# Evaluating three asset-based wealth measures in low- and middle-income countries

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## Introduction

- Asset-based measures of wealth are used to
  - Monitor health equity
  - Track economic inequality
  - Develop policy
- Many measures exist with differing assumptions
- No systematic comparisons of reliability and validity
- We assess three proposed measures (AWE, CWI, IWI)

## Questions

1. How closely are AWE, CWI, IWI correlated?
2. How well do they predict two measures of health?
   - child height-for-age
   - adult women's BMI

## Methods

- Demographic Health Surveys from 84 countries [1]
  - 4.4M households
  - 282K women (40-49 y)
  - 405K children (12-35 m)
- Calculated AWE, CWI, and IWI for each household
- Assessed correlations between measures
- Mixed effect linear regressions examine associations with women's BMI and children's height-for-age z-scores

## Three methods of measuring wealth
All assume assets (e.g., TV, car, cell phone) and access to services (e.g., electricity) proxy economic well-being

**International Wealth Index (IWI)**
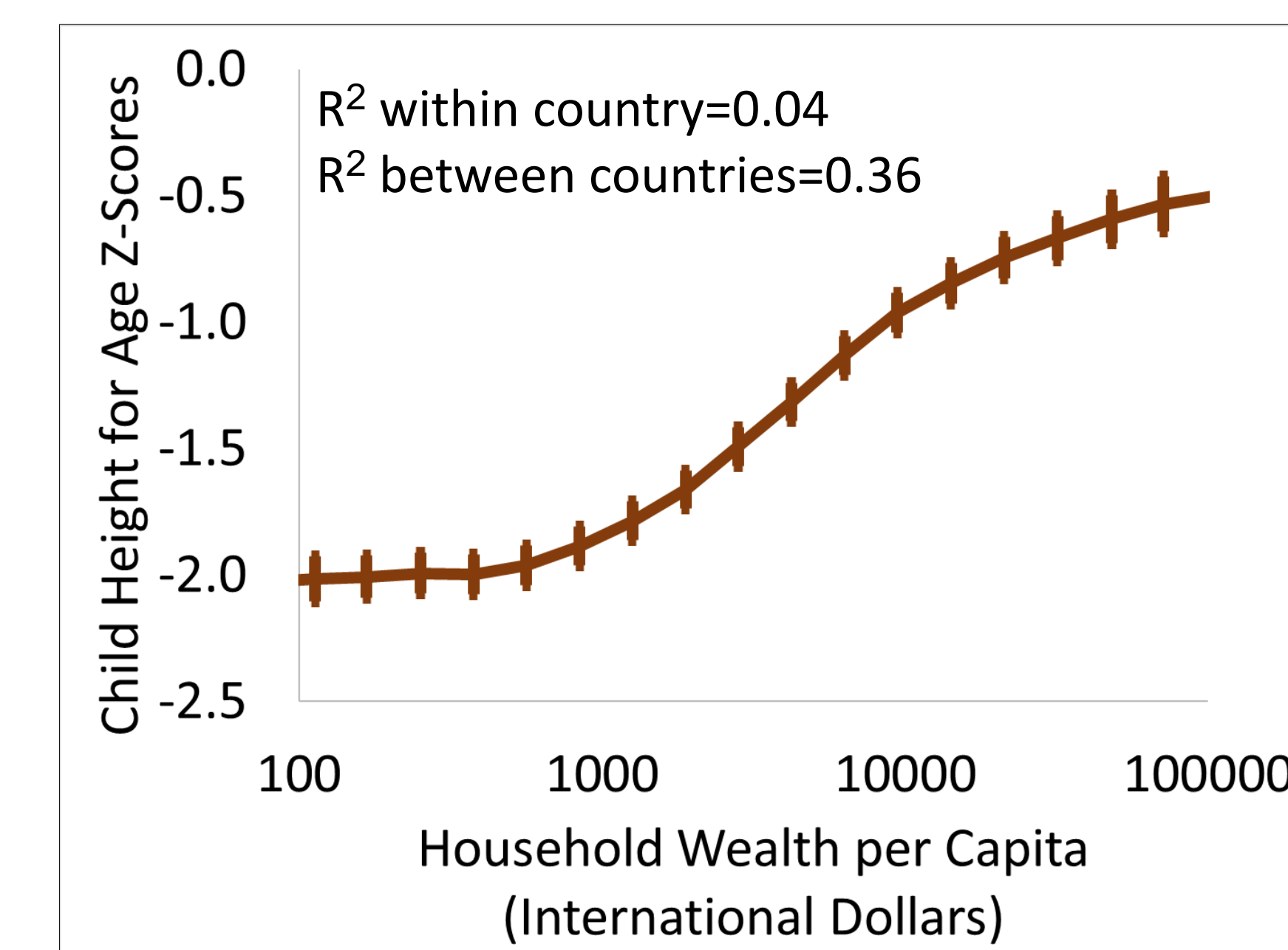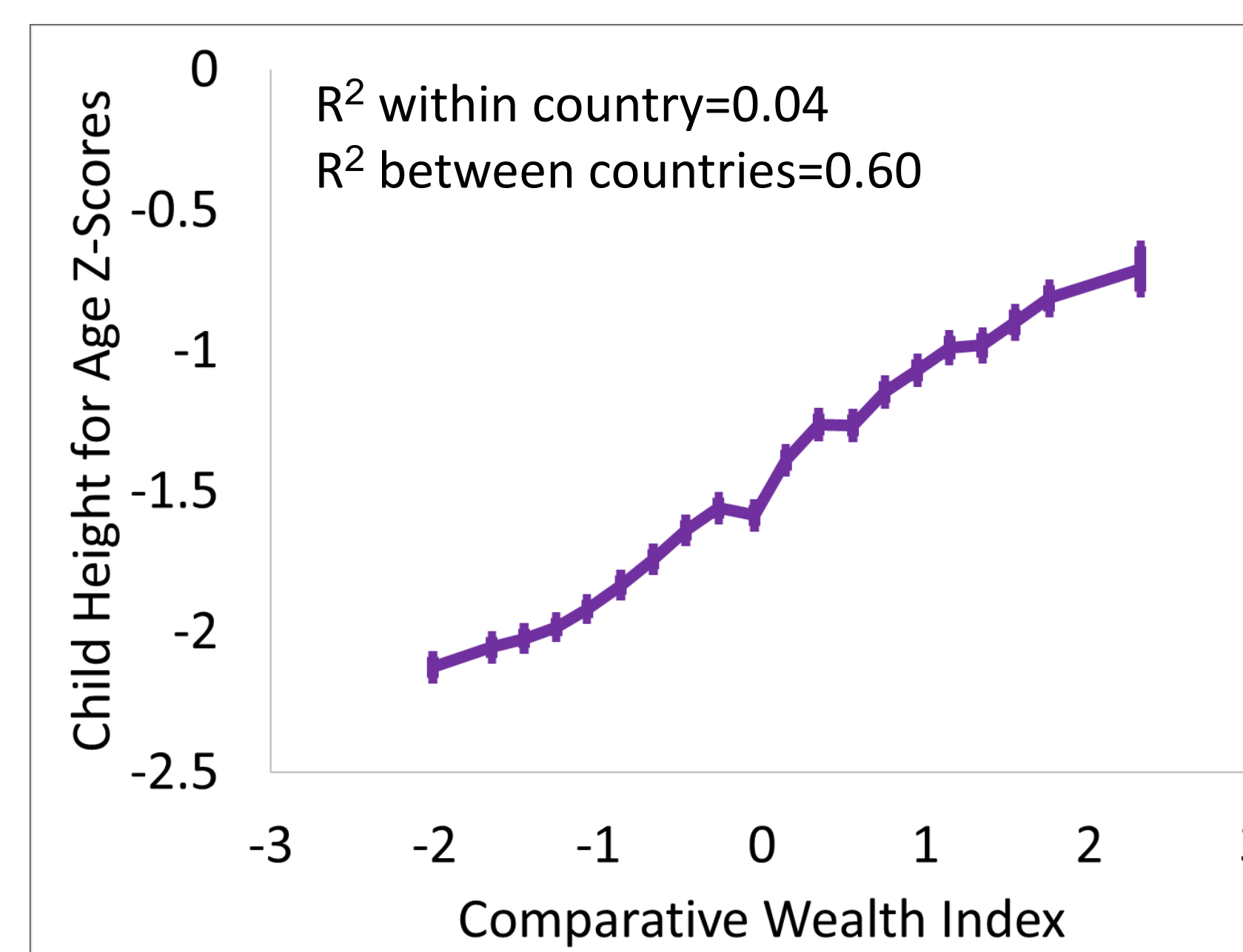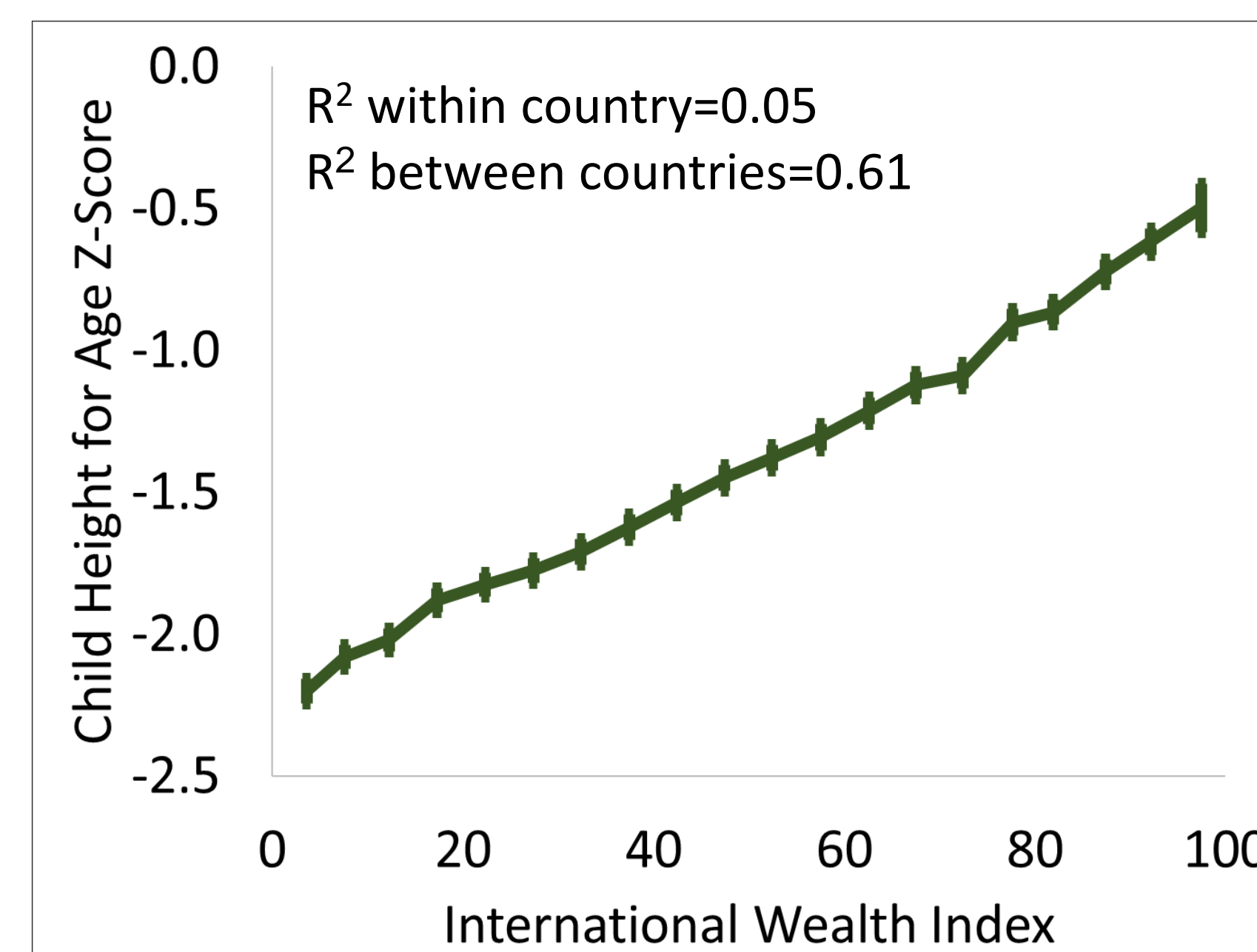Ranks household by universal indicators [2]. Scaled from 0-100.

**Comparative Wealth Index (CWI)**
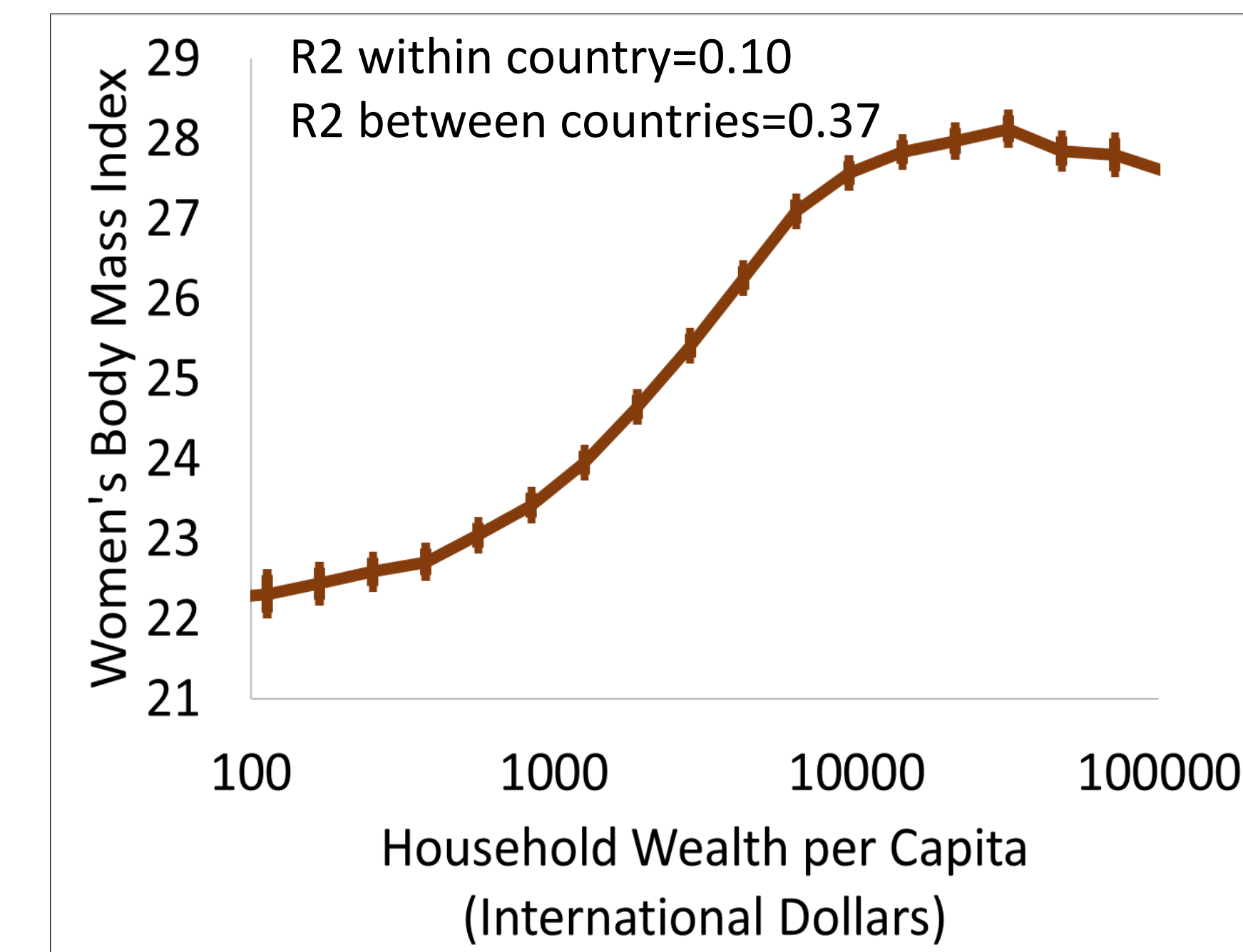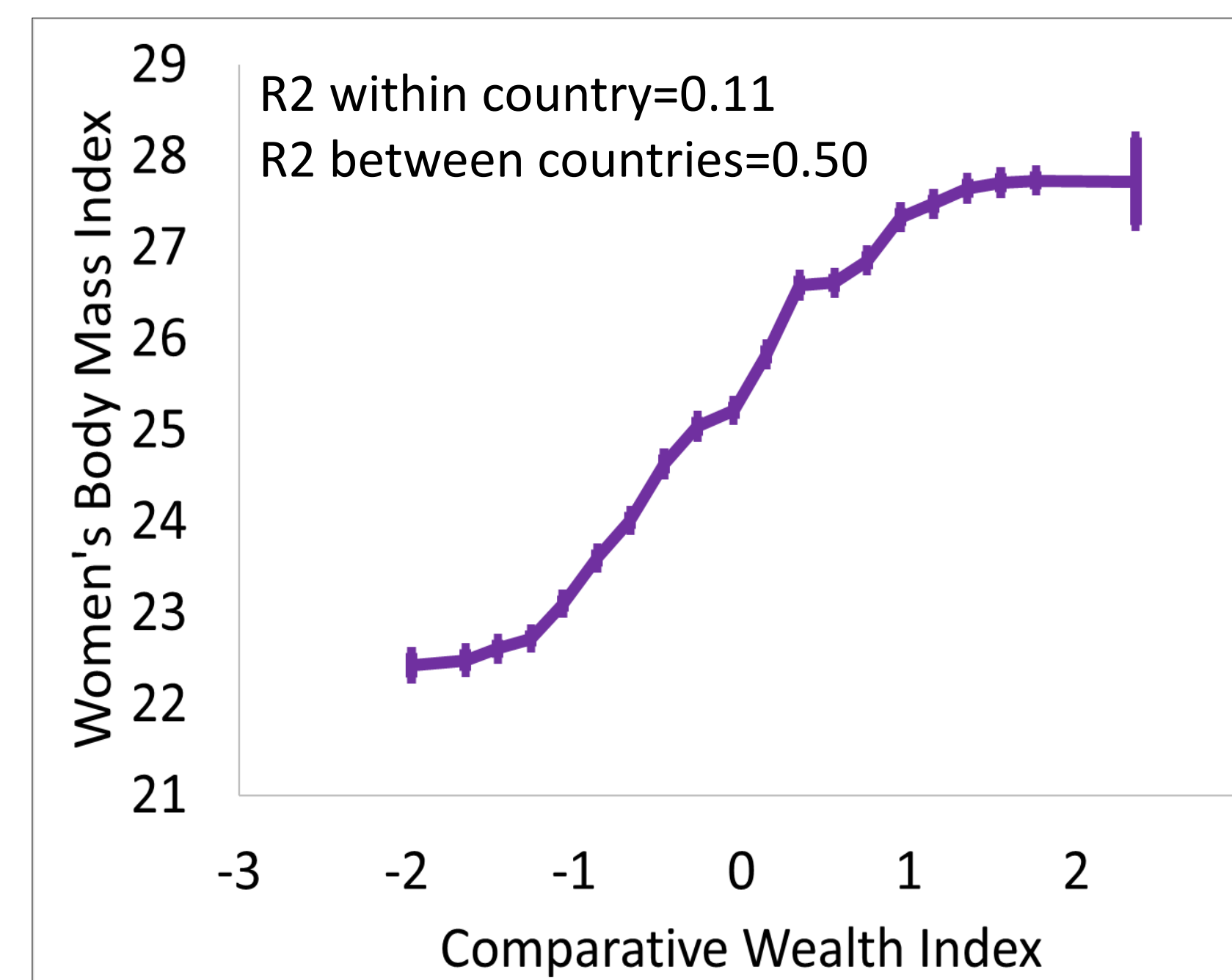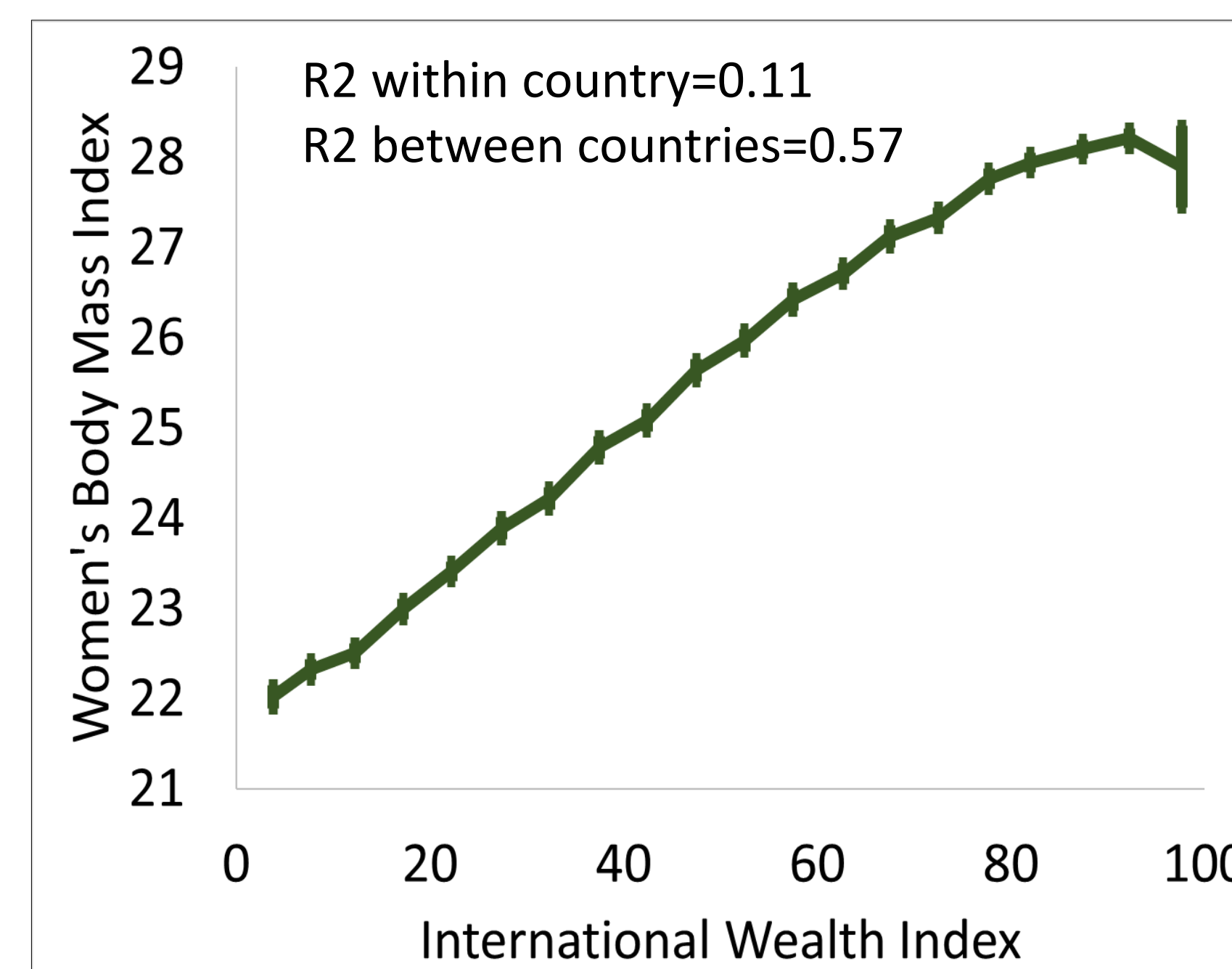Context-specific weights for assets scaled by universal basic needs [3].

**Absolute Wealth Estimate (AWE)**
Fully context-specific weights for assets. Scaled to international dollar value [4].



## Results

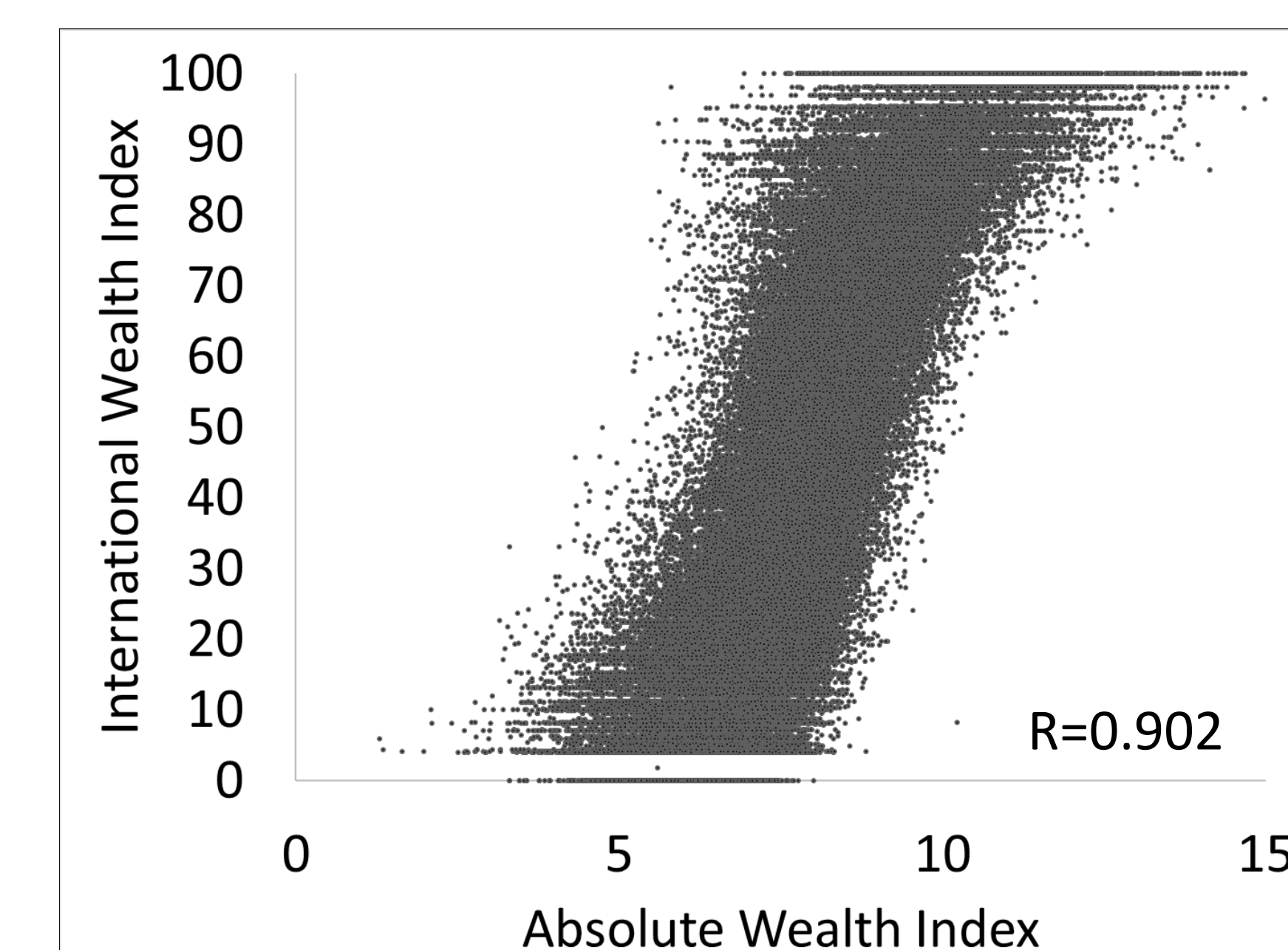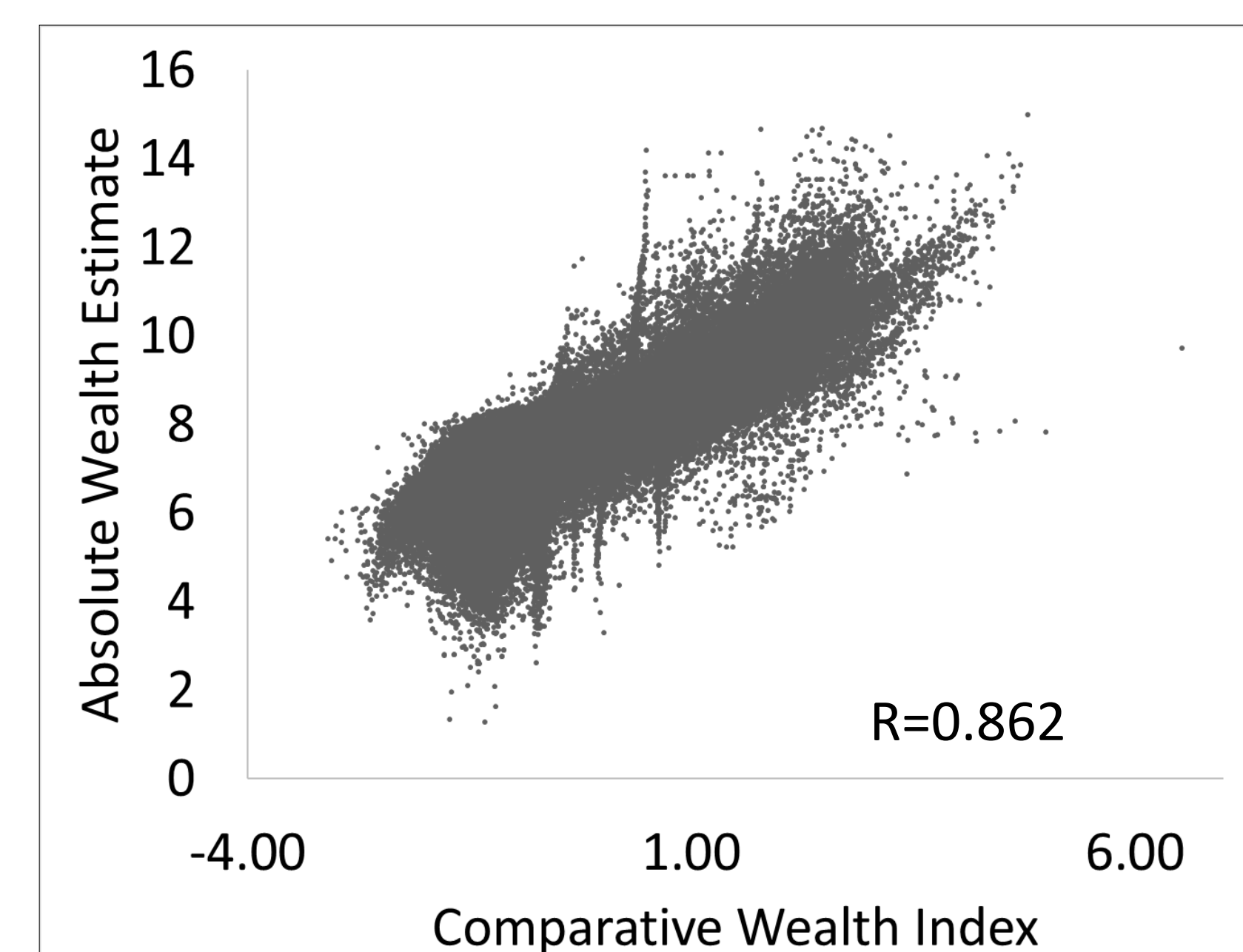1) Three measures highly correlated (r=0.8 to 0.9)
2) IWI best accounts for variance both within and between countries for child height-for-age and adult women's BMI.

## Discussion

- Measure with universal asset weights (IWI) best accounts for variance in women's BMI and child height-for-age

**Future work**
1. Why do context-sensitive measures perform worse?
2. Which measures are most sensitive to extreme poverty?
3. Assess additional measures
   - poverty scorecards
   - multidimensional poverty index
   - agricultural wealth index

## References

[1] The DHS Program—Demographic and Health Survey (DHS). (n.d.). Retrieved September 24, 2019, [2] Smits, J., & Steendijk, R. (2015). The International Wealth Index (IWI). Social Indicators Research; Dordrecht, 122(1), 65–85. [3] Rutstein, S. O., & Staveteig, S. (2014). Making the Demographic and Health Surveys wealth index comparable. [4] Hruschka, D. J., Gerkey, D., & Hadley, C. (2015). Estimating the absolute wealth of households. Bulletin of the World Health Organization, 93, 483–490.