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Women's Labor Force Attachment in Jordan:

Understanding Attrition, Retention, and Re-Entry

Rozan Wehbe,
Nisreen Salti
and Ali Abboud

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منتدى البحوث الاقتصادية

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Rozan Wehbe
Department of Economics, American University of Beirut
Email: rrw04@mail.aub.edu.lb

Nisreen Salti
Department of Economics, American University of Beirut
Email: ns17@aub.edu.lb

Ali Abboud
Department of Economics, American University of Beirut
Email: aa184@aub.edu.lb

Abstract

This paper examines women's medium-run labor force trajectories in Jordan using the 2010–2016 Jordan Labor Market Panel Survey. Moving beyond static participation measures, we classify women into four six-year trajectories: remain, enter, exit, or remain out of the labor force, and estimate multinomial models incorporating education, marriage, fertility, wealth mobility, and intergenerational backgrounds. Four robust patterns emerge. Tertiary education is a binding threshold for women's entry into the labor force and improves retention, but does not shield them from marriage-driven exits, while secondary schooling has weak effects. Socio-economic status shapes trajectories asymmetrically: affluent households facilitate withdrawal, whereas downward wealth mobility increases labor force exits. Marriage, rather than motherhood, is the central life event reducing women's attachment, with strong negative effects that dominate fertility dynamics. Maternal employment and education are powerful intergenerational predictors of women's trajectories, whereas paternal characteristics matter little. Women's outside options are constrained by scarce "decent" jobs and household bargaining dynamics, leading to early and persistent withdrawal from the labor market. Our findings underscore the need for policies that expand stable employment opportunities, reduce marriage-related barriers, and support continuous employment among mothers.

JEL Classifications: J13, J16, J21, O15
Keywords: labor force participation, Jordan, marriage, wealth mobility, intergenerational transmission, gender

1. Introduction

Jordan presents one of the largest gender gaps in labor force participation in the world, despite decades of rising female educational attainment. While women now complete secondary and tertiary education at rates comparable to and often exceeding men, their participation has remained stagnant. Existing research has documented this paradox, commonly referred to as the "MENA Paradox", extensively, but most studies rely on cross-sectional measures of participation or unemployment and therefore cannot capture the life-cycle dynamics that shape women's long-term attachment to the labor market.

This paper provides new evidence by exploiting the longitudinal structure of the JLMPS 2010–2016 to construct four medium-run labor force trajectories: remaining in the labor force, entering, exiting, or remaining persistently out. This approach allows us to move beyond static participation rates and examine how life-cycle events including education, marriage, fertility, wealth mobility, and parental backgrounds jointly shape women's sustained attachment to work. While earlier studies have emphasized education, labor demand constraints, or gender norms, none have integrated these mechanisms within a single empirical framework that follows women across time.

Our analysis reveals four consistent patterns. Tertiary education acts as a binding threshold for women's entry and retention; socio-economic status affects women's attachment asymmetrically at the top and bottom of the wealth distribution; marriage (not motherhood) is the pivotal life event restructuring women's labor market behavior; and maternal employment and education exert strong intergenerational influence on women's trajectories. Our findings point to a unified mechanism in which women's outside options are constrained by the scarcity of stable, socially acceptable jobs, reinforcing early withdrawal once marriage reshapes bargaining dynamics within households.

Situating labor market outcomes within the broader sequence of life-cycle events, allows us to provide a more integrated understanding of Jordan's "MENA paradox" and highlight the structural and intergenerational forces that limit women's long-run employment prospects. The results have important implications for labor market policy, social protection, and gender equality strategies in Jordan.

2. Literature Review

Jordan's female labor force participation has long puzzled researchers. Despite decades of rising educational attainment, delayed marriage, and declining fertility, women's participation has remained among the lowest globally and has shown little improvement over time. A large empirical literature has documented this paradox, yet most studies focus either on cross-sectional

participation decisions or on broad labor market conditions rather than the medium-run trajectories that shape women's long-term attachment to work. This section reviews the strands of evidence most relevant to our analysis and highlights the gaps that motivate our contribution.

2.1 The persistence of low female participation in Jordan

Multiple studies show that Jordan's female participation rates have stagnated around 14–17% for nearly two decades, even as women's educational attainment has risen sharply (Assaad and Krafft 2023; Assaad et al. 2020). Research consistently points to a mismatch between women's qualifications and the structure of the labor market: educated women face high unemployment and long job-search durations, while less-educated women rarely participate at all. The contraction of the public sector which is historically the main employer of educated women combined with limited growth in formal private-sector opportunities has increased unemployment and discouraged participation among new female cohorts. These trends are documented in both descriptive and econometric studies relying on labor force surveys and data Jordan Labor Market Panel Survey (JLMPS).

Yet this literature primarily measures participation at a point in time. It shows that women participate less, but not how their trajectories evolve or which life-cycle events shape entry, exit, and long-term attachment.

2.2 Marriage, norms, and the timing of women's withdrawal

Marriage plays a central role in women's labor market outcomes in Jordan. Studies on women's agency and gender norms (Alkasasbeh 2025; Gauri, Rahman, and Sen 2019) find that marriage, more than motherhood, reshapes women's economic choices. Married women face stronger constraints on mobility, job search, and acceptable forms of work. Even though many non-working women express a desire to work, the transition into marriage brings a tightening of normative expectations.

This literature aligns with broader findings across the MENA region: participation decisions are embedded in household bargaining and deeply influenced by expectations about gender roles. However, the empirical focus remains cross-sectional as most studies estimate the effect of being married, not the effect of becoming married or of transitioning out of marriage.

Life-cycle transitions into and out of marriage are rarely incorporated into models of women's medium-run labor market behavior.

2.3 Education as a threshold for entry, not a guarantee of attachment

Education is widely understood as a key enabler of women's labor force participation, but recent evidence suggests that its effect is conditional and asymmetric. While tertiary education

increases the likelihood of entering the labor force, rising educational attainment has not translated into sustained participation or improved employment prospects (Assaad et al. 2021; Assaad and Krafft 2020). Educated women face high unemployment rates, long job-search episodes, dependence on public sector queues, and limited sectoral diversification (Assaad and Krafft 2015).

The school-to-work transition has become more protracted, with declining activity even among educated young women (Assaad and Krafft 2019). But most of this work focuses on initial entry, not on whether educated women remain attached to the labor market once they enter.

2.4 Socio-economic status and household economic conditions

Household economic position shapes participation decisions differently across genders. Studies on remittances and non-labor income (Al-Assaf, 2016) find that increases in household resources reduce labor supply for both men and women, but women's responses are smaller and more context-dependent. Other research highlights how high-SES households may allow (or encourage) women to withdraw from the labor force, while low-SES households face segmented, low-quality jobs that may not justify the costs of working (Assaad and Krafft 2015; Assaad et al. 2021).

Despite these insights, very few studies examine wealth mobility as in how downward or upward movement in the wealth distribution affects women's medium-run trajectories. Nor do they integrate wealth dynamics with marital transitions and intergenerational factors.

2.5 Intergenerational transmission of work norms

Evidence from Turkey, the United States, and other settings (Durmaz-Aslan 2020; Binder 2021) shows strong intergenerational transmission of female labor force participation: daughters of working mothers are significantly more likely to participate themselves. Maternal employment serves as an observable form of role modeling and reflects deeper preferences, norms, and negotiation patterns within households. These effects often persist even after accounting for daughters' education and household characteristics.

In Jordan, however, intergenerational mechanisms remain understudied, particularly within a structural context of marriage-related exits, constrained job opportunities, and declining public sector employment. Existing JLMPS-based research has not yet incorporated maternal background into models of women's labor market trajectories.

2.6 Gaps in the literature and contribution of this study

Across these strands, three gaps stand out.

First, existing research has not examined medium-run labor force trajectories (whether women remain, enter, exit, or remain out of the labor force over a sustained period). Most work studies participation as a static outcome, overlooking the life-cycle dynamics that determine long-run attachment.

Second, no study has jointly analyzed marital transitions, fertility changes, wealth mobility, and maternal role modeling within a unified empirical framework. These life-cycle events are central to women's labor market behavior in Jordan, yet they have been treated separately in the literature.

Third, the literature has not connected Jordan's "MENA paradox" of high education but low participation to intergenerational influences and wealth dynamics, nor explored how these factors interact with marriage to shape women's entry and exit patterns.

Our study addresses these gaps by using the unique longitudinal structure of the JLMPS 2010–2016 to construct four labor force trajectories and to examine how education, marriage, fertility, wealth mobility, and maternal characteristics jointly shape women's medium-run labor market attachment. This approach allows us to move beyond static participation models and to situate women's decisions within the broader sequence of life-cycle events, providing a more integrated understanding of female labor market behavior in Jordan.

3. Data and Sample

This study draws on the Jordan Labor Market Panel Survey (JLMPS) for the years 2010 and 2016, a nationally representative longitudinal survey implemented by the Economic Research Forum (ERF) and Jordan's Department of Statistics (DoS). The JLMPS follows a multi-stage, stratified cluster sampling design, capturing socioeconomic, demographic, and labor market indicators for individuals and households across all Jordanian governorates. The survey's longitudinal structure allows tracking of original households as well as new split households formed by members who moved between 2010 and 2016.

The baseline 2010 wave consists of 25,953 individuals across 5,102 households. By 2016, ERF successfully recontacted a large share of this sample, yielding the following official tracking structure presented in the following table.

Analytic Panel Dataset	**Freq.**
2010 Baseline Sample	
Individuals Interviewed	25, 953
Households Interviewed	5,102
2016 Follow-up Tracking	
Original 2010 Households Recontacted	3,058
Split Households Identified	1,221
Individuals Successfully Tracked from 2010	**14,502**
− In Original Households	13,235
− In Split Households	1,267

Table. Sample Size

3.1 Construction of the Analytic Panel Sample

We impose several data-cleaning and sample-selection steps before analysis. These steps restrict the raw panel to individuals who can be consistently followed across waves and who have valid information for our key variables. The construction of the analytic sample proceeds as follows:

1. We exclude the Refresher households, which represent new 2016 households introduced for cross-sectional representativeness, but not part of the original 2010 baseline.

2. We retain Panel households using the 2016 “hhtype_16” classification (types 1 and 2: original + split households).

3. We drop new 2016 household members to maintain a strict 2010-origin panel.

4. We only keep individuals with non-missing 2010 characteristics.

3.2 Sample Restrictions for Analysis

To focus on labor market dynamics, the analytic sample is further restricted to:

- Individuals aged 15–64 in at least one wave
- Individuals with harmonized sex, ever-worked history, and birth-history corrections
- Individuals with valid labor force status in each wave when analyzing transitions

Corrections include:

- Sex mismatches, resolved using fertility information, relationship-to-head, and household composition
- Ever-worked inconsistencies, ensuring logical temporal ordering
- Derived male fertility variables via spouse-linking within households (non-destructive)

3.3 Weighting Strategy

The JLMPS provides three types of weights including cross-sectional weights (2010 and 2016) for population representativeness in each wave and panel weight (panel_wt_10_16), normalized to 1, for analyses spanning both waves.
Given our focus on transitions and life-cycle patterns, descriptive statistics (tree diagrams, age trajectories, marriage/fertility curves) are reported unweighted, as they rely on strict analytic panel. Regression analyses are estimated with panel weights, ensuring population representativeness of the 2010-origin cohort.

3.4 Key Variables

The JLMPS provides a rich longitudinal information on labor force status (employed, unemployed, out of labor force), education (ISCED categories, collapsed into low/secondary/tertiary), marital status (binary, harmonized across waves), fertility, number of children inside and outside the household, household structure and size, parental background (education and employment), work characteristics (industry, hours worked, travel time, history)
To study life-cycle dynamics, we construct:

- Four-part labor force trajectory variable: Remain, Enter, Exit, Out of the labor force

- A binary retention variable, which equals one if a woman is in the labor force in both 2010 and 2016 and zero otherwise. This is used in the complementary binary regression to isolate the determinants of sustained attachment.

- Life-event variables, including marriage status, marital transitions, number of children, change in the number of children, and the arrival of a new child between waves.
- Household mobility indicators capturing movement up or down the wealth distribution between waves.
- Detailed fertility measures, such as the age of the youngest child in each wave and a dummy for having a new child.

4. Descriptive Statistics

4.1 Labor Force Trajectories, 2010–2016

We begin by mapping labor force transitions for women and men between 2010 and 2016 using the balanced analytic panel. Figures 1 and 3 present transition "trees" separately by gender, tracing individuals who were employed, unemployed, or out of the labor force (OLF) in 2010 and showing their subsequent status six years later. Figures 2 and 4 extend the transition trees by isolating the subgroup of out-of-labor-force individuals who were students in 2010.

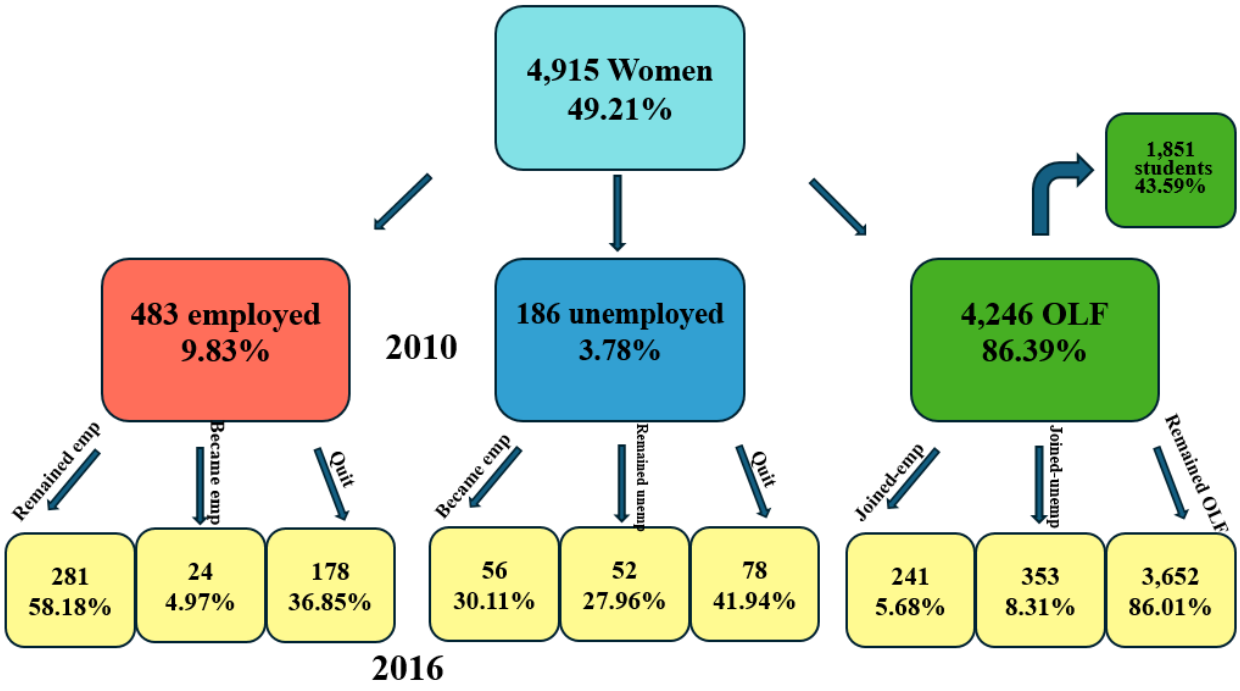

Figure 1. Female Transition Tree

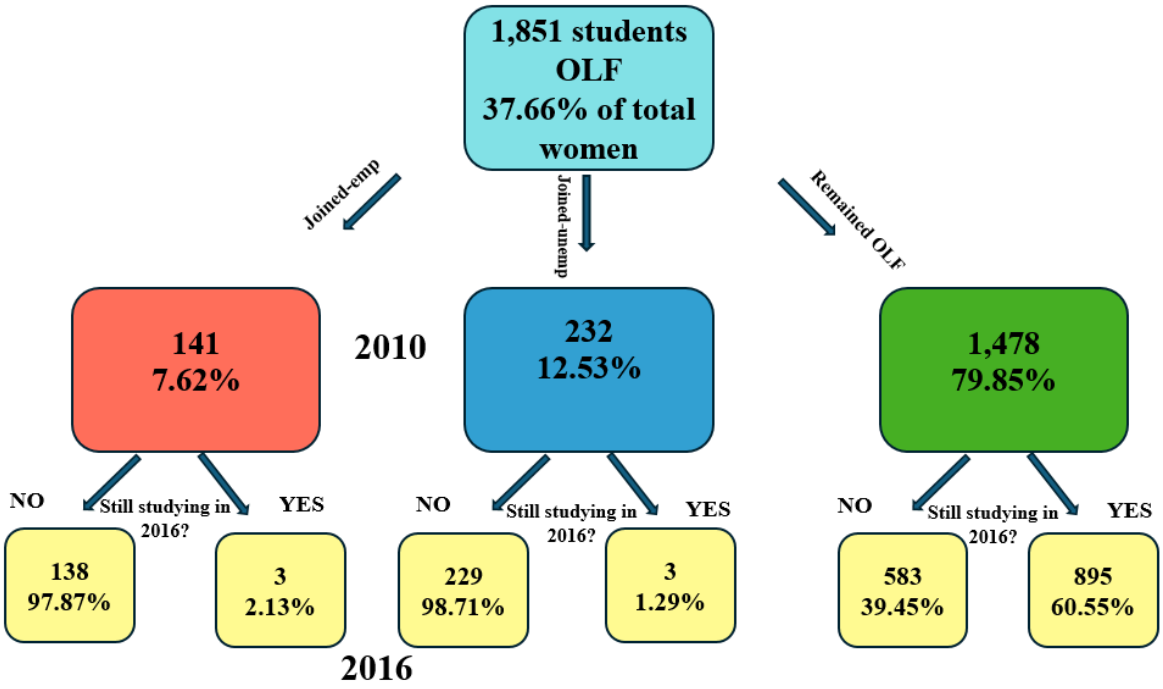

Figure 2. OLF Female Students

Women exhibit dramatically different patterns than men. Despite comparable educational distributions to men and even a higher share of tertiary-educated individuals, only 10% were employed in 2010, and about 86% were out of the labor force, predominantly students or married women (44% and 62% respectively). Female employment is fragile as only 58% of employed women remain employed, while 37% exit the labor force entirely. Among unemployed women, only 30% transition into employment, and more than 40% leave the labor force. Even among women OLF who were students in 2010, transitions into employment remain limited; the majority remain out of the labor force.

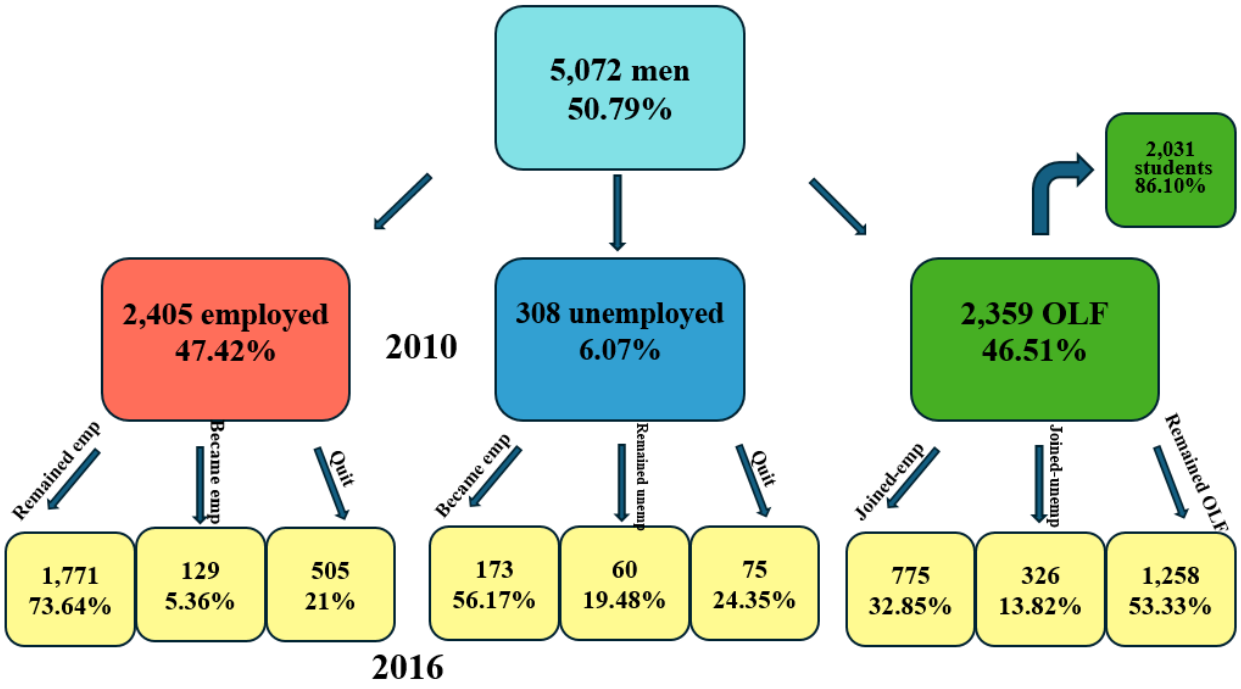

Figure 3. Male Transition Tree

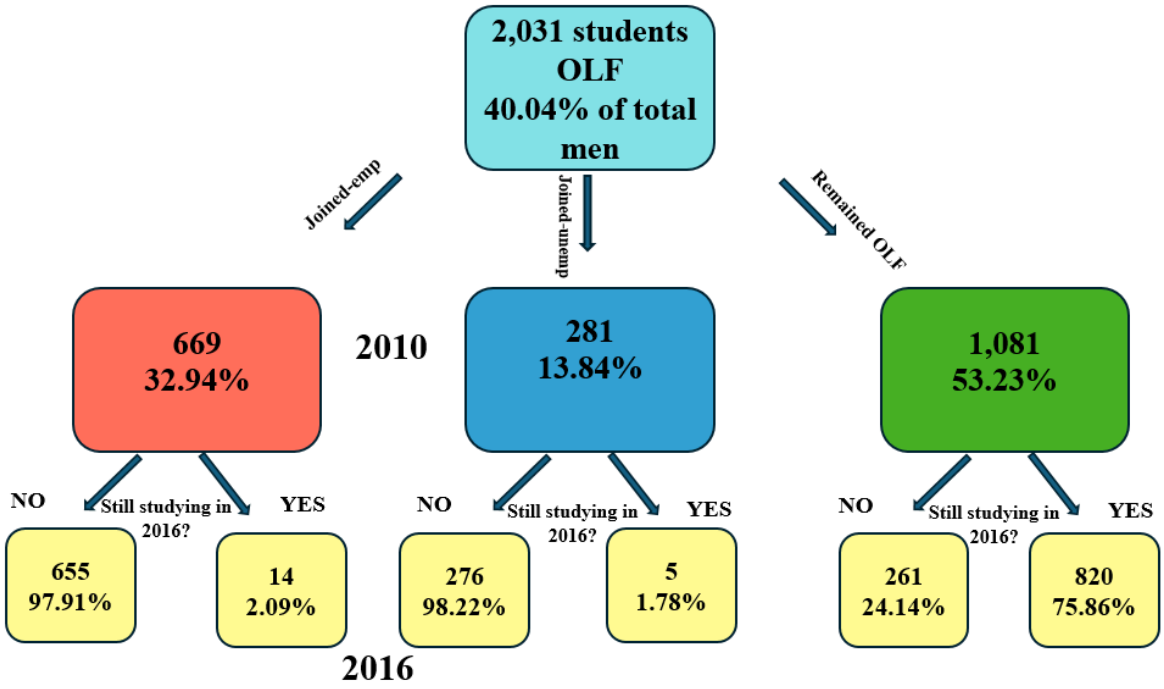

Figure 4. OLF Female Students

Among men, labor force attachment is high and highly persistent. Almost half (47%) were employed in 2010, and nearly three-quarters remained employed by 2016. Upward mobility from unemployment is also sizable: 56% of unemployed men transition to employment, while a minority exit the labor force. Among the 46% who were out of the labor force in 2010 transitions are strongly age-structured (86% were students): roughly one-third enter employment by 2016, while just over half remain out of the labor force, usually completing education or continuing in tertiary studies.

These gendered trajectories visualize Jordan's well-documented "double barrier": low female entry and low female retention. These gendered student trajectories underline the central theme of our analysis: female trajectories are shaped as much by household and marital transitions as by education or human capital.

4.2 Age-Specific Labor Force Participation Patterns

Figures 5 and 6 plot labor force participation rates by age group and sex for 2010 and 2016. The age profiles closely mirror the transition patterns documented in the previous section and highlight the stark gender asymmetries that characterize Jordan's labor market.

For men, participation follows the classic inverted-U shape common in middle-income economies. In both waves, male participation rises steeply between ages 15–24 as individuals complete schooling and enter the labor market. Participation reaches near universality during the prime working ages: in 2010, rates exceed 94 percent between ages 30 and 39, and although there is a slight decline in 2016, with peaks around 88–91%, the overall profile remains one of very high labor force attachment. The decline after age 45 is gradual in 2010 but more pronounced in 2016, consistent with demographic aging and modest changes in the timing of retirement. Even so, male participation at older ages remains substantial, with nearly a quarter of men aged 60–64 still in the labor force in 2016.

Women's age profile stands in sharp contrast. Female participation is extremely low at all ages, and the life-cycle pattern is much flatter. Among women aged 15–19, participation is essentially zero in both waves, reflecting near-universal school attendance. Participation rises modestly in early adulthood, reaching only 23% in 2010 and 25% in 2016 among women aged 20–24. The only noticeable "bump" occurs during ages 25–34, when some tertiary-educated women enter the labor market after completing university. Even at its peak, however, female participation remains below 40% in 2010 and just above 40% in 2016: an order of magnitude lower than male participation at the same ages. Female participation declines steeply after age 40, falling below one in five by ages 45–49. By ages 55–64, participation drops to roughly 2–3%, effectively approaching zero.

These age profiles align with the transition-tree evidence. Men exhibit strong and stable attachment: they enter early, remain employed throughout the life cycle, and only gradually

withdraw near retirement age. Women follow the opposite pattern: participation is very low at young ages, rises modestly during a narrow window in the late twenties, and declines sharply thereafter, largely driven by marriage rather than by childbirth. The modest rise in labor force participation among tertiary-educated young women does not translate into sustained attachment; rather, it confirms that education facilitates entry but does not overcome the structural constraints that drive women's early and persistent withdrawal from the labor market.

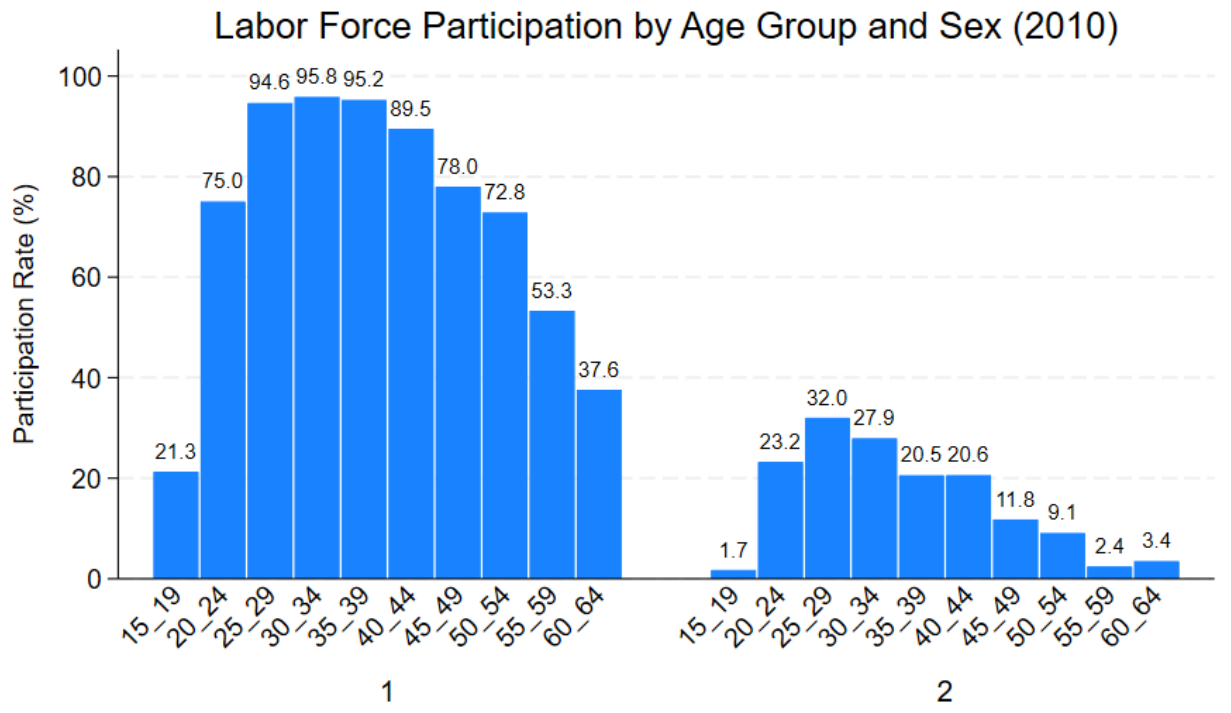

Figure 5. Labor Force Participation by Age and Sex in 2010, Where 1 is Males, and 2 is Females

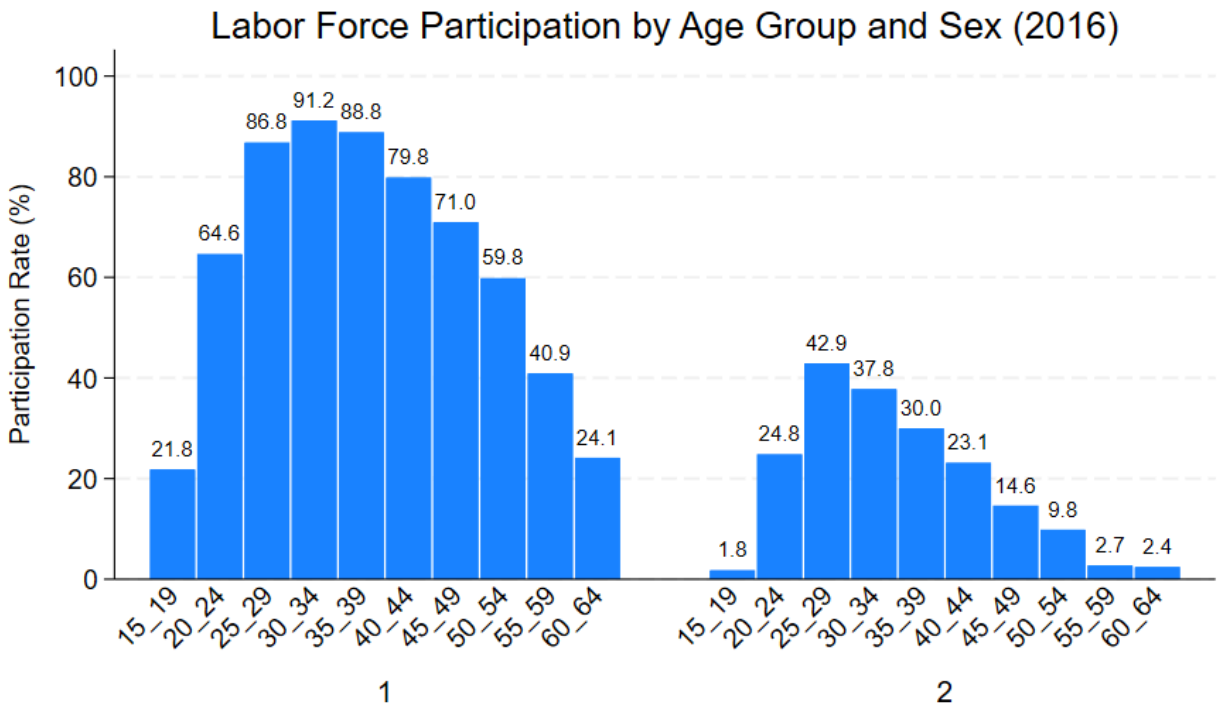

Figure 6. Labor Force Participation by Age and Sex in 2016, Where 1 is Males, and 2 is Females

4.3 Ever-Worked Profiles Across the Life Cycle

The "ever-worked" profiles in Figures 7 and 8 provide a complementary view of labor market attachment by age and sex, capturing whether individuals have *ever* participated in paid work by the time they reach each age group. These patterns reinforce and magnify the gender gaps observed in current labor force participation.

For men, ever-worked rates rise sharply in early adulthood and reach near universality by the mid-twenties. In 2010, more than 90% of men aged 25–29 had already held a job at least once, and this proportion exceeds 97–100% from ages 30 through 59. The 2016 profile is nearly identical: by age 30, virtually all men have some labor market experience. These patterns underscore a structural reality of Jordan's male labor market: entry is guaranteed, even if job stability is not, and the modal male path involves early, near-universal integration into the labor force.

Women's ever-worked profiles show a radically different life-cycle dynamic. Across all ages and both waves, women exhibit extremely low cumulative work experience. In 2010, fewer than 15% of young women aged 20–24 had ever worked; even among women aged 25–29, only one-third

had any work history at all. The peak ever-worked rate reaches just 31–32% among women aged 30–34, meaning that two-thirds of women in their early thirties have never worked a day in their lives. The 2016 wave shows slight improvement for younger cohorts, but the overall structure remains unchanged: at no age does the proportion of women with any work experience exceed 40%.

This evidence is central to our empirical strategy: the drivers of women's labor force participation cannot be understood through job transitions alone. Instead, the data point to a fundamentally different life-cycle process in which education, marriage, childbirth, and household dynamics interact to suppress both labor market entry and cumulative work experience.

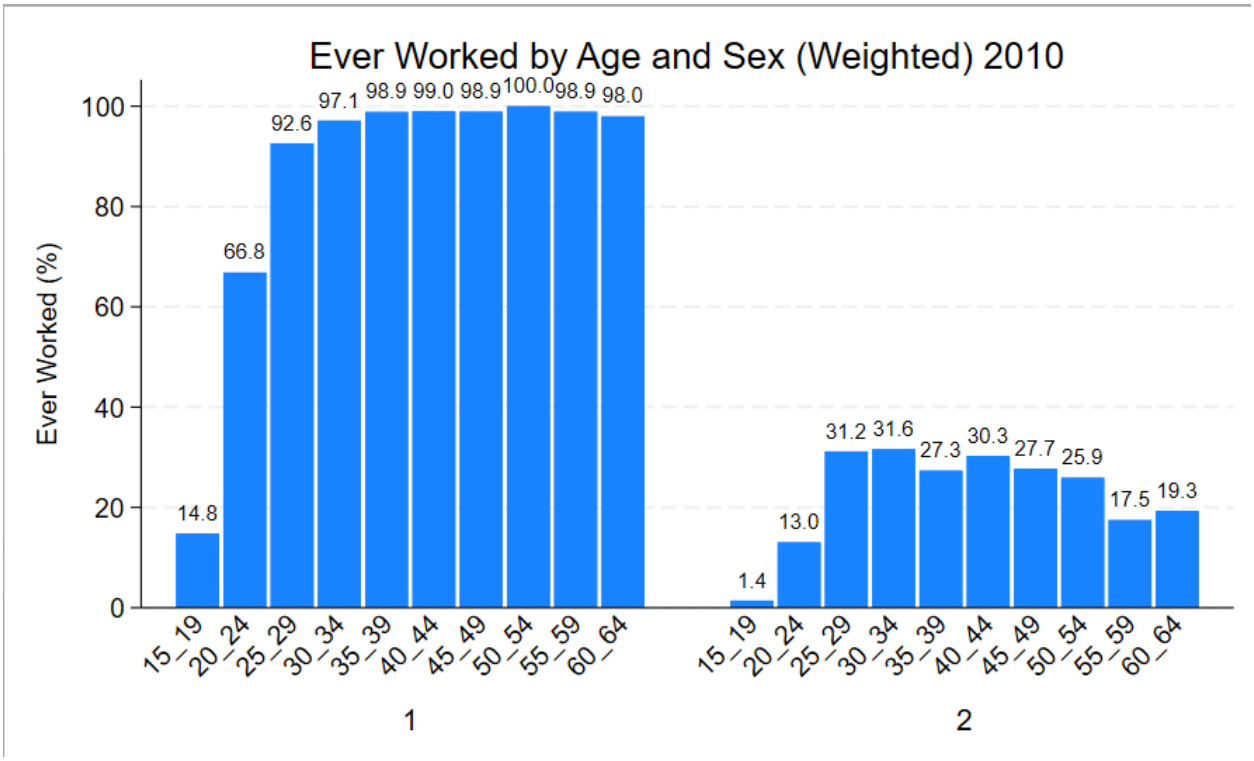

Figure 7. Existing Work Experience by Age and Sex in 2010, Where 1 is Males, and 2 is Females

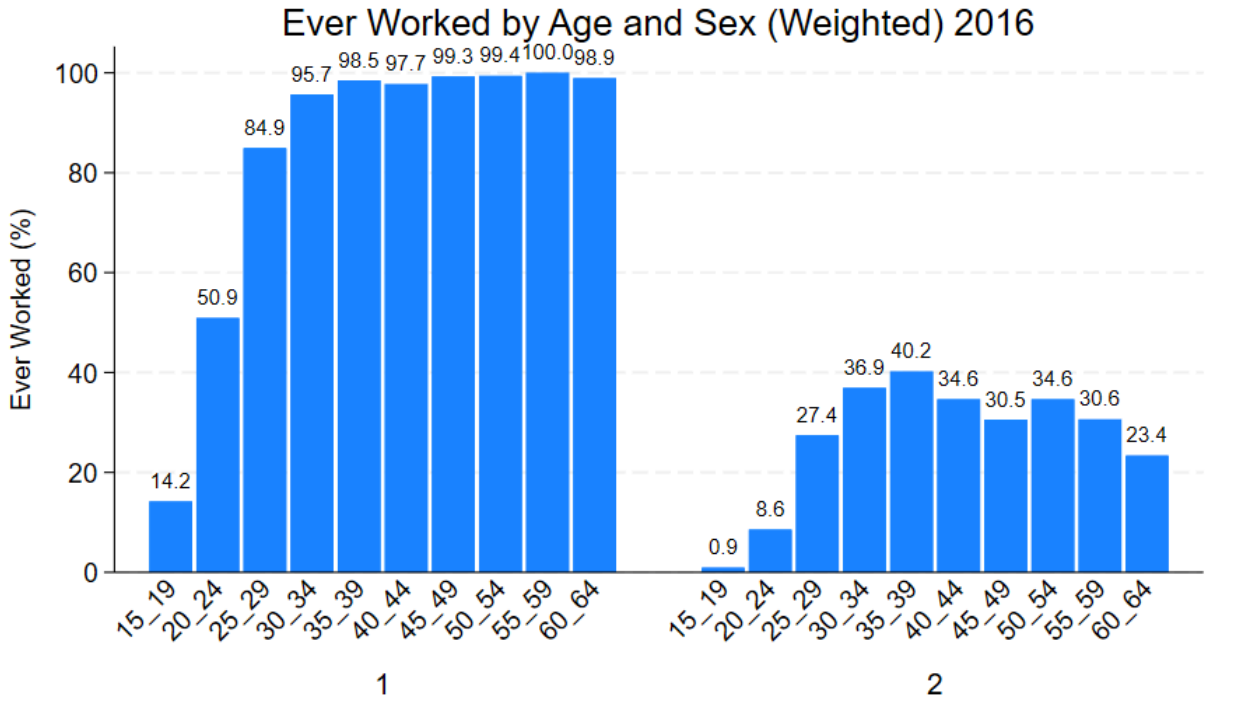

Figure 8. Existing Work Experience by Age and Sex in 2016, Where 1 is Males, and 2 is Females

4.4 Marriage Patterns &Life-Cycle Constraints

Figures 9 and 10 plot age-specific marriage rates by sex for 2010 and 2016. These life-cycle profiles reveal a strikingly gendered timing of marriage that closely parallels and helps explain the participation patterns and ever-worked trajectories described above.

For men, marriage is a relatively late-life event. In both 2010 and 2016, fewer than 7% of men aged 20–24 are married, and even among those aged 25–29, marriage rates remain below 40 percent. It is only in the early thirties that marriage becomes near-universal: 80-90% of men aged 30–39 are married in both waves, and marriage rates remain close to 95–98% through the late forties and fifties. This timing reflects the normative male life path in Jordan: a prolonged schooling-to-work transition, followed by several years of labor market consolidation, culminating in marriage once economic stability is achieved. The delayed male marriage curve is entirely consistent with the high and rising labor force participation observed through the twenties and thirties.

By contrast, women marry dramatically earlier, and marriage is effectively universal across adulthood. In both waves, 63–73% of women aged 25–29 are already married, and marriage rates exceed 80% from ages 30 through 44. Even among women in their fifties, more than 75%

remain married. This early and near-universal timing of marriage is deeply intertwined with women's labor market behavior. The sharp rise in marriage between ages 20 and 29 coincides precisely with the modest participation "bump" observed in Section 4.2. Yet this same window is also the period in which participation begins to collapse: as women transition into marriage, their already limited entry into the labor market becomes truncated, and most withdraw entirely.

The comparison across waves suggests stability rather than change. While women in their late twenties exhibit slightly higher marriage rates in 2016 than in 2010 which is consistent with ongoing early marriage norms, the broad life-cycle shape is virtually identical. Early marriage remains the dominant institution structuring women's economic trajectories, and the marriage curve aligns almost perfectly with the age at which women's labor force participation and ever-worked rates stagnate or decline.

The marriage profiles underscore a central result of our descriptive evidence: gender differences in labor market attachment are inseparable from differences in marriage timing and household formation. For men, labor market integration precedes marriage; for women, marriage overwhelmingly precedes or replaces labor market integration. These patterns reinforce the core argument of this paper that understanding women's labor force attachment in Jordan requires situating participation decisions within the broader sequence of life-cycle events, not merely within labor market transitions.

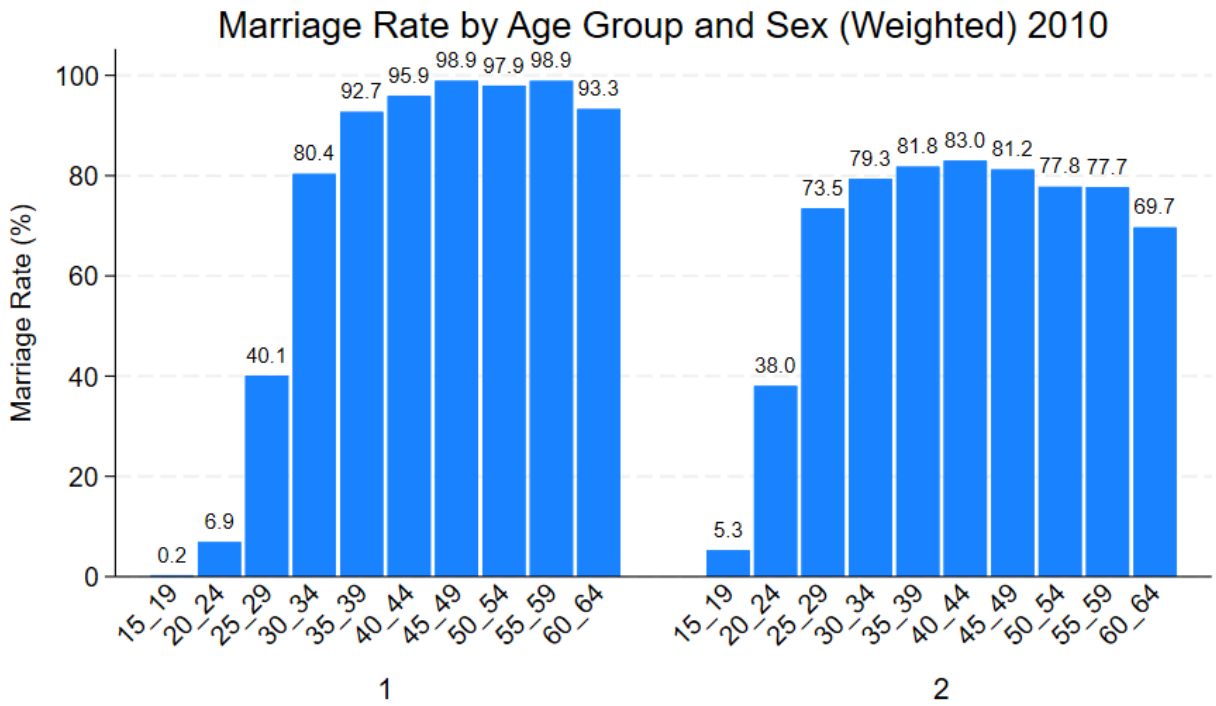

Figure 9. Weighted Marriage Rates by Age and Sex in 2010, Where 1 is Males, and 2 is Females

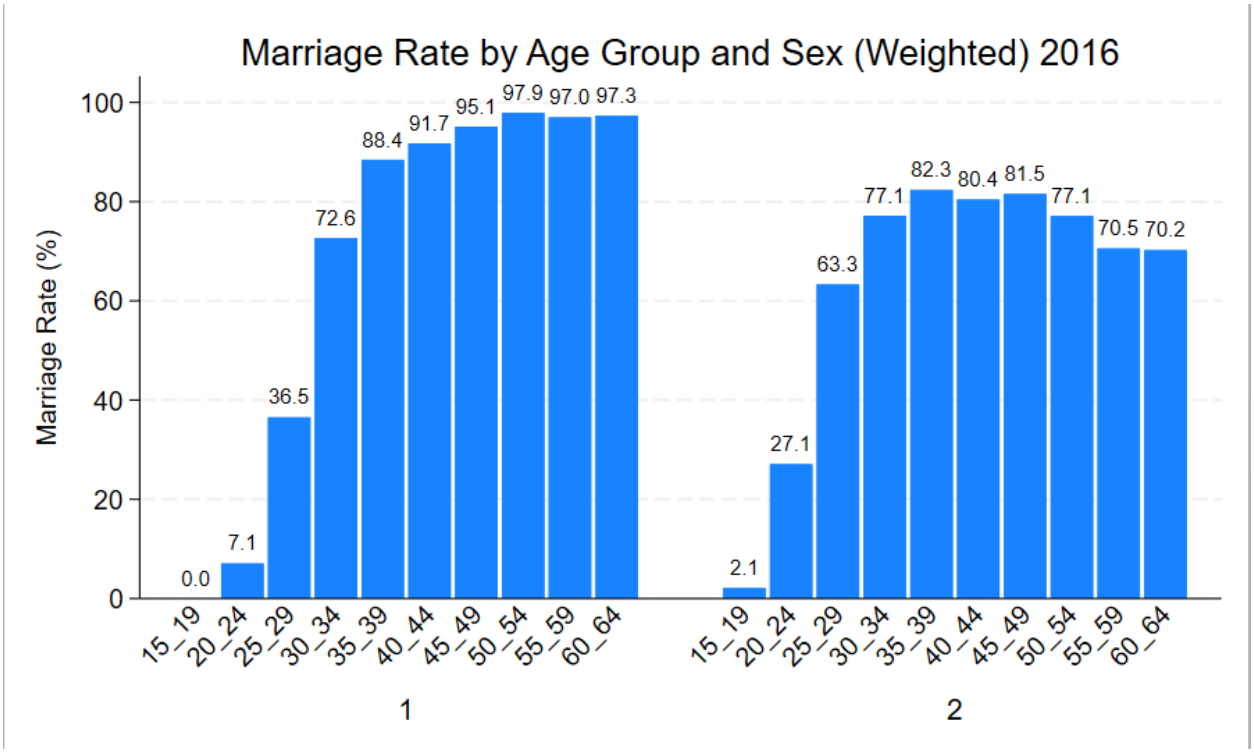

Figure 10. Weighted Marriage Rates by Age and Sex in 2016, Where 1 is Males, and 2 is Females

5. Empirical Methodology

5.1 Outcome definition: labor-force trajectories, 2010–2016

The empirical analysis models women's labor-force trajectories between 2010 and 2016. Using the 2010–2016 JLMPS panel constructed in Section 3, we classify each woman aged 15–64 in 2010 into one of four mutually exclusive categories based on her labor-force status in both waves:

1. Remain in the labor force: in the labor force (employed or unemployed) in both 2010 and 2016.

2. Exit the labor force: in the labor force in 2010 but out of the labor force in 2016.

3. Enter the labor force: out of the labor force in 2010 but in the labor force in 2016.

4. Remain out of the labor force: out of the labor force in both 2010 and 2016.

These categories summarize women's attachment to the labor market rather than short-run transitions between jobs. They reflect whether women manage to sustain participation, (re)enter after a period out, or remain persistently out of the labor force over a six-year horizon.

Let Yi denote the trajectory of woman i. The dependent variable is coded as:

$$Y_i = \begin{cases} 0 & \text{if remain out of the labor force (OLF in 2010 and 2016)} \\ 1 & \text{if remain in the labor force} \\ 2 & \text{if exit the labor force} \\ 3 & \text{if enter the labor force} \end{cases}$$

The category "remain out of the labor force" (OLF in both years) is treated as the reference outcome. This group represents the dominant pattern among Jordanian women and provides a meaningful contrast for trajectories of sustained or regained attachment. All multinomial models are estimated on the female panel sample defined in Section 3, after applying the panel restrictions and excluding refresher and new 2016 individuals.

5.2 Covariates &dynamic controls

We group the explanatory variables into three blocks that mirror the descriptive patterns in Section 4 and the four arcs we emphasize in the results:

1. Human capital and life-cycle controls
    - Education in 2010 (base: primary or less): indicators for secondary and tertiary education.
    - Age in 2010 and its square (age²) to capture non-linear life-cycle patterns in participation.
    - Age at first marriage, defined for ever-married women.
2. Education captures long-run human capital investment. Age and age at first marriage summarize the life-cycle stage at baseline and the timing of key household commitments.

3. Household structure, marriage, fertility, and wealth

    - Marriage status in 2010 and a set of indicators for marital transitions between 2010 and 2016 (remained non-married, non-married to married, married to non-married).

    - Number of children in 2010 and the change in the number of children between 2010 and 2016. In extended specifications we replace the continuous number of children with dummies (e.g. “has any children”) and include a dummy for the arrival of a new child between 2010 and 2016, and the age of the youngest child in each wave.

    - A dummy for blood-related marriage, which is common in Jordan and may affect household bargaining, fertility, and extended family support (and can also proxy more traditional social norms).

    - Household wealth quintiles in 2010 (Q1–Q5) constructed from the JLMPS wealth index (base: poorest quintile).

    - Indicators for wealth mobility between 2010 and 2016: moved down, no change, moved up (base: moved up or stable, depending on the specification).

4. These variables jointly capture both the “supply side” (domestic responsibilities, marriage) and the economic environment within which women bargain over time and labor effort. Wealth level and wealth shocks proxy for the household’s budget constraint, reservation income, and exposure to economic stress.

5. Intergenerational and work-history variables

    - Mother’s education (secondary, tertiary; base: less than secondary).

    - Mother’s employment history (ever worked vs. never worked).

    - Father’s education and employment, included in extended specifications.

    - Work history of the woman herself: year of first job, cumulative years of work experience up to 2010, and an indicator for ever having worked by 2010.

6. These variables capture intergenerational transmission of norms and opportunities as highlighted in the literature on role modelling and the extent to which women have

already overcome initial entry barriers into the labor market.

7. Geographic and residential controls
    - Governorate fixed effects (12 governorates), with the capital-based region as the reference.
    - Urban vs. rural residence.
8. These controls flexibly absorb spatial differences in job availability, sectoral composition, and public employment opportunities that could simultaneously influence women's outside options and their households' preferences.

5.3 Econometric specification

Given the four-category outcome and the focus on relative probabilities of alternative labor-force trajectories, we estimate multinomial logistic regression models. For woman i, with covariate vector X_i, the probability of trajectory j∈{1,2,3} relative to the base category j=0 is:

$$P(Y_i = j \mid X_i) = \frac{exp(X'_i\beta_j)}{1 + \sum_{k=1}^{3} exp(X'_i\beta_k)}, \quad j = 1, 2, 3,$$

$$P(Y_i = 0 \mid X_i) = \frac{1}{1 + \sum_{k=1}^{3} exp(X'_i\beta_k)}.$$

The vectors β_j are estimated by maximum likelihood. For each non-baseline outcome, the model yields a set of log-odds coefficients that summarize how a one-unit change in a covariate affects the log odds of being in trajectory j instead of remaining out of the labor force.

We estimate a sequence of specifications that progressively introduce additional dimensions of heterogeneity:

- **Table 1** reports baseline specifications with education, marriage, age, fertility, wealth, and core geographic controls.

Table 1

Multinomial Logit Estimates of Women's Labor Force Trajectories, 2010–2016

	(1)			(2)			(3)		
Variables	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016
Education (Base=Primary)									
Secondary	0.186	0.097	-0.496	2.627**	-0.716	1.184	1.593	-0.712	-0.368
Tertiary	3.104***	1.358***	1.789***	3.453***	-0.968	1.37	2.330***	-0.661	-0.094
Marriage	-1.613***	-0.732*	-1.507**	-2.015	1.582	0.189	-1.253	0.415	1.004
age	0.818***	0.238	0.534***	0.785	2.461***	0.202	0.872*	2.140***	0.126
age²	-0.011***	-0.003	-0.008***	-0.010*	-0.026***	-0.003	-0.012**	-0.024***	-0.002
First marriage age	0.096**	0.059*	0.069*	0.145	-0.08	0.160*	0.161**	-0.067	0.176**
Num. of children	-0.207***	-0.045	-0.041	0.042	-0.337	0.197	-0.061	-0.248	0.097
Blood-related marriage	-0.242	-0.217	0.215	0.089	1.191	1.323*	-0.166	0.953	1.293*
Household wealth quintiles (Base = Q1)									
2	0.182	-0.048	-0.366	-1.122	-1.901	-1.925	-0.105	-1.948	-0.897
3	-0.299	-0.648	-0.011	-1.249	-1.653	-2.267	0.437	-1.191	-0.561
4	0.916	-0.433	0.09	-1.373	-0.375	-4.627**	-0.164	-0.765	-3.503*
5	0.187	-0.711*	0.033	-2.604*	-2.009	-4.717***	-0.493	-1.59	-2.441
Governorates									
Balqa	1.558***	1.357***	0.495	0.929	-1.745	2.176**	1.072	-1.143	2.198**
Zarqa	-0.43	0.51	0.288	0.514	-0.237	2.179**	1.042	0.075	2.844***
Madaba	1.054**	0.759	1.036*	-0.254	-0.193	2.547**	0.198	-0.356	3.133***
Irbid	1.500***	1.172***	1.170***	2.888**	1.161	3.771***	2.536**	1.08	3.600***
Mafraq	1.600***	0.769	0.575	2.525**	0.791	2.506**	2.060**	0.524	2.409**
Jarash	1.661***	0.731	1.148**	3.145	1.553	1.983	3.125	1.294	2.76
Ajloun	1.339**	0.669	0.426	1.039	-0.847	-1.02	2.286*	-0.537	-0.69
Karak	2.947***	1.504***	2.469***	1.793	-17.440***	2.58	2.47	-16.483***	3.27
Tafileh	2.316***	1.194**	0.849	27.927***	20.998***	26.675***	25.892***	21.395***	24.816***
Ma'an	2.627***	0.749	1.225**	1.76	0.719	1.393	1.855	0.808	1.753
Aqaba	-11.418***	1.507**	2.372***	-2.428	1.33	16.368***	-0.716	0.606	18.462***
Urban	0.211	-0.133	0.574**	1.196	-0.693	0.912	0.698	-0.284	0.317
First Job Year				0.889***	0.132*	0.694***	0.692***	0.084	0.544***
Work Life Experience				0.917***	0.277***	0.457***	0.721***	0.240***	0.292***
Mother's Education									
Secondary				0.054	3.173**	1.763			
Tertiary				0.801	5.268***	1.548			
Mother's employment status				7.468***	-13.904***	5.633**			
Father's Education									
Secondary							-0.156	1.656	2.096
Tertiary							1.573	0.847	2.105
Father's Employment Status							-0.908	0.977	-1.439
Pseudo R^2		0.2467			0.619			0.6048	
N		2,008			348			349	

*Note: ***p<0.01, **p<0.05, *p<0.10*

- **Table 2** adds dynamic change variables for wealth mobility, marital transitions, and fertility.

Table 2

Extended Multinomial Logit Models Incorporating Change Variables, 2010–2016

	-4			-5			-6			-7		
Variables	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016
Education (Base=Primary)												
Secondary	0.061	-0.163	-0.517	0.03	-0.246	-0.519	0.09	-0.153	-0.52	0.052	-0.237	-0.522
Tertiary	2.741***	0.633*	1.425***	2.603***	0.583*	1.372***	2.750***	0.632*	1.425***	2.610***	0.582*	1.372***
age	0.790***	0.266	0.619***	0.790***	0.281	0.573***	0.806***	0.268	0.616***	0.800***	0.283	0.570***
age²	-0.0109***	-0.0032	-0.0091***	-0.011***	-0.003	-0.009***	-0.011***	-0.003	-0.009***	-0.011***	-0.003	-0.008***
First marriage age	0.074*	0.018	0.031	0.081*	0.016	0.027	0.075*	0.017	0.03	0.081*	0.016	0.026
Num. of children												
Blood-related marriage	0.101	0.05		0.161	0.278	0.499*	0.11	0.061	0.402	0.164	0.065	0.500*
Governorates												
Balqa	2.021***	1.641***	1.155**	2.144***	1.734***	1.021*	2.005***	1.621***	1.149**	2.127***	1.714***	1.011*
Zarqa	0.338	0.986**	0.916*	0.422	0.966**	0.987*	0.301	0.953*	0.905*	0.383	0.936*	0.971*
Madaba	0.876	0.752	1.251**	1.082*	0.803	1.210**	0.845	0.728	1.244**	1.059*	0.781	1.198**
Irbid	2.250***	1.660***	1.893***	2.376***	1.594***	1.889***	2.201***	1.634***	1.892***	2.336***	1.572***	1.881***
Mafraq	2.316***	1.391**	1.497***	2.430***	1.396**	1.566***	2.272***	1.350**	1.483***	2.389***	1.360**	1.540***
Jarash	2.798***	1.456***	2.055***	2.878***	1.428***	2.057***	2.753***	1.436***	2.050***	2.839***	1.409**	2.043***
Ajloun	2.322***	1.375*	1.230*	2.985***	1.427*	1.338	2.337***	1.375*	1.246*	2.993***	1.425*	1.354*
Karak	4.105***	2.136***	3.235***	4.322***	2.173***	3.221***	4.090***	2.101***	3.231***	4.306***	2.143***	3.214***
Tafileh	3.349***	1.858***	1.945**	3.465***	1.814***	1.954**	3.403***	1.841***	1.961**	3.506***	1.801***	1.967**
Ma'an	3.572***	1.246	2.254***	3.639***	1.254*	2.280***	3.546***	1.221	2.241***	3.614***	1.23*	2.265***
Aqaba	-10.787***	2.287**	3.662***	-10.536***	2.359***	3.654***	-10.594***	2.299**	3.675***	-10.614***	2.364***	3.669***
Rural	0.456	-0.026*	0.473	0.429	-0.05	0.483*	0.46	-0.024	0.477	0.436	-0.047	0.487*
Mother's Education												
Secondary	-0.828	-0.651	1.180**				-0.796	-0.643	1.179**			
Tertiary	0.134	0.882	0.2236				0.189	0.866	0.266			
Mother's employment status	1.269	-0.136	0.69				1.258	-0.158	0.669			
Father's Education												
Secondary				-0.939	-0.372	0.973**				-0.901	-0.358	0.980**
Tertiary				1.029**	0.601	0.833*				1.015**	0.582	0.814*
Father's Employment Status				-0.205	0.252	-0.403				-0.194	0.258	-0.398
Marital Status Change												
Remained Non-Married	2.219***	1.118**	-1.016	2.141***	1.132**	-1.128	2.240***	1.103**	-1.044	2.153***	1.123**	-1.142
Non-Married to Married	-0.134	-16.927***	1.181	-0.694	-16.900***	0.961	0.014	-17.056***	1.194	-0.595	-17.428***	0.978
Married to Non-Married	1.608	0.564	2.317***	1.504	0.569	2.148***	1.676	0.58	2.331***	1.565	0.581	2.173***
Change in the num. of children	0.057	0.315*	-0.059	0.006	0.322*	-0.088	-0.097	0.241	-0.119	-0.116	0.257	-0.159
Move in Wealth												
Move Down	0.512	0.586	-0.213	0.52	0.636*	-0.227	0.455	0.562	-0.23	0.48	0.615	-0.246
No Change	-0.146	-0.0718	-0.618*	-0.011	-0.023	-0.498	-0.175	-0.078	-0.615*	-0.029	-0.027	-0.499
Ever Worked	5.420***	3.087***	2.585***	5.467***	3.106***	2.688***	5.438***	3.106***	2.600***	5.487***	3.122***	2.705***
Dummy new child between 2010 & 2016							0.498	0.296	0.198	0.391	0.255	0.233
Pseudo R^2		0.4115			0.4126			0.4122			0.4131	
N		2,006			2,006			2,006			2,006	

*Note: ***p<0.01, **p<0.05, *p<0.10*

- **Table 3** augments the model with work-history variables and intergenerational backgrounds, including maternal and paternal education and employment, as well as more detailed fertility measures (e.g. age of the youngest child).

Table 3

Multinomial Logit Models of Women's Labor Force Transitions with Fertility and Child Age Controls, 2010–2016

	-1			-2			-3			-4		
Variables	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016	Remain in the LF between 2010 & 2016	Exit the LF between 2010 & 2016	Enter the LF between 2010 & 2016
Education (Base=Primary)												
Secondary	2.732**	-0.543	1.228	1.656	-0.413	-0.201	2.609**	-0.537	1.176	1.56	-0.361	-0.383
Tertiary	3.384***	-1.083	1.312	2.280***	-0.688	0.004	3.452***	-0.75	1.38	2.348***	-0.497	-0.049
Marriage	-1.918	1.773	0.46	-1.452	0.432	1.125	-1.94	2.126	0.326	-1.302	0.777	0.992
age	0.946*	2.689***	0.184	0.944*	2.329***	0.181	0.898	2.845***	0.336	0.957	2.550***	0.261
age²	-0.0116*	-0.028***	-0.004	-0.0121**	-0.0250***	-0.0035	-0.0115	-0.0310***	-0.0049	-0.0121*	-0.0280***	-0.0037
First marriage age	0.137	-0.098	0.160*	0.161**	-0.078	0.177**	0.123	-0.049	0.15	0.135	-0.062	0.155
Num. of children	-0.058	-0.416	0.283	-0.101	-0.326	0.191	-0.027	-0.29	0.184	-0.155	-0.31	0.037
Blood-related marriage	0.112	1.338*	1.322*	-0.157	1.046	1.315*	-0.126	1.066	1.099	-0.342	0.893	1.132
Household wealth quintiles (Base = Q1)												
2	-1.246	-1.984	-1.85	-0.241	-1.982	-0.819	-1.232	-1.813	-1.929	-0.096	-1.848	-0.831
3	-1.135	-1.61	-2.096	0.587	-1.121	-0.461	-1.102	-1.289	-2.021	0.72	-1.041	-0.26
4	-1.137	-0.038	-4.762**	-0.05	-0.548	-3.587**	-1.106	-0.493	-4.359*	0.16	-0.951	-3.181*
5	-2.499	-1.891	-4.654**	-0.377	-1.288	-2.44	-2.66	-2.22	-4.697**	-0.376	-1.663	-2.309
Governorates												
Balqa	0.891	-2.049	2.214**	1.115	-1.372	2.168**	0.684	-2.171	1.871	0.946	-1.464	2.014**
Zarqa	0.366	-0.367	2.283*	1.053	-0.047	2.965***	0.651	-0.461	2.308*	1.257	-0.198	3.037***
Madaba	-0.34	-0.326	2.400**	0.141	-0.552	2.886**	-0.109	-0.67	2.533**	0.264	-0.757	3.069***
Irbid	2.751**	1.005	3.809***	2.504**	0.998	3.575***	3.076**	0.984	3.916***	2.663**	0.896	3.651***
Mafraq	2.649**	0.903	3.051***	2.032**	0.547	2.647***	2.861**	0.899	2.834**	2.159**	0.346	2.486**
Jarash	3.228	1.523	2.233	3.325	1.179	2.903	2.987	1.337	2.106	3.101	1.13	2.876
Ajloun	1.295	-0.831	-1.42	2.303	-0.786	-0.892	1.134	-1.202	-0.474	2.390*	-0.713	-0.357
Karak	1.934	-17.568***	2.568	2.548	-16.724***	3.101	2.238	-17.588***	2.931	2.65	-17.805***	3.355
Tafileh	28.734***	22.129***	27.377***	25.715***	21.932***	24.489***	28.798***	22.074***	27.553***	27.354***	23.594***	26.280***
Ma'an	1.576	0.526	1.289	1.575	0.425	1.551	1.86	0.175	1.371	1.987	0.033	1.759
Aqaba	-2.324	1.511	16.542***	-0.81	0.615	18.181***	-1.544	2.429	17.613***	0.009	1.843	20.031***
Urban	1.071	-0.705	0.83	0.701	-0.166	0.429	0.891	-0.501	0.693	0.575	-0.052	0.247
First Job Year	0.888***	0.13	0.677***	0.689***	0.077	0.536***	0.883***	0.113	0.698***	0.693***	0.067	0.546***
Work Life Experience	0.931***	0.301***	0.443***	0.726***	0.255***	0.288***	0.926***	0.289***	0.474***	0.730***	0.245***	0.300***
Mother's Education												
Secondary	0.37	3.418**	1.799	-0.126	1.893		0.191	2.727	1.84			
Tertiary	1.748	5.804***	1.21	1.572	0.607		0.907	5.968***	1.462			
Mother's employment status	7.138***	-14.010***	5.587***				7.533***	-14.936***	5.700**			
Father's Education												
Secondary				-0.126	1.893	1.986				-0.283	1.642	1.94
Tertiary				1.572	0.607	1.988				1.532	0.905	2.05
Father's Employment Status				-0.802	1.163	-1.298				-0.972	1.094	-1.486
Dummy new child between 2010 & 2016	1.209	1.487	-0.585	0.731	1.618*	-0.57						
Age of the youngest child 2010							0.1814	0.427**	0.121	0.133	0.418**	0.093
Age of the youngest child 2016							-0.154	-0.273	-0.081	-0.143	0.321	-0.1
Pseudo R^2		0.6299			0.6139			0.6264			0.612	
N		348			349			345			346	

*Note: ***p<0.01, **p<0.05, *p<0.10*

- **Table 4** reports complementary binary logistic regressions where the outcome equals one if the woman remains in the labor force between 2010 and 2016, and zero otherwise. These simpler models provide a robustness check and a more direct interpretation of the correlates of sustained attachment.

Table 4

Binary Regressions for Women staying in the Labor Force, 2010-2016

	(1)	(2)
Variables	Remain in the LF between 2010 & 2016	Remain in the LF between 2010 & 2016
Marriage	0.027	0.038
Education (Base = Primary)		
Secondary	0.039	0.399
Tertiary	0.334***	0.324***
age (2010)	0.044	0.051*
age^2	-0.00068*	-0.00075*
First marriage age	0.0018	0.0015
Governorates		
Balqa	0.037	0.043
Zarqa	0.123	-0.114
Madaba	0.038	0.046
Irbid	-0.022	-0.004
Mafraq	0.175	0.191
Jarash	0.153	0.187
Ajloun	0.303**	0.306**
Karak	0.363***	0.379***
Tafileh	0.18	0.211*
Ma'an	0.289**	0.311**
Aqaba	-0.490***	-0.463***
Num. of children	-0.008	-0.01
Blood-related marriage	-0.082	-0.068
Household wealth quintiles (Base = Q1)		
2	-0.103	-0.093
3	-0.087	-0.086
4	-0.928	-0.099
5	-0.073	-0.084
Urban	-0.3	-0.027
First Job Year	0.013***	0.012***
Mother's Education	-0.087	
Mother's employment status	0.073	
Father's Education		0.025
Father's Employment Status		-0.041
R^2	0.3408	0.3395
N	278	278

*Note: ***p<0.01, **p<0.05, *p<0.10*

To retain representativeness of the analytic panel, all models are estimated using the panel sampling weights provided in the JLMPS and described in Section 3. We treat the individual as the primary sampling unit and report robust standard errors clustered at the individual level, which are numerically equivalent to clustering at the household level in this design. Model fit is summarized with the Pseudo R^2 and the number of observations.

5.4 Identification, interpretation, &limitations

The multinomial models are descriptive and should be interpreted as capturing conditional associations rather than causal effects. Several sources of endogeneity are difficult to fully address with the available data:

- Education, marriage, fertility, and wealth are jointly determined over the life cycle and may respond to unobserved preferences or constraints (e.g. gender norms, risk preferences, unmeasured ability).

- Labor demand shocks particularly the scarcity of "decent" jobs in the private sector may simultaneously influence household wealth, marriage timing, and women's willingness to search for work.

To mitigate omitted-variable concerns, we:

1. Condition on a rich set of covariates that jointly capture education, work history, household structure, fertility, intergenerational backgrounds, and geography.

2. Include dynamic variables that absorb key life-cycle events between 2010 and 2016, such as transitions into or out of marriage, childbirth, and wealth movements.

3. Check robustness across specifications; our four main arcs: education, socio-economic status, marriage vs. childcare, and maternal backgrounds emerge consistently across Tables 1–4, even as the control set is enlarged.

However, the results should be read as evidence on which characteristics sort women into different medium-run trajectories, rather than as structural parameters of labor supply. We interpret the patterns within a joint framework that combines household bargaining and labor demand constraints: limited decent jobs in the formal and public sectors weaken women's outside options and bargaining power, shaping both household decisions and observed trajectories. Although employment sector undoubtedly mediates some of these mechanisms, the female employed subsample is too small to condition the multinomial specification on sector

without materially reducing precision. The empirical sections below are structured precisely around this unifying story.

6. Empirical Results

Table 1 presents the baseline multinomial logit estimates for women's labor-force trajectories between 2010 and 2016.

Table 2 extends these models by incorporating changes in wealth and marital status, while Table 3 brings in work-history and detailed fertility controls. Table 4 reports binary regressions for the probability of remaining in the labor force. Across all specifications, four robust patterns emerge, which we organize into four arcs.

6.1 Education as a binding constraint for women, but not for men

The first arc concerns education as a threshold condition for women's attachment to the labor market. In Table 1, tertiary education is strongly and significantly associated with remaining in the labor force as well as entering the labor force between 2010 and 2016. Women with a university degree in 2010 are substantially more likely to be in the "remain in LF" and "enter LF" categories relative to the baseline group that remains out of the labor force, even after controlling for age, marriage, fertility, region, and wealth. This pattern persists in the extended models in Tables 2 and 3 once we add change variables, work history, and intergenerational backgrounds: the tertiary coefficients remain large and precisely estimated across most trajectories.

By contrast, secondary education plays a much weaker role. In our preferred specifications with the full set of controls (Table 2 and Table 3), secondary schooling rarely shows robust, statistically significant associations with any of the three non-baseline trajectories. Where secondary education is significant in simpler specifications, its coefficients are smaller, less stable across models, and sensitive to the inclusion of additional controls. This suggests a sharp threshold effect: women appear to require university-level qualifications before their labor-force attachment changes meaningfully.

Parallel specifications estimated for men (results not tabulated) reveal much flatter gradients. For men, tertiary education is only weakly associated with entering the labor force and is not systematically related to remaining or exiting once other factors are controlled for. This asymmetry reinforces the interpretation that education serves as a gatekeeper for women but not for men: women must "cross the tertiary threshold" for labor market prospects to improve, whereas men's attachment is driven far more by other forces, including demand-side conditions in male-dominated sectors.

A key mechanism behind this pattern: in Jordan, tertiary education is the main route into a narrow set of formal, "decent" jobs, especially in the public sector and certain service activities (education, health, public administration). While we do not explicitly condition on sector in the multinomial models (both to avoid over-complicating the specification and because the female employed subsample is small) the interpretation is consistent with well-documented patterns in the Jordanian labor market. Tertiary-educated women are known to be disproportionately concentrated in formal and public-sector jobs, which offer greater stability and are viewed as more socially acceptable forms of employment. In this context, tertiary education does not merely raise skills; it grants access to a narrow segment of the job ladder that can support sustained participation.

6.2 Socio-economic status as a selective constraint on women's participation

The second arc focuses on socio-economic status, measured by household wealth quintiles in 2010 and subsequent movements in the wealth distribution. In the baseline models (Table 1), wealth has a non-linear and highly gendered effect. For women, the contrasts between the poorest quintile (Q1) and the top of the wealth distribution are particularly informative:

- Women in the top wealth quintiles are less likely to enter or remain in the labor force relative to remaining OLF, especially in specifications that include the full set of controls. Several coefficients on Q4 and Q5 are negative and statistically significant for the "enter" and "exit" categories, consistent with an interpretation where affluent households can afford women's withdrawal from the labor market.

- At the bottom of the distribution, women exhibit more mixed patterns: some specifications show modestly higher probabilities of remaining attached, others show greater exits, but overall the wealth gradient is weaker and less systematic than at the top.

For men, in contrast, transitions show no clear or robust association with household wealth once education, age, and geography are controlled for. Male labor-force attachment appears relatively insulated from socio-economic background, at least as captured by the wealth index.

Table 2 deepens this picture by introducing wealth mobility between 2010 and 2016. The indicator for moving down the wealth distribution is positively associated with exiting the labor force, and in some specifications with being out of the labor force in 2016 even conditional on initial status. These coefficients are substantively large and often statistically significant for women, whereas movements up or stable positions in the wealth distribution show no such pattern. In other words, downward shocks are particularly disruptive for women's attachment, pushing them out of employment or discouraging them from entering in the first place.

Putting these pieces together, socio-economic status plays a selective role that materializes almost exclusively among women and only at the extremes:

- At the top, economic comfort and higher non-labor income relax budget constraints and make it easier for households to opt for women's withdrawal which is consistent with "reservation income" and leisure–work substitution mechanisms documented for the region.

- At the bottom, women's trajectories become highly sensitive to negative wealth shocks: when households slip down the distribution, women are more likely to exit or remain outside the labor force, pointing to fragility rather than stabilizing labor supply responses.

From a bargaining perspective, both sides of the distribution imply weak outside options for women: affluent households may not need women's earnings; poorer households may face segmented, low-quality jobs that are not worth the cost of working. Demand-side constraints, particularly the scarcity of decent private-sector jobs, interact with household wealth to produce the observed patterns.

6.3 Marriage as the primary constraint, rather than childcare

The third arc disentangles the roles of marriage and childbearing. The baseline results in Table 1 already indicate that being married in 2010 is strongly and negatively associated with remaining in or entering the labor force between 2010 and 2016. Married women are substantially less likely to be in the "remain in LF" category relative to staying OLF, even controlling for age, education, and fertility. In contrast, the number of children in 2010 has no robust or monotonic relationship with trajectories once marriage is accounted for: the coefficients fluctuate in sign, and significance largely disappears in the richer specifications.

The dynamic models in Table 2 sharpen this finding. The indicators for marital transitions show a clear asymmetric pattern:

- Women who remain non-married between 2010 and 2016 have markedly higher probabilities of remaining attached to the labor force relative to the baseline group.

- Women who transition into marriage over the six-year period are significantly less likely to remain in the labor force and more likely to exit from the labor force by 2016.

- Conversely, women who transition out of marriage (divorce, widowhood, or separation) display higher probabilities of entering the labor force, controlling for baseline characteristics.

By contrast, fertility dynamics (captured by the change in the number of children and the dummy for having a new child) do not exhibit comparably strong or consistent effects. The arrival of a new child has, at best, modest associations with labor-force exits, and these often lose significance once marital transitions and parental backgrounds are added (Table 3). Additional specifications that replace the number of children with change variables or more detailed fertility indicators yield very similar conclusions: while some child-related variables display occasional significance, their effects are small, unstable across specifications, and substantially weaker than the marriage coefficients. Overall, it is marriage rather than fertility per se that consistently emerges as the core constraint on women's labor force attachment.

Comparing with men's trajectories (again, based on parallel regressions not reported in the tables), the asymmetry is stark. For men, marriage is positively associated with stable attachment to work, and fatherhood carries no penalty, reinforcing the interpretation that marriage has fundamentally different economic and social meanings across genders. For women, marriage typically entails an intensification of domestic responsibilities and social expectations incompatible with market work; for men, it increases the pressure and incentive to maintain employment.

This arc therefore highlights marriage, not motherhood, as the pivotal life event reshaping women's labor-force decisions. The combination of limited decent jobs and gendered household norms means that once women marry, their effective outside options shrink and their bargaining power over time allocation diminishes, making exits and non-entry far more likely.

6.4 Maternal backgrounds as stronger intergenerational drivers than paternal ones

The fourth arc turns to intergenerational drivers. Tables 2 and 3 show that maternal characteristics, education and employment, are far more predictive of women's trajectories than paternal characteristics.

Across nearly all specifications in Tables 2 and 3:

- Maternal employment status has large, positive, and statistically significant associations with remaining or entering the labor force. Daughters of employed mothers are systematically more likely to remain attached to the labor market and less likely to exit, relative to remaining OLF. In extended specifications that also control for the woman's own work history, these maternal effects remain sizeable.

- Maternal education reinforces this pattern: mother's secondary and tertiary schooling increase the probability that daughters stay in or re-enter the labor force and reduce the likelihood of persistent non-participation.

By contrast, paternal education and employment enter sporadically, often with small and statistically insignificant coefficients. Even in male regressions, maternal variables tend to carry more explanatory power than paternal ones, although the magnitudes are smaller.

These findings are consistent with a role-modeling and socialization channel: mothers transmit norms about women's economic participation, as well as information and networks about how to combine work and family in a context of constrained demand for decent female jobs. The fact that paternal variables do relatively little work in the regressions suggests that fathers matter more through the household's economic position (captured by wealth) than through direct intergenerational transmission of work norms.

From the perspective of the bargaining–labor demand framework, maternal employment and education can be interpreted as indicators of stronger female bargaining power in the previous generation, leaving a legacy in which daughters not only aspire to work but are also more likely to be supported in pursuing and sustaining labor-force attachment.

6.5 Summary &implications

The four arcs documented in Tables 1–4 describe a coherent pattern:

1. Education (specifically tertiary education) is a binding condition for women's labor-force attachment, but not for men's.

2. Socio-economic status matters in a non-linear way: high wealth relaxes budget constraints and encourages withdrawal, while downward wealth mobility destabilizes women's attachment.

3. Marriage, rather than childcare per se, emerges as the primary life event reshaping women's trajectories, sharply reducing their probability of remaining or entering the labor force.

4. Maternal backgrounds are powerful intergenerational drivers, much more so than paternal characteristics, highlighting the importance of role modelling and norm transmission.

These results are consistent with a setting where women face both constrained labor demand for decent work and restricted bargaining power within the household. Education, wealth, marriage, and maternal backgrounds operate as key levers in this joint household–labor market system. The next section will discuss how these empirical patterns relate to the broader literature and what they imply for policy interventions aimed at improving women's labor-force attachment in Jordan.

7. Discussion

The empirical results reveal a coherent and internally consistent picture of women's labor market trajectories in Jordan. Although the multinomial and binary models are descriptive, the patterns across the four arcs converge on a unified explanation: women's medium-run attachment to the labor force is shaped not merely by job opportunities or participation decisions, but by the sequencing of life-cycle events and the interplay of household bargaining and labor demand constraints. In this section, we interpret the findings within this broader framework and situate them in the context of Jordan's gendered labor market.

First of all, a unifying mechanism: the four arcs (education thresholds, socio-economic selectivity, marriage as a binding constraint, and maternal role-modelling) are not separate mechanisms. They reflect a single structural reality: women's outside options in Jordan remain weak due to the scarcity of stable, "decent" jobs in the formal and public sectors. When outside options are limited, household bargaining power declines, the opportunity cost of non-participation falls, and women's labor market attachment becomes highly sensitive to shocks, norms, and marital transitions.

This interpretation aligns with the broader MENA literature, which emphasizes demand-side bottlenecks and the narrowing funnel of formal employment opportunities. But by examining trajectories over time rather than static participation outcomes, our findings demonstrate how these constraints materialize across the life course. Women enter briefly, cluster in narrow segments of the job ladder, and withdraw early and permanently as marriage and household responsibilities reshape bargaining positions.

Second of all, there is a key asymmetry in the results. Tertiary education increases women's likelihood of entering or remaining in the labor force, but it does not insulate them from marital exits or household role expectations. This is consistent with a labor market in which tertiary education functions as a gateway to a very specific subset of socially acceptable jobs like the public sector roles and certain service occupations (rather than a general driver of sustained attachment).

However, once women marry, the effect of education is overshadowed by the reallocation of time toward domestic labor and the reinforcement of gendered expectations of household roles. The strong negative coefficients on marriage transitions, combined with the instability and lack of significance of fertility variables, indicate that the central inflection point is not motherhood but marriage itself. So, even highly educated women face limited opportunities that would strengthen their fallback positions within the household. When the private sector offers few high-quality jobs and the public sector continues to contract, education enhances aspirations and entry, but does not fundamentally change women's bargaining power over time allocation once they marry.

Next, the wealth arc reveals a two-sided structure. At the top of the wealth distribution, the opportunity cost of working is low and households can afford women's non-participation. Wealthier women are less likely to enter or remain in the labor force, which reinforces the literature on reservation wages and leisure-income trade-offs. Whereas at the bottom, downward wealth mobility increases women's probability of exiting the labor force, suggesting that negative shocks create fragility rather than compensatory labor supply responses. Poorer households face a segmented labor market with unstable and low-quality jobs that may not justify the cost of working. In both cases, wealth interacts with bargaining: high-SES households may prefer women's withdrawal; low-SES households may see little value in women entering precarious or unacceptable jobs. These dynamics reinforce the view that demand-side constraints are the core structural forces shaping trajectories.

In parallel, a major contribution of the trajectory-based approach is the ability to separate the effects of marriage and fertility. Across all models, marriage dominates fertility. Its coefficients are large, consistent, and stable across specifications, while child-related variables are small, intermittent, and sensitive to control sets.

This finding resonates with emerging evidence from Jordan showing that social norms, household structure, and marital expectations shape women's agency and employment decisions long before the arrival of children. Marriage reorganizes time, responsibilities, and bargaining conditions. Motherhood simply reinforces a structure already set in motion. This distinction is critical for understanding participation trajectories. Women often exit or refrain from entering before having children which reflects anticipatory adjustments rooted in normative expectations.

Finally, the strong effects of maternal employment and education when compared to the inconsistent effects of paternal characteristics underscore the importance of intergenerational transmission of gender norms and labor market behaviors. Daughters of employed mothers are more likely to remain attached or re-enter the labor force, even after controlling for their own characteristics and work histories. Maternal education similarly shapes participation trajectories. Mothers provide both role models and actionable knowledge about how to combine market work with domestic responsibilities in a context where such combinations are challenging. The fact that paternal variables carry little explanatory power reinforces the gendered nature of this transmission. However, even daughters of employed mothers face early exits upon marriage when outside options are limited. Role-modelling thus interacts with, but does not override, labor demand constraints.

The life-cycle lens:

All together, these four arcs shed new light on the MENA paradox. Much of the existing literature treats this puzzle through static participation models or examines single life-cycle events in isolation. By contrast, the trajectory-based analysis demonstrates that the paradox is fundamentally rooted in timing. Women's labor market engagement is concentrated in a brief

window of early adulthood, primarily before marriage. Even tertiary-educated women who enter the labor force tend not to accumulate continuous experience. Marriage often triggers early withdrawal, and limited demand for women in high-quality jobs prevents re-entry. The paradox thus reflects not only entry barriers but the inability to convert education into sustained attachment across the life cycle.

Implications for future research and policy design:

The findings point to several implications for understanding women's labor market behavior in Jordan:

- Interventions targeting job search or skills alone will have limited impact without addressing the underlying scarcity of stable, socially acceptable jobs in the private sector.

- Marriage-based exits are central, suggesting the need for policies that reduce the opportunity cost of work for married women. This includes transportation, workplace flexibility, sectoral diversification, childcare availability.

- Wealth mobility and vulnerability matter: downward shocks disproportionately push women out of the labor force, highlighting the importance of social protection mechanisms.

- Maternal transmission is powerful but cannot fully overcome structural constraints. Thus, supporting continuous employment among mothers may indirectly enhance future women's labor participation.

8. Conclusion

This paper used the longitudinal structure of the JLMPS 2010–2016 to examine women's medium-run labor force trajectories in Jordan. By distinguishing whether women remained in the labor force, entered, exited, or stayed out entirely, the analysis moves beyond static participation rates and provides new evidence on the life-cycle dynamics underlying persistently low female participation.

Four consistent patterns emerge. First, tertiary education acts as a threshold for entry and sustained attachment, yet even highly educated women face early exits once they marry, which reflects the limited availability of stable, socially acceptable jobs. Second, socio-economic status shapes participation asymmetrically as affluent households facilitate withdrawal, while downward wealth mobility increases exits, indicating that vulnerability drives women's responses to economic shocks. Third, marriage more than fertility is the key life event reducing women's labor market attachment, and this underscores the dominant role of household structure

and gendered expectations. Fourth, maternal characteristics, particularly a mother's employment status, strongly predict daughters' trajectories, highlighting the importance of intergenerational transmission of norms and role-modelling.

Our findings point to a unified mechanism in which women's outside options in both the labor market and the household are constrained by the scarcity of decent jobs. Education enables entry but cannot offset the structural and normative pressures that lead to early withdrawal. Understanding women's labor force participation in Jordan therefore requires situating labor market decisions within broader household dynamics and life-cycle events.

Future research should more closely examine job quality, sectoral segmentation, and intra-household negotiation, while policy efforts must focus on expanding decent employment opportunities, reducing the opportunity costs of work for married women, and supporting continuous employment among mothers to strengthen intergenerational pathways into the labor force.

9. References

Durman-Aslan, Mine. 2020. Female Labor Force Participation in Turkey: The Role of the Intergenerational Links.

Alkasasbeh, Yusra. 2025. Women's Agency in Jordan: The Impact of Marriage and Motherhood Moderated by Education. Working paper.

Kasoolu, Semiray, Ricardo Hausmann, Tim O'Brien, and Miguel Angel Santos. 2019. Female Labor in Jordan: A Systematic Approach to the Exclusion Puzzle. CID Faculty Working Paper No. 365. Cambridge, MA: Harvard University Center for International Development.

Binder, Ariel J. 2021. "Rising Inequality in Mothers' Employment Statuses: The Role of Intergenerational Transmission." Demography 58 (4): 1223–1248.

Knutson, Marlys Ann. 1974. A Woman in the Labor Force: Factors Affecting Both Her Labor Force Decision and the Time She Is Willing to Supply in the Labor Market. Master's thesis, Oklahoma State University.

Mehtap, Salime, Yazan Jayyousi, Njood Gammoh, and Ahmad Al Haj. 2016. "Factors Affecting Women's Participation in the Jordanian Workforce." International Journal of Social Science and Humanity 6 (10): 784–789.

Gauri, Varun, Tasmia Rahman, and Iman Kalyan Sen. 2019. Measuring Social Norms About Female Labor Force Participation in Jordan. World Bank Policy Research Working Paper No. 8916. Washington, DC: World Bank.

Al-Assaf, Ghazi Ibrahim. 2016. Do International Remittances Affect the Performance of the Labor Market in Jordan? An Empirical Investigation. Economic Research Forum Working Paper No. 1014. Cairo: ERF.

Assaad, Ragui, and Caroline Krafft. 2023. “Labour Market Dynamics and Youth Unemployment in the Middle East and North Africa: Evidence from Egypt, Jordan, and Tunisia.” *Labour* 37 (4): 519–553.

Ilkkaracan, Ipek, Ayse Aylin Bayar, Luiza Nassif Pires, Tom Masterson, and Ajit Zacharias. 2022. Investing in Early Childhood Education and Care Services in Jordan: An Assessment of Costs and Returns. Amman: UN Women Jordan Country Office.

Alkasasbeh, Yusra. 2025. Women’s Agency in Jordan: The Impact of Marriage and Motherhood Moderated by Education. Working Paper No. 1776.

Amer, Mona, Alia El Mahdi, and Ali Rashed. 2018. The Changing Economic Environment and the Development of Micro and Small Enterprises in Egypt. Economic Research Forum Working Paper No. 1196. Cairo: ERF.

Sherif, Alif N., Sarin Alshed, and Caitlyn Keo. 2006. The Economic Environment and Its Evolution: The Development of Micro and Small Enterprises in Egypt. Economic Research Forum Working Paper No. 10906. Cairo: ERF.

Meendy, Ragui, Shaimaa Yassin, Alia El Mahdi, and Ali Rashed. 2012. The Economic Environment and the Development of Micro and Small Enterprises in Egypt. Economic Research Forum Working Paper No. 0906. Cairo: ERF.

Assaad, Ragui, Rana Hendy, Moundir Lassassi, and Shaimaa Yassin. 2021. “Explaining the MENA Paradox: Rising Educational Attainment, Yet Stagnant Female Labor Force Participation.” Demographic Research 43: 817–850.

Assaad, Ragui, and Caroline Krafft. 2020. “Labour Market Dynamics and Youth Unemployment in the Middle East and North Africa: Evidence from Egypt, Jordan, and Tunisia.”

Assaad, Ragui, and Caroline Krafft. 2015. “The Economics of Family, Marriage, and Labor: The Puzzle of High Female Unemployment in Jordan.” In The Jordanian Labour Market in the New Millennium, edited by Ragui Assaad and Mohamed Shatnawi, 105–143. Oxford: Oxford University Press.