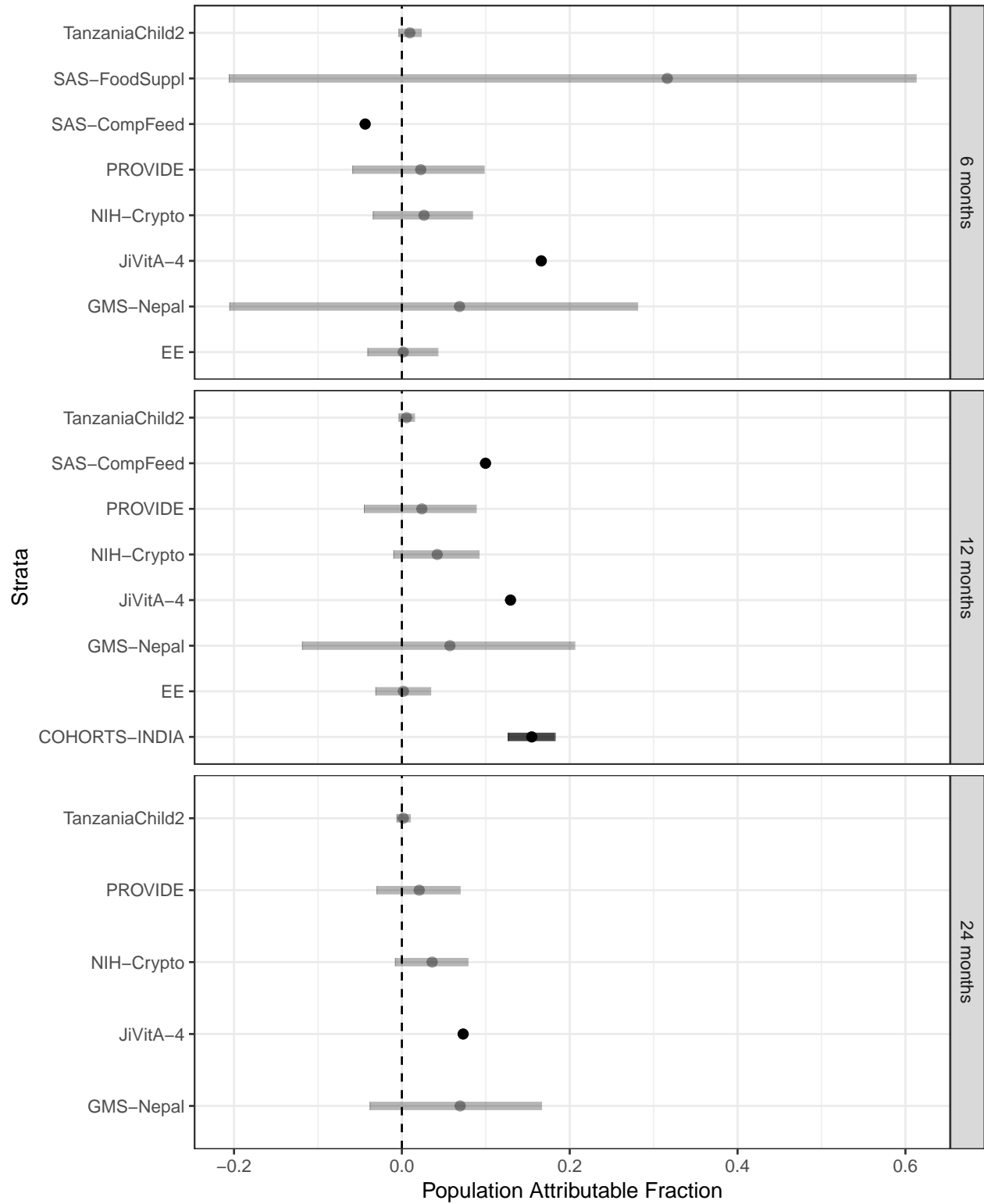
Child characteristics

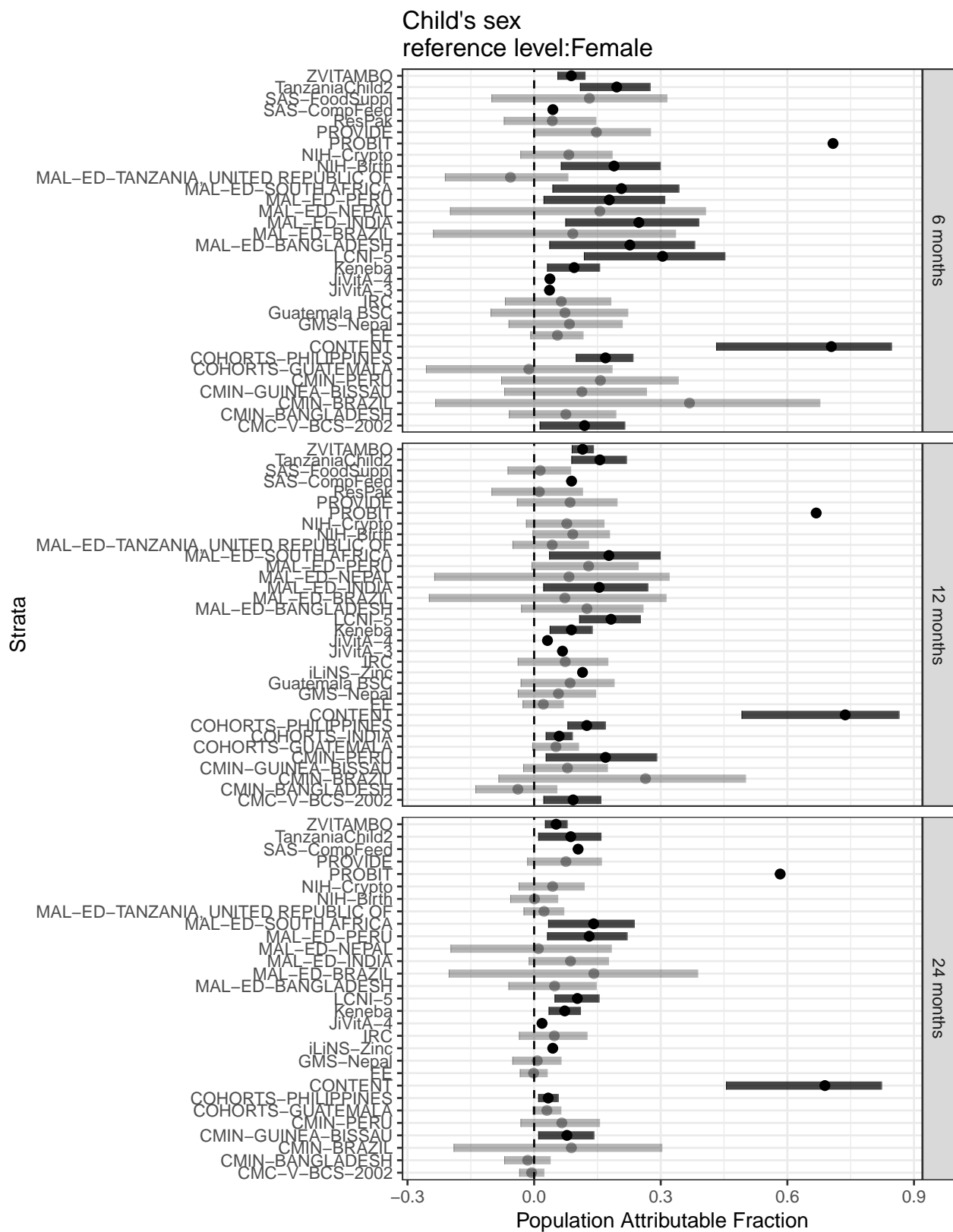




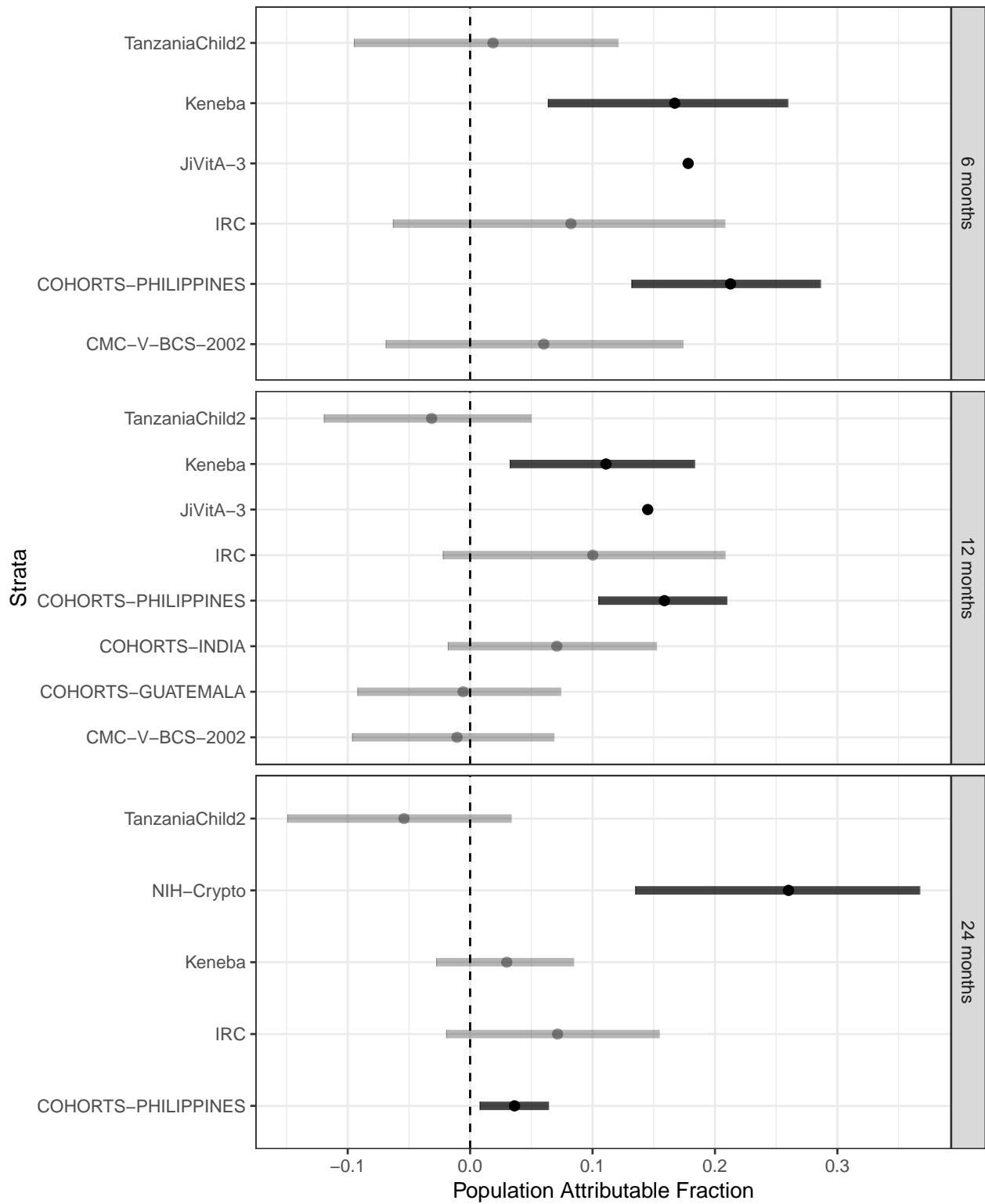


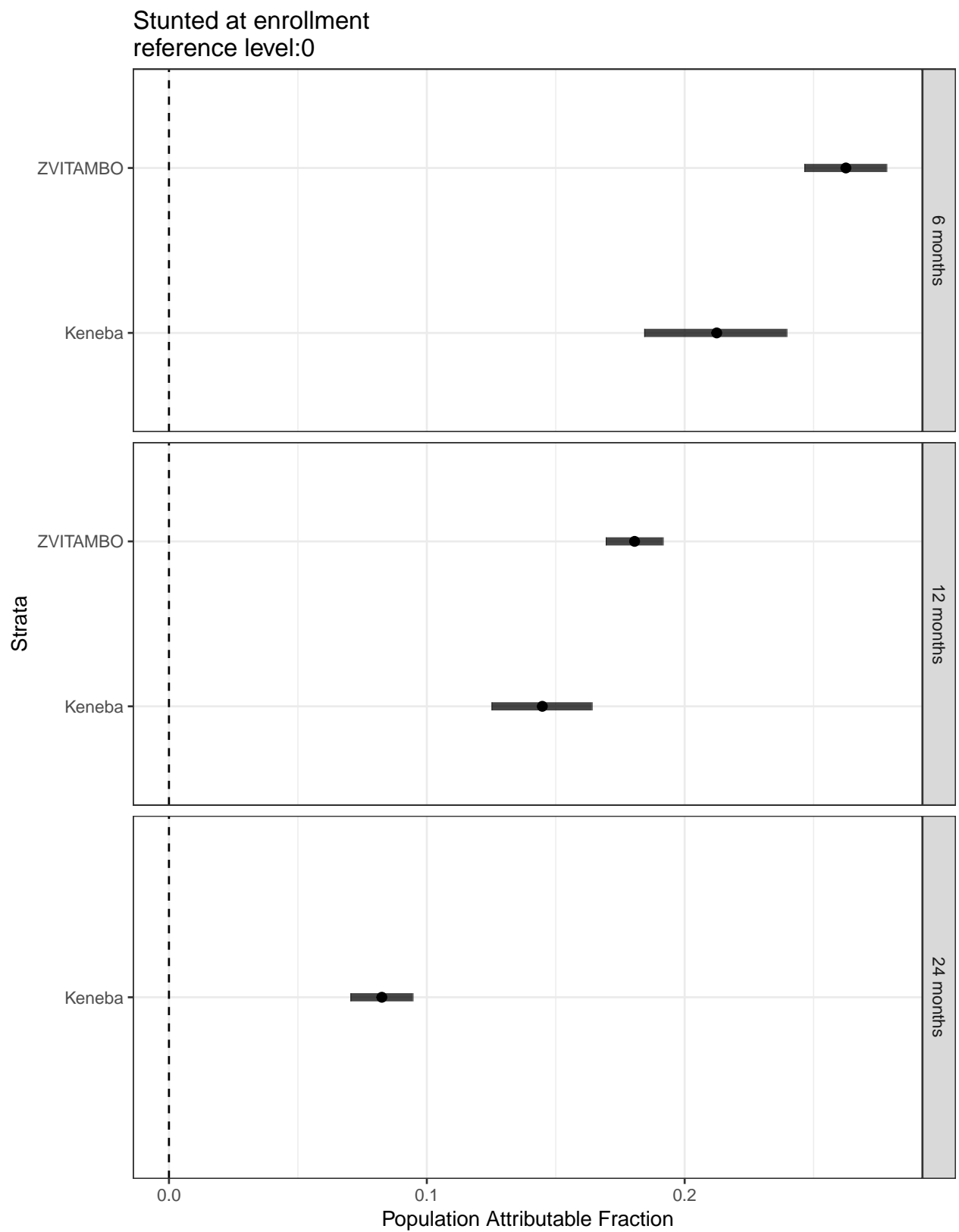
Child delivered at home
reference level:0

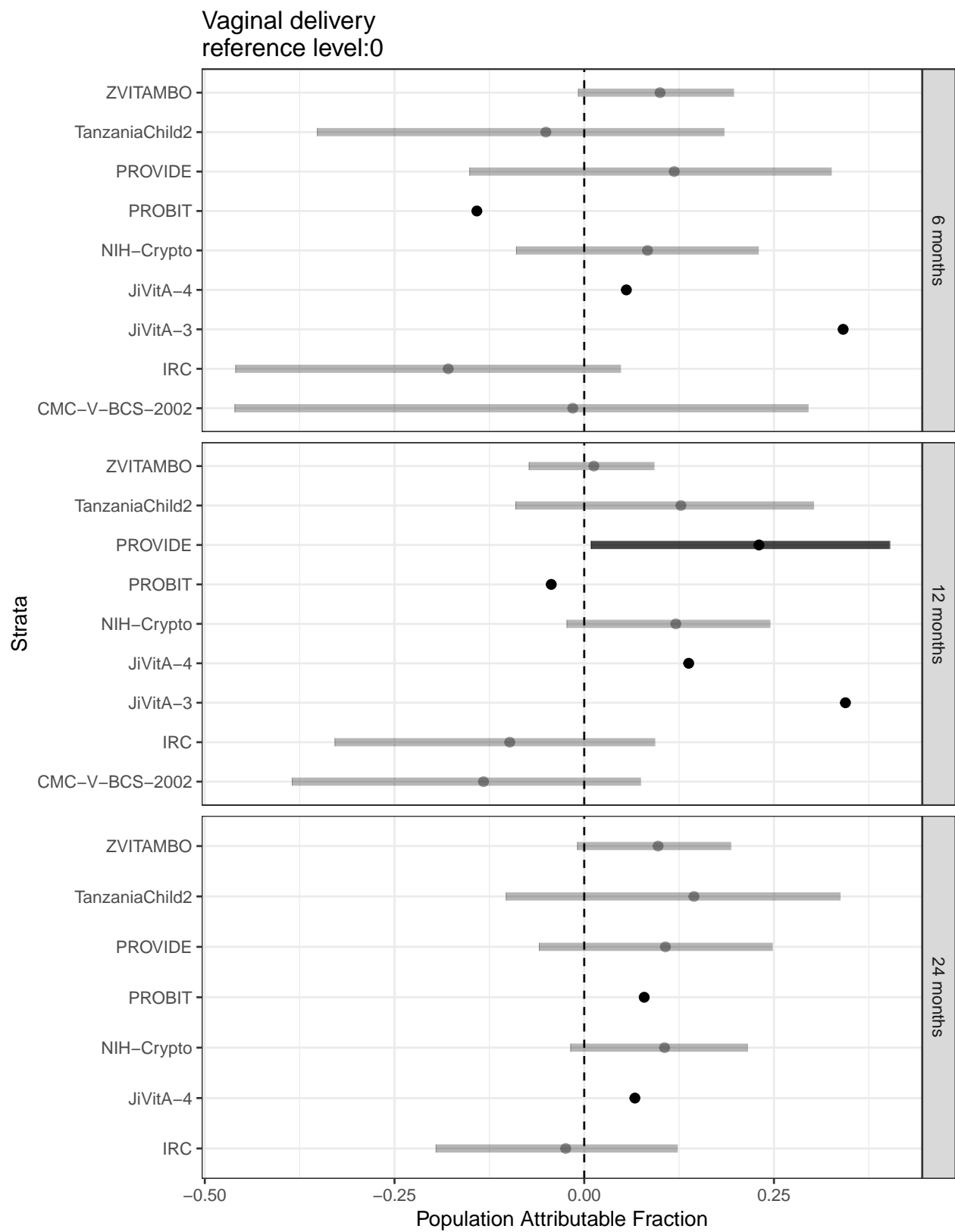




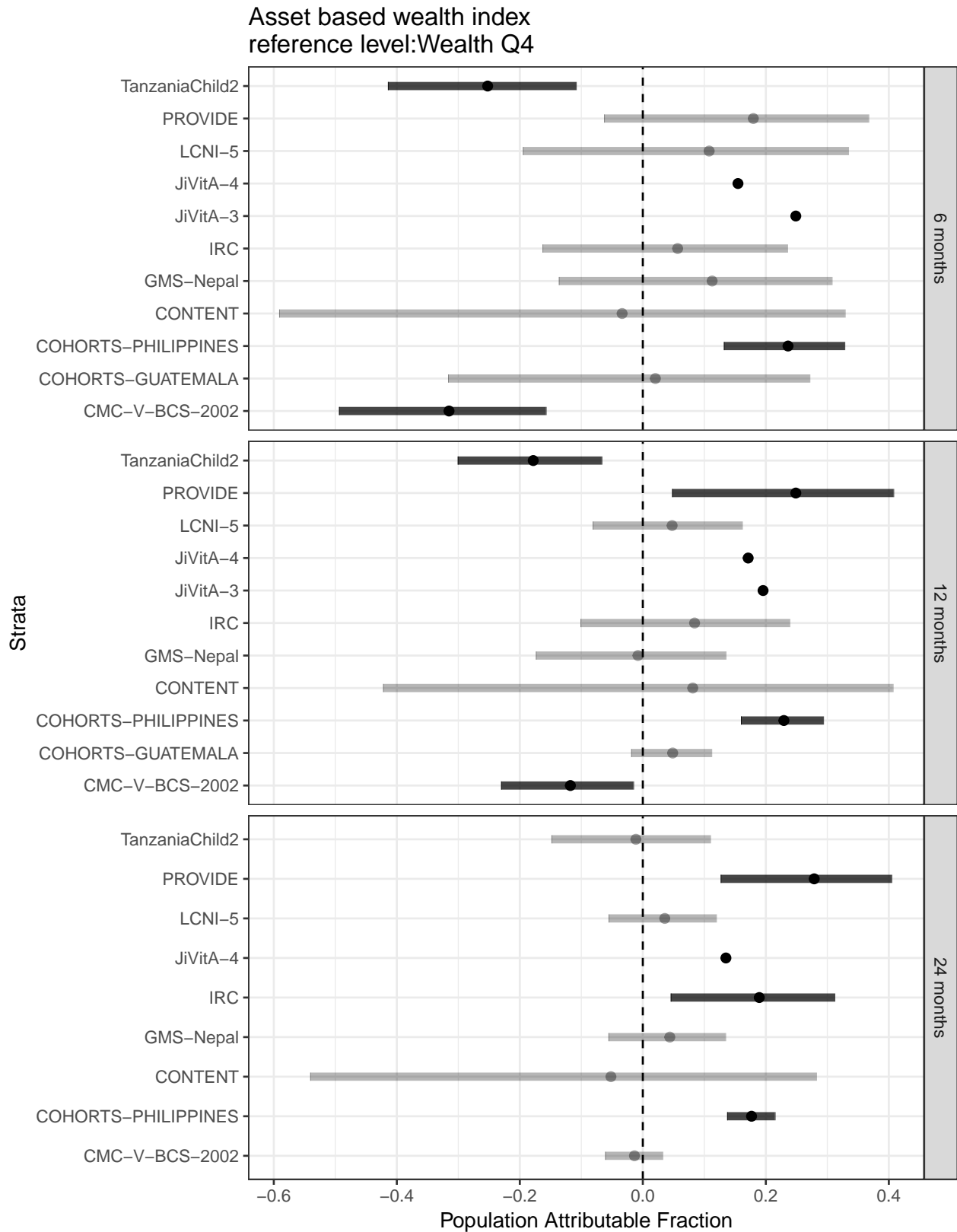
Gestational age at birth in days
reference level:[273–287)



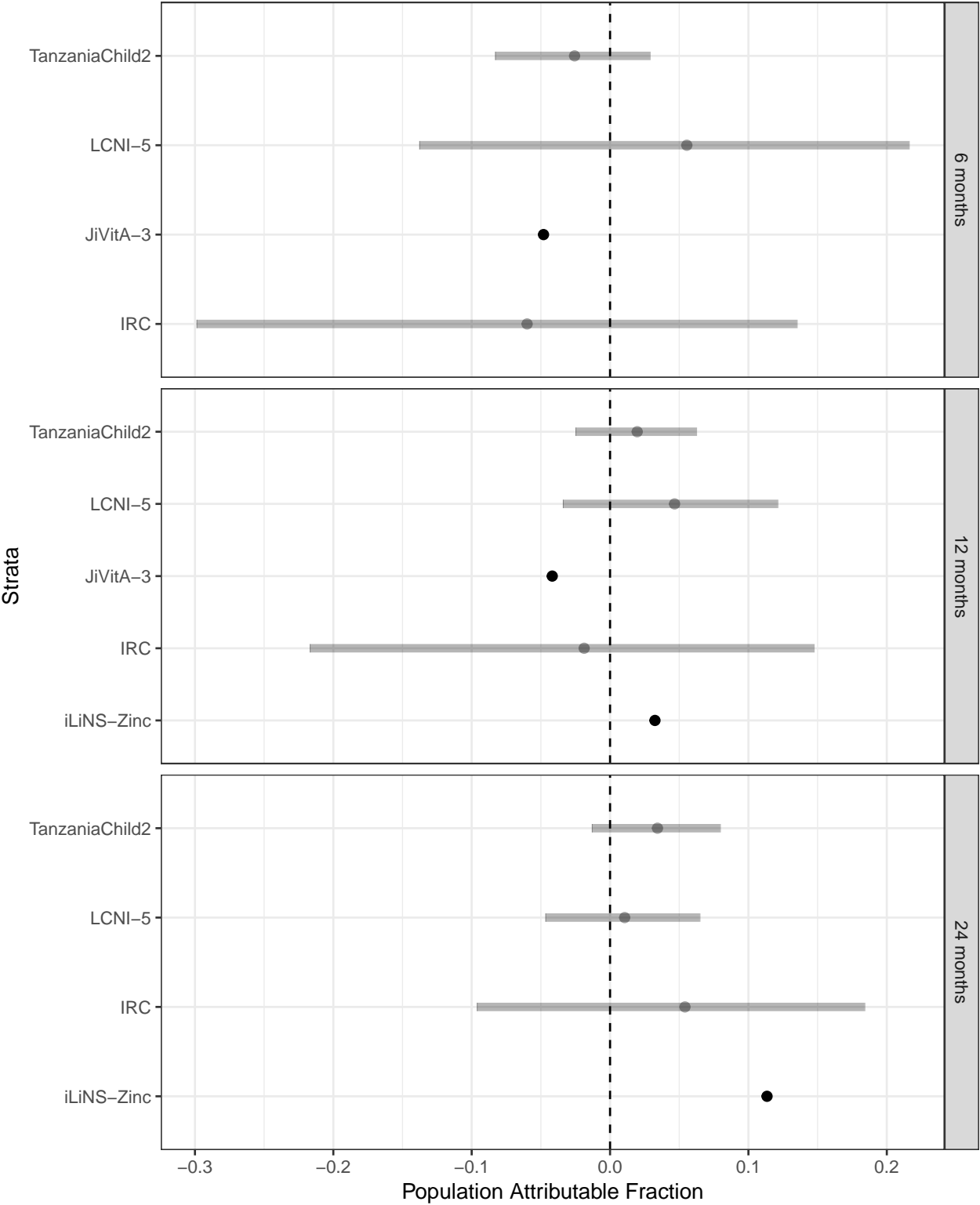




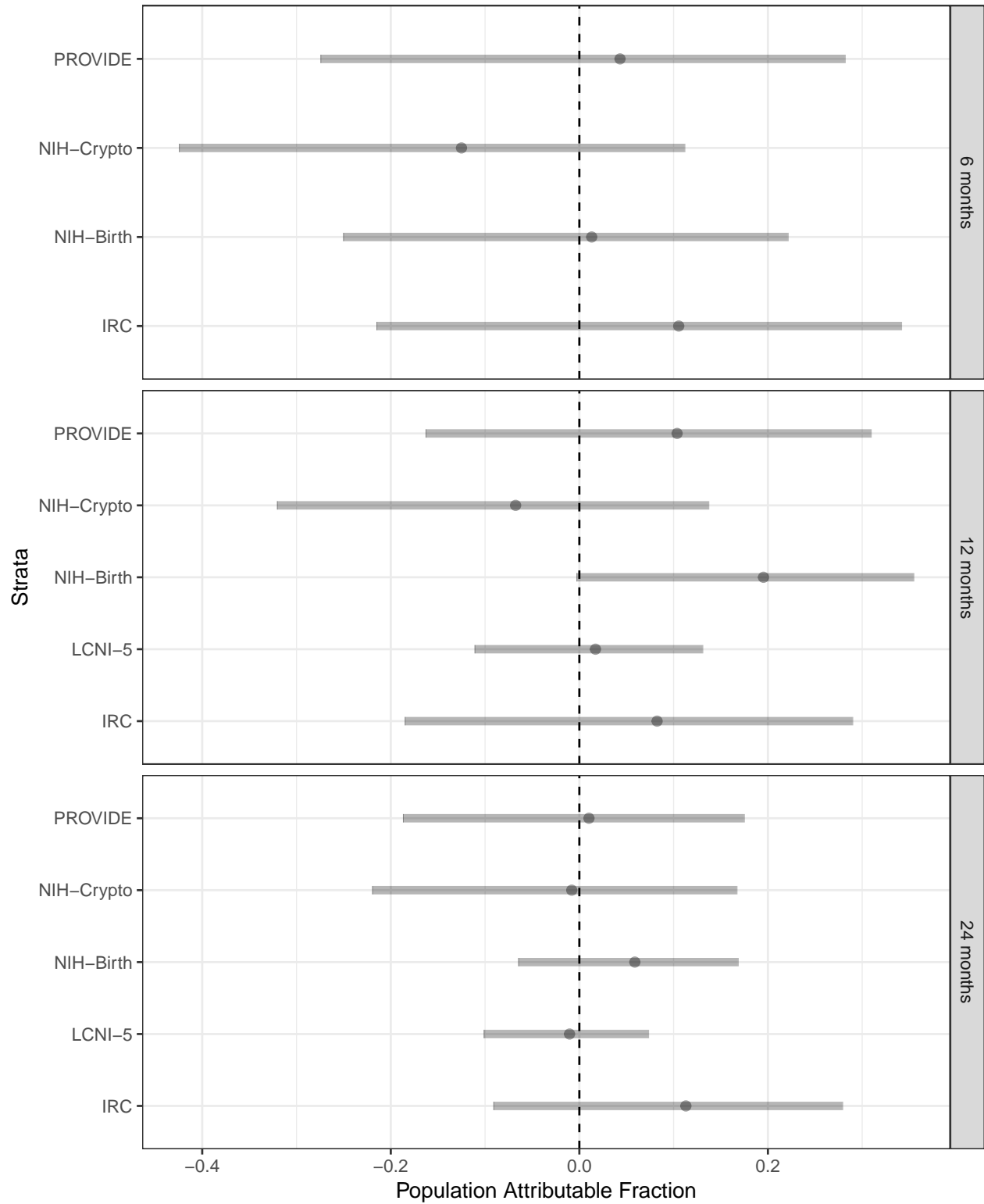
Household characteristics

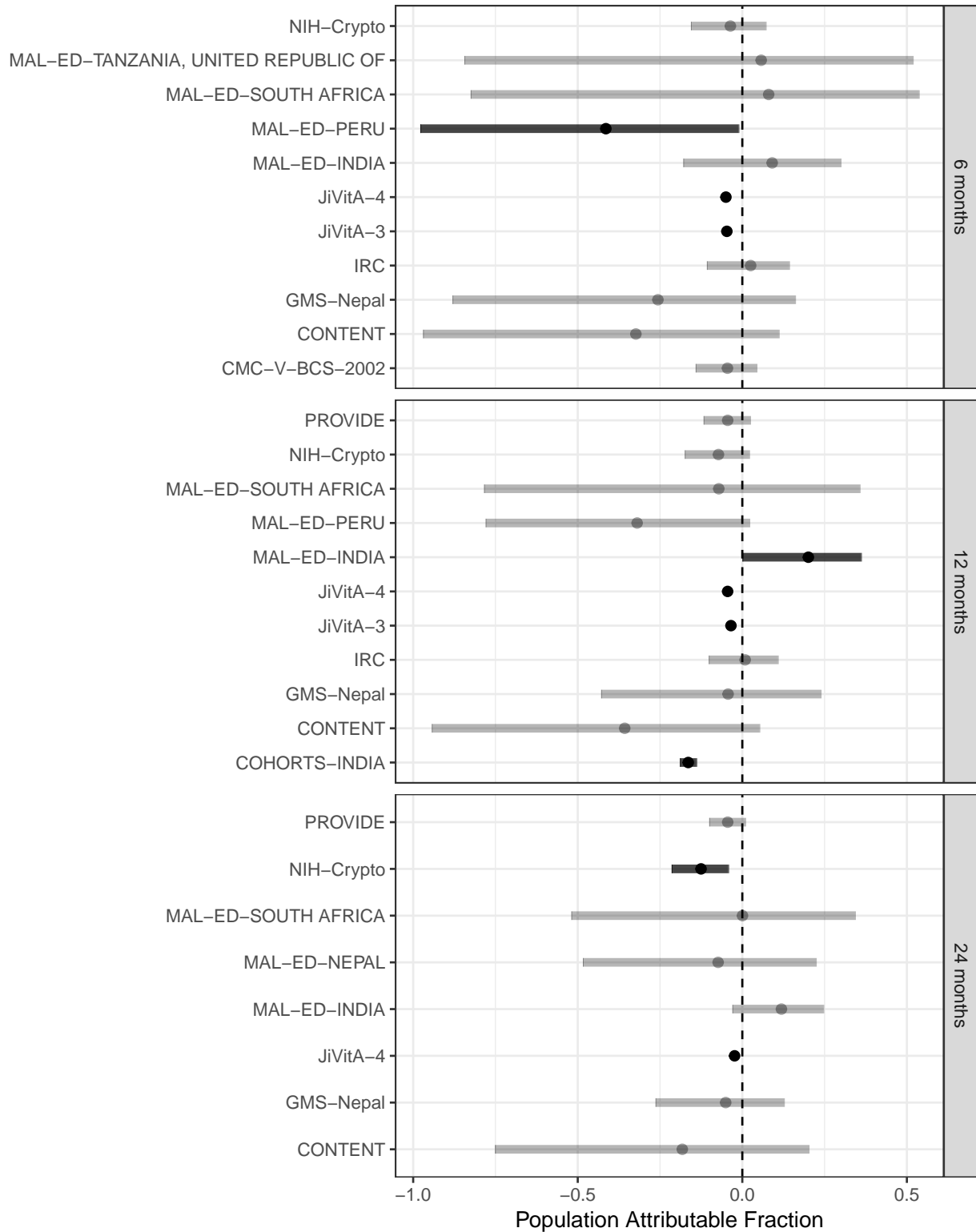


Number of children in the household under 5 years
reference level:1

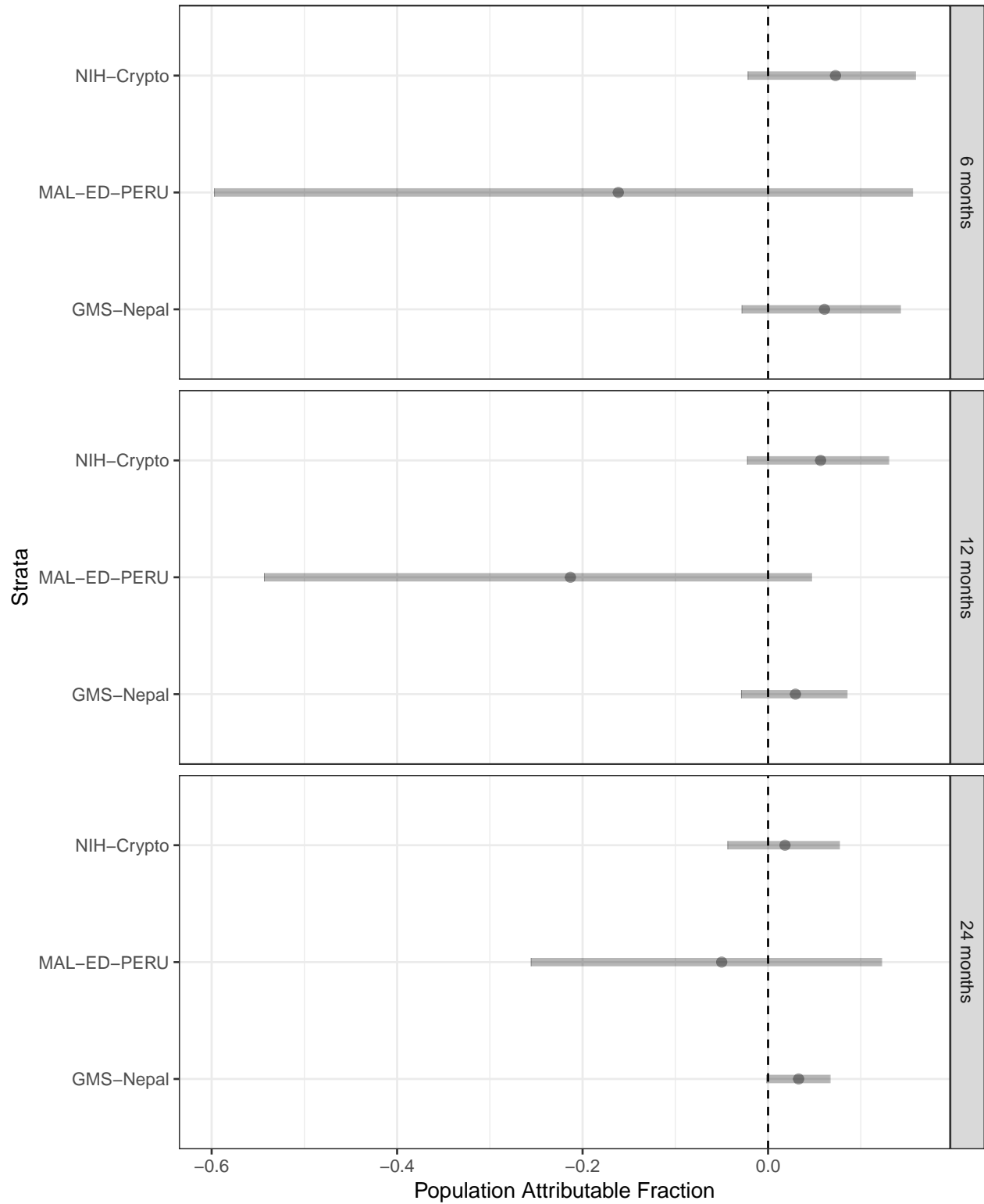


Number of people in the household
reference level:3 or less

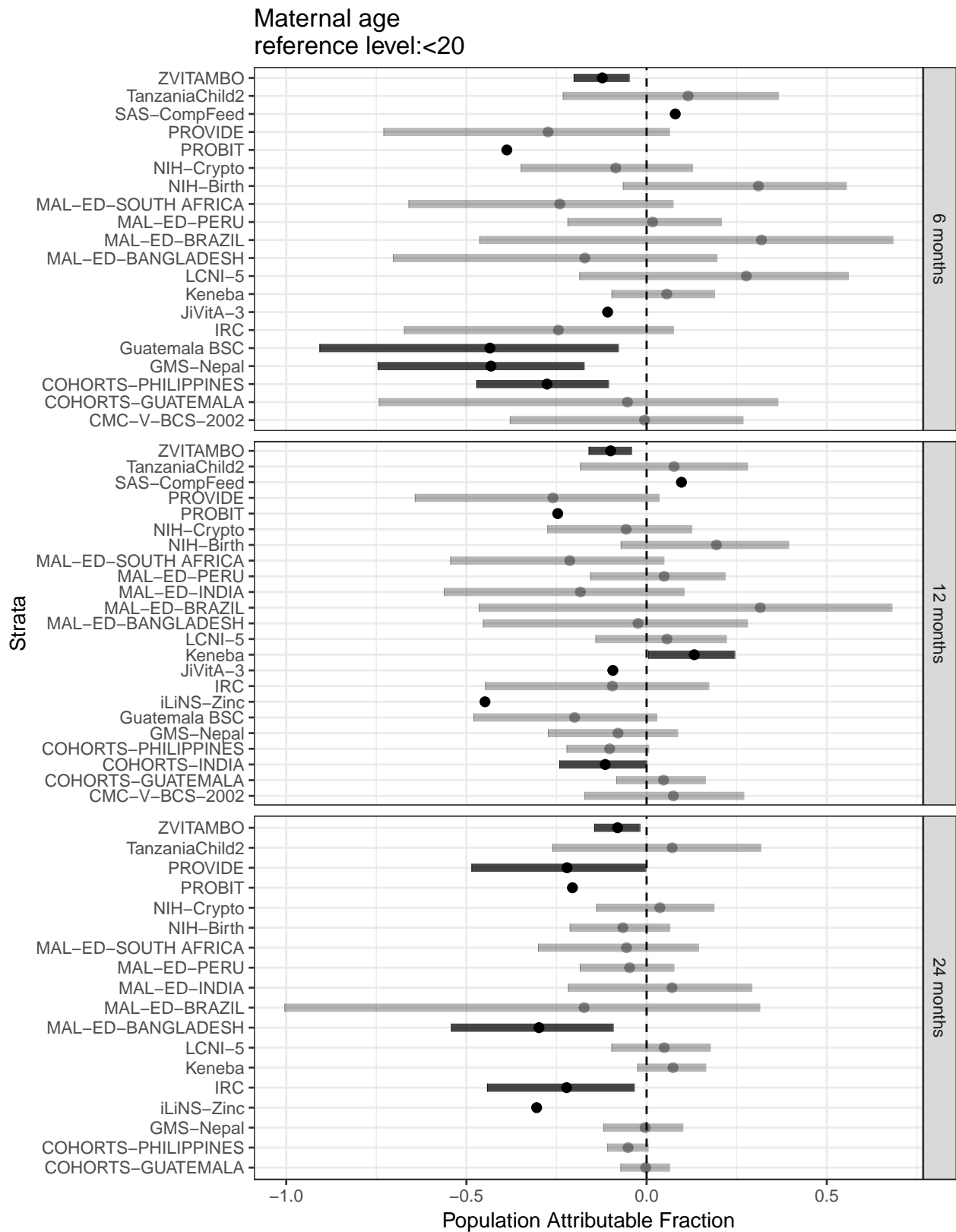


Number of rooms in household
reference level:1

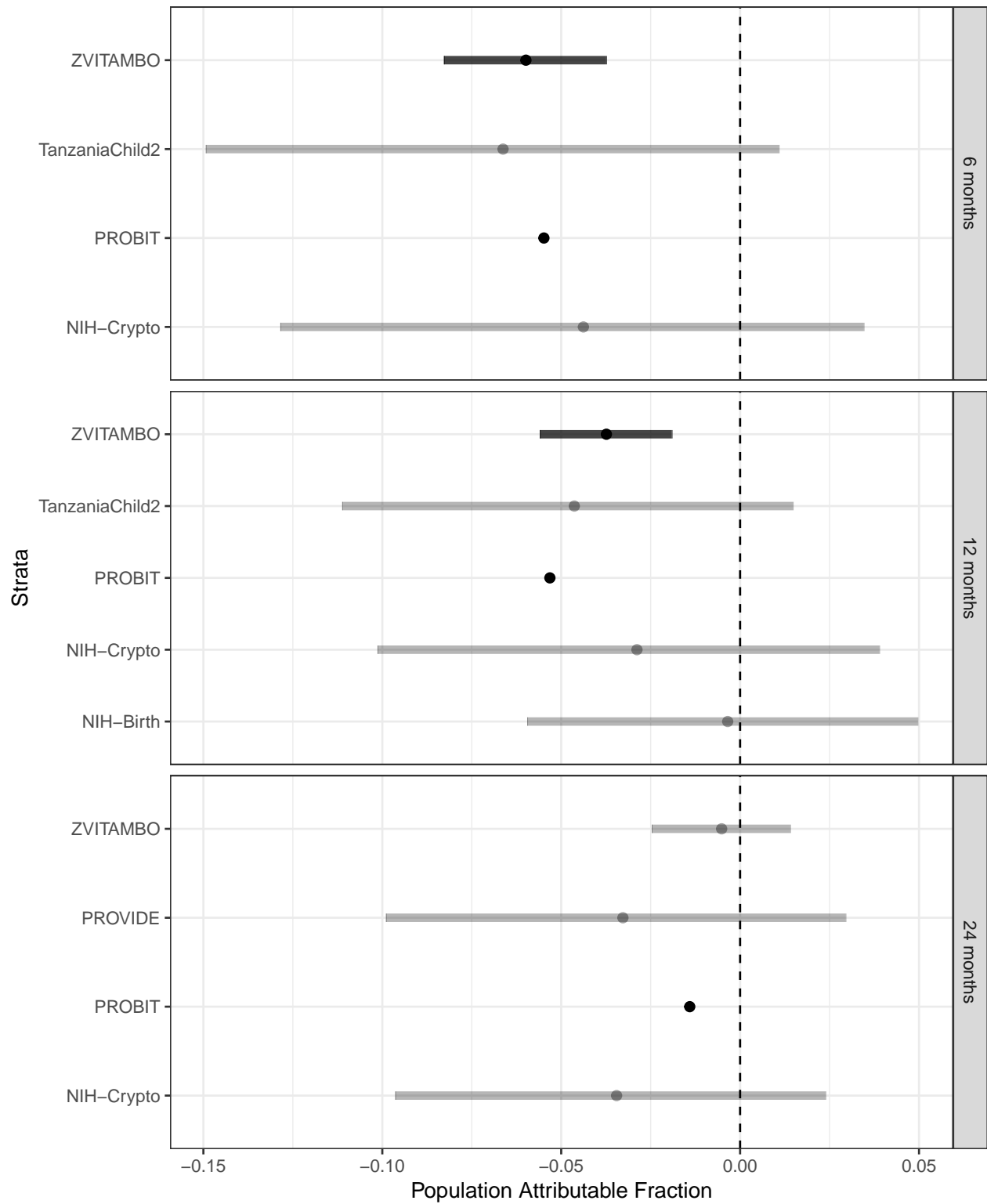
USAID Household Food Insecurity Access Scale (HFIAS) category
reference level: Food Secure

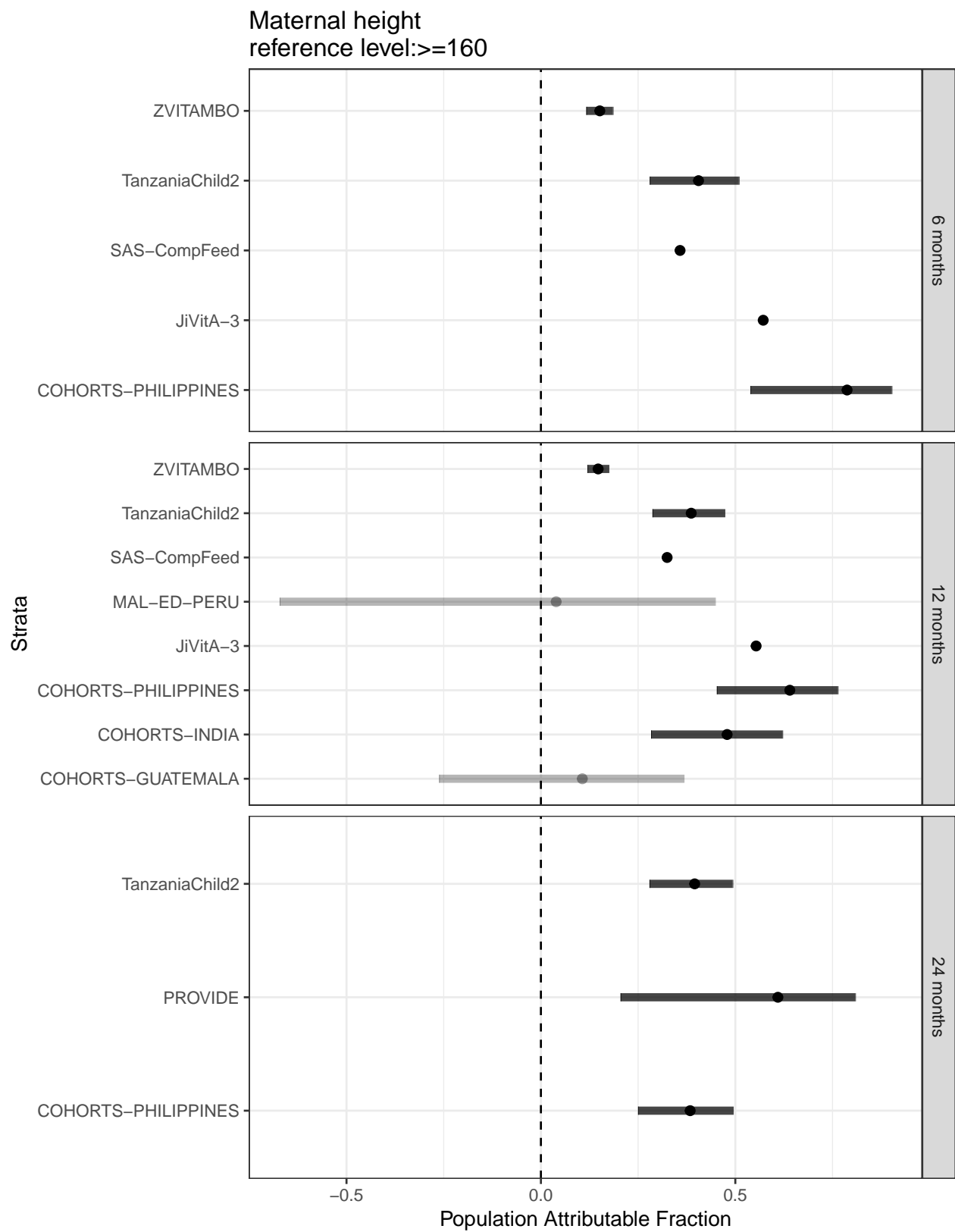


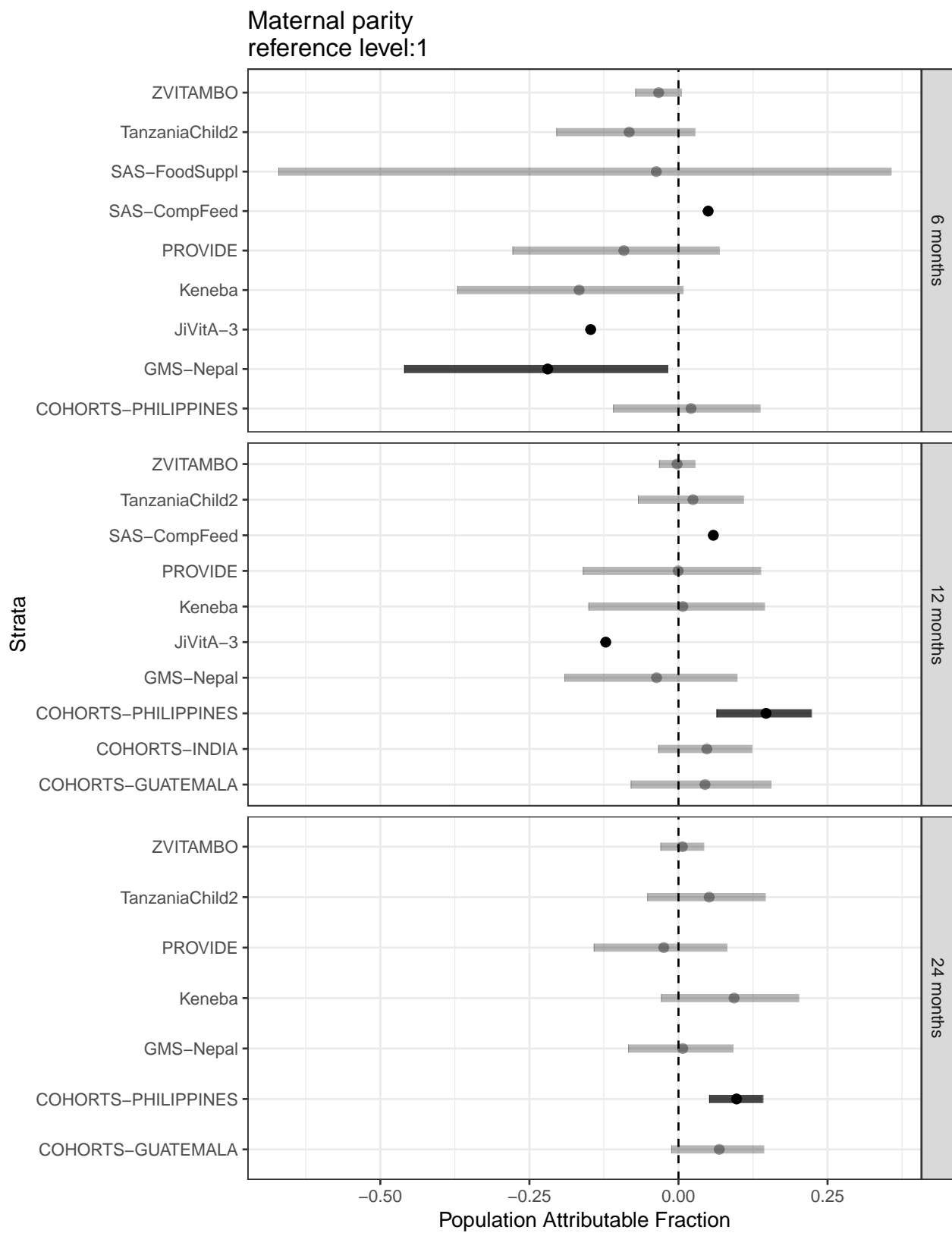
Maternal characteristics

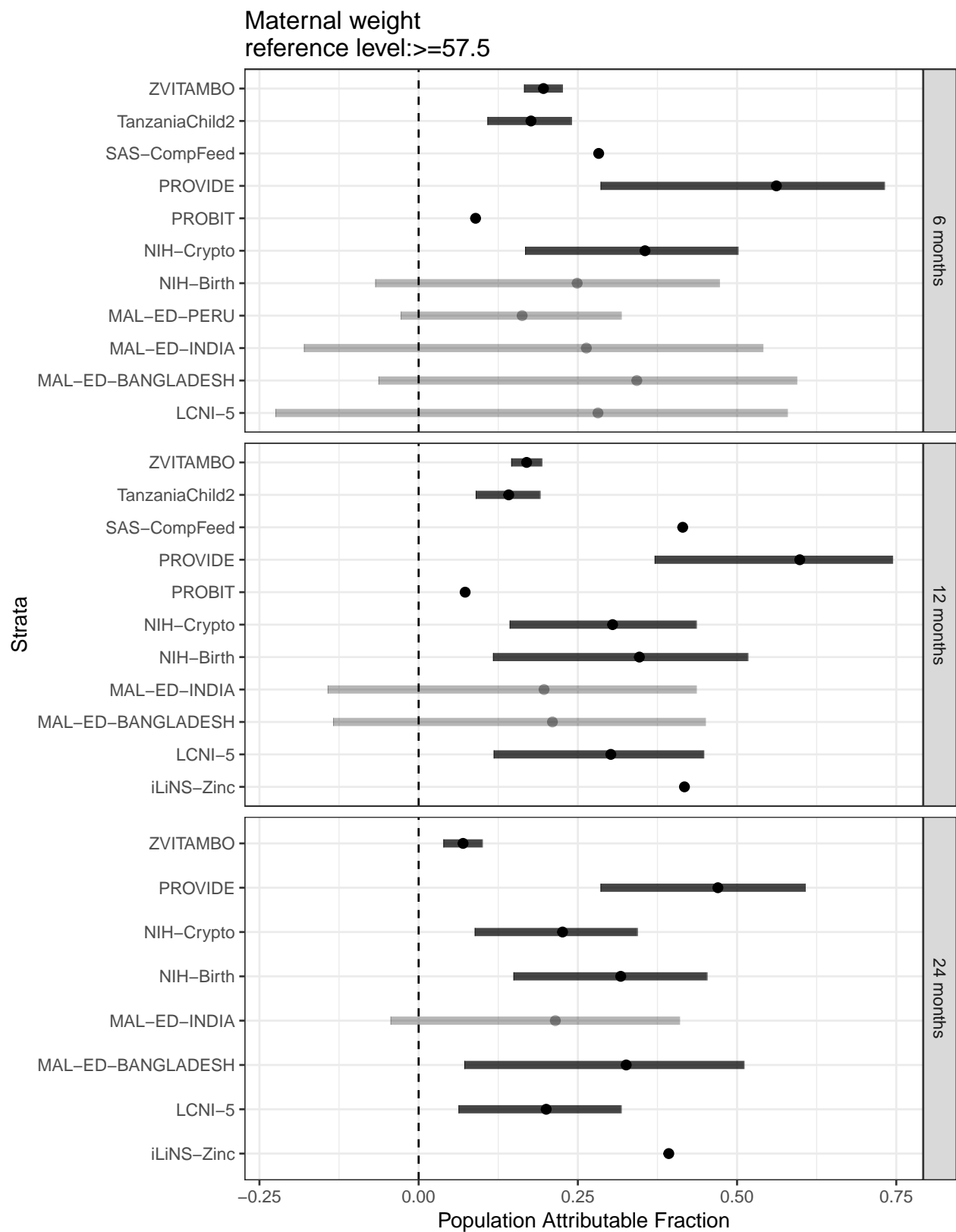


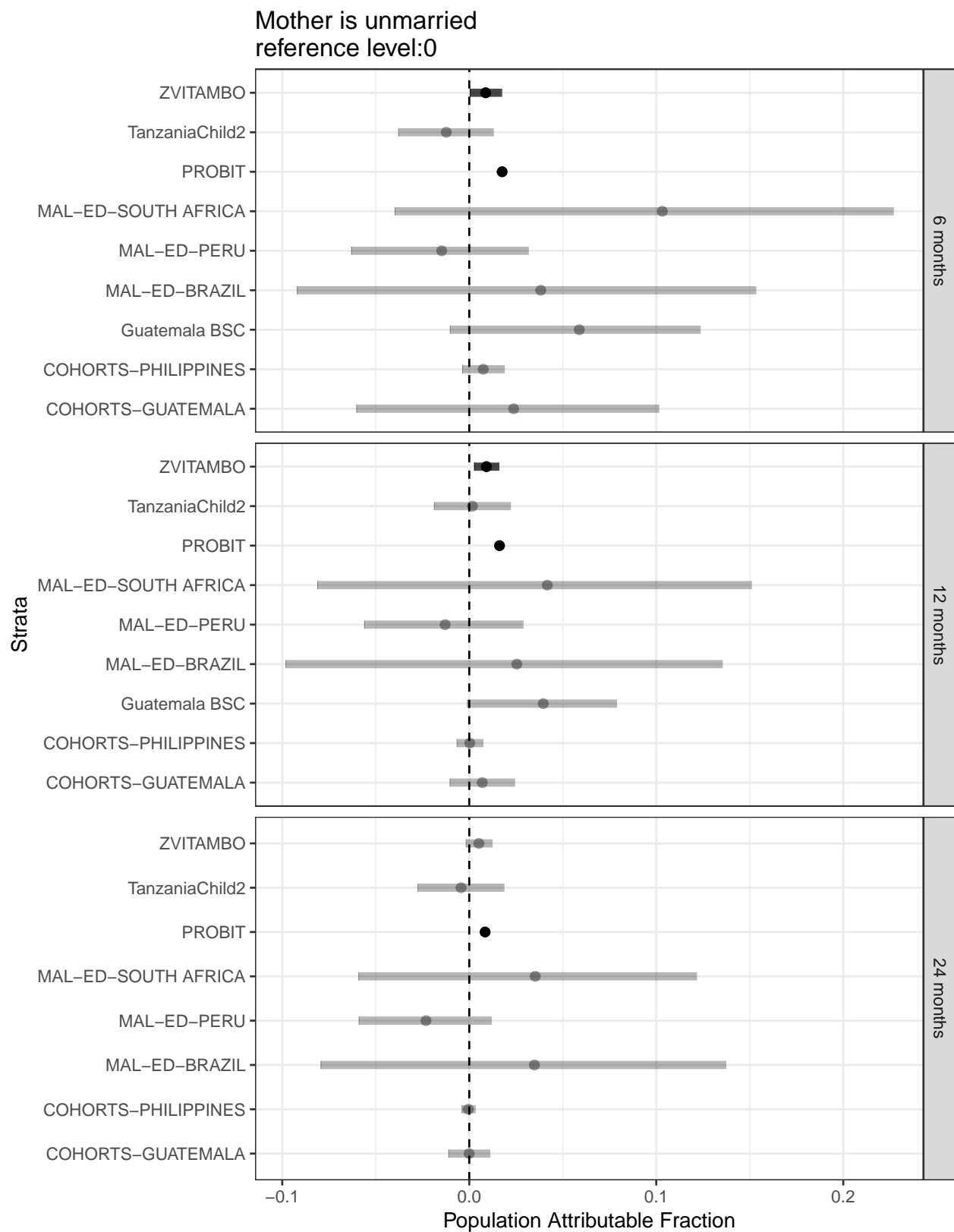
Maternal BMI
reference level:[18.5–25)



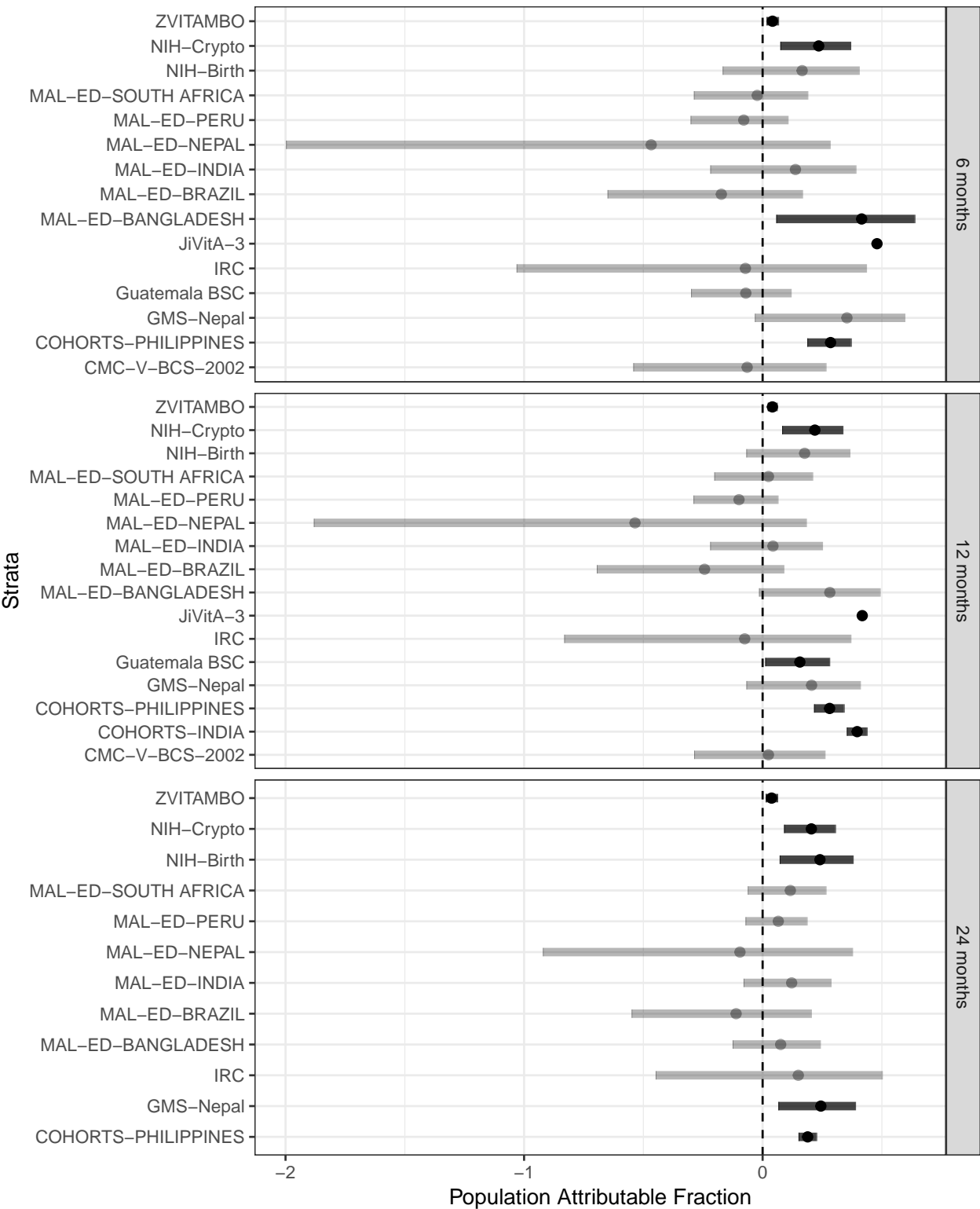




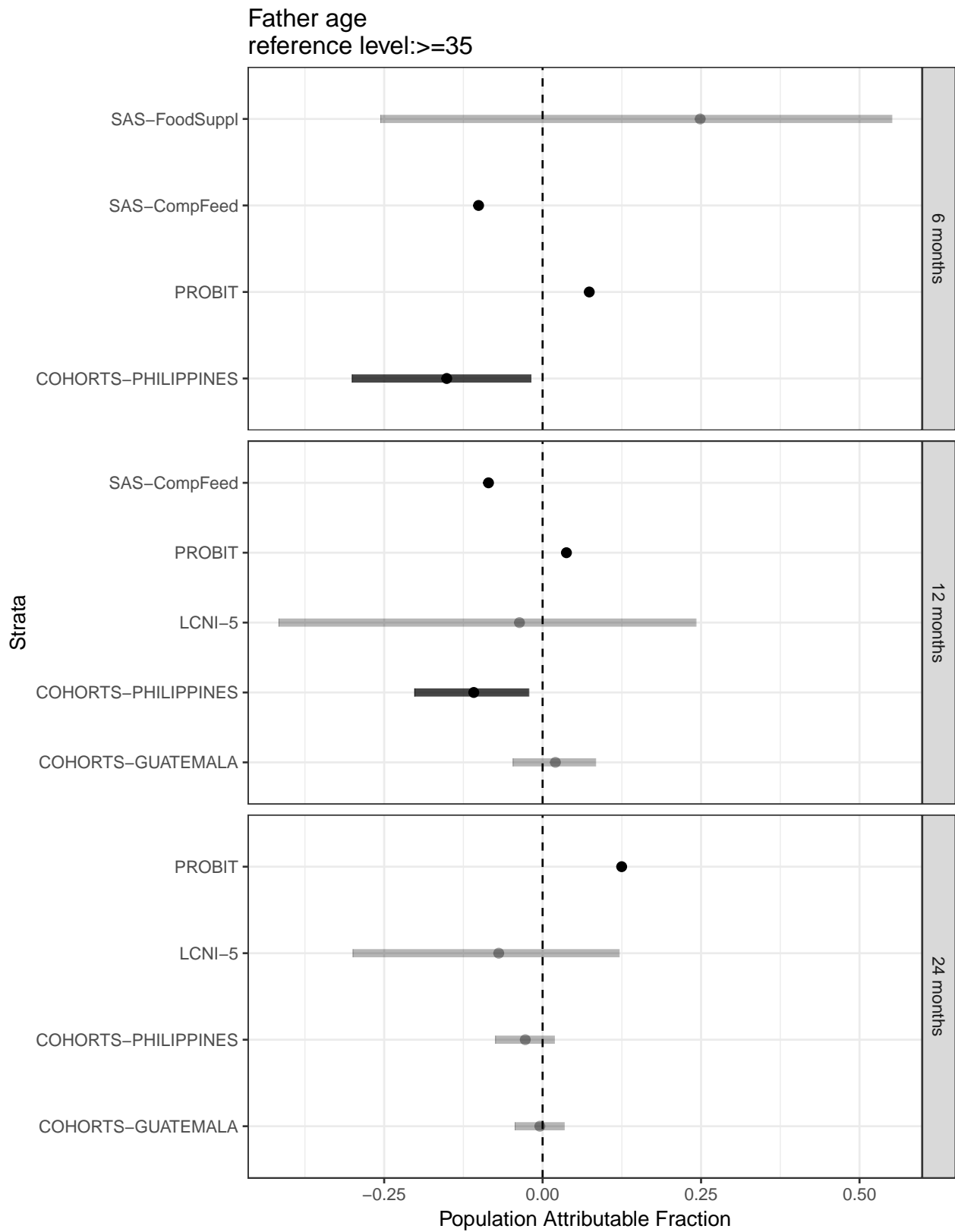




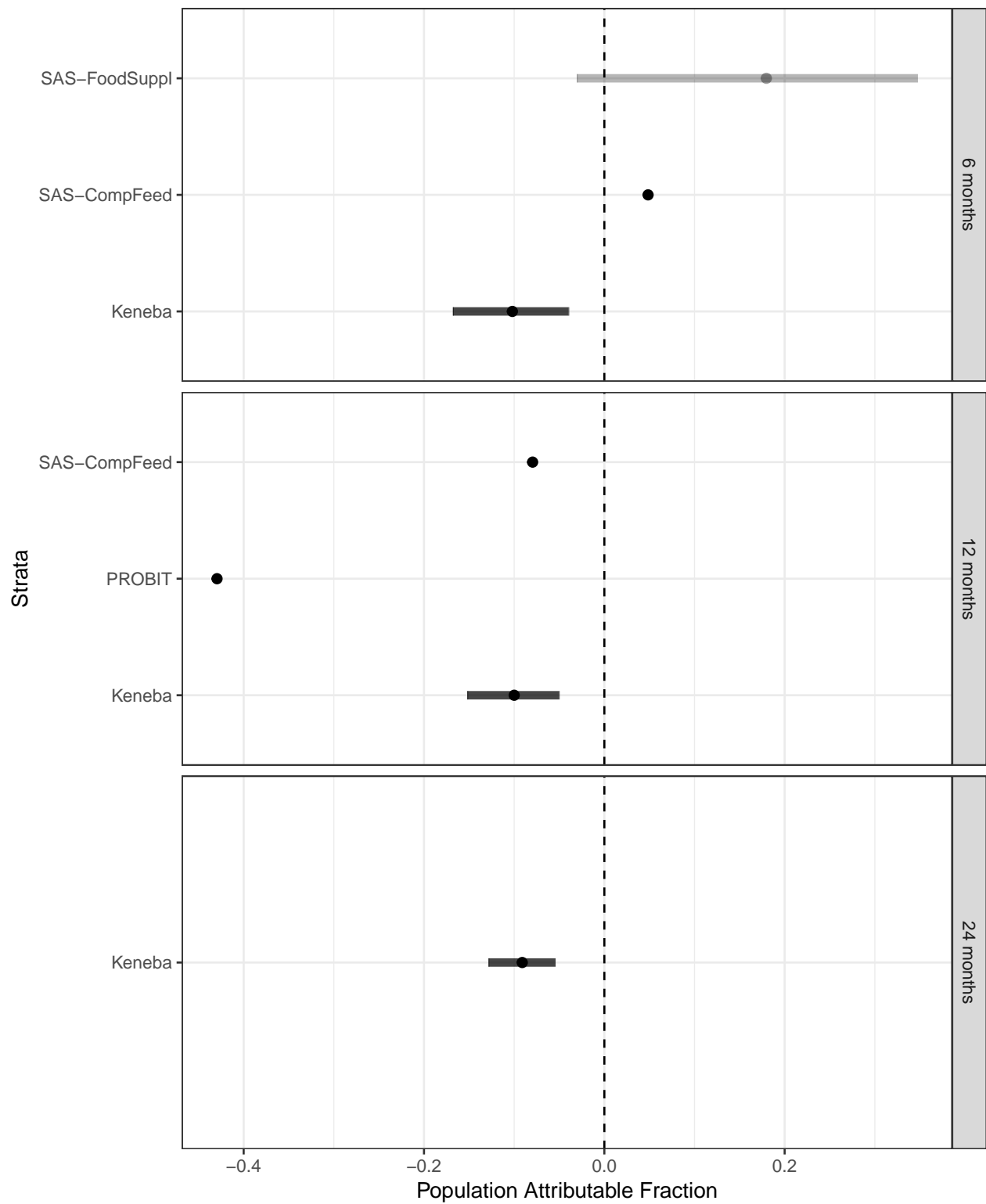
Mother's education
reference level:Q4

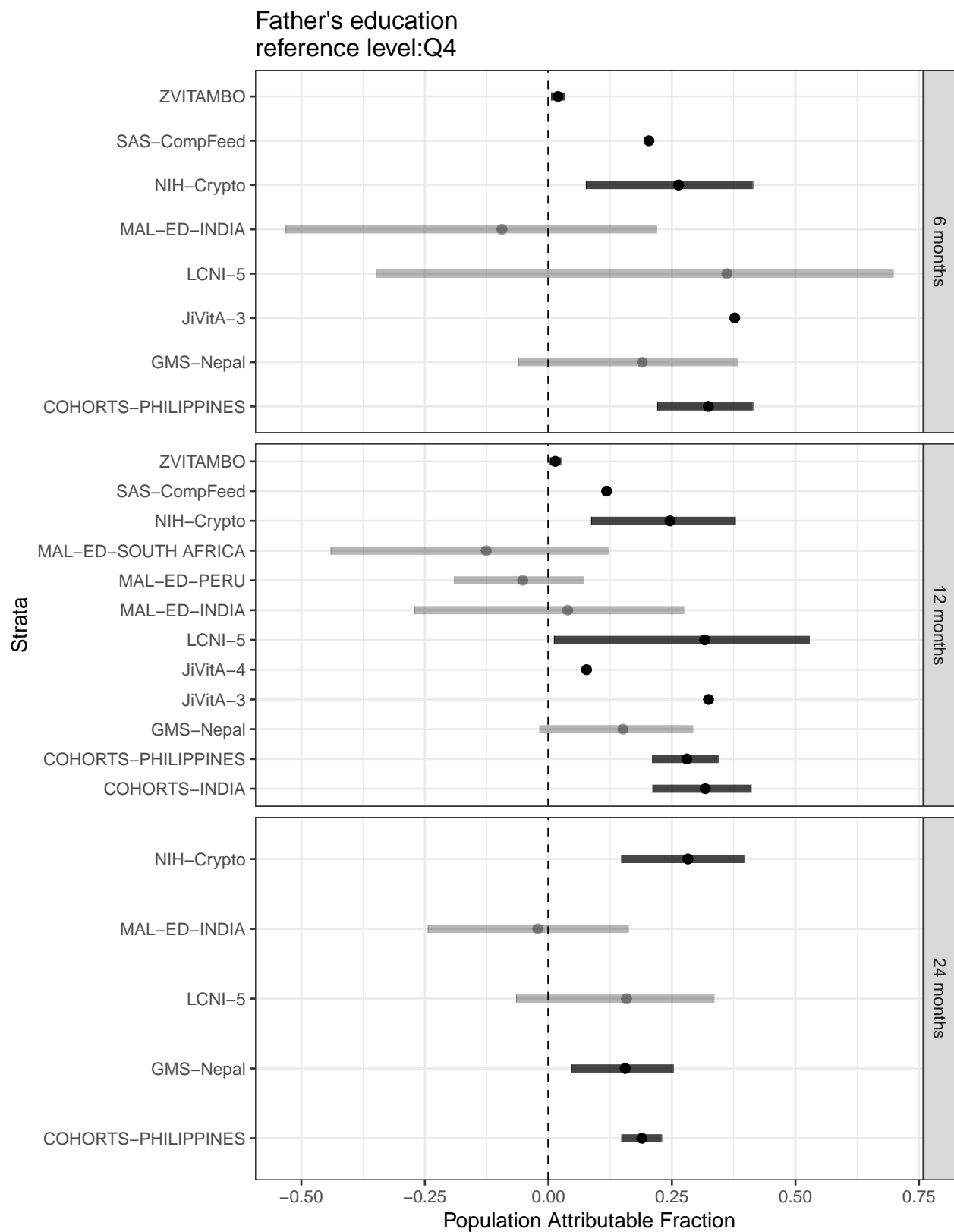


Paternal characteristics



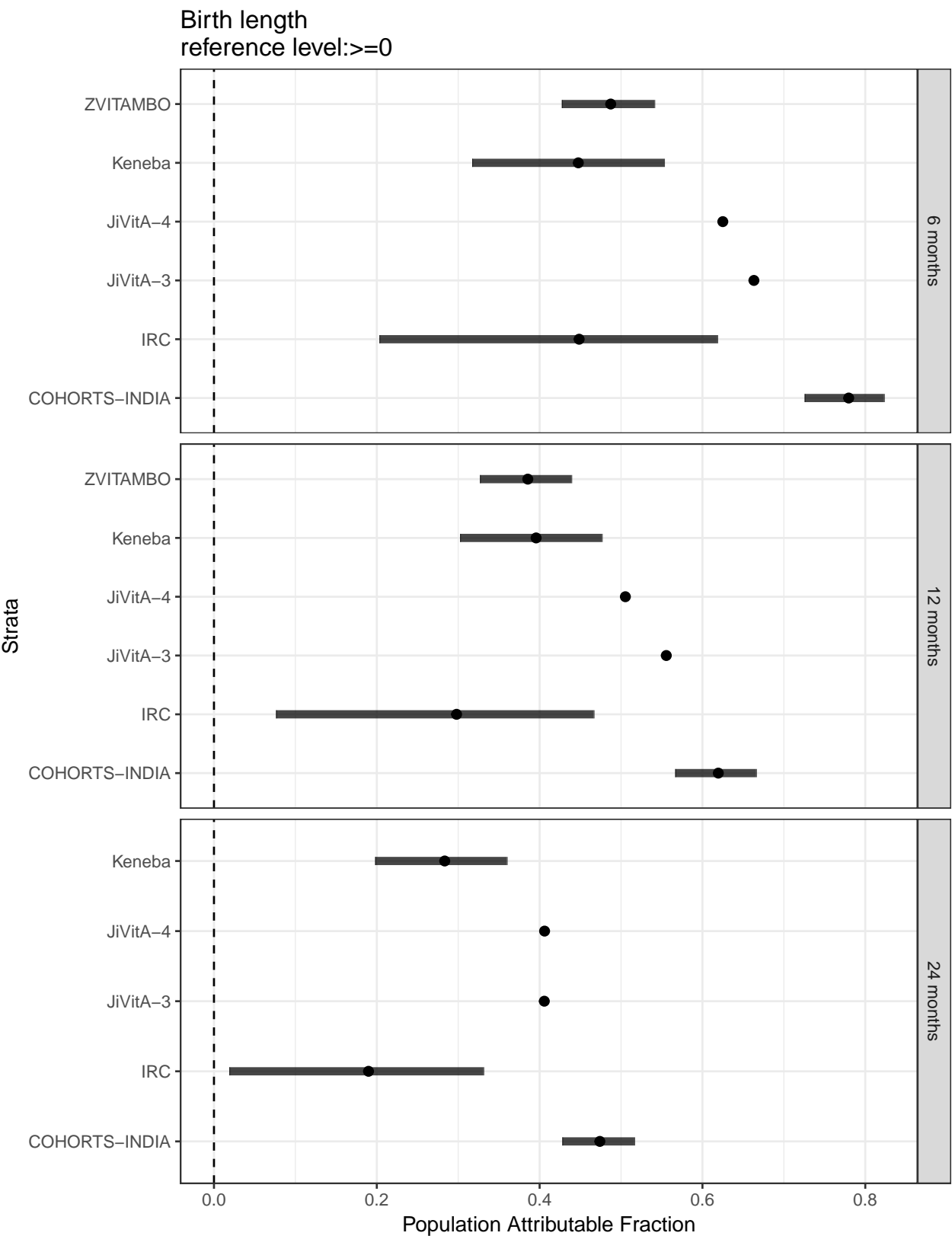
Father height
reference level:[160–170)

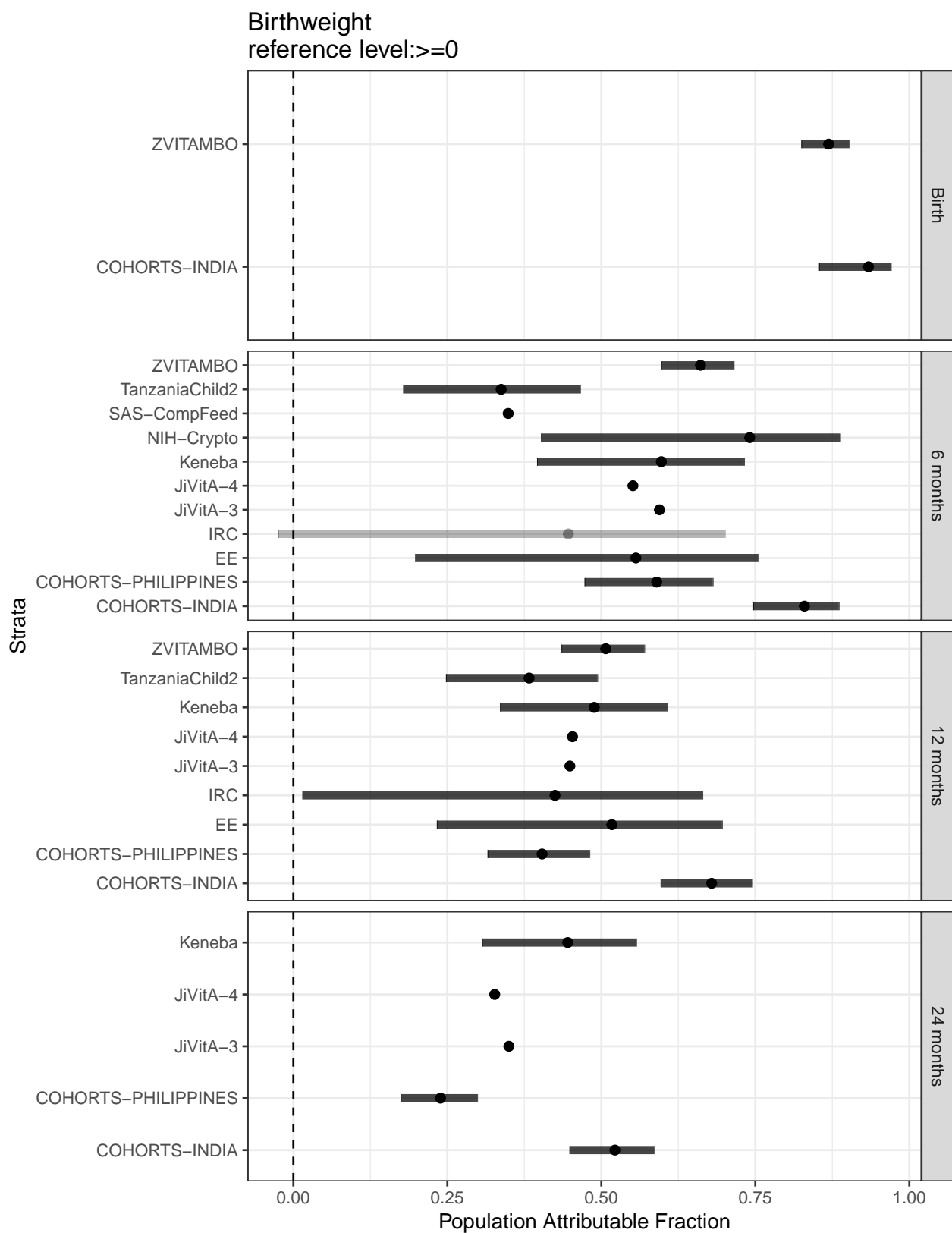




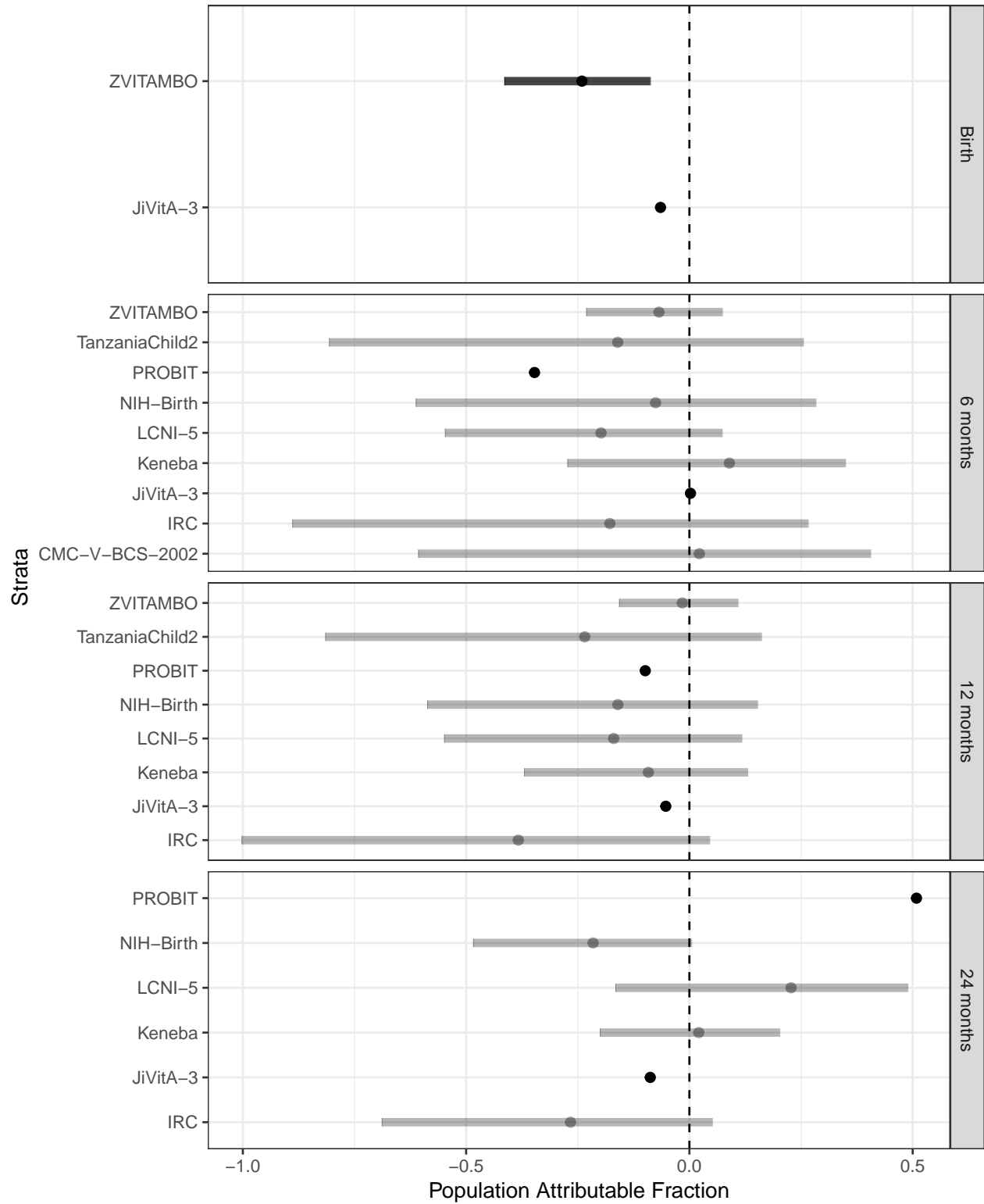
Point prevalence of stunting

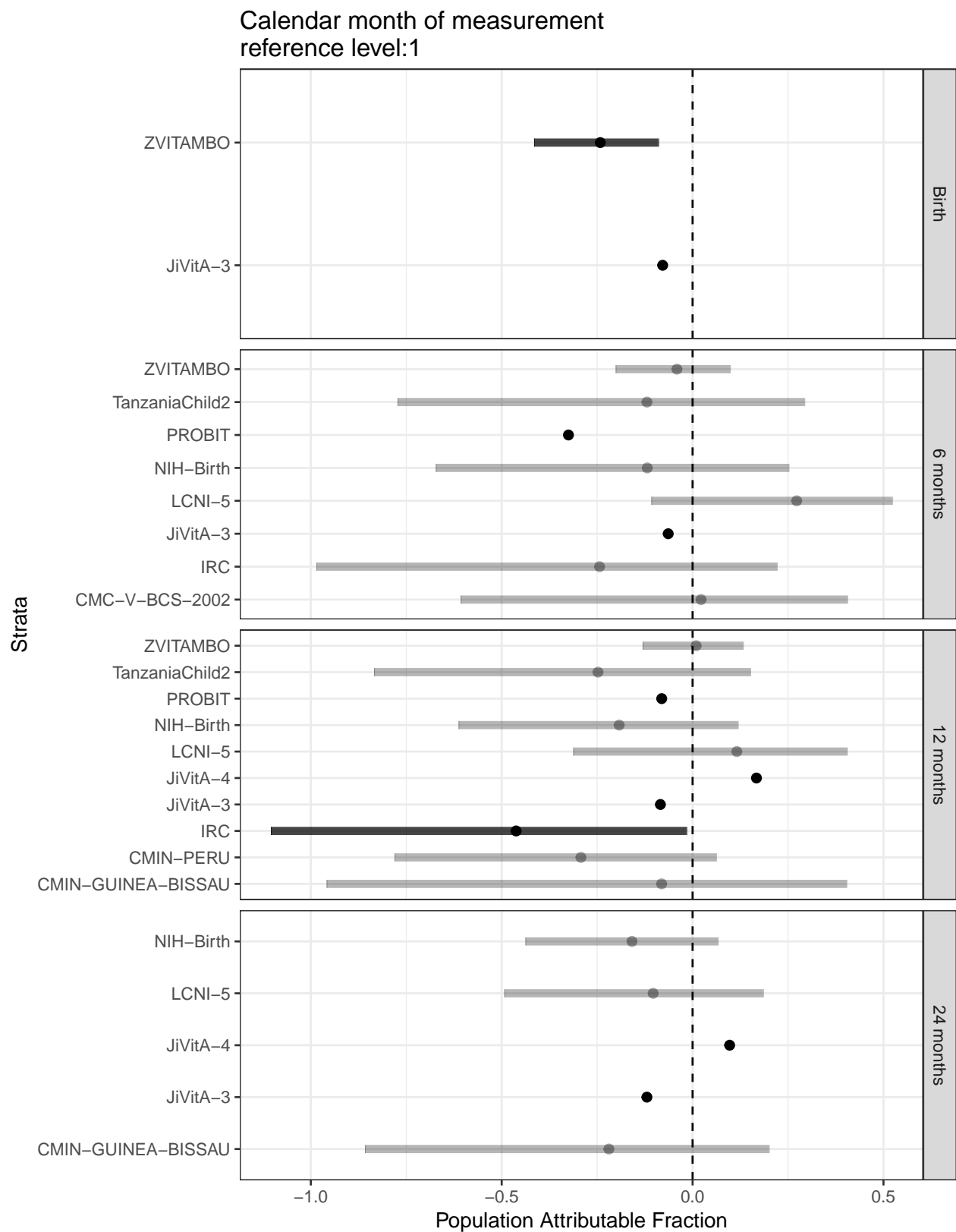
Child characteristics



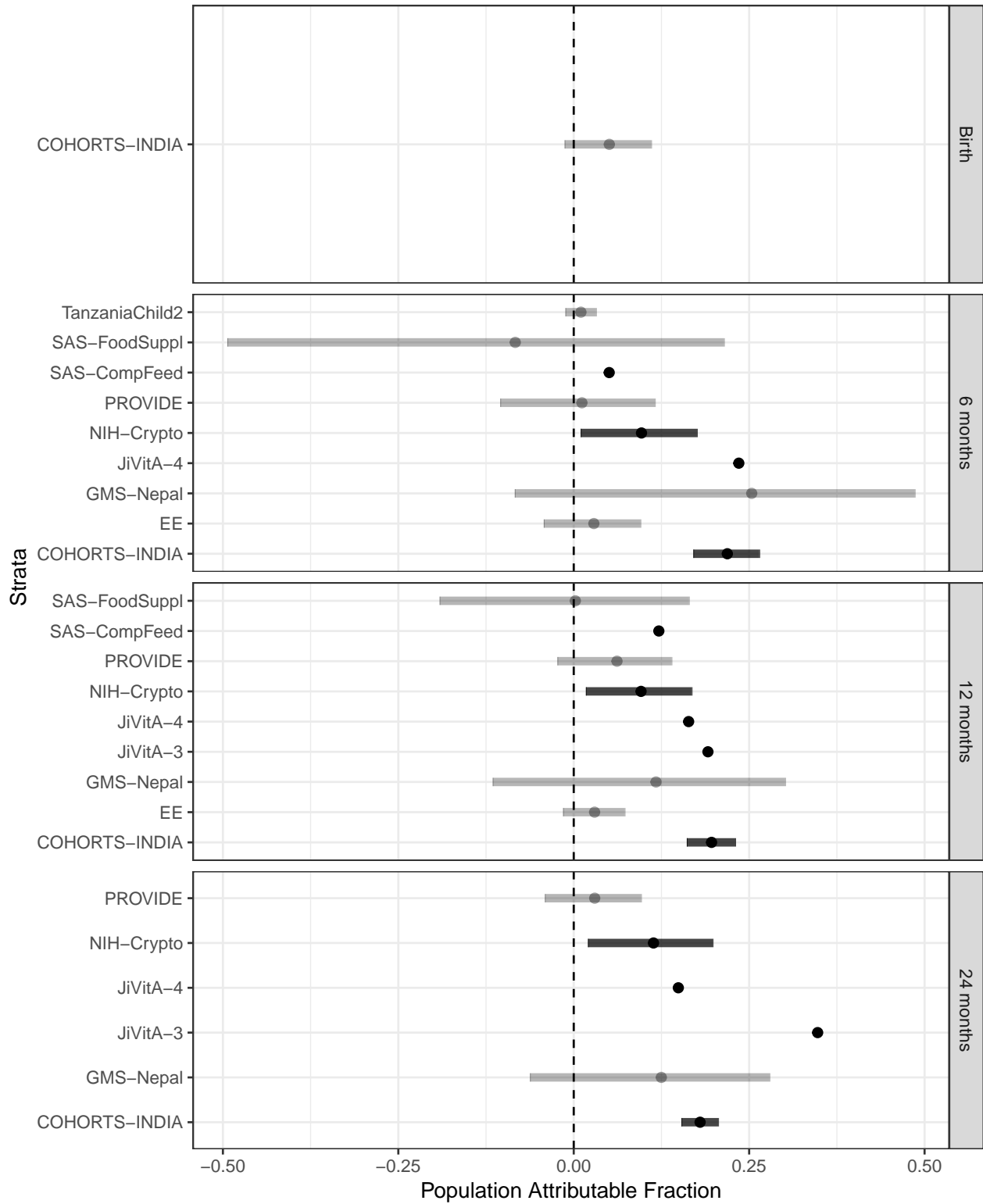


Calendar month of birth
reference level:1

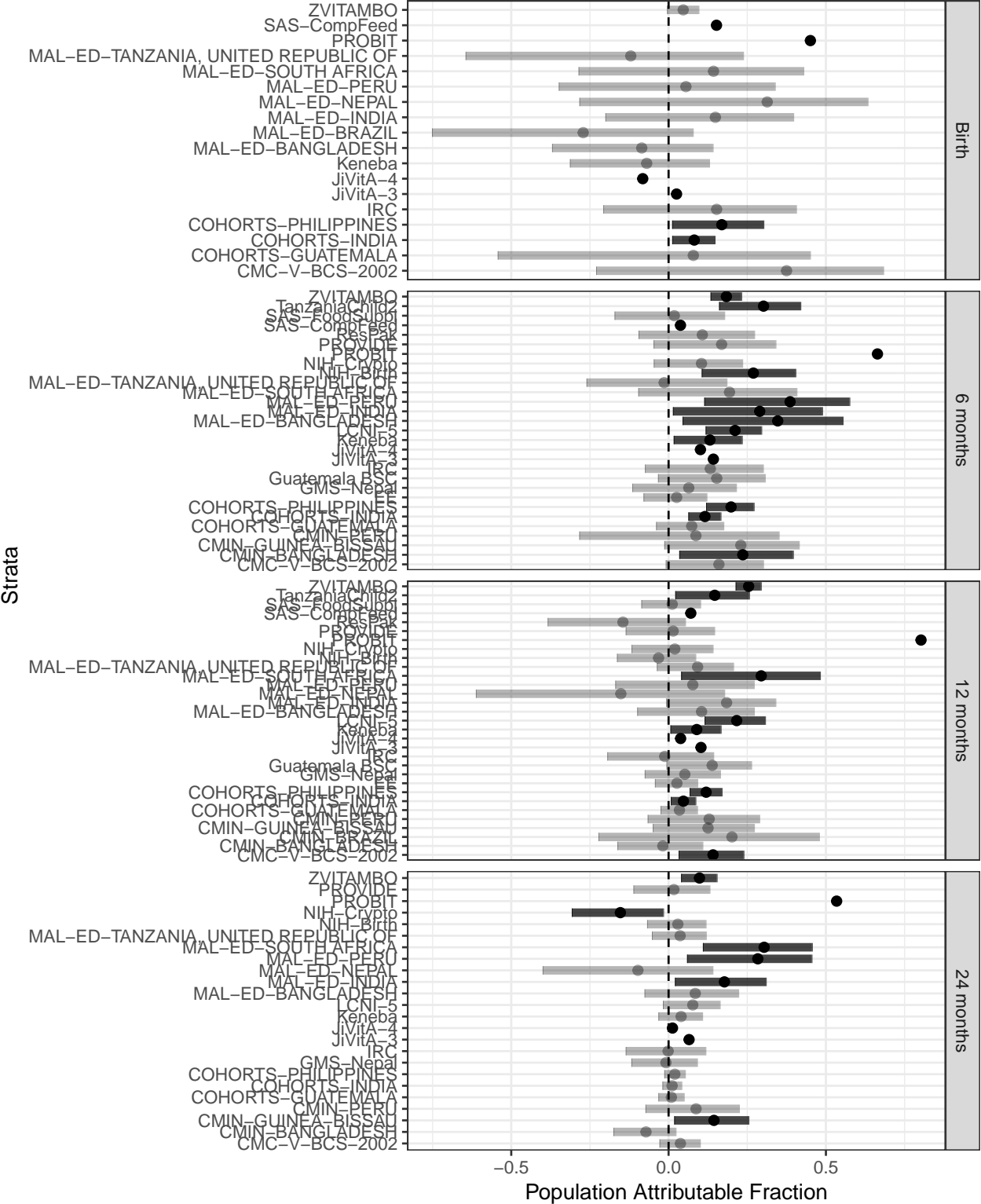




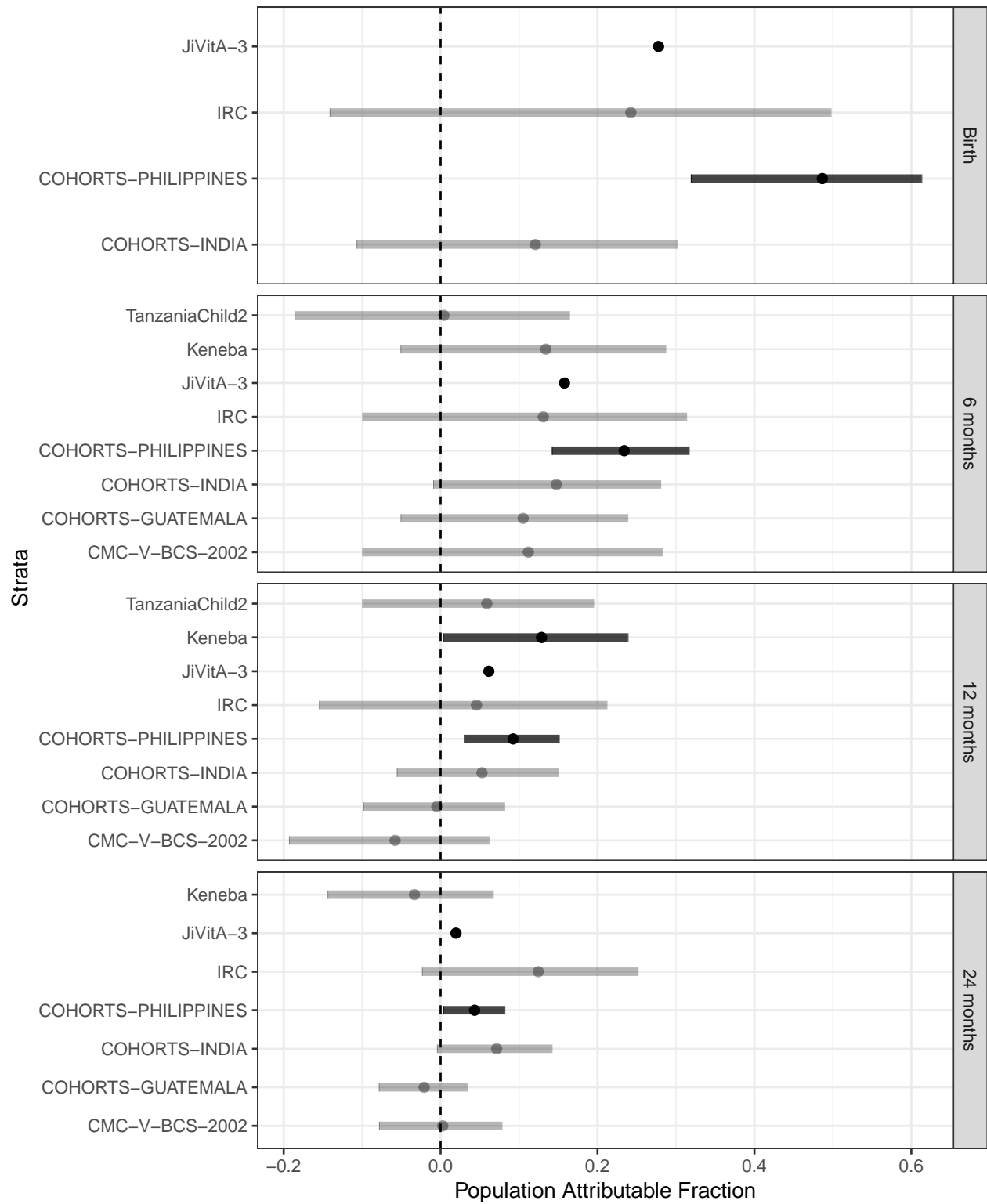
Child delivered at home
reference level:0



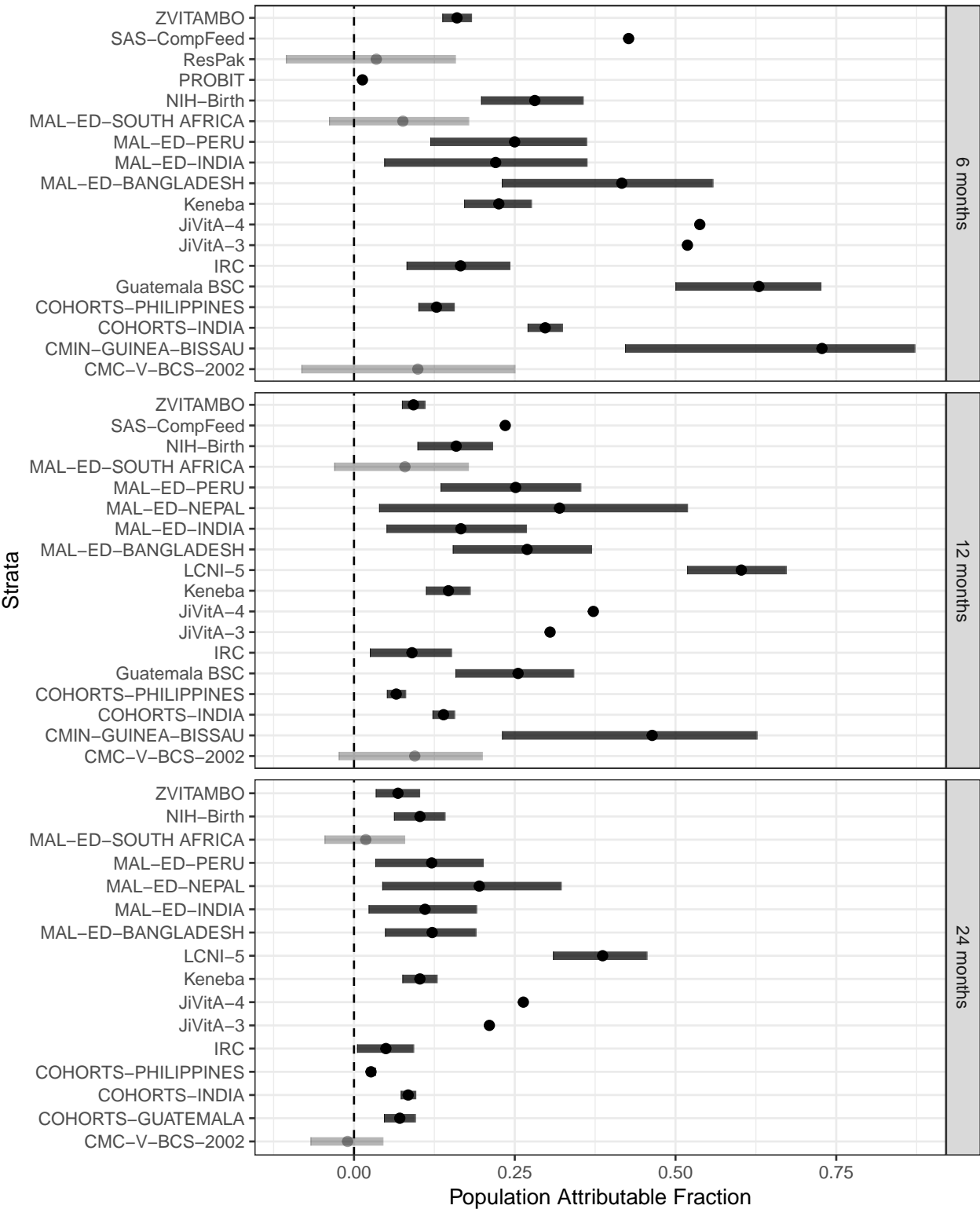
Child's sex
reference level:Female

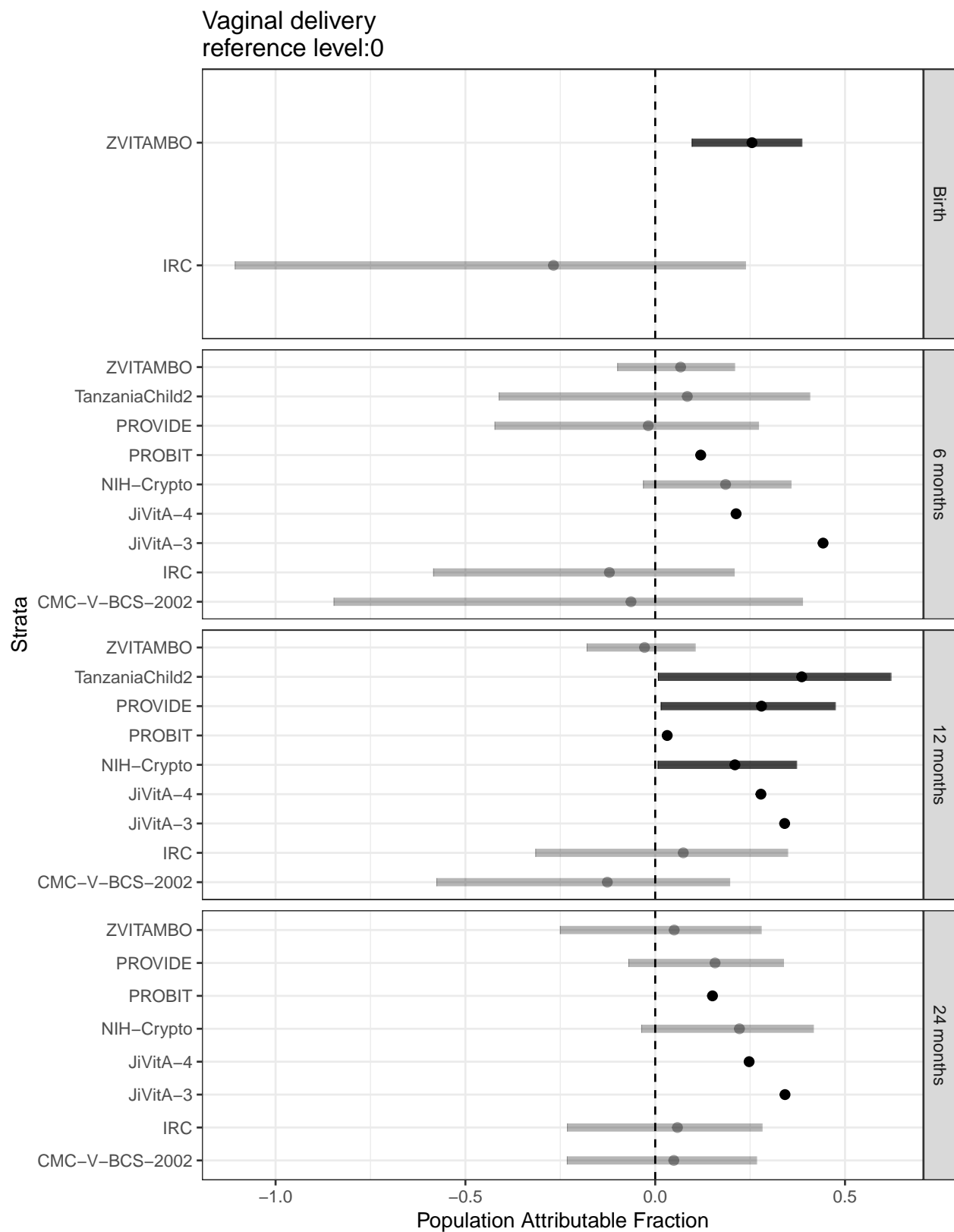


Gestational age at birth in days
reference level:[273–287)

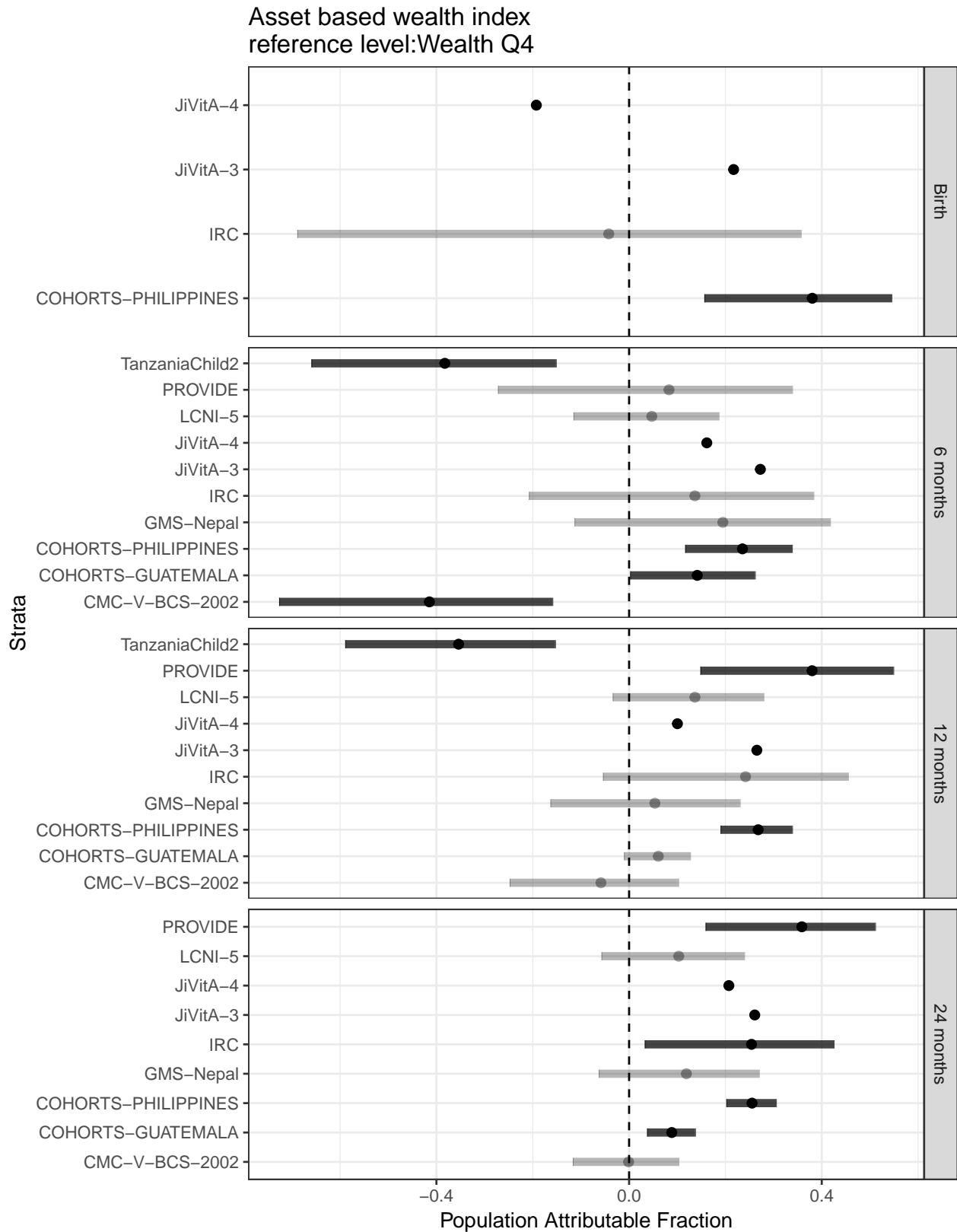


Stunted at enrollment
reference level:0

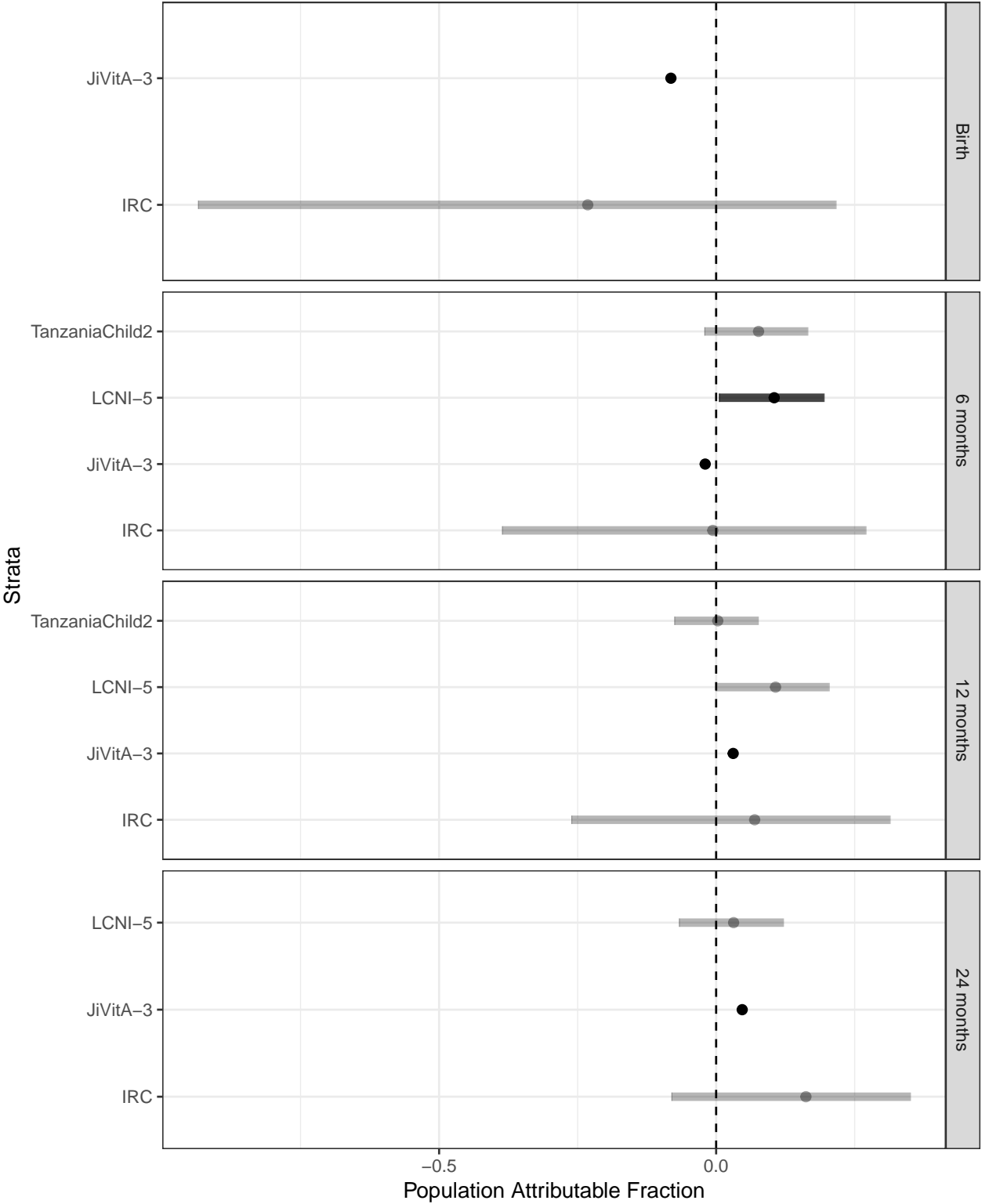




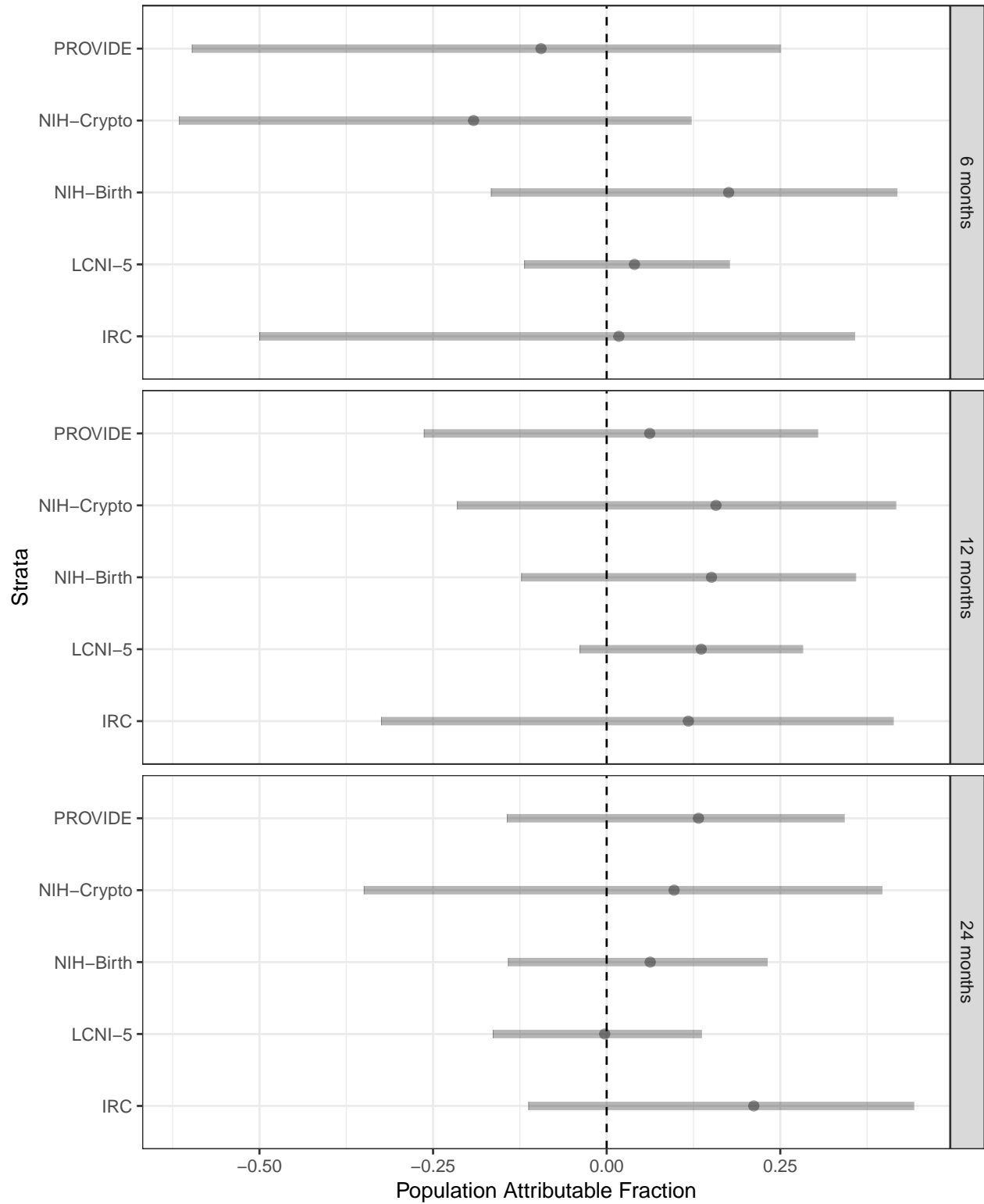
Household characteristics

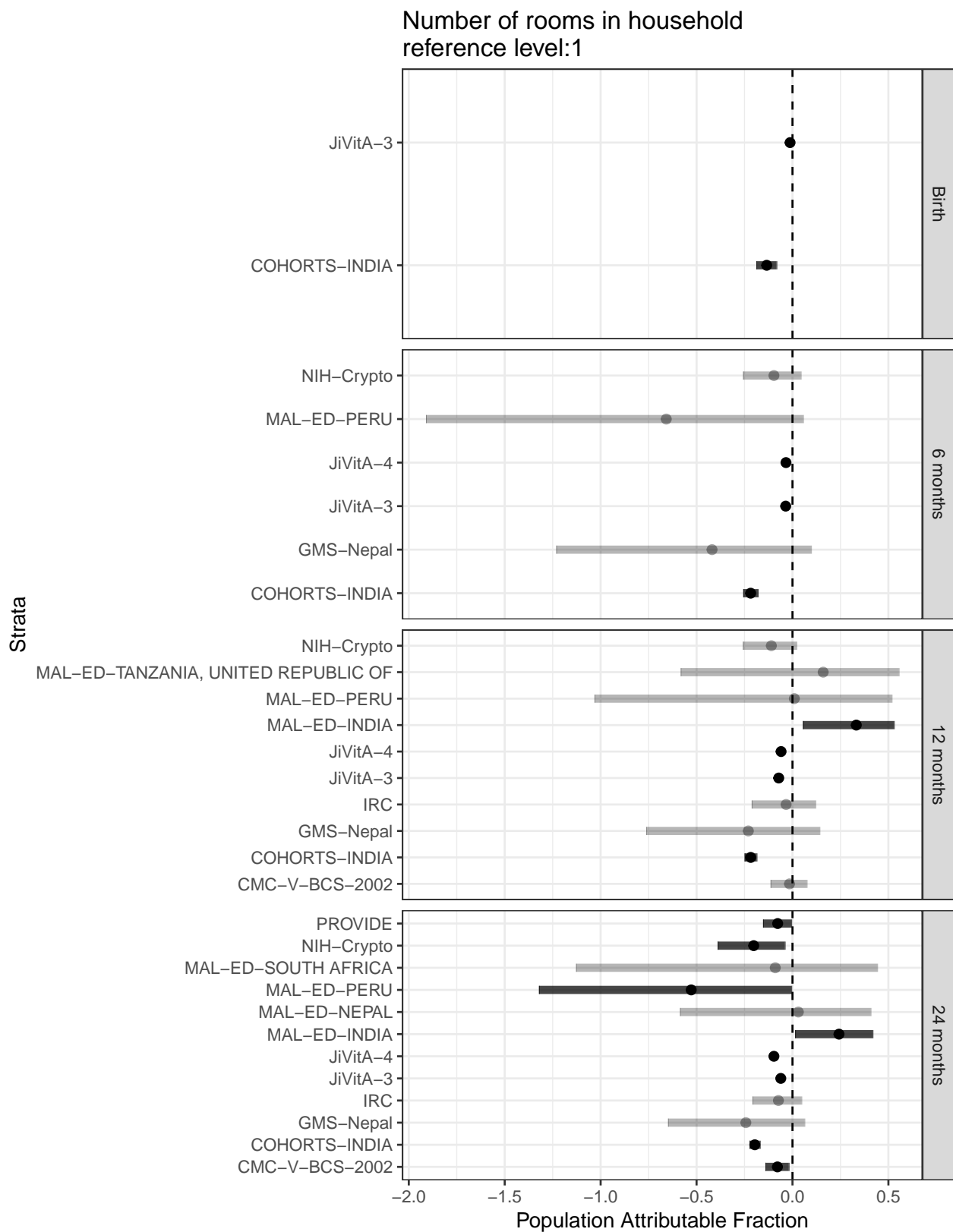


Number of children in the household under 5 years
reference level:1

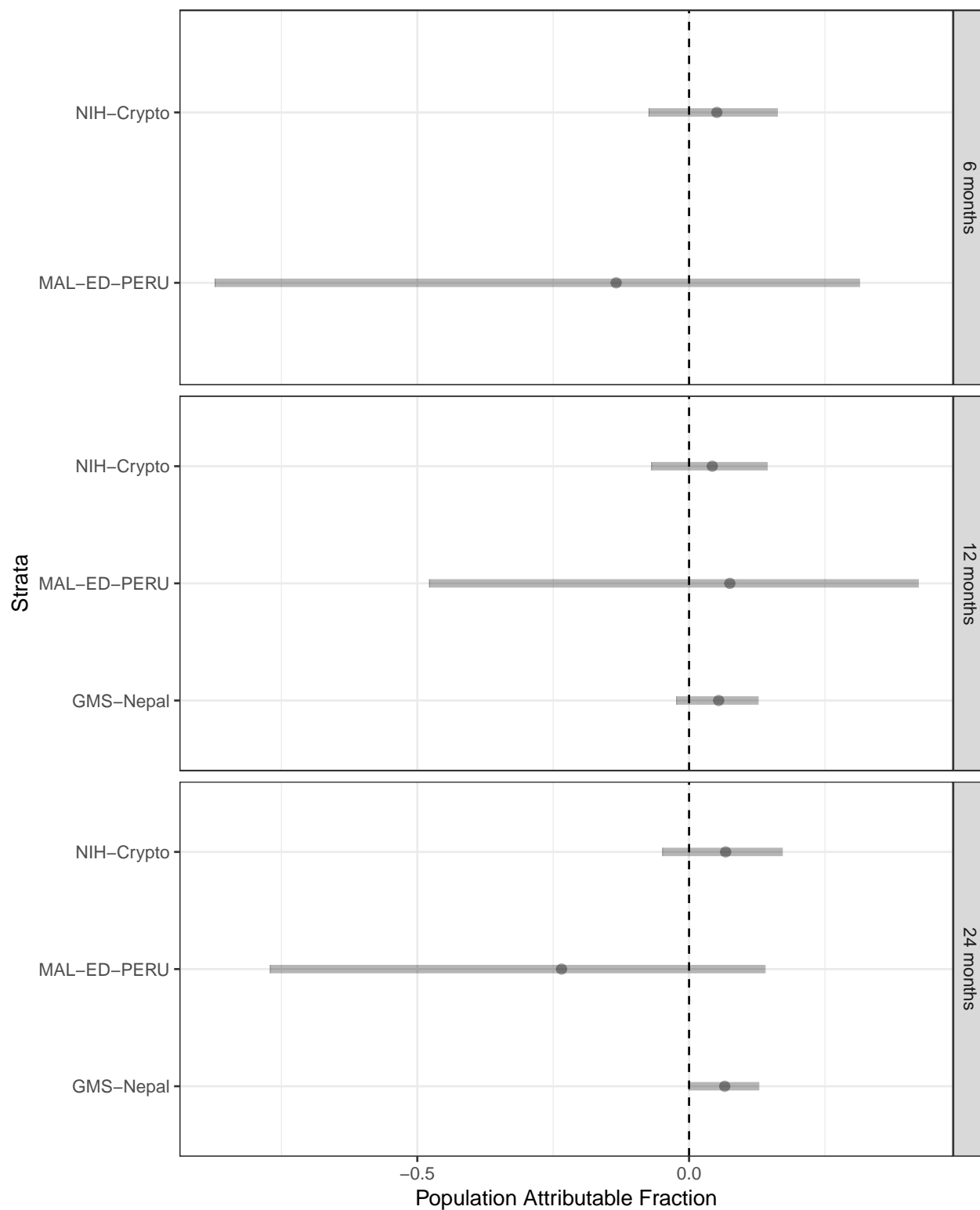


Number of people in the household
reference level:3 or less

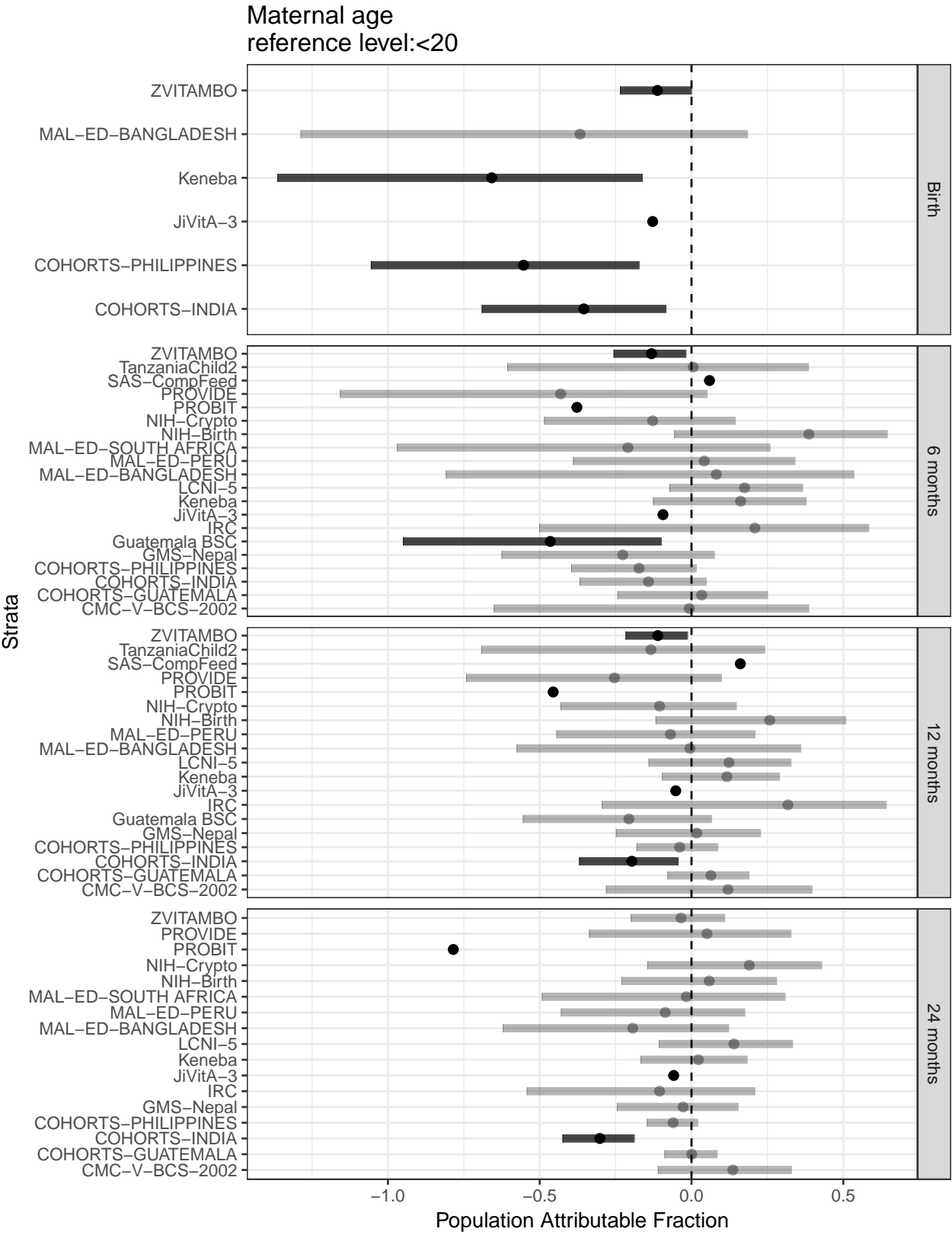




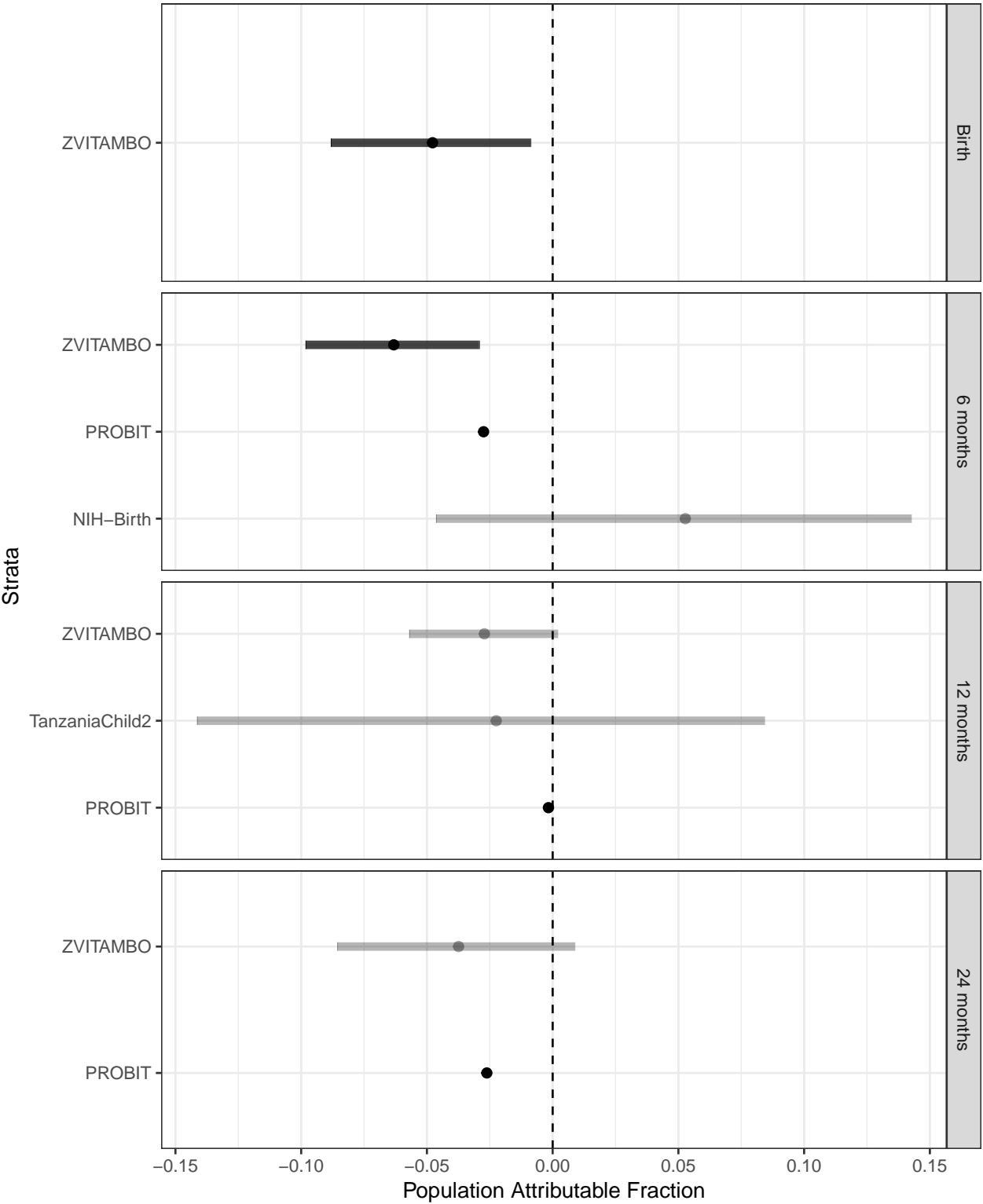
USAID Household Food Insecurity Access Scale (HFIAS) category
reference level: Food Secure

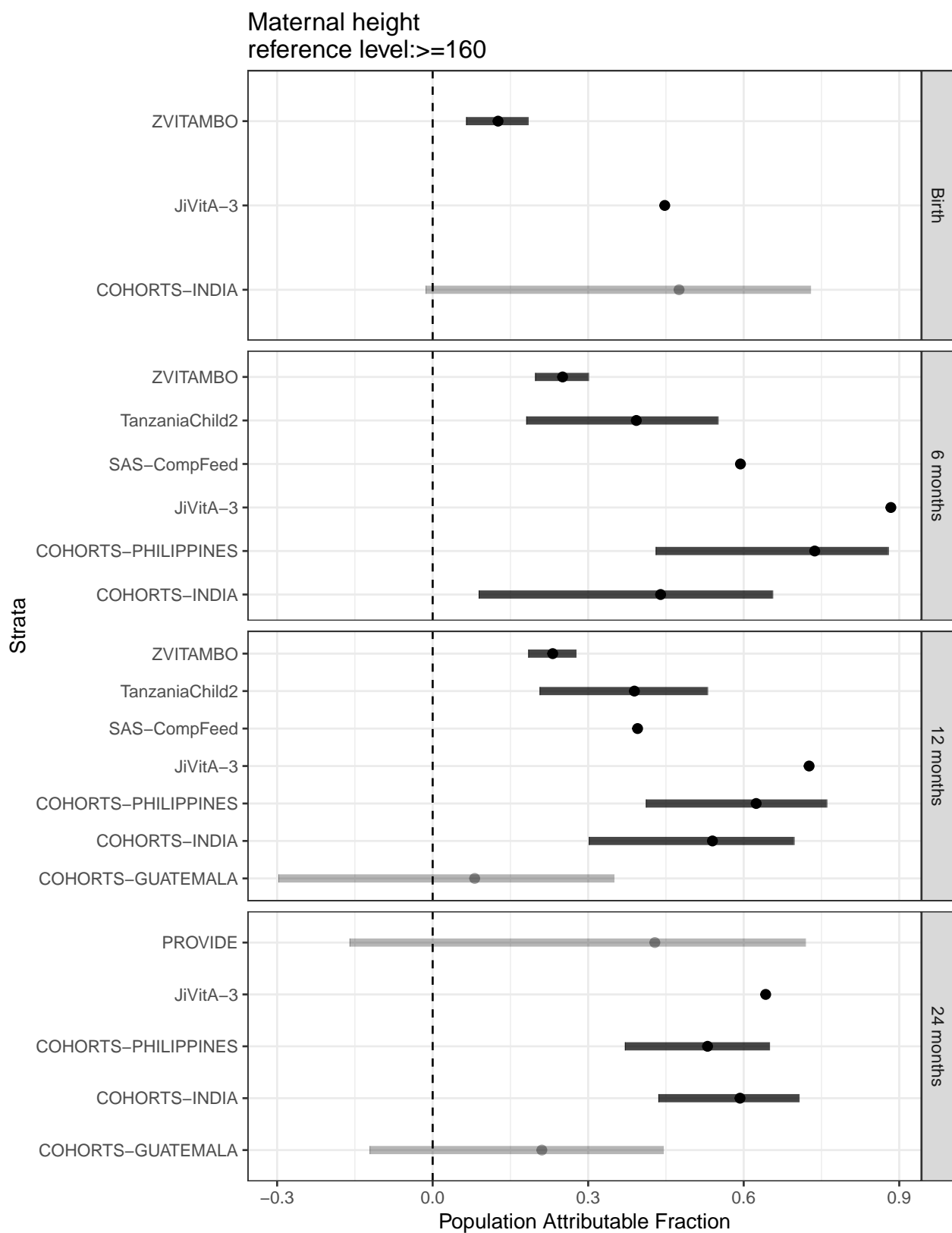


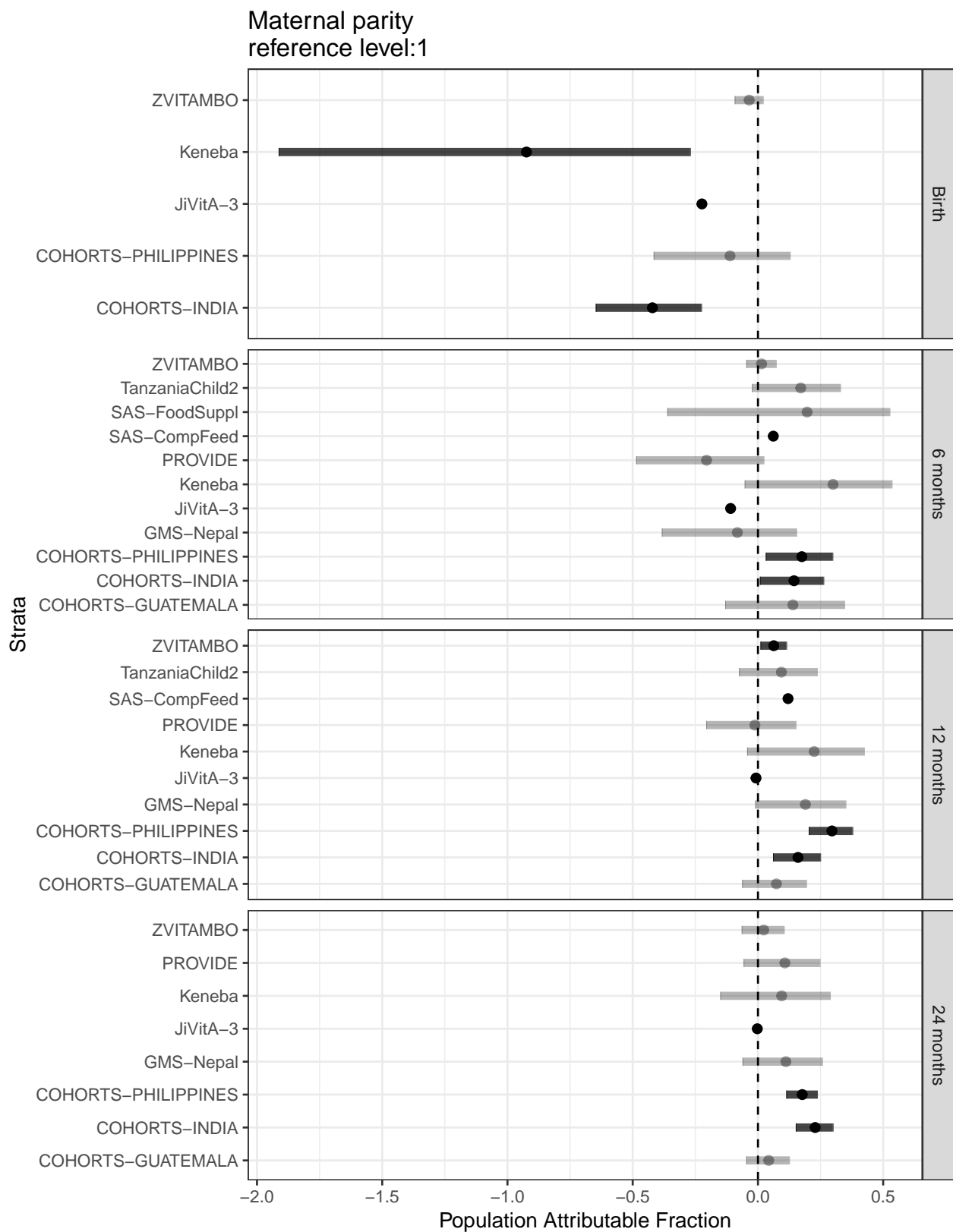
Maternal characteristics

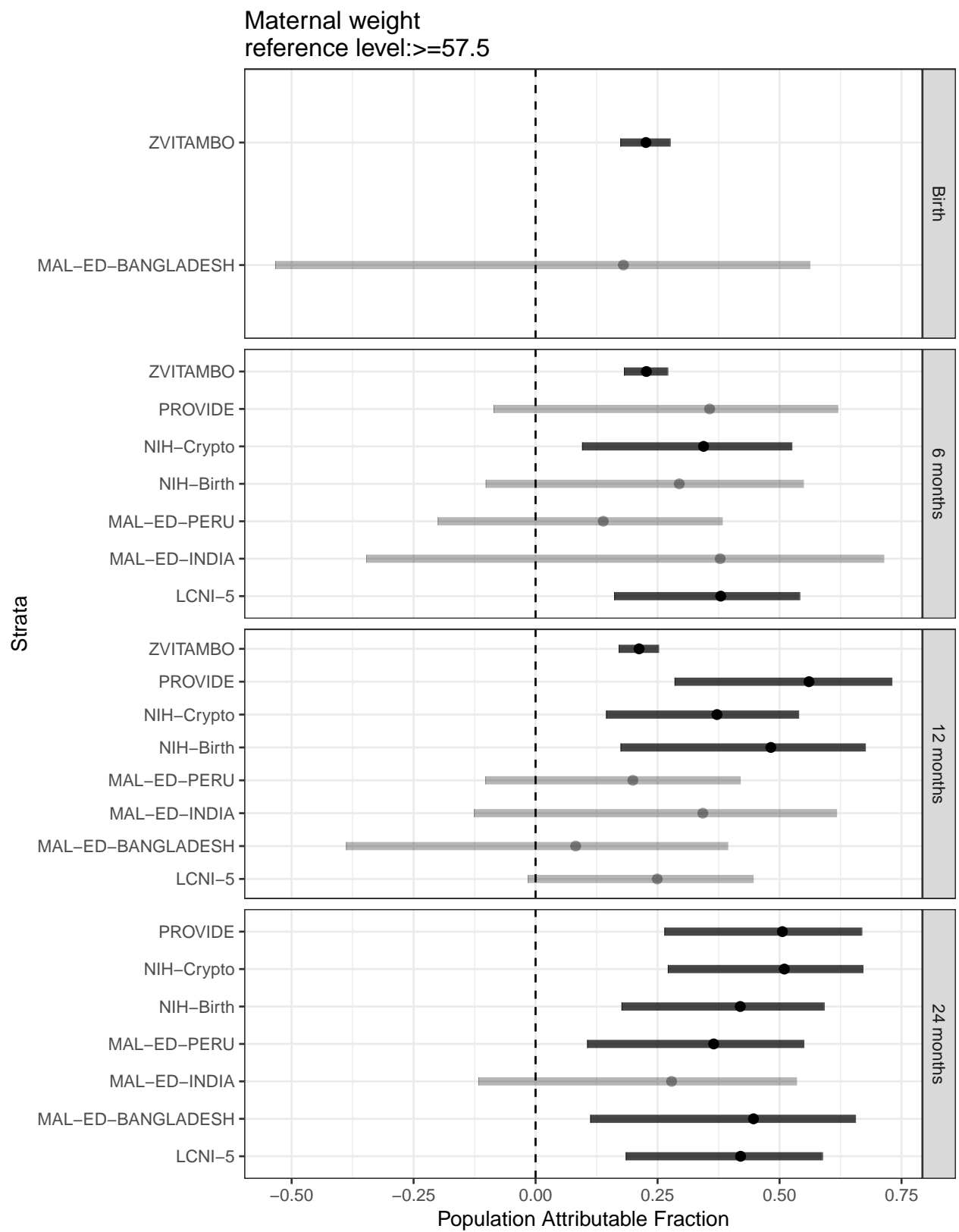


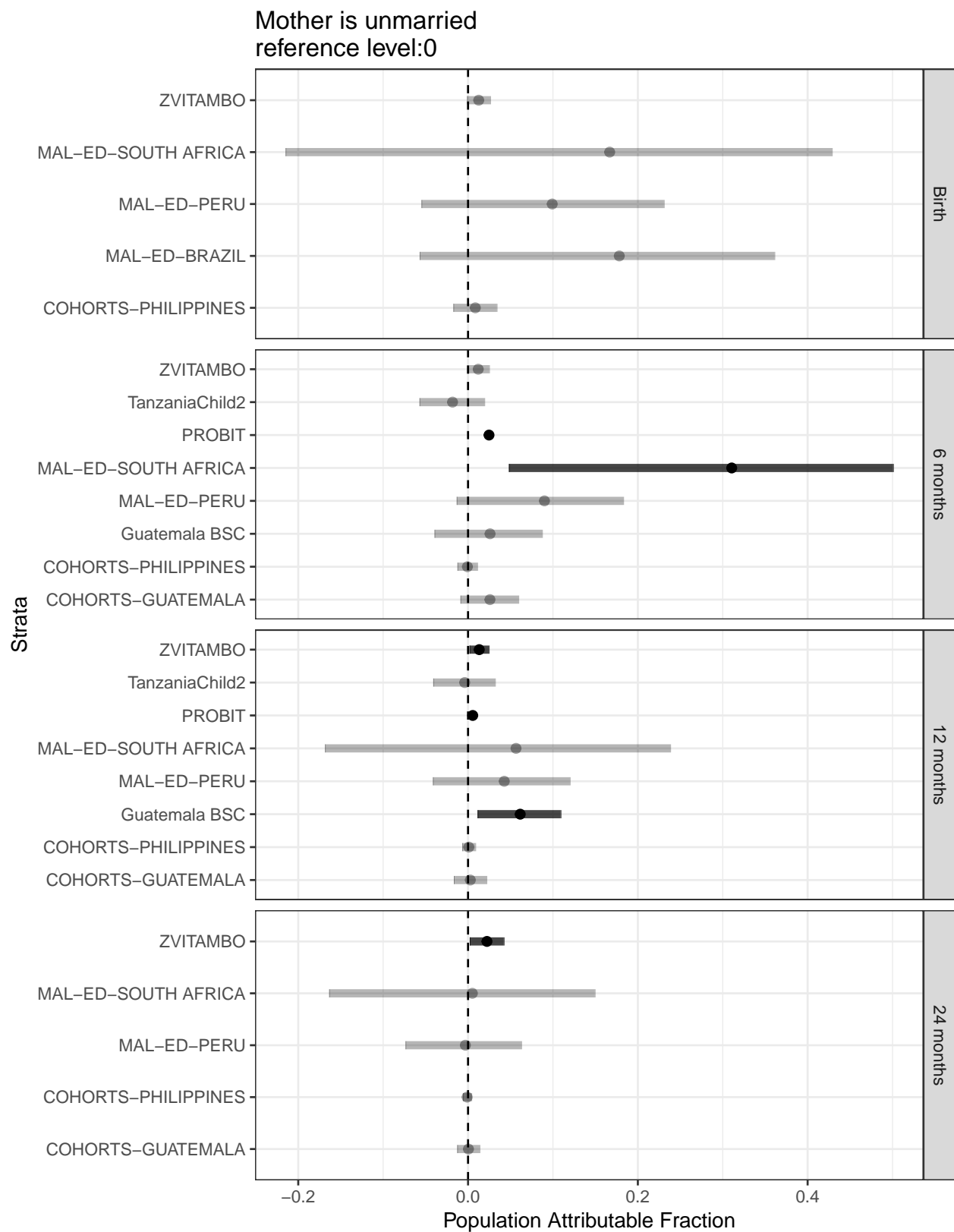
Maternal BMI
reference level:[18.5–25)

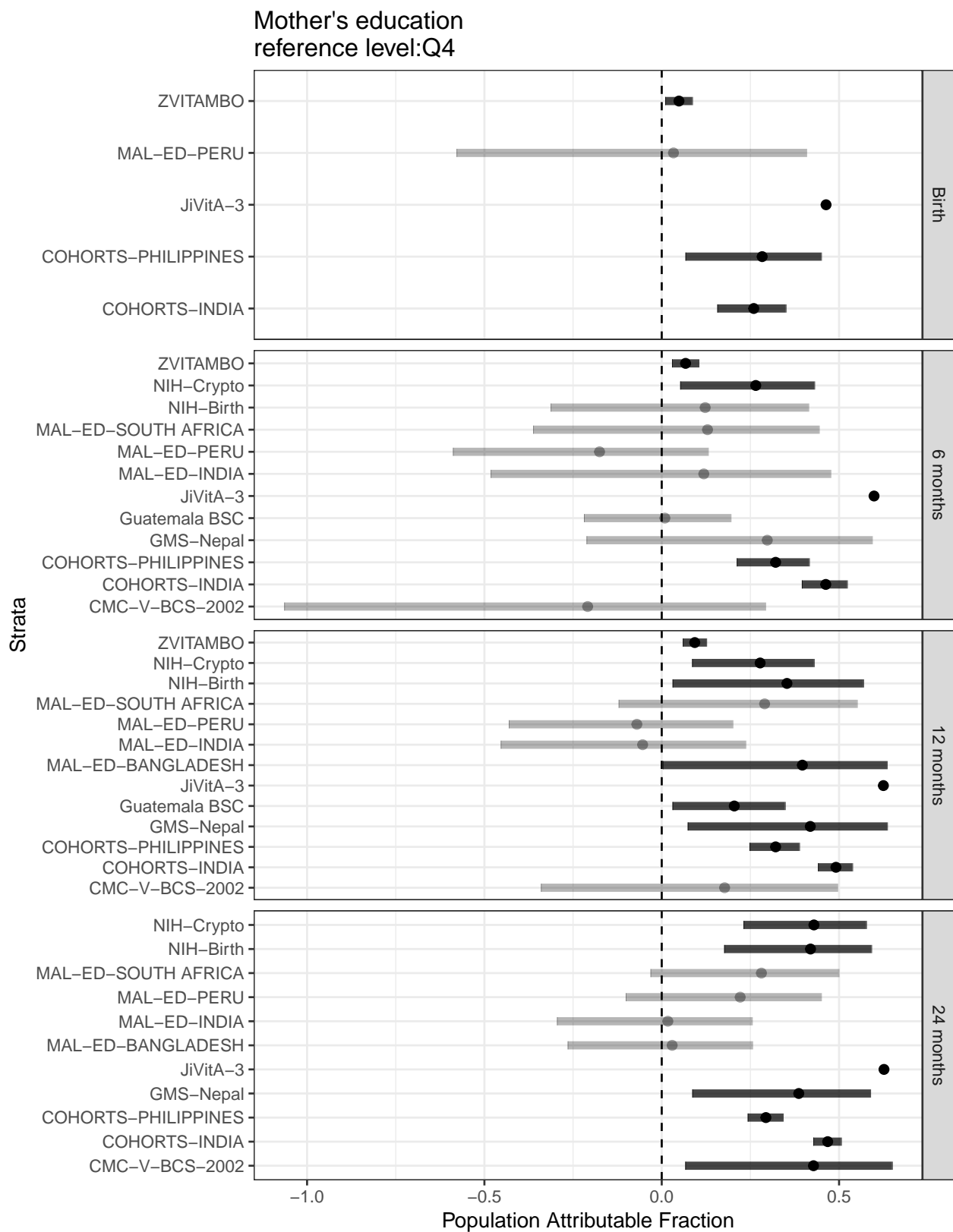




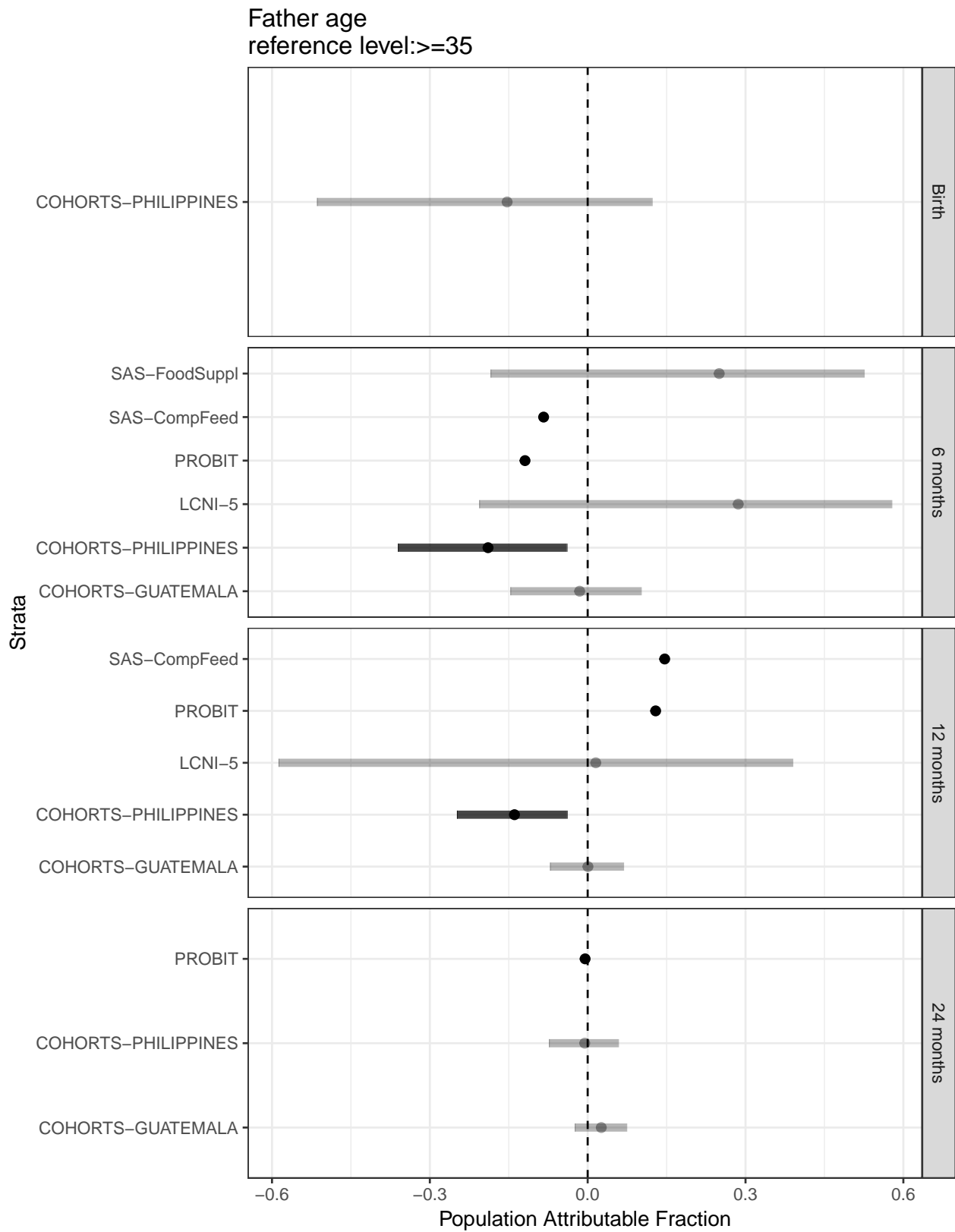


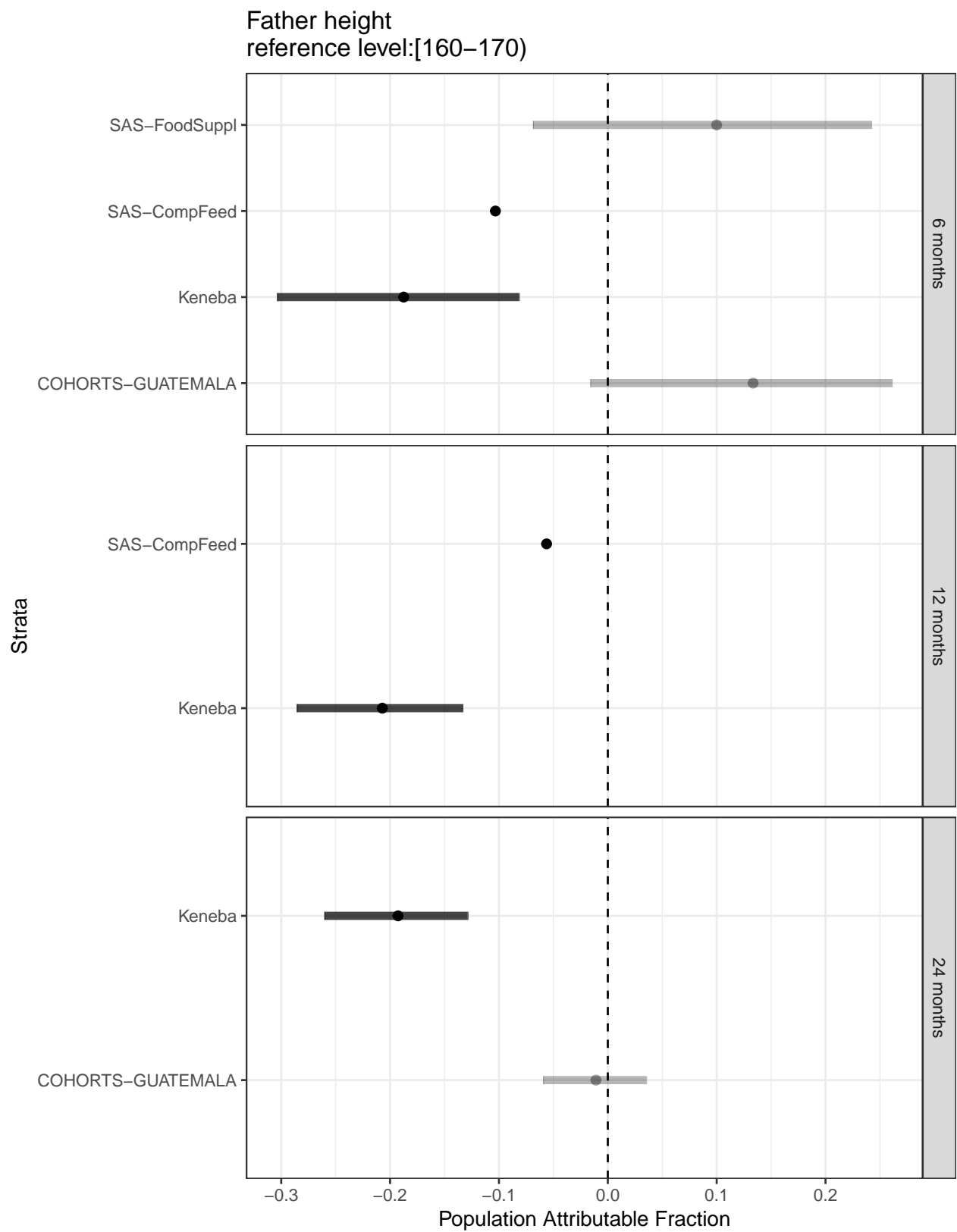


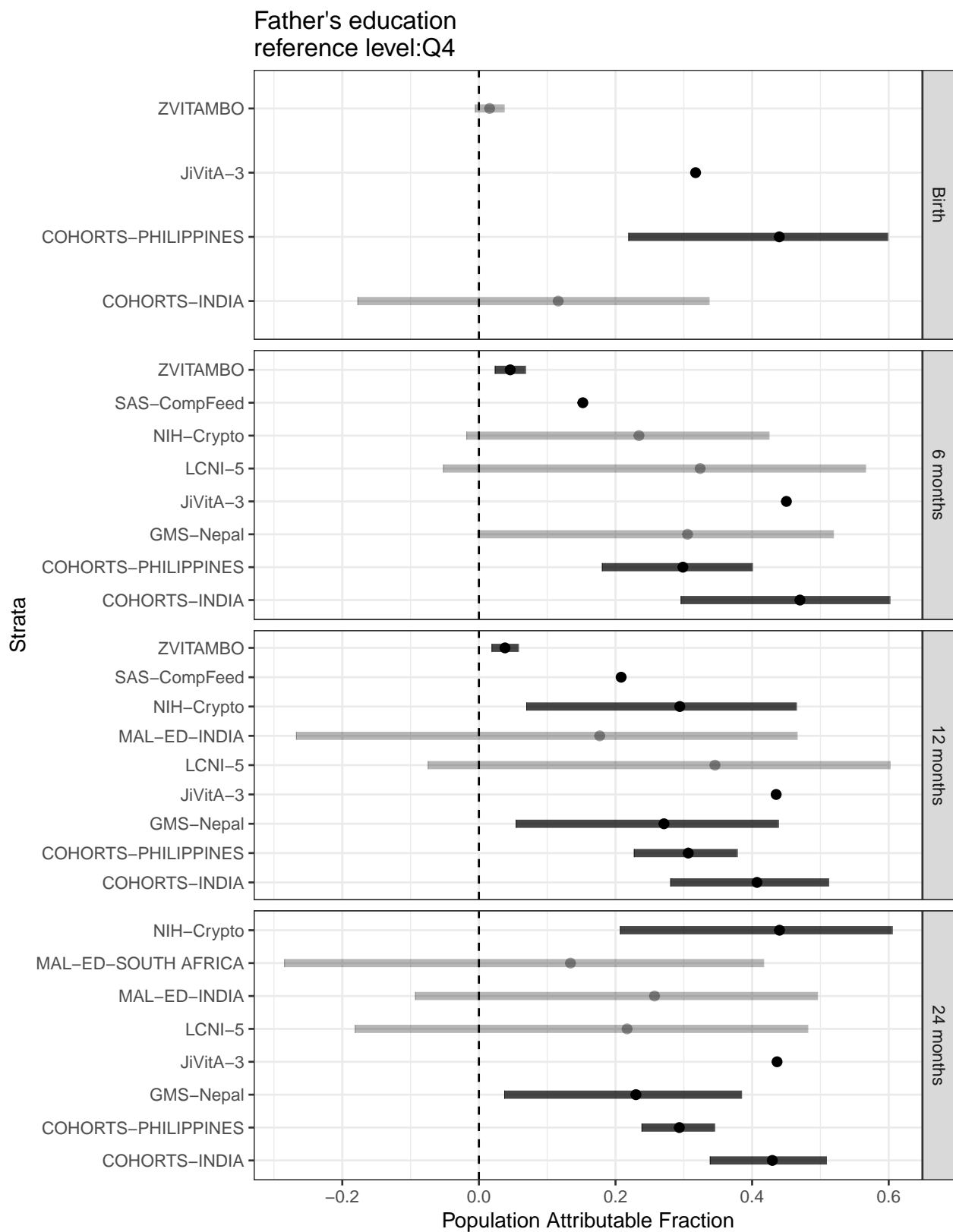




Paternal characteristics

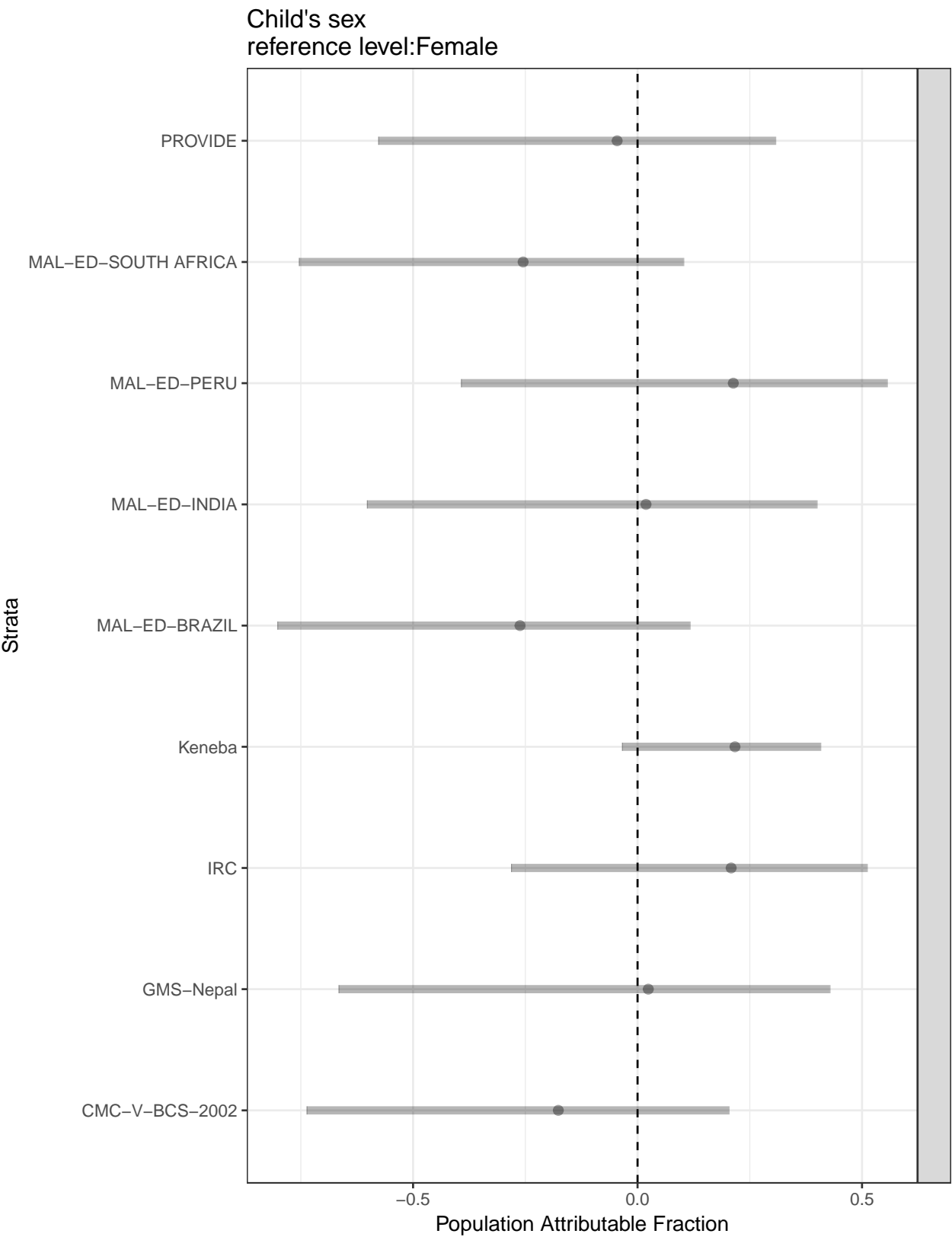




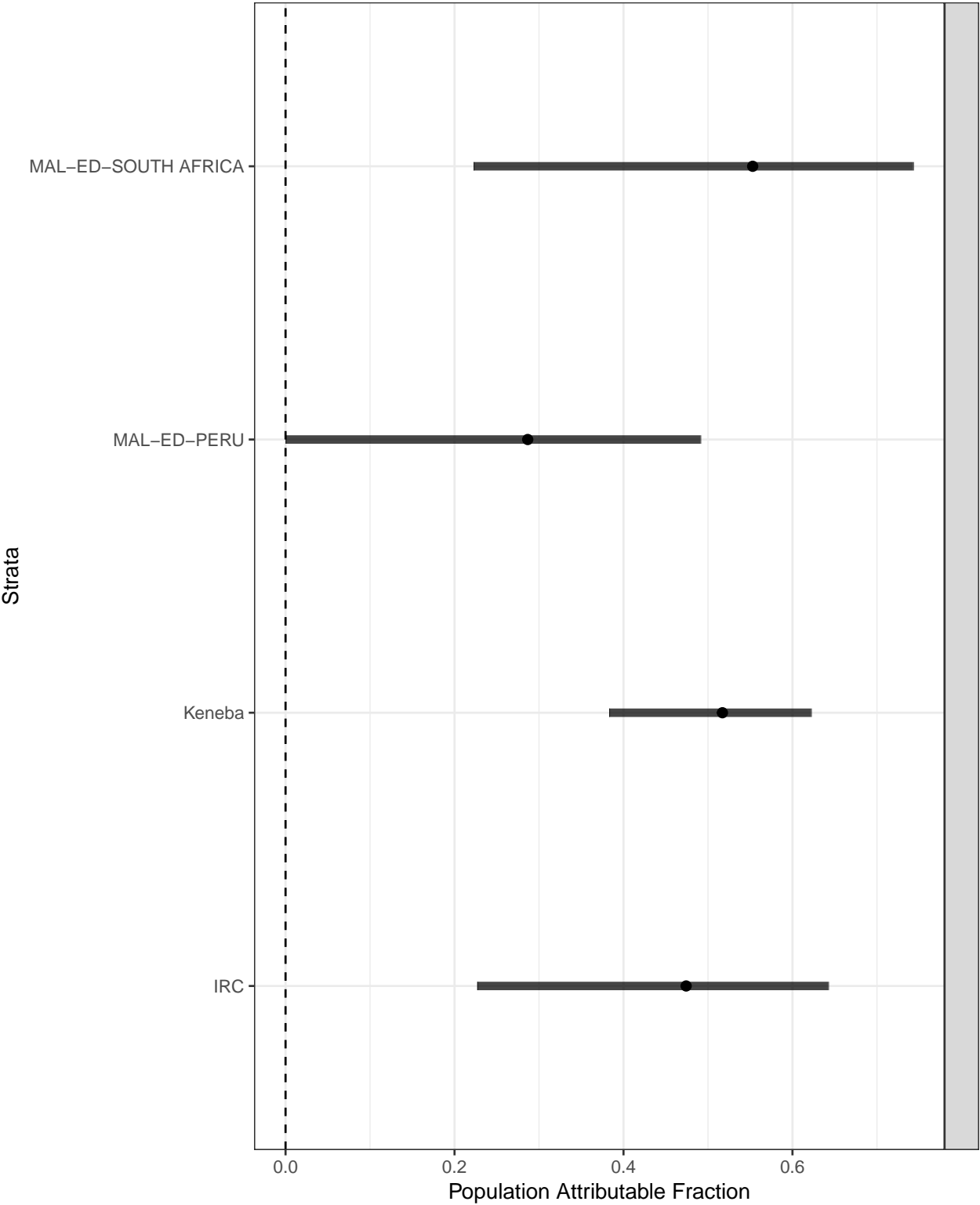


Proportion of children who were stunted between birth and 3 months who recovered by 24 months

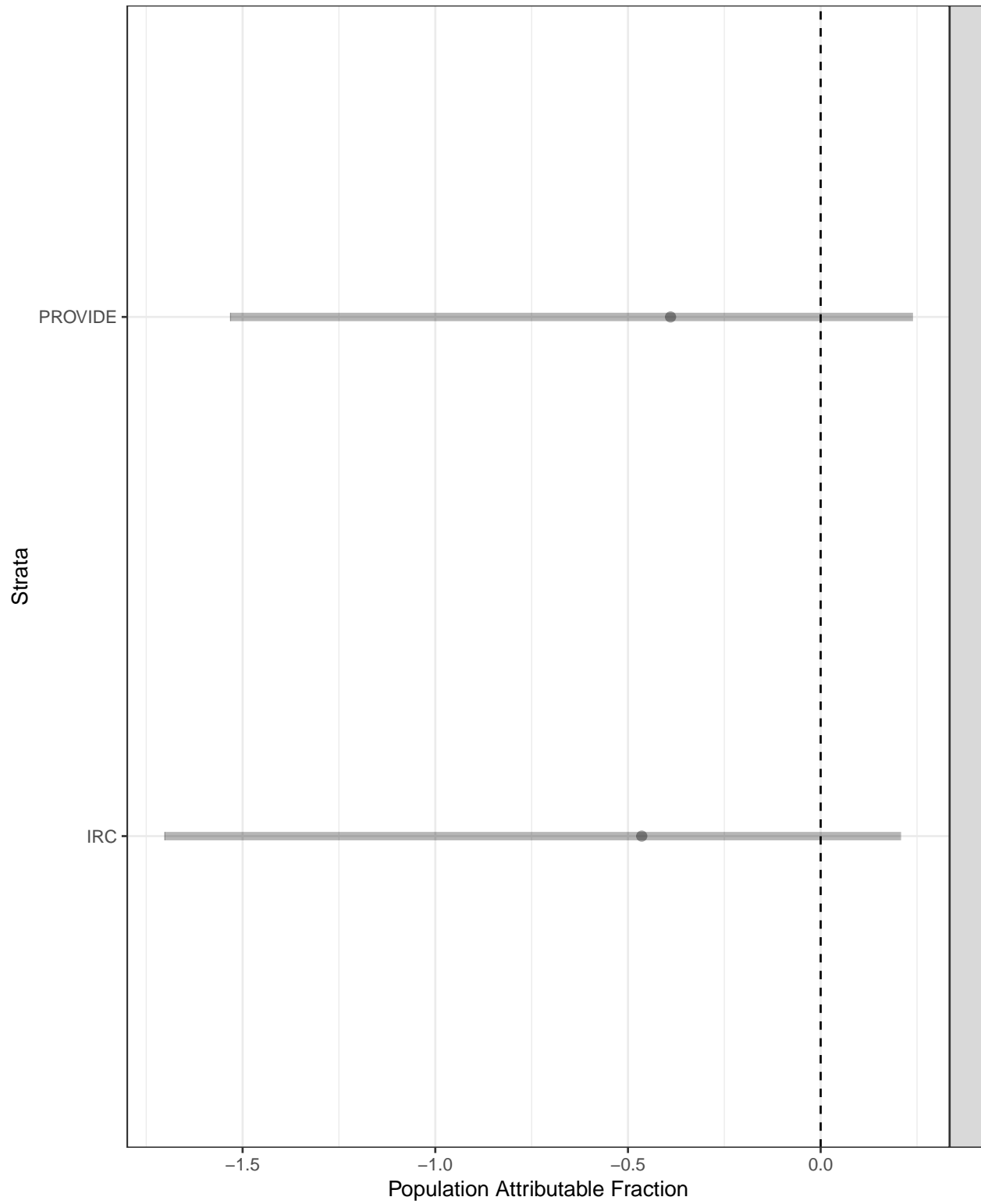
Child characteristics



Stunted at enrollment
reference level:0

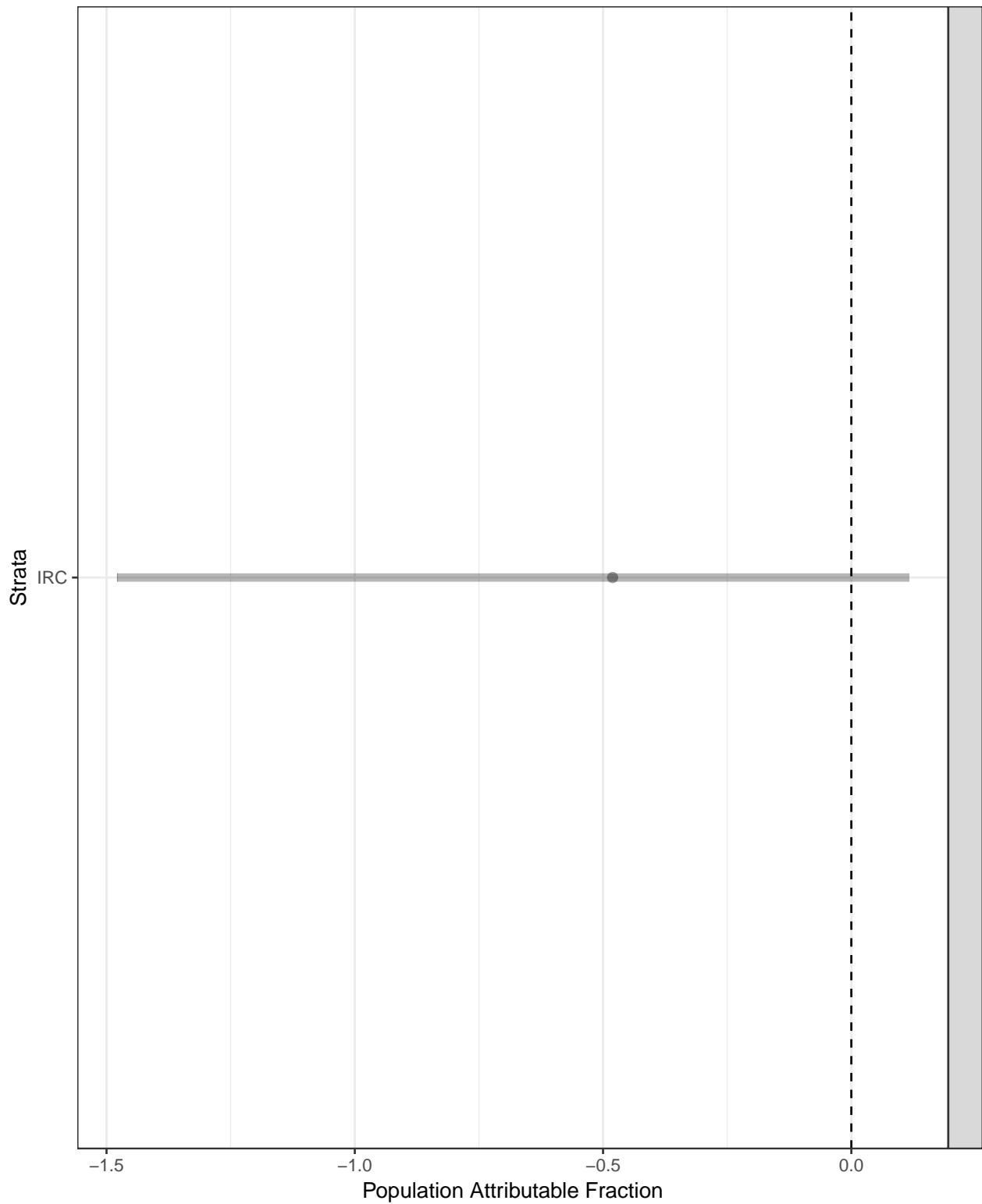


Vaginal delivery
reference level:0

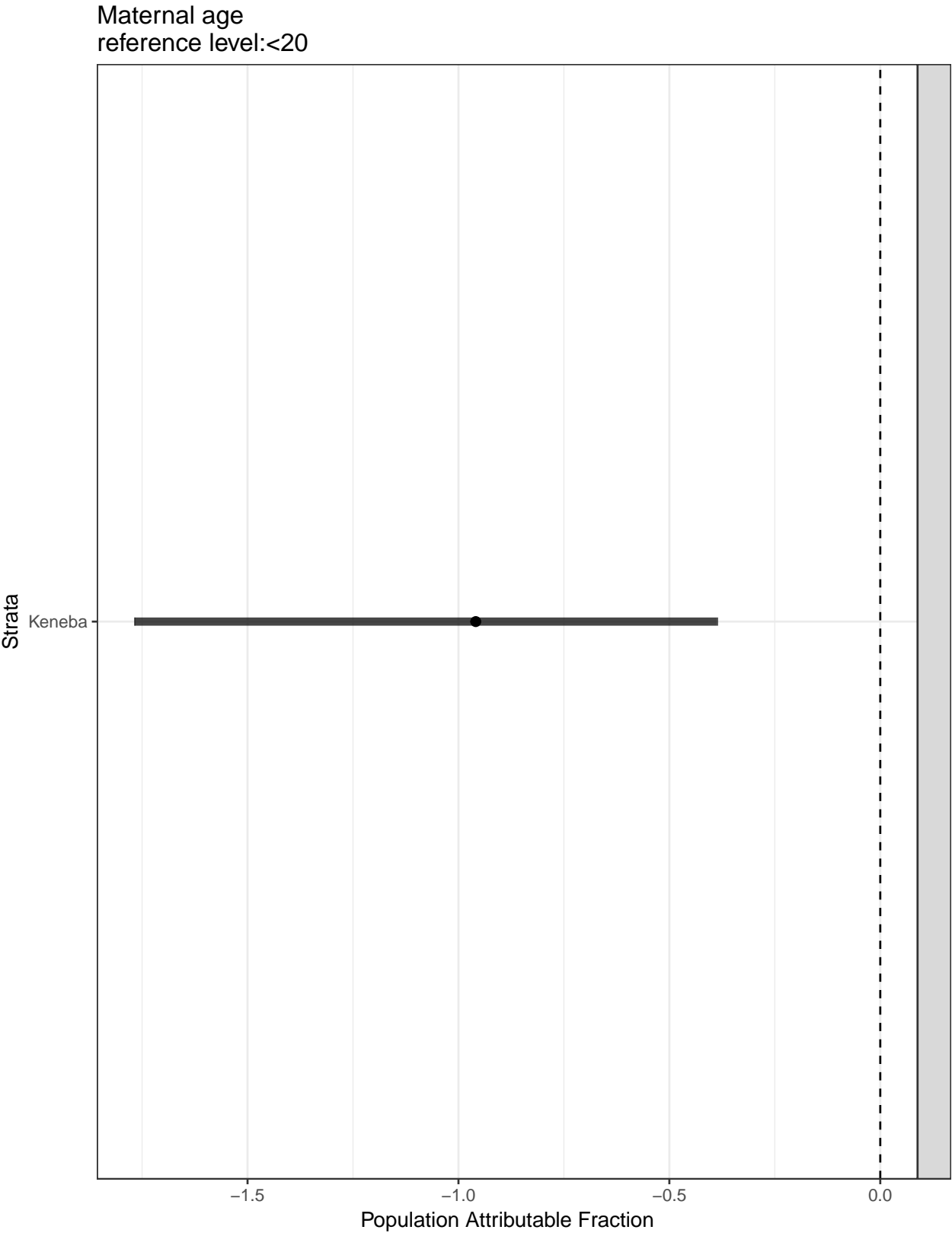


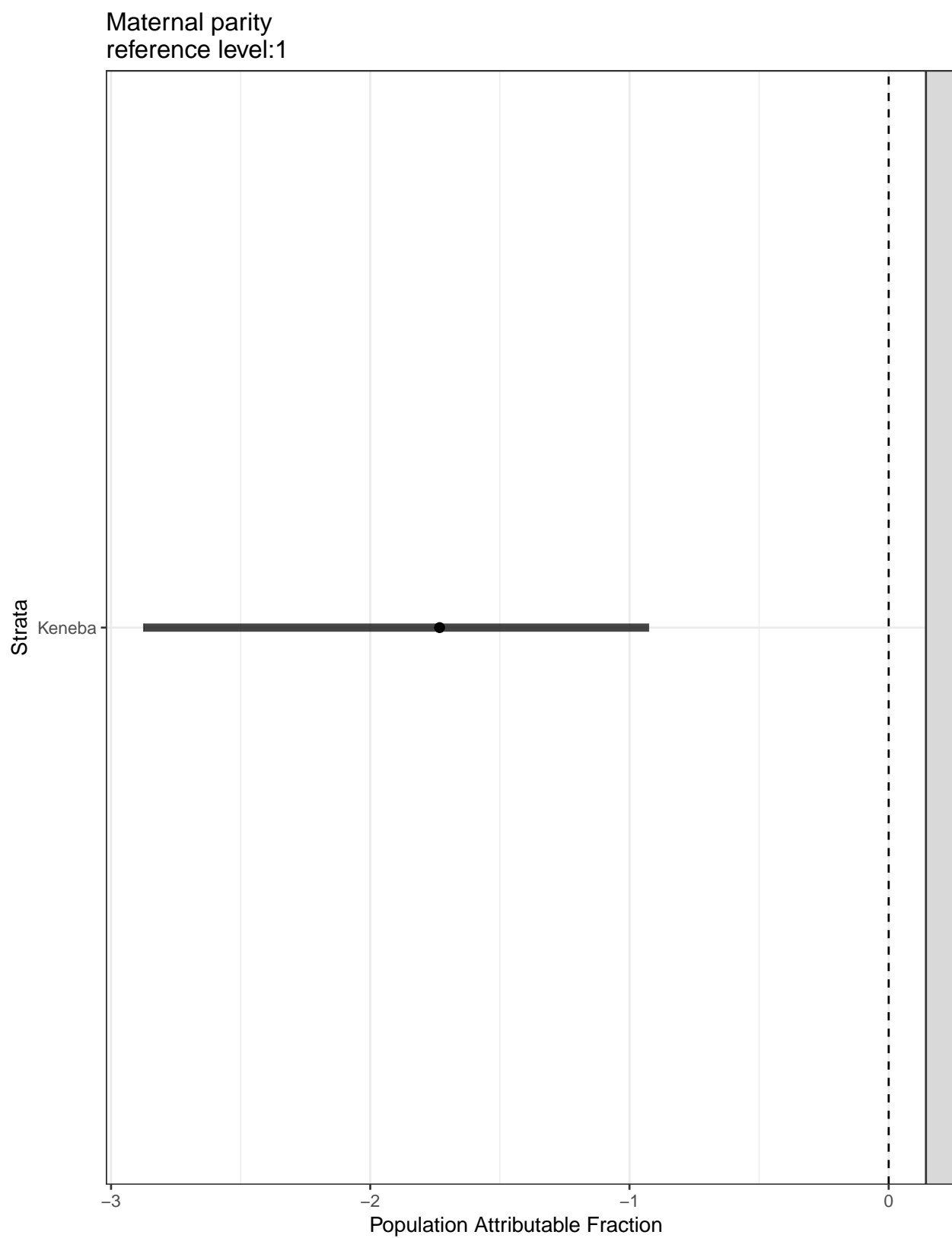
Household characteristics

Number of children in the household under 5 years
reference level:1



Maternal characteristics





Mother is unmarried
reference level:0

Strata

MAL-ED-SOUTH AFRICA

