



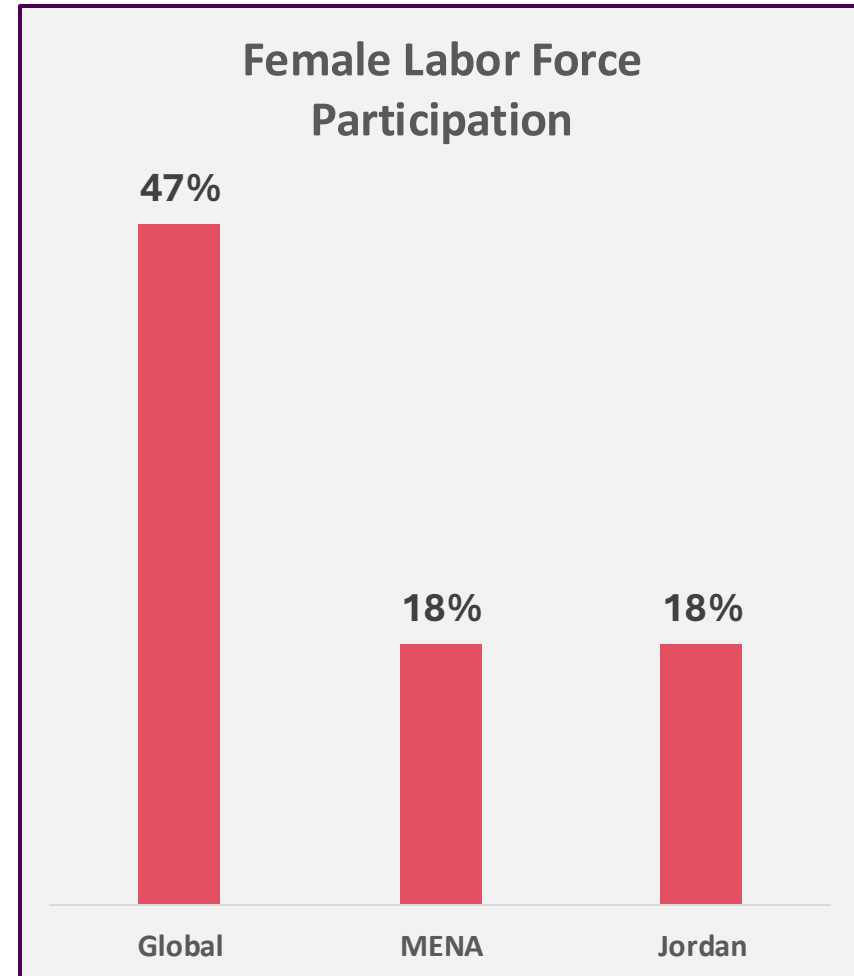
Assessing the Return on Investment (ROI) of Childcare Services

3 September 2025



Jordan's Context – Low FLFP and Childcare Gaps

- Jordan's female labour force participation (FLFP) is only about **17.6%** – among the lowest globally (MENA average about 18% vs about 48% worldwide).
- Lack of childcare is a major barrier: **56% of Jordanian women** with young children cite family responsibilities as the reason they cannot work (World Bank 2023).
- **~1.5 million** children under 5 in Jordan, yet licensed nurseries serve **<3%** of them
- Women perform **~80%** of unpaid care. Mothers often spend **7–9 hours/day** on childcare. Working mothers face a “double shift” of **~12–14 hours**.



The “Motherhood Penalty” and Barriers to Women’s Work

- Globally, studies show employers are **less likely to hire mothers** and often offer them lower salaries due to caregiving responsibilities.
- In MENA countries, **limited childcare and few family support policies** mean motherhood-related career hurdles are even higher.
- Women often **either withdraw entirely or seek only secure public-sector jobs** after motherhood. Few accept private-sector jobs lacking flexibility or security – many prefer not working at all over unsupportive work conditions.
- Cultural expectations strongly favor women as **stay-at-home caregivers**. MENA female labor participation is only **~18%** versus **70%** for men. Traditional norms and stigma around non-family childcare continue to suppress women’s employment.



Policy Momentum in Jordan – Recent Efforts and Remaining Barriers

Jordan's leaders are increasingly treating childcare as essential infrastructure, not just a private issue.

Government Prioritization

- In April 2024, the National Council for Family Affairs (NCFA) released a national childcare policy outline (with support from IRC) to expand access via subsidies and grants, improve quality standards, and reduce women's care burden.

National Strategy

- Expanding childcare aligns with Jordan's Economic Modernization Vision (EMV) goals and recent reforms (e.g. extended maternity leave) to boost women's economic participation.

Enforcement

- Laws exist (e.g. Labor Code Article 72 requires employers to provide childcare in workplaces over a certain size).

*Despite momentum, formal childcare remains unaffordable for many.
Availability is also uneven*

Study Objectives

- **Assess ROI of childcare expansion:**

Quantify the *return on investment of expanding early childcare and education (ECEC)* services for children 0–5 in Jordan – in terms of both economic benefits to society and fiscal benefits to the government.

If Jordan scales up childcare, what benefits and costs result?

- **Compare delivery models:**

Evaluate and compare alternative models for expanding childcare – primarily a *demand-side subsidy (voucher) approach versus a supply-side public provision approach* – to see which delivers better value for money in Jordan’s context.

Which expansion model delivers better ROI – vouchers or public centers?

- **Inform policy design:**

Identify which model and what *program features maximize impact*, and offer a roadmap tailored to Jordan for turning childcare from a policy idea into on-the-ground reality.

How do results change under different assumptions?

Global Evidence – Childcare as a High-Return Investment

Expanding childcare boosts employment (especially for women) and GDP, and often partially “pays for itself” through increased tax revenues.

Jordan

UN Women (2022)

- Spending on childcare would outperform equal spending on construction in terms of **job creation** and would help **narrow the gender employment gap**.

Jordan

World Bank (2023)

- If childcare becomes **affordable**, **FLFP rises ~2.5 p.p.**; if childcare is **free**, **~6–7 p.p.**—that’s tens of thousands of Jordanian women moving into work.

Global

ILO (2022)

- Spending an extra **2–3%** of GDP on childcare could generate **millions of new jobs** and **raise economic growth**.
- On average **~27%** of the childcare spending is **recouped** immediately via **higher tax revenues** (and up to **36%** in economies with more formal employment).

What's New About This Study?

- **First ROI analysis for childcare in Jordan:**

Our study is the first to provide clear ROI metrics (societal and fiscal BCRs), giving decision-makers concrete “*money in vs. money out*” figures.

- **Direct model comparison:**

We explicitly compare a *demand-side subsidy approach against building public centers*, including all costs, to see which model delivers more value for Jordan.

- **Phased implementation & realistic scenarios:**

Instead of assuming an immediate universal rollout, we consider *gradual scale-up scenarios* (e.g. targeted start then expansion). This reflects how policies are implemented – pilot and expand.

- **Jordan-specific data and context:**

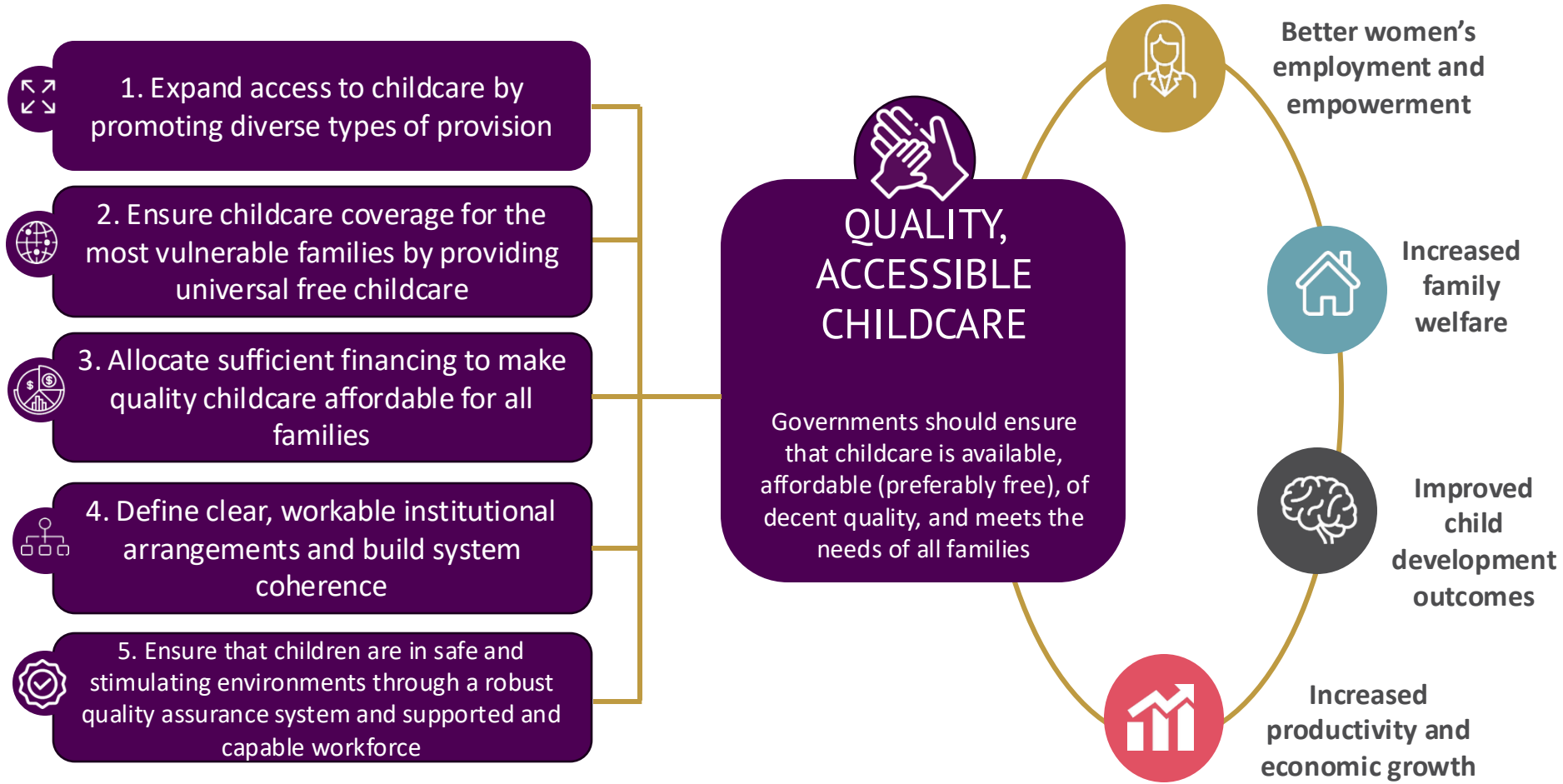
The model is *tailored with Jordanian data* – we used national survey data on women’s employment responses, local cost estimates from stakeholders, and aligned assumptions with Jordan’s demographic and policy context.

Conceptualizing the Provision of Childcare through a 'Care Diamond'



Policy Goals to Improve Access to Accessible, Quality Childcare

Policy goals



Methodology – Cost-Benefit Analysis Framework

- We employ a **cost–benefit analysis (CBA)** over an 18-year horizon to evaluate childcare expansion.
- We project and discount future costs and benefits to present value (using a **7% discount rate**) to compute return metrics.
- Our primary metric is the **BCR**, the ratio of present-value benefits to costs. **BCR > 1** indicates positive returns.
- **Two ROI lenses:**
 - **Societal perspective:** All economic benefits to Jordan versus total programme costs – reflects the net gain to the economy/society.
 - **Fiscal perspective:** Government revenue gains (taxes, social security) versus government expenditures – reflects the impact on the public budget.

Policy Scenarios Modeled

Scenario 1: Basic Voucher

A **universal childcare voucher** program open to all mothers of children under school age.

The government offers a **subsidy (voucher)** for each child that can be used at licensed childcare providers.

Coverage expands over time, but importantly **government only incurs cost when a child is actually enrolled** (no upfront building costs) and the mother joins the labour force.

We assume **uniform behavior**: on average, a certain percentage of mothers use the voucher (benchmark unmarried women's LFPR) and seek work, regardless of child's age. This provides a baseline for comparison.

Scenario 2: Age-Targeted Voucher

A demand-driven model like S1, but accounts for **different uptake by child age and assumptions of uptake**.

Mothers with older **preschoolers are more likely to use childcare** and return to work than mothers of infants (reflecting norms and readiness) but this also drives persistence in LFPR

The voucher is **still available to all**, but effectively more moms use it for age 3–4 children initially.

This scenario could be seen as a **phased or targeted voucher** – focusing on the age groups where impact is highest first.

Scenario 3: Public Centre-Based Model

A fully public, **supply-driven approach**. Government builds, staffs, and operates childcare centers (or fully funds their operation) to provide free childcare.

We assume **capacity is expanded gradually** (you don't build everything at once; centers come online over several years).

Since it's free, **we assume higher uptake rates** (fewer barriers for parents) similar to Scenario 2's age-based pattern, but **costs are incurred for all built capacity** whether or not every slot is filled.

This model has high upfront investment (infrastructure, hiring) and ongoing operating costs.

Key Modeling Assumptions (All Scenarios)

- **Gradual scale-up:**

We assume none of these scenarios achieves full coverage instantly. *Vouchers can ramp up faster* (eligibility is wide, but uptake grows as awareness and supply grow), whereas public centers scale more slowly (phased construction by age group).

- **Mothers' workforce persistence:**

A critical assumption is that many mothers who gain employment *continue working* even after their child ages out of the program.

- **Job creation and multipliers:**

All scenarios generate *direct jobs (childcare teachers, aides, center staff)* and we also include *indirect/induced job creation* via an economic multiplier.

- **No labor displacement:**

We assume *new jobs created* (whether mothers' jobs or childcare jobs) are filled by unemployed or underemployed *people currently outside the formal workforce*.

Impact Pathway – How Childcare Yields Benefits (Conceptual)

- Childcare subsidy/program → Mothers' time freed
- More women working → Higher household incomes
- Increased earnings → Fiscal revenues
- Childcare sector jobs → Direct employment
- Spillovers → Indirect economic gains

See *Annex* for detailed tables, including:

- Key Benefit and Cost Categories of a Childcare Program.
- Consolidated Scenario Assumptions; and
- Key Model Inputs, Descriptions, and Data Sources.

Headline ROI Results – Benefit-Cost Ratios (BCR)

**Vouchers
deliver very
high
returns**

Basic Voucher:

Societal BCR ≈ 6.9 , Fiscal BCR ≈ 2.2 . (Every 1 JOD spent yields ~ 6.9 JOD in economic benefits and about 2.2 JOD back in tax/SS revenue.)

Age-Targeted Voucher:

Societal BCR ≈ 8.1 , Fiscal BCR ≈ 2.5 . (Even stronger – targeting likely users pushes returns higher: ~ 8 JOD benefit per 1 JOD cost, and ~ 2.5 JOD in revenues per 1 JOD cost.)

**Public
provision
has
modest
BCR**

Public Centres:

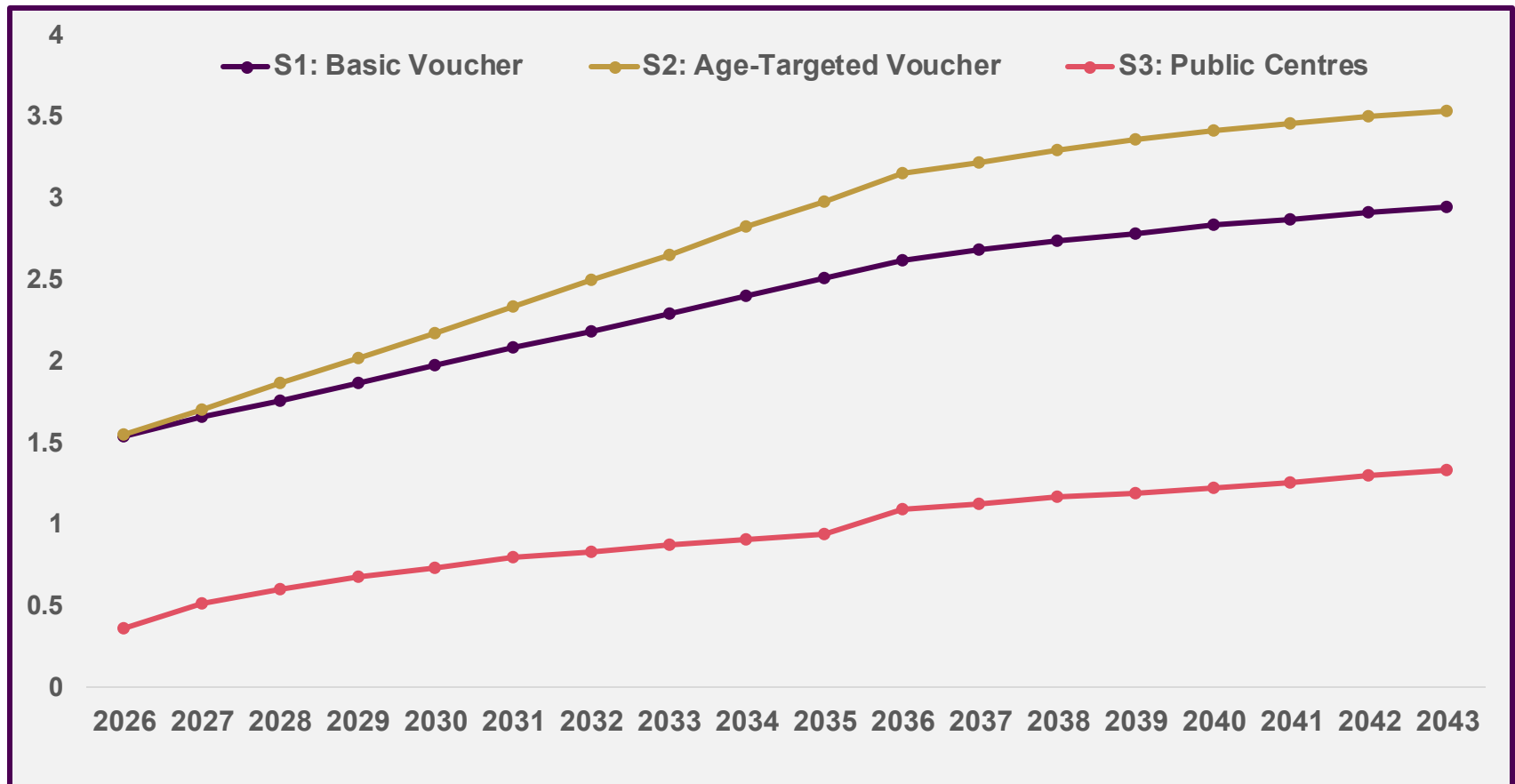
Societal BCR ≈ 2.7 , Fiscal BCR $\approx 0.9-1.0$ (just under 1). (About 2.7 JOD in economic benefit per 1 JOD spent, but fiscal BCR < 1 , meaning government does not fully recover its costs through tax revenues alone in present value terms.)

Vouchers far outperform the public model in both societal and fiscal returns. For example, 1 dinar via a voucher generates more than double the fiscal impact that 1 dinar via public childcare does, and about 2–3 \times the economic impact.

Time Dynamics – Speed of Fiscal Returns

Vouchers = near-immediate payback

Public model = delayed breakeven

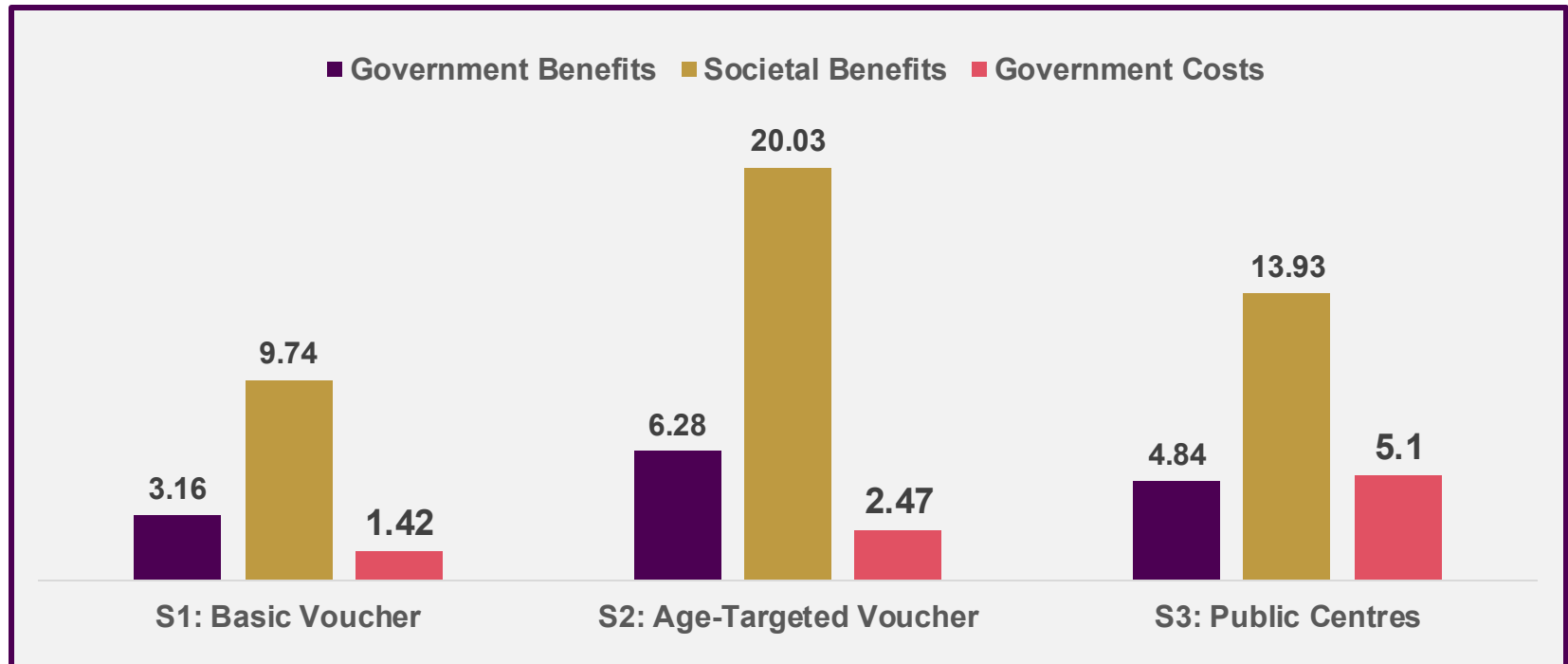


Present Value of Benefits and Costs (18-year totals)

Basic Voucher (S1): Cost ~JOD 1.4 billion, generating ~JOD 9.7 billion in total socioeconomic benefits and ~JOD 3.2 billion in fiscal (tax + SSC) revenue.

Age-Targeted Voucher (S2): Cost ~JOD 2.5 billion, yielding ~JOD 20.0 billion in societal benefits and ~JOD 6.3 billion in fiscal revenue.

Public Centres (S3): Cost ~JOD 5.1 billion, yielding ~JOD 13.9 billion in societal benefits and ~JOD 4.8 billion in fiscal revenue.



Sensitivity Analysis – Stress-Testing ROI

- **Uptake uncertainty:**

If significantly fewer mothers use childcare than expected, *voucher models self-adjust* – fewer vouchers paid out means lower cost and also lower benefit, but the ratio stays high.

- **Employment outcomes:**

If, for example, only 50% of mothers who seek work actually find jobs (vs ~70–80% base assumption), *voucher models still remain above fiscal breakeven*.

- **Higher program costs:**

A much larger voucher (e.g. from ~JOD 50 to JOD 100 per child) naturally lowers ROI, but even at JOD 100 subsidy (double cost) *the voucher schemes remained above break-even*.

A modest +25% increase in public operating costs (say construction or salaries cost more) drag the *public model's fiscal and societal BCR down* – making it clearly not cost-effective

- **Tax revenue assumptions:**

If we assume a weaker fiscal scenario – e.g., no Social Security contributions (only income tax collected), *the voucher models' fiscal BCRs drop but remain above 1*.

Analytical Caveats & Limitations

Conservative benefit estimates

Labor market absorption assumptions

No general equilibrium effects

Fiscal policy environment

18-year horizon and discount rate

Data uncertainties

Why Vouchers Outperform Public Provision

Pay for-use efficiency

- Vouchers **only expend funds when a service is delivered** (child enrolled).

Faster scalability and flexibility

- Demand-side subsidies can scale up quickly **by leveraging existing private and community providers**. Money flows to where families choose to enroll, allowing the system to grow organically in response to needs.

Lower fixed costs and overhead

- Vouchers **avoid large capital expenditures** and permanent staffing commitments by the state.

Incentive aligned

- In a voucher system, providers have an **incentive to attract and satisfy parents** (to get the voucher business), which can encourage better quality and innovation (assuming good regulation). The **government's role is to set standards and ensure compliance**, not to operate services.

Robustness to real-world variability

- Because vouchers scale with demand, they handle uncertainty better. If **take-up is low, the program naturally contracts** (saving money); if take-up is high, it expands (delivering more benefit).

Policy Implication – Lead with a Demand-Side (Voucher) Strategy

- **Prioritize vouchers for expansion:**

The evidence strongly indicates that Jordan should lead its childcare expansion with a *voucher/subsidy program (demand-side financing)* as the core strategy.

- **Target for quick wins:**

Implement an age-targeted or otherwise targeted voucher initially to *maximize early uptake and ROI*.

- **Use vouchers as the engine, public centers as a back-up:**

Public or NGO-run centers can play a strategic role in *these underserved areas for equity*.

- **Integrate with existing initiatives:**

Design the voucher scheme to be robust (adequate subsidy, broad eligibility) and integrate it with efforts like Article 72 enforcement (e.g., *employers could accept vouchers at workplace nurseries*).

- **Rationale for policymakers:**

Leading with a demand-side program means *more women employed faster, greater private sector involvement, and a self-sustaining fiscal cycle* (as taxes from working mothers help fund the program).

Design Recommendations for a High-Impact Voucher Program

- **Make it user-friendly and broad-based:**

The voucher program should be *simple to access and as close to universal* as feasible (for the target age group).

- **Sufficient subsidy & fee regulation:**

The voucher *value must be high enough to make childcare affordable* for low and middle-income families. Additionally, implement price caps or fee guidelines for providers receiving vouchers.

- **Ensure quality via strong standards:**

Establish and enforce robust childcare quality standards: caregiver-to-child ratios, caregiver qualifications/training requirements, health & safety protocols, and an inspection regime.

- **Support supply expansion, especially in underserved areas:**

While vouchers stimulate demand, the government should *simultaneously support the growth of childcare providers* to meet that demand.

Implementation Risks

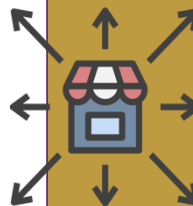
Cultural resistance and low initial uptake

There is a risk that despite subsidies, some families (especially in conservative areas) **might be reluctant to use formal childcare**, limiting program reach.



Quality dilution due to rapid expansion

Quickly scaling up childcare could lead to a **proliferation of substandard providers** trying to make a quick profit, or overstressing the inspection system, risking incidents that could undermine confidence.



Administrative capacity and fraud

Rolling out a voucher system is administratively complex – **risk of delays in payments, or misuse** (e.g., collusion between parents and providers to claim vouchers without actual service).



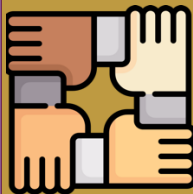
Sustainability of funding

There's a risk that **budget constraints could derail funding** after initial years, especially if fiscal benefits (though positive) are not immediately visible in the budget silo.



Equity and inclusion considerations

If not designed carefully, the program might **disproportionately benefit certain groups** (e.g., urban over rural, or better-off families who find jobs more easily, leaving behind the poorest).



Measures for Maximizing Impact and Inclusion

- **Link childcare with job opportunities:**

Childcare enables mothers to seek work, but they may *still need help finding suitable jobs*.

- **Promote flexible and part-time work options:**

Encourage employers (possibly via incentives or awareness) to offer *mother-friendly work arrangements*.

- **Public awareness and norm change campaigns:**

Cultural attitudes can impede utilization. Include messaging that *encourages shared parental responsibility* – e.g., paternity leave promotion, fathers taking part in childcare drop-offs.

- **Sustainable financing and institutionalization:**

As the program proves its worth, ensure it's built into the *budget and medium-term expenditure frameworks* as a permanent feature (not a one-off pilot).

- **Alignment with national strategies:**

Frame and integrate the childcare expansion within Jordan's *broader development agendas* – Economic Modernization Vision, women's economic empowerment initiatives, human capital development plans.

Thank you!

Annex

Key Benefit Categories of a Childcare Program (1/4)

Benefit Category	Description	Included in the Cost-Benefit Analysis (CBA)?
Increased female labour force participation and earnings	Affordable childcare vouchers enable mothers who would otherwise stay home with young children to work. In Jordan, lack of childcare is among the most cited barriers to women's paid work; removing it allows thousands of mothers to seek employment, raising FLFP and household incomes (World Bank 2023a). These additional earnings are the programme's primary quantified benefit.	Yes: monetized as the main benefit driver (based on uptake of vouchers and employment probabilities and earnings for mothers).
Job creation in childcare sector and beyond	Expanding childcare services directly creates jobs for caregivers, teachers, and support staff—roles predominantly held by women—increasing FLFP, reducing female unemployment and strengthening the care sector. From the programme's accounting perspective, however, wages paid through the childcare program are transfers rather than net new income.	Yes: for fiscal impacts, we still compute tax revenue on all additional income—including caregivers' salaries—so those taxes (and payroll contributions, where applicable) are counted as benefits. Indirect and induced job creation is included as explained below.
Multiplier effects	Direct job creation in the childcare-sector jobs feeds into job creation via multiplier effects. Jobs created in the childcare sector also generate indirect jobs along supply chains (e.g., food, utilities, maintenance) and induced jobs from workers' local spending.	Yes: included as a conservative multiplier on indirect or induced job gains. While not modelled through a full general equilibrium or input-output framework, the estimate captures basic spillover effects. Job creation resulting from increased female labour supply could generate additional multiplier impacts, but these have not been incorporated into the calculation. As a result, the spillover effects presented here are likely an underestimate.

Key Benefit Categories of a Childcare Program(2/4)

Benefit Category	Description	Included in the Cost-Benefit Analysis (CBA)?
Working mothers gain experience, enhancing future productivity	When mothers rejoin the workforce, they build skills and job experience, avoiding the “resume gap” that often penalises women’s careers. Over time this leads to higher productivity and earning potential. For example, continuous employment can open opportunities for promotions and wage growth. It also creates positive role-model effects: children (especially daughters) see their mothers balancing work and family, which can raise the next generation’s aspirations for women’s economic and educational roles.	No: We model persistence of labour market participation but do not apply multi-year earnings profiles or experience-related productivity gains, so long-run earnings are likely understated (conservative).
Other household members such as fathers are freed to pursue work or education	When formal childcare is absent, fathers, older siblings, grandparents, or other relatives often shoulder care responsibilities. Reliable childcare frees them to reallocate time: for example, an older daughter can stay in school, a grandmother can run a home business or rest, and father can also work. This shift can raise household productivity and income and yield long-term gains (higher sibling attainment, additional adult earnings) as members move to their best-suited activities (Cabrera-Hernández & Padilla-Romo, 2021; Armstrong-Carter et al., 2023; Devercelli and Beaton-Day, 2020).	No: not directly quantified in the CBA. These multi-generational benefits (e.g. siblings’ higher educational attainment or a second adult’s earnings) were excluded due to measurement complexity (too diffuse and context-dependent to quantify reliably—benefits vary widely by household and are not easily attributable or observable over a short time horizon).
Higher tax revenue	As these women find jobs (whether formal or informal), they begin to earn incomes. This is a direct private benefit to the women and their households. Earning an income also tends to increase women’s bargaining power and overall well-being at home. Concurrently, if women enter formal jobs, they and their employers contribute to taxes or social security, thereby generating additional revenue for the government. Higher female employment yields improved household incomes and a broader tax base.	Yes: added tax revenues from new earnings are included in the CBA calculations.

Key Benefit Categories of a Childcare Program (3/4)

Benefit Category	Description	Included in the Cost-Benefit Analysis (CBA)?
Reduced welfare payments (e.g. cash assistance saved)	By helping mothers move into paid work, the programme can reduce their reliance on government assistance. Although Jordan's cash support for unemployed mothers is limited, some beneficiaries may exit programmes like the National Aid Fund once they earn new incomes. If those vacancies are not immediately filled by other households, the government saves that expenditure. These savings on welfare payouts are a fiscal benefit, though likely very small compared to other gains. If, however, the overall scale of social assistance programmes remains unchanged, direct costs to government would not decline; instead, the main fiscal effect would be indirect, through the inclusion of previously excluded households.	No: any reduction in social assistance expenditure is not captured, albeit the impact is minimal given low coverage of such benefits (a minor component of ROI).
Child development gains	High quality childcare and early childhood education deliver substantial child development benefits. Global evidence (Devercelli and Beaton-Day 2020) shows that early learning participation improves cognitive and social skills, boosting school readiness and later attainment. In the long term, beneficiaries are more productive and earn higher adult incomes: today's childcare is an investment in the future workforce. Because these gains unfold over decades, they fall outside our evaluation window.	No: not included in the CBA due to the long time horizon and difficulty of measurement. These benefits materialise decades later and require longitudinal data to credibly link early care to adult earnings. Excluding them makes our ROI estimates conservative (we acknowledge the gains qualitatively, but they are not monetised in the 5-year model).
Quality of care improvements (child well-being) beyond future earnings	Access to organized childcare can improve a child's daily quality of life: for instance, children may receive better nutrition, early socialisation with peers, and a safe, stimulating environment compared to ad hoc home care. These wellbeing improvements have intrinsic value, enhancing current child welfare (beyond any future earnings or school performance gains) (Devercelli and Beaton-Day, 2020).	No: not monetised. These immediate child wellbeing benefits (better care, nutrition, social development, etc.) are discussed qualitatively only. They reinforce the case for childcare but are omitted from the ROI due to valuation challenges. Such benefits lack clear market proxies and are difficult to monetise without assigning subjective values to non-economic outcomes like emotional wellbeing or social development, thereby undervaluing the programme's full benefit to children.

Key Benefit Categories of a Childcare Program (4/4)

Benefit Category	Description	Included in the Cost-Benefit Analysis (CBA)?
Future criminality/health cost reductions	Children who receive enriching care in their early years are statistically less likely to engage in crime and often enjoy better health outcomes as adults, reducing future costs to society (e.g. lower criminal justice and healthcare expenditures). For example, well-known longitudinal studies of early education have linked it to lower rates of juvenile delinquency (Heckman and Karapakula 2019) and adult chronic disease (Campbell et al. 2014). However, such benefits would materialise far in the future and depend on many factors.	No: not quantified (no local data and effects occur beyond the project horizon). These long-term social benefits – lower crime and improved lifelong health – are recognised but omitted from the ROI calculations, as they require multi-decade tracking and complex attribution models.
Increased fertility rates	Easier access to childcare could theoretically influence family decisions on having children. If parents (especially mothers) feel more supported in balancing work and caregiving, they might choose to have additional children, potentially nudging the fertility rate upward (OECD 2024). Any such effect would be gradual and shaped by cultural norms and personal preferences and is not a direct goal of the programme.	No: out of scope for the CBA. Potential demographic effects (such as families deciding to have more children due to available childcare) were not evaluated, as the analysis focuses on economic and social outcomes of current families.
Parental well-being (stress, mental health)	Affordable childcare can significantly relieve parental stress. Working parents – especially mothers – gain peace of mind knowing their children are in safe, quality care, which can improve mental health and work-life balance. While juggling job and family can still be challenging, the availability of childcare prevents the extreme strain of having no support (Devercelli and Beaton-Day, 2020).	No: not included in the CBA (intangible benefit). The value of reduced stress and better mental health for parents is real albeit not directly financial. It lacks a standardized economic valuation and varies widely across individuals and contexts. It remains a qualitative advantage of childcare support
Gender equality and empowerment	Investing in childcare promotes fairer sharing of care and women's economic empowerment. As more mothers work, gender gaps in participation and earnings narrow, catalysing shifts in social norms, greater female leadership, and women's agency in household and public decision-making (Devercelli and Beaton-Day, 2020). These transformative effects are central to the program's social rationale, even without an immediate price tag.	No: not monetised in the ROI. The value of greater gender equality and women's empowerment is acknowledged qualitatively, but it does not directly enter the financial CBA. These outcomes are difficult to monetise because they involve long-term shifts in power, norms, and agency that lack clear economic proxies.

Key Cost Categories of the Childcare Program (1/1)

Cost Category	Description	Included in the Cost-Benefit Analysis (CBA)?
Direct program outlays (service delivery set up / subsidies)	<p>In voucher programmes, the main outlays are subsidies or reimbursements paid to approved providers or families for eligible children, contingent on the child actually receiving care. In contrast, centre-based programs require covering ongoing operating costs tied to the centre's maximum capacity rather than actual enrolment. These costs include carers' wages and supervision, consumables and meals, rent or lease, utilities, routine maintenance, staff training and contracted services. Establishing a new centre also requires a significant upfront investment, which is accounted for in scenarios where the full cost of childcare is publicly financed, either through direct government construction of centres or reimbursement to private providers for their capital expenses.</p>	<p>Yes: primary program cost over the analysis horizon.</p>
Administrative, implementation, operation, quality and learning	<p>This category covers: programme management and staffing; eligibility/enrolment and verification; payment processing; provider contracting and case management; grievance redress; Information Technology / Management Information System(s) (MIS); operations and data protection; capacity building; standards and licensing/accreditation; inspections and provider support; safeguarding and health-and-safety compliance; outreach/communications and provider onboarding; and, routine monitoring and audits, surveys, data analytics, and evaluations.</p>	<p>Yes: mix of recurrent (and some upfront) programme costs.</p>

Consolidated Scenario Assumptions (1/3)

Assumption area	S1: Basic Voucher	S2: Age-Targeted Voucher	S3: Public Centres
Uptake path	Gradual increase to match LFPR of unmarried women at 20%; applied uniformly to all mothers with children 0–5; participation persists for 75% after youngest child turns 6	Varies by child age: 0–1 years at 10% of maximum potential (80% of non-participants), 2–5 years at 70% of maximum potential; participation persists for 75% after youngest child turns 6	Higher uptake than vouchers: around 80% of non-participants, with capacity rollout to 20% of 0–1 year olds by year 5 and 80% of 2–5 year olds by year 10; participation persists for 75% after youngest child turns 6
LFP response	We assume that all mothers who take up childcare programme also enter the labour force; in other words, the labour force participation (LFP) response among childcare users is treated as 100%. In this model, childcare uptake is equivalent to labour market entry, reflecting the assumption that mothers primarily access the program in order to work. ^a	Same as S1	Same as S1
Employment probability	70%	70%	70%
Persistence in LFP	75%	75%	75%

Consolidated Scenario Assumptions (2/3)

Assumption area	S1: Basic Voucher	S2: Age-Targeted Voucher	S3: Public Centres
Share of the jobs that are formal	50%	50%	50%
Staffing	Caregivers = $1.25 \times (\text{children} \div \text{care standard})$ Support staff = $\text{children} \div 50$	Same as S1	Same as S1 (public hiring)
Average wage of mothers	JOD 400 /month	Same as S1	Same as S1
Average wage of childcare workers	JOD 290 /month	Same as S1	Same as S1
Average wage childcare support staffs	JOD 290 /month	Same as S1	Same as S1
Average wage of indirect/ induced jobs	JOD 500 /month	Same as S1	Same as S1
Fiscal take	Combined tax + SSC: average 28% (16.8% when tax only considered; 14.5% employer SSC; 7.25% employee SSC); % of all new jobs are formal	Same as S1	Same as S1
Multiplier	1.5	1.5	1.5

Consolidated Scenario Assumptions (3/3)

Assumption area	S1: Basic Voucher	S2: Age-Targeted Voucher	S3: Public Centres
Voucher value	JOD 50 /month	Same as S1	N/A
Administration	10 % of voucher payouts	10 % of voucher payouts	N/A
Capital	N/A	N/A	34,400 JOD/nursery; 30- child capacity
Average size/ capacity of a centre	N/A	N/A	30 children
Public operating cost	N/A	N/A	85 JOD/month
Discount Rate	7 %	Same as S1	Same as S1
Time horizon	2026-2043 ($T = 18$ years)	Same as S1	Same as S1

Note: ^a We recognise that in practice, not all mothers who receive a voucher will enter the labour force—some may use childcare for other reasons. For tractability, however, we assume that voucher uptake is synonymous with labour force entry. This is admittedly an optimistic simplification, as the boundary between being willing and genuinely able to work is not always clear. Moreover, employment outcomes are not 100 per cent even among those who do seek work. As such, our estimates may modestly overstate the employment effects.

^b “N/A” indicates not applicable. These results illustrate which factors most affect returns and the relative robustness of each model.

^c See Annex 3 for details on data sources.

Key Model Inputs, Descriptions, and Data Sources (1/3)

Model Input	Description	Source and Justification
Population: Target Women and Children	Number of eligible mothers (with children aged 0–5) and the corresponding number of children in two age groups (0–1, 2–5). Demographic breakdown by mother’s age (under 30, 30–34, 35+) used to project changes over the modelling period.	Estimates derived from UNDESA World Population Prospects (2024) for Jordan, disaggregated using Jordan Population and Housing Census (2015). Household structure and age-specific fertility patterns taken from Jordan Demographic and Health Survey (DHS, 2023). This aligns with standard demographic cohort-component projections. References: United Nations, World Population Prospects 2024; Department of Statistics (Jordan), Population and Housing Census 2015; Department of Statistics & ICF, Jordan DHS 2023.
Uptake path and Increase in LFP	Share of covered mothers using childcare, scenario- and age-specific. In voucher scenarios (S1, S2), costs scale with use; in public centres (S3), uptake is proportion of funded capacity utilised.	Uptake rates are scenario- and age-specific. In voucher scenarios S1, the maximum achievable uptake is linked to the LFP gap between married and unmarried women of the same age/education (about 20 p.p.); In scenario S2 the uptake is approximately the proportion of women’s willingness to work shown by the survey results of World Bank (2023c) which show 73 per cent uptake potential with subsidised care and 80 per cent with free care, calculated of the approximately 80 per cent of the target group outside the labour market, supporting the assumed upper bounds. Further, subgroup-specific rates reflect lower uptake among mothers of infants (e.g., about 20 per cent for 0–1) and higher uptake for mothers of older preschoolers. In S3 (public centres), uptake is expressed as a share of funded capacity (e.g., around 80 per cent utilisation). References: Department of Statistics (Jordan), EUS 2018 and LMPPS 2016 (OAMDI 2024 and 2018); World Bank, 2023c).
Persistence in LFP	Share of mothers remaining in the labour force after their youngest child turns six. Applied to prior year’s entrants, adjusted for annual exit.	Persistence rate set at 75 per cent, informed by the results by Selwaness and Krafft (2021) whereby in Jordan about 75 per cent of women whose employment spell starts at or after marriage are still employed 5 years later. Exit rate for mothers over 35 assumed at 10 per cent annually after 10 years, informed by the age distribution of women with the youngest child of 6 years.

Key Model Inputs, Descriptions, and Data Sources(2/3)

Model Input	Description	Source and Justification
Employment Probability	Probability that a mother entering the labour force finds employment.	Set at 70 per cent based on average female unemployment rates in Jordan (30–33 per cent between 2020–2024; Department of Statistics).
Average Wage of Mothers	Average monthly wage for newly employed mothers.	JOD 400 /month approximates the median from EUS 2024 earnings distribution, aligned with SSC data (JOD 477 in 2022). References: Department of Statistics (Jordan), (2025); Social Security Corporation (Jordan), Annual Statistical Report 2022.
Childcare Sector Staffing	Caregiver-to-child standards plus staffing factor ($\varphi = 1.25$) to allow for leave and training.	Regulatory norms from World Bank (2023c) and Jordan licensing standards assuming stricter standards as for home-based care to allow for higher quality care: 5 children per carer (0–1), 7 children per carer (2–5).
Childcare Sector Wages	Monthly wages for caregivers and support staff.	Caregivers: JOD 290 (Jordan minimum wage, 2025), per WB 2024 provider survey. Sensitivity test uses “living wage” of JOD 395 from Anker institute living wage benchmarks. Support staff wages proportionally aligned. References: Ministry of Labour (Jordan), Minimum Wage Regulation 2025; Anker Institute (2025), World Bank (2023b), Authors’ survey of care providers.
Wages in Indirect/Induced Jobs	Average monthly wage in sectors benefiting from multiplier effects.	Estimate JOD 500 /month based on SSC 2022 average in the private sector inflated to 2026 using IMF inflation estimates JOD 536 (Department of Statistics 2024) and the data on EUS 2024 whereby majority of Jordanian respondents report monthly earnings of JOD 300-499 References: Department of Statistics (2024, 2025), IMF (2025).
Tax and Social Security Parameters	Effective combined tax + SSC rate on formal wages; share of jobs formal.	$p_f = 50$ per cent formal share (ILOSTAT, 2023; 53.8 per cent informality in non-agriculture). Average tax rate = 2 per cent income tax on formal wages approximated based on the tax regime and income taxes across the income distribution (PWC Jordan Tax Guide 2025, Rodriquez and Wai Poi 2024) and sales tax at rate 16 per cent. SSC = 21.75 per cent combined employer/employee contributions.

Key Model Inputs, Descriptions, and Data Sources (3/3)

Model Input	Description	Source and Justification
Multiplier	Employment multiplier capturing indirect + induced job effects.	Base $m = 1.5$ (conservative), consistent with global childcare multiplier studies (De Henau 2022; UN Women 2025) and Arab-region IO coefficients (Antonopoulos et al., 2020). Sensitivity tests explore values 1 and 2
Voucher value	Annual cost per child for subsidised care in voucher scenarios.	Values of the subsidy based on the Reaya programme and authors' assumptions
Public operating cost	Annual operating cost per child in public centre-based scenarios.	Defined as the annual per-child operating cost in public centre-based scenarios, applied to funded capacity regardless of actual utilisation. Includes staffing, utilities, maintenance, and consumables, based on WB (2024) cost benchmarking for Jordanian public childcare provision and authors' survey of childcare providers.
Capital cost	Per-centre capital/setup cost and capacity (κ) for public provision scenarios.	Per-centre setup cost and designed capacity for public provision scenarios, applied to newly commissioned centres each year. Based on World Bank study of childcare supply (2024).
Administrative cost	Percentage of programme payouts allocated to administration and oversight.	Share of programme payouts allocated to administration, monitoring, and oversight. Assumption 10 per cent. No data on the administrative costs available, but for social protection programmes 10 per cent can be a valid estimate (see Lastunen et al 2025).
Discount Rate	Social discount rate applied to PV calculations.	Base $r = 7$ per cent, aligned with recent Jordan real interest rates (2015–2024 avg. 6.44 per cent). Sensitivities at 3 per cent (Ramsey rule) and 10 per cent (low-income settings). Reference: World Bank 2016.