

ERF POLICY CONFERENCE

FROM DATA TO POLICY: EVIDENCE AND INSIGHTS FROM THE EGYPT
LABOR MARKET PANEL SURVEY 2023

DATE: 24-25 NOVEMBER 2024 SAFIR HOTEL CAIRO, EGYPT

Household appliances, infrastructural services, and married women's unpaid care work in Egypt

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Introduction

- Women in Egypt do 6 hours of unpaid care work for every hour than men do.
- Currently married women have the highest burden of unpaid care work, especially those in rural areas
- Unpaid care work is classified into direct and indirect care work
 - Direct care work consists of time spent directly caring for family members
 - Indirect care work consists of household chores, such as cooking cleaning, shopping, etc. It constitutes the bulk of women's care work (80 percent)
- Main research question:
 - Does access to home appliances and infrastructural services have time-saving effects on the time married women spend on indirect care work? If so, which appliances and which services are most important in that regard?

Data and definitions: time-use

- We use data from the time-use module in the ELMPS 2023 to defined several categories of time use
- 1- Employment or subsistence work
- 2- Indirect unpaid care work
- 3- Direct unpaid care work
- 4- Other time uses

Add up time spent in these time-use categories over 24-hour period preceding interview

- Care work can either be a primary or secondary time use.
- We examine total time in direct and indirect care work

We focus our analysis on indirect care work and its subcomponents:

- Total hours in indirect care work
- Hours spent cooking, cleaning, and in other indirect care tasks (such as shopping, travel, etc.)

Data and definitions: access to appliances and infrastructural services

- Appliances:
 - Basic appliances:
 - refrigerator, stove/oven, automatic washing machine, water heater
 - Supplementary appliances:
 - Freezer, dishwasher, microwave oven, mixer/grinder/kitchen machine, vacuum cleaner
- Infrastructural services:
 - Access to piped water, electricity, sewage networks, garbage collection
- Summary indices
 - Additive indices for (i) **all appliances**, (ii) **basic appliances**, (iii) **supplementary appliances**, and (iv) **infrastructural services** that are standardized on a scale of 0-10
 - $std_{index} = 10 * \frac{index - \min(index)}{\max(index) - \min(index)}$

Methods

- Most challenging aspect of this research is that household decisions on ownership of appliances and connection to services are potentially endogenous to household members' decisions about time-use.
 - Endogeneity is likely due to unobserved heterogeneity, but also possibly to reverse causality
 - For services, there are two aspects to the decision:
 - Decision to connect to services when available in community of residence
 - Decision to locate in communities that have access to services
 - Can neutralize endogeneity of first decision by aggregating access to the community level
 - For appliances, a similar strategy is unlikely to work
 - We include a large number of individual, household, and community-level controls to try to reduce the bias caused by unobserved heterogeneity
 - E.g. education, age, age at first marriage, HH per capita income decile, HH age and sex composition, availability of various community services, average of community wealth index

Short synopsis of findings related to appliance ownership

- Owning a stove was the appliance most consistently associated with time-saving in indirect care work
 - Associated with time-savings in all three sub-components of indirect care work – cooking, cleaning, and other indirect care
- Owning a vacuum cleaner is also associated with time-savings in indirect care work, mostly through its effect on time spent cleaning, and to a lesser extent time in other indirect tasks
- Owning a stand-alone freezer is associated with time-saving in cooking and cleaning, but has an overall insignificant effect
- Ownership of basic appliances has a time-saving effect that ownership of supplementary appliances

Short synopsis of findings related to access to infrastructural services

- Results on access to infrastructural services are more mixed
- Community-level access to **garbage collection services** has a significant time-saving effect on indirect care work
 - This is mostly due to its effects on time spent cleaning and in other indirect care tasks.
 - No effect, when specified at the household level
- The effect of access to **sewage networks** disappears when controls are included

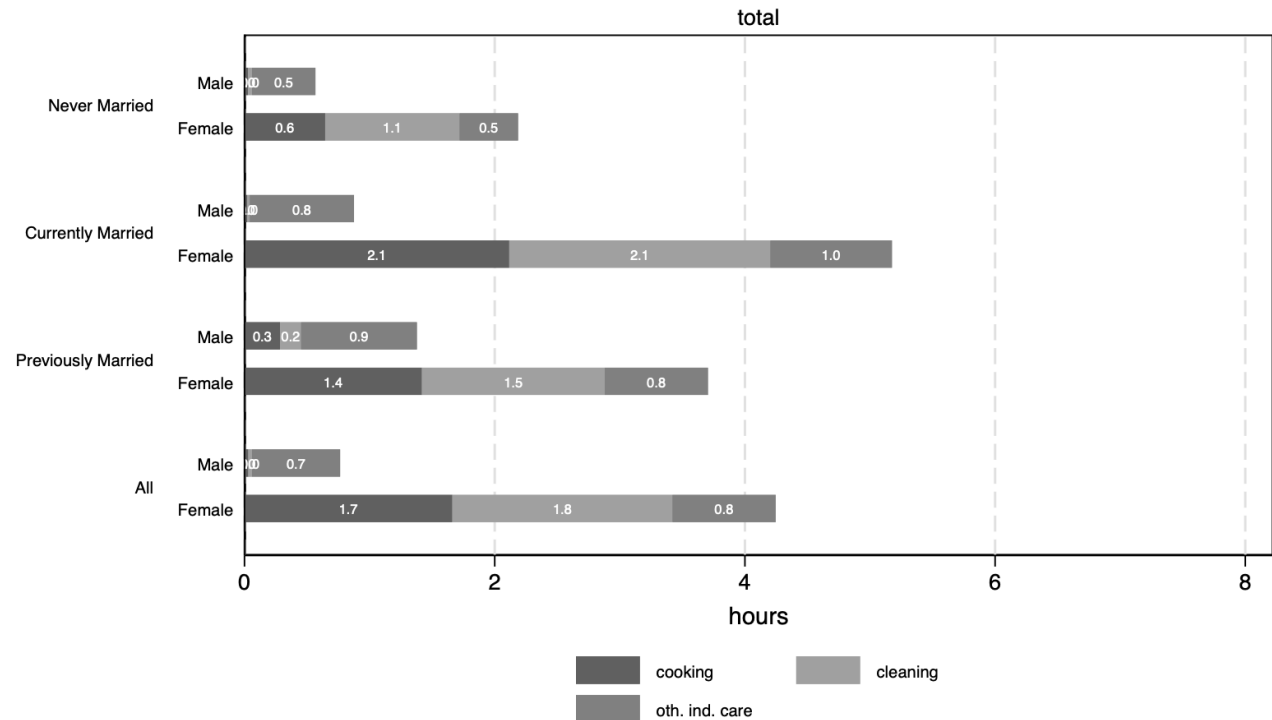
Access to infrastructural services and home appliances (percentage), 2023

	Location		
	Urban	Rural	Total
Infrastructural services			
Piped water	99.5	97.7	98.4
Electricity	99.7	99.5	99.5
Sewage network	92.2	53.0	68.5
Garbage collection	53.7	55.8	55.0
Home appliances			
Fridge	99.0	98.5	98.7
Cooker/Stove	97.6	93.7	95.2
Water Heater	85.1	59.3	69.4
Automatic Washing Machine	48.9	23.0	33.2
Freezer	29.1	28.1	28.5
Dishwasher	2.8	0.7	1.5
Microwave	19.7	9.7	13.7
Mixer/Grinder/Kitchen Machine	96.1	94.1	94.9
Vacuum Cleaner	36.4	17.6	25.0

Hours in indirect care work

- Currently married women undertake 5.2 hours of indirect care work per day, compared to 0.9 hours for currently married men
- Nearly all the indirect care men do is in tasks other than cooking and cleaning, whereas the majority of women's time is in these tasks

Hours in indirect care work by sex and marital status



Source: Authors' calculation based on data from ELMPS 2023.

Effect of ownership of home appliances on time spent on indirect care work, currently married women, 15-64

VARIABLES	Ind. care hrs.	Ind. care hrs.	cooking hrs.	cooking hrs.	cleaning hrs.	cleaning hrs.	Other indirect care hrs	Other indirect care hrs
	Model (1)	Model (2)	Model (1)	Model (2)	Model (1)	Model (2)	Model (1)	Model (2)
fridge	0.410*	0.292	0.172	0.123	0.169	0.0968	0.0812	0.0677
	(0.228)	(0.223)	(0.133)	(0.131)	(0.140)	(0.138)	(0.130)	(0.130)
cooker/stove	-0.695***	-0.638***	-0.138**	-0.123*	-0.447***	-0.381***	-0.120*	-0.141**
	(0.119)	(0.118)	(0.0696)	(0.0692)	(0.0733)	(0.0730)	(0.0681)	(0.0687)
water heater	-0.0973	0.0242	-0.0913**	-0.0125	-0.102***	-0.0232	0.0797**	0.0558
	(0.0611)	(0.0626)	(0.0356)	(0.0367)	(0.0375)	(0.0388)	(0.0348)	(0.0364)
automatic washing machine	-0.212***	-0.0723	-0.0470	0.0120	-0.0115	0.0667*	-0.116***	-0.103***
	(0.0624)	(0.0625)	(0.0363)	(0.0367)	(0.0383)	(0.0387)	(0.0356)	(0.0364)
freezer	-0.132**	-0.0764	-0.129***	-0.112***	-0.131***	-0.0947**	0.0734**	0.0912**
	(0.0605)	(0.0616)	(0.0352)	(0.0362)	(0.0371)	(0.0382)	(0.0345)	(0.0359)
dishwasher	-0.0551	0.299	-0.0379	0.116	0.00240	0.233*	-0.0450	-0.0333
	(0.210)	(0.207)	(0.122)	(0.122)	(0.129)	(0.128)	(0.120)	(0.121)
microwave	0.116	0.223***	-0.0343	0.00858	0.207***	0.286***	-0.159***	-0.158***
	(0.0810)	(0.0806)	(0.0472)	(0.0473)	(0.0497)	(0.0500)	(0.0462)	(0.0470)
mixer, grinder or kitchen machine	0.181	0.0534	0.105	0.0383	0.0867	0.0332	-0.0105	-0.0222
	(0.116)	(0.114)	(0.0675)	(0.0668)	(0.0712)	(0.0705)	(0.0661)	(0.0663)
vacuum cleaner	-0.336***	-0.214***	-0.00729	0.0445	-0.206***	-0.133***	-0.0840**	-0.0750*
	(0.0670)	(0.0674)	(0.0390)	(0.0395)	(0.0411)	(0.0417)	(0.0382)	(0.0392)
Constant	0.410*	0.292	0.172	0.123	0.169	0.0968	0.0812	0.0677
	(0.228)	(0.223)	(0.133)	(0.131)	(0.140)	(0.138)	(0.130)	(0.130)
Controls included	no	yes	no	yes	no	yes	no	yes
Observations	12,979	12,979	12,979	12,979	12,979	12,979	12,979	12,979
R-squared	0.011	0.060	0.004	0.038	0.010	0.043	0.004	0.012

Model (1) has no controls, Model (2) has a full set of individual, HH, and community controls. Statistical significance at the 0.1% (***) , 1% (**) and 5% (*) levels are shown. ¹⁰

Effect of indices of appliances owned on time in indirect care work, currently married women, 15-64.

	Model (1)	Model (2)	Model (3)	Model (4)
All appliances	-0.141*** (0.0146)	-0.0293 (0.0187)		
Basic appliances			-0.0828*** (0.0135)	-0.0346** (0.0145)
Supplementary appliances			-0.0502*** (0.0146)	0.00908 (0.0159)
Controls included?	No	Yes	No	Yes
Observations	13,027	13,027	13,027	13,027
R-squared	0.007	0.063	0.007	0.063

Models (1, 3) have no controls, Models (2, 4) have a full set of indiv., household, and community controls. Statistical significance at the 0.1% (***) , 1% (**) and 5% (*) levels are shown.

Effect of access to infrastructural services on time in indirect care work, currently married women, 15-64

	(1)	(2)	(3)	(4)
VARIABLES	HH. access/no controls	HH. Access w/controls	Community Access, no controls	Community access, w/controls
piped water	0.146 (0.199)	0.324* (0.195)	0.0440 (0.538)	0.523 (0.534)
electricity	-0.0617 (0.371)	-0.277 (0.364)	-0.923 (0.846)	-1.894** (0.839)
sewage system	-0.357*** (0.0558)	-0.0591 (0.0646)	-0.523*** (0.0688)	-0.0695 (0.0863)
garbage disposal	-0.0319 (0.0518)	-0.0410 (0.0526)	-0.196** (0.0775)	-0.346*** (0.0826)
Controls included?	No	Yes	No	Yes
Observations	12,979	12,979	12,979	12,979
R-squared	0.004	0.060	0.007	0.062

Models (1, 3) have no controls, Models (2, 4) have a full set of indiv., HH and community controls. Statistical significance at the 0.1% (***) , 1% (**) and 5% (*) levels are shown.

Conclusions

Time spent in indirect unpaid care work is systematically associated with access to certain home appliances and infrastructural services

- Ownership of basic appliances such as a stove, is negatively associated with indirect care work, even after correcting for host of individual, household, and community controls
- Supplementary appliances as a group do not have an additional effect, but individual appliances such as vacuum cleaners do
- Among infrastructural services, only access to garbage collection consistently reduces time in indirect care work
 - The effect of access to water and electricity cannot be analyzed since these services are almost universally available in Egypt