Unpaid Work, Time Use, and Time Poverty in Kenya

K. Simiyu[12345] J. Njai[1]

[1]Economics Scholar

[2]UJ SARChiID

[3]CSSR-Africa

[4]Economics Students Association of Kenya

[5]University of Nairobi

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Background

- What do we know?
  1. The burden of unpaid work falls disproportionately on women and girls relative to men and boys (Mugehera **&** Parkes, 2020; KNBS, 2023; Chauhan, 2021; Coffey et al, 2020).
     - This burden is not shared equally among women and girls (Coffey et al, 2020).
     - Exposure risk to time poverty is heterogeneous.
  2. This burden exists despite the share of men undertaking unpaid work $\Uparrow$ (Sayer, 2005; Kurowska, 2018; Casel **&** Posel, 2020; Farré et al, 2020).
  3. The distribution of time use between paid and unpaid work is unstable (Goldin, 2023; Qi **&** Dong, 2018; Andrew et al, 2022; Bahn et al, 2020; Craig **&** Churchill, 2021a; Hupkau **&** Petrongolo, 2020).

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Theoretical Underpinnings

- Existing studies are divided into three groups:
  1. Feminist economic thought: women's economic agency, labour legislation and reforms (Goldin, 2023; Bahn et al, 2020; Coffey et al, 2020).
     - Unpaid work remains largely unrecognized,undervalued, and underappreciated.
  2. Time poverty, and the trade-off between labour market participation and household production (Aguilar-Gomez et al, 2022; Qi & Dong, 2018; Otero-Cortés et al, 2022; Cortés, 2023)
     - These studies integrate externality component of unpaid work into welfare analyses.
  3. Time allocation between paid and unpaid work within the context of tech/ productivity shocks, cultural revolutions, and natural vagaries (Goldin & Katz, 2000, 2002; Goldin, 2004; Sayer, 2005; Cortés & Pan, 2023; Whillians & West, 2022)
     - Cultural revolutions affect the relevance of gender norms related to men and women's involvement in unpaid and paid work (Nautet & Piton, 2021).

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Methodology

- An individual's critical time comprises study, sleep, and other basic needs including personal care and eating, unpaid and paid work (Vega-Rapun et al, 2021; Qi & Dong, 2018).
- Available time = total time - critical time
  - Time poverty $\sim$ available time (Bardasi & Wodon, 2010).
- Time poverty thresholds are set arbitrarily.
  - Bardasi & Wodon (2010) — 70.5h and 50h of paid and unpaid work
  - Qi & Dong (2018) — 68.4h
  - Vega-Rapun et al (2021) — halving the median time available to an individual after accounting for critical time. Time-poor if available time $<$ threshold.

Analytical Model

- Foster et al. (1984) indices computed as:

$$I_\alpha = \frac{1}{N}\sum_{m=1}^{m_p}\left(\frac{I - t_m}{I}\right)^\alpha \tag{1}$$

- Where the time poverty threshold I exceeds an individual m's total available time t with It.
  - N is total no. of individuals, and m_p is the no. of time-poor individuals.
- We estimate time poverty in a probit model:

$$G_m = G_m(Z_m) \tag{2}$$

$$Z_m = w_0 + \alpha X_m + \beta Y_m + \delta Q_m + \epsilon_m \tag{3}$$

  - Where X, Y, & Q capture individual characteristics, household characteristics, & other factors, respectively.
  - Q captures interactions drawn from X & Y.
- Data: Kenya Time Use Survey of 2021 with 21576 individual-level observations.

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Overview of Time Use and Time Poverty in Kenya

variable	male (N=9435)	female (N=12141)
housework, e.g., unpaid caregiving	158.74 (185.76)	370.21 (209.47)
personal care, ..., & sleeping	705.81 (131.83)	698.20 (122.49)
studies and learning	58.96 (176.70)	46.84 (156.95)
social life	101.85 (145.52)	88.75 (132.05)
travel	50.89 (70.97)	32.73 (57.41)
paid work	259.88 (291.59)	121.56 (212.20)
leisure	154.56 (140.70)	114.16 (113.24)
other unpaid work	5.43 (39.97)	4.58 (31.94)

Table 1-4: Gender-disaggregated time use demographics (minutes per day)

- After accounting for critical time, available time, on average, for females and males is 203 and 257 minutes, respectively (Table 1-5).
  - Thus, a 54minutes gap exists in favor of males.

Time Poverty Indices

variable	male (N=9435)	female (N=12141)
headcount time poverty index	.53 (.29)	.49 (.29)
time poverty gap	.03 (.02)	.06 (.03)
time poverty severity	.02 (.01)	.05 (.03)
share of time-poor individuals	percentage	
paid & unpaid worktime $>$ 428 minutes	51.4	62.8
paid & unpaid worktime $>$ 586 minutes	31.5	38.9
paid & unpaid worktime $>$ 604 minutes	25.1	31.6
available time $<$ 90 minutes	21.7	28.6

Table 1-5: Gender-disaggregated time poverty

Main Results

- Interaction effects were computed after probit estimation following Radean (2023). In Table 2-1:
  1. 25-59-year-old females were likelier to be time-poor than 15-17-year-old males.
  2. Rural adults were likelier to be time-poor compared to 15-17-year-olds in urban areas.

	prob. of being time-poor			
variables	(1)	(2)	(3)	(4)
gender*residence*age				
18-24	-.141*	-.139**	-.155**	-.0914
25-34	-.271***	-.241***	-.290***	-.178***
35-59	-.235***	-.115***	-.186***	-.0855
60 and above	-.0538	-.137	-.155	-.0541
gender*never married	.0286	.0455*	.0461	.0714***
observations	21574	21574	21574	21574

Table 2-2: Interaction effects after probit

Main Results ...

- We then control for economic activities.

variables	prob. of being time-poor (1)	(2)	(3)
gender*paid*marital status			
other	.105	.0485	.0787
never married	.0784	.211*	.249***
gender*family*marital status			
other	-.125	-.0660	-.0741
never married	-.0343	.0786	.113
gender*own account*marital status			
other	-.0610	-.0293	-.0236
never married	-.0295	.0592	.116
observations	15981	15981	15981

Table 2-3: Interaction effects after probit

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Conclusions

- Key takeaways are the following:
  1. Females shouldered a greater burden of unpaid housework, had fewer minutes of available time, and were less likely to be in paid employment compared to males.
  2. Females were likelier to be time-poor; and among time-poor individuals, time poverty was deeper, and more severe among females compared to males.
  3. Adult females and adult rural residents being more time-poor relative to male children and children in urban areas, respectively.
     - However, adult females in rural areas were less likely to be time poor in comparison to 15-17-year-old males in urban areas.