

# Does the Gendered Nature of Invisible Work Explain Low Female Labor Participation Rate

Insights from Morocco

Sara Loukili and Najat El Mekkaoui

The 15th Global Meeting of the NTA Network

March 12, 2025

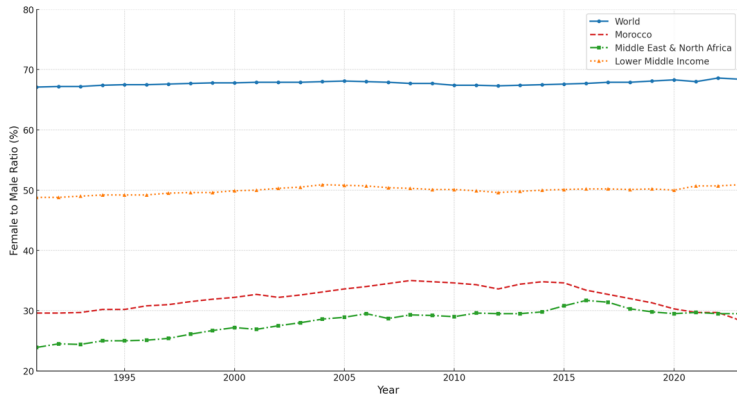
1. Motivation
2. Context
3. Methodology
4. Results
5. Discussion

# Demographic Transition and Female Labor Market Participation

- **Demographic Transition Theory:** Societies shift from high to low birth and death rates as they industrialize and modernize (Notestein, 1945).
- **Link to Female Labor Participation:** Lower fertility rates often correlate with increased female labor market participation (Klasen and Lamanna, 2009; Prettner, 2012).
- **This relationship is driven by:** Increased access to education (Becker, 1993; Schultz, 1997) Structural economic changes (Goldin, 2006; Bloom et al., 2003) Financial necessity (McDonald, 2000)
- **Developing Countries' Context:** Female labor participation often rises with economic growth and demographic changes (Lee, 2003).
- **Morocco's Paradox:** Despite advances in women's education, female labor force participation remains low. Educated women face significant barriers to entering or staying in the workforce (Assaad, 2014)

# Demographic Transition and Female Labor Market Participation

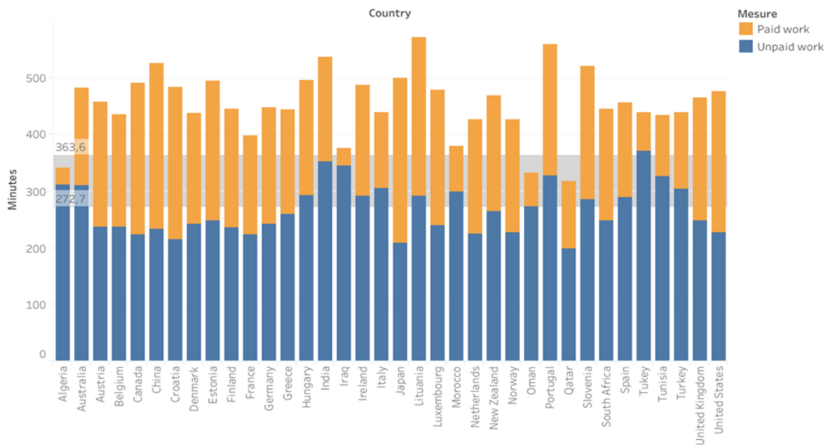
Figure: 1. Evolution of the ratio of female to male labor force participation (1991-2023)



Source: Authors. World Bank data.

# Demographic Transition and Female Labor Market Participation

Figure 2. Average time spent by women in paid and unpaid work (minutes per day), developed and developing countries



Source: Authors. Country time use data.

# The Impact of Invisible Work on Economic Equality

- **Structural Challenges and Gender Inequality:** The gap between unpaid labor and formal labor market participation highlights structural barriers to women's economic equality. Invisible work—household chores, caregiving—remains essential but is not captured in GDP (Reid, 1934; Mason and Lee, 2011; Hochschild and Machung, 2012; Donehower, 2018).
- **Economic Exclusion and Social Mobility:** Women's disproportionate responsibility for unpaid labor limits financial autonomy and reinforces economic exclusion.
- **Institutional Gaps in Morocco:** Limited social support systems (e.g., affordable childcare, eldercare) place a heavier caregiving burden on women (Orloff, 1993). This lack of support increases economic vulnerability and restricts career advancement (Gornick and Meyers, 2003).

# Study Objectives and Policy Implications

- **Study Objectives:** (1) Quantify the contribution of invisible labor to Morocco's GDP; and (2) Examine the gendered division of unpaid labor and its link to women's economic exclusion despite rising educational attainment.
- **Policy Implications:** Emphasize the need for policies to: (1) Recognize the value of unpaid work; (2) Redistribute the burden of invisible labor; (3) Reduce the barriers limiting women's participation in the formal labor market.
- **Contribution to literature:** (1) Explore the intersection of gender, labor, and policy; (2) Provide insights for other developing economies facing similar challenges in recognizing and valuing invisible work.

## Context 1/3: Gendered Economic Exclusion in the Moroccan Labor Market

- **Economic Exclusion:** Significant exclusion of youth and women (Shaban et al., 1995; Assaad and Krafft, 2014).
- Slow job creation and dominance of low-quality, informal non-agricultural jobs (Lopez-Acevedo et al., 2021).
- **Female Labor Force Participation (FLFPR) Trends:** Despite rising education, declining fertility, and economic growth, FLFPR has decreased over the past two decades.
- Women face sharper declines in participation and higher unemployment rates since 2015.

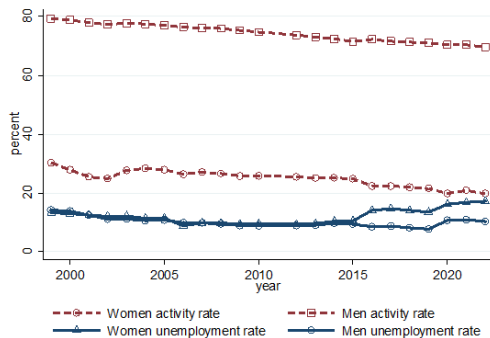
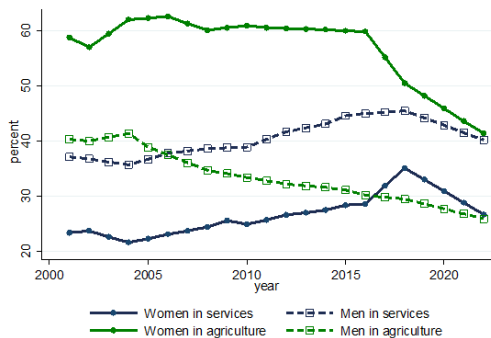


## Context 2/3: Structural Transformation and Female Labor Market Participation

- **Sectoral Shifts and Gender Disparities:** Moroccan labor shifted from agriculture to services (1999–2022), a pattern typically linked to structural transformation.
- **However**, women's employment in both sectors has declined, challenging conventional development patterns
- **Deviation from Global Patterns:** Literature suggests service sector growth boosts female labor supply (Buera et al., 2019; Olivetti and Petrongolo, 2016; Ngai and Petrongolo, 2015, 2017).
- **Moroccan case diverges:** Structural changes have not translated into greater female labor market participation.

# Context 2/3: Structural Transformation and Female Labor Market Participation

Figure 3. Evolution of key labor market indicators by gender (1999 – 2022)



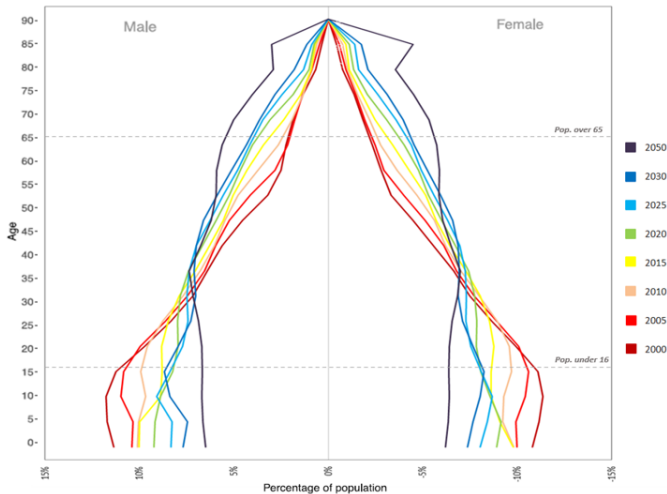
Source: Authors. HCP employment survey data.

## Context 3/3: Demographic Shifts and Labor Market Pressures

- **Changing Demographic Structure:** Morocco's population is rapidly aging: By 2050, the age structure will resemble a rectangle rather than a pyramid.
- Increasing dependency ratios with more elderly dependents and sustained growth in the youth population intensify labor market pressures.
- **Labor Market Impact:** More than 9 million people are of working age, with 430,000 new entrants annually by 2030 (HCP projections).
- These demographic trends increase the need for investments in social protection systems.

# Context 3/3: Demographic Shifts and Labor Market Pressures

Figure: 4. Evolution of key labor market indicators by gender (1999 – 2022)



## Methodology 1/3: The NTTA Framework

- Integrates data on time use to quantify unpaid labor and its economic value.
- Captures gendered patterns of household production throughout the life-cycle.
- Distinguishes between market-based and household-based production.
- **Imputes a monetary value to unpaid work for comparison with market labor.**
- **Key Profiles Constructed:** (1) Production Profile – Time spent on unpaid household services (by age and gender). (2) Consumption Profile – Estimated use of household services. (3) Inflow transfers - Time received as unpaid care. (4) Outflow transfers – Time provided for unpaid care.

- **Data Collection:**
  1. Uses time-use diary surveys to quantify unpaid labor by age and gender
  2. Monetizes unpaid work using the replacement cost method (housekeeper, childcare worker wages)
- **Activity Classification:** Based on the third-party criterion (Reid, 1934; Donehower, 2018), activities counted if they could be outsourced.

Table: NTTA household production activities groups

---

<b>Time Use Activity</b>
1. Cleaning
2. Laundry (includes sewing and clothing repair)
3. Cooking (food and drink preparation)
4. Household maintenance and repair
5. Lawn and garden care
6. Management of households
7. Pet care (not veterinary care)
8. Purchasing goods and services
9. Travel (related to activities 1-8, 10-12)
10. Childcare
11. Care for adults and elders
12. Volunteering or other forms of care for community members
13. Fetching wood or carrying water

---

Source: Donehower, 2018.

## Methodology 3/3: Valuing unpaid work

- **Monetary valuation**

Applies the legal minimum wage for a conservative estimate of unpaid work  
Applies the legal minimum wage for a conservative estimate of unpaid work

- **Total value of unpaid work:  $V(a) = T(a) \times W(a)$**

$V(a)$  is the monetary value of unpaid work

$T(a)$  is time spent on unpaid work activities

$W(a)$  is the imputed hourly wage

- **Household Consumption of unpaid services:  $C(a) = \sum_i \frac{P_i}{N}$**

$C(a)$  is the consumption of unpaid work at age (a)

$P_i$  represents the total household production of unpaid services

$N$  is the number of household members sharing the benefits.



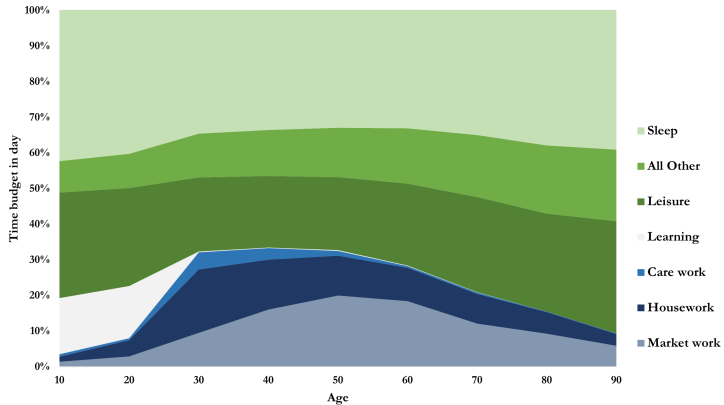
- **Primary Data Source:** The National Time-Use Survey by the High Commission for Planning (HCP, 2012)
  1. Sample: 9,200 households (one male, one female aged 15+ per household)
  2. Subsample: 3,000 children (aged 7–14)
  3. Data: Daily activity diaries capturing paid and unpaid work
- **Macro Controls and Population Data:**
  1. National accounts for scaling age profiles
  2. Population estimates (ages 0–99) disaggregated by age and gender for adjustments

# Summary Statistics

	Married couples		Intra-gender differences		
	Wife	Husband	Non-working women	Working women	Difference
<i>Demographic characteristics</i>					
Own age	38,085	43,56	36,61	40,3885	3,778***
Has children	0,605	0,629	0,573	0,663	0,09
Elderly in the household	0,1805	-	0,1555	0,19865	0,043
Size of household	3,88	3,88	3,6565	4,095	0,438
<i>Diploma</i>					
No diploma	0,5815	0,3965	0,542	0,5965	0,054***
Primary	0,1785	0,283	0,211	0,1105	-0,1005***
Middle school	0,1	0,12575	0,116	0,05935	-0,056
High school	0,0815	0,0974	0,085	0,09295	0,007
University	0,05755	0,0948	0,04075	0,138395	0,097***
<i>Time allocations (in minutes)</i>					
Paid work	81,87	423,15	-	287,774	-
Unpaid domestic work	307,445	45,06	336,845	269,74	-67,105***
Unpaid care work	53,54	24,28	64,065	33,8615	-30,2035***
Self-care and leisure	272,73	222,15	300,77	204,775	-95,995*
<b>Observations</b>		3394	2221	956	
<b>Share of sample</b>		36,8% (of all households)	69,9%	30%	

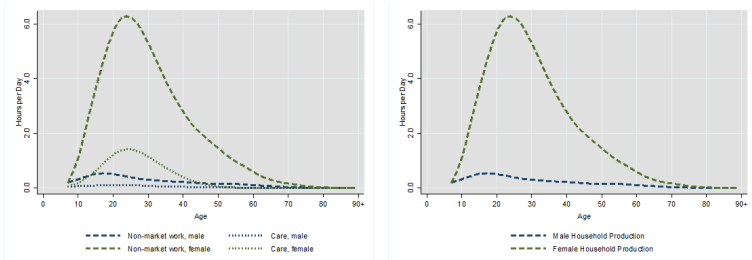
Source: Author's calculations from the Morocco National Time Budget Survey 2012.

Figure: 5. Time Use Profiles by Age in Morocco



# Results (2/6): Gendered Allocation of Time Over the Lifecycle

Figure: 6. Allocation of Time over the Lifecycle by Gender

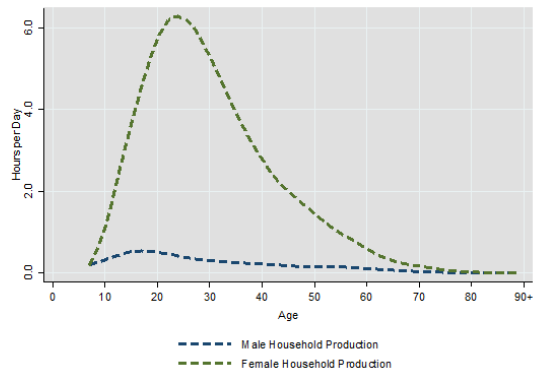
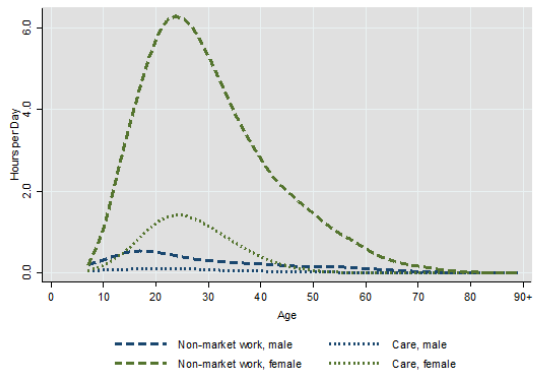


## Results 3/6: Gendered Allocation of Time Over the Lifecycle

- **Unpaid Work and Gendered Division:** In the absence of universal social protection, women provide the majority of unpaid care work for children and the elderly
- **Age Profiles and Gender Differences:**
  1. Women provide the bulk of unpaid household work, while men dominate paid market production
  2. Unpaid production accounts for 27.3 percent of Morocco's GDP
- **Lifecycle Patterns:**
  1. Male market work peaks at age 28; female market work peaks at age 25
  2. Women's market work declines sharply after age 50, while men's hours plateau before retirement age
  3. Gender gaps in market work persist until around age 70

# Results (4/6): Household production Over the Lifecycle

Figure: 6. Household production through the Lifecycle



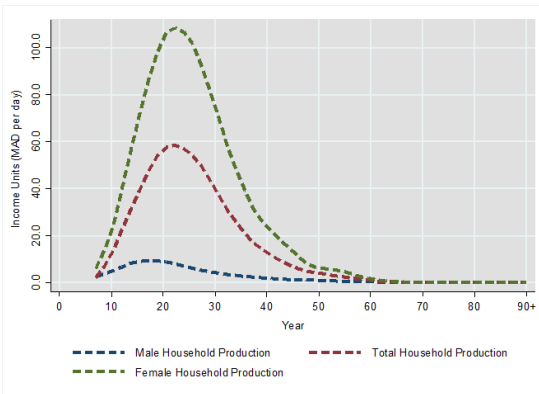
# Results (5/6): The economic value of unpaid work over the lifecycle

	Under 18 yrs	18-39 yrs	40-59 yrs	60 yrs plus	Male	Female	TOTAL
<b>Domestic Work</b>							
Housework <i>(hours per day)</i>	0,9	2,3	2,5	1,8	0,6	3,4	7,4
Care <i>(hours per day)</i>	0,2	0,6	0,2	0,1	0,1	0,4	1
Household Production <i>(Total hours)</i>	1	2,9	2,7	1,9	0,7	3,8	8,5
<b>Value of domestic work in year</b> <i>(In sample)</i>							
Value in MAD	4509	13099	11851	8274	3039	16754	37733
Equivalent in USD	458	1330	1204	840	309	1702	3832
<b>Value of domestic work in year</b> <i>(Whole economy)</i>							
Value in MAD <i>(billions)</i>	<b>44,46</b>	<b>217,61</b>	<b>69,38</b>	<b>8,15</b>	<b>0,011</b>	<b>286,59</b>	<b>286,61</b>
Value in USD <i>(billions)</i>	<b>4,52</b>	<b>22,10</b>	<b>7,05</b>	<b>0,83</b>	<b>0,001</b>	<b>29,11</b>	<b>29,11</b>
<b>Domestic work relative to GDP</b>	<b>4,23%</b>	<b>20,69%</b>	<b>6,60%</b>	<b>0,77%</b>	<b>0,001%</b>	<b>27,30%</b>	<b>27,30%</b>

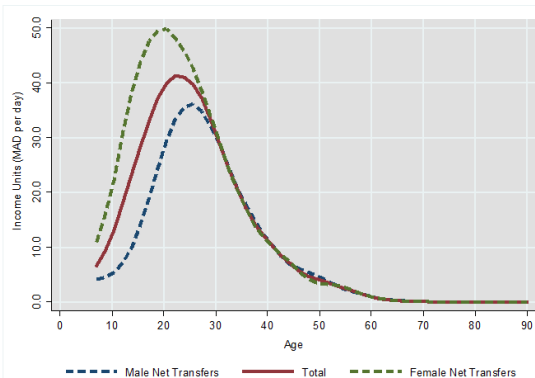
# Results (6/6): The economic value of unpaid work over the lifecycle

Figure: 7. Value of unpaid work by gender

Value of unpaid work Production and Transfers in a Day by Gender



Value of Net Transfers over the Lifecycle in a Day by Gender





## Discussion (1/2): Gendered Division of Unpaid Labor and Social Protection

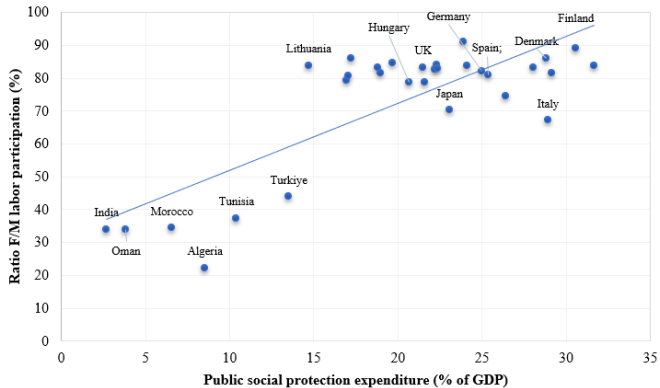
- **Key Findings:**

**Structural Barrier:** Unpaid labor is a primary barrier to women's formal employment, driven by limited public social policies (e.g., childcare, eldercare)

**Social Protection and Labor Participation:** Countries with public social protection spending more than 15 percent of GDP show higher female-to-male (F/M) labor force participation

# Discussion (1/2): Gendered Division of Unpaid Labor and Social Protection

Figure: 8. Social Protection Expenditure and Female Labor Force Participation



## Discussion (1/2): Gendered Division of Unpaid Labor and Social Protection

- **Key Findings:**

**Structural Barrier:** Unpaid labor is a primary barrier to women's formal employment, driven by limited public social policies (e.g., childcare, eldercare)

**Social Protection and Labor Participation:** Countries with public social protection spending more than 15 percent of GDP show higher female-to-male (F/M) labor force participation

- **Economic Contribution of Unpaid Labor:**

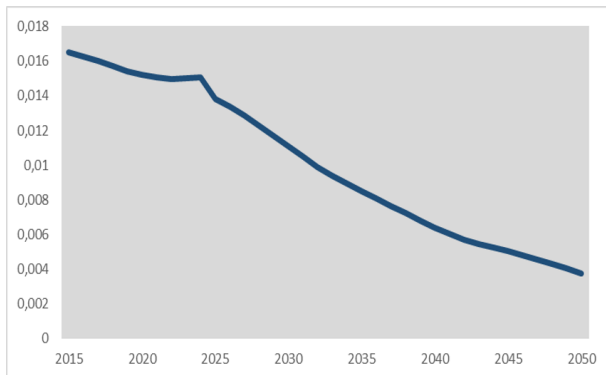
Unpaid labor accounts for **27.3 percent of Morocco's GDP**, aligning with global estimates (20-39 percent of GDP)

Despite its economic significance, unpaid work remains **invisible** in national accounts, reinforcing gender inequality

## Discussion (2/2): Demographic Shifts and Policy Recommendations

- **Demographic Transition and Growing Care Burden on women:** Morocco's elderly population projected to reach 11.5 percent by 2050, increasing demand for eldercare

Figure: 9. Impact of Demography-Induced Changes in Supply of Invisible Work



- **Policy Recommendations:**
  1. **Subsidized Childcare and Eldercare:** Reduce caregiving burden and enable women's labor participation
  2. **Flexible Work Arrangements:** Support caregivers through adaptable work structures
  3. **Tax Incentives:** Encourage family-friendly, gender-equitable workplace policies
  4. **Pension Reforms:** Include informal workers and caregivers to ensure inter-generational equity