

Restrictive Reproductive Laws and Women's Workforce Participation: A Cross-National Comparative Analysis of Canada and Sri Lanka

Author(s): Gelareh Farhadian¹, Abedeh Gholidoust², Ashwini Krishnadhas²

1 Fairleigh Dickson University, Vancouver, Canada.

2 University Canada West, Vancouver, Canada.

Corresponding Author: g.farhadian@fdu.edu

Received: August, 2026, Published: October, 2026

ARTICLE INFO

Keywords:

Canada; Comparative Policy; Female Labor Force Participation (FLFP), Gender Equality; New Home Economics; Reproductive Law; Sri Lanka

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ABSTRACT

This study examines the association between the reproductive policy environment and female labor force participation (FLFP) in Canada and Sri Lanka using panel data from 2013-2023. The analysis introduces a Reproductive Policy Restrictiveness Index (RPRI), a ten-component composite integrating three externally sourced legal variables (abortion legality, contraception access, and the World Bank Women, Business and the Law composite) with seven institutional indicators. The analytical approach in this work uses correlation analysis, Principal Component Analysis, Random Forest feature ranking, and ARIMA forecasting. Findings document a 55.7-point RPRI gap between Canada (mean = 90.6) and Sri Lanka (mean = 34.9), co-varying with a 13.4-percentage-point FLFP gap (pooled $r = 0.996$). Within-country temporal correlation is essentially zero, indicating the RPRI-FLFP association is between-country. The study contributes the first integrated legal-institutional restrictiveness index for these countries, framed associational rather than causally.

1.0 Introduction

Women's economic participation is a cornerstone of sustainable development, yet global disparities persist due to unequal access to reproductive rights and maternal support. This study explores the association between reproductive laws and maternal policies on women's workforce participation, comparing two distinct national contexts: Canada and Sri Lanka. While Canada provides extensive institutional support, such as legal abortion access, subsidized birth control, and paid parental leave, Sri Lanka maintains more restrictive laws and limited reproductive health infrastructure. Drawing on the New Home Economics (NHE) theory which models fertility and female labor force participation as joint outcomes of household decision-making, and following Becker's theory (Becker, 1976) that when women have less control over fertility due to restrictive reproductive laws (RRL) the opportunity cost of childbearing rises, we hypothesize that more supportive reproductive policy environments reduce the opportunity cost of childbearing and thus increase women's participation in the formal labor force.

Women's labor-force participation is shaped not only by labor demand and human capital but also by the institutional conditions under which reproduction and care occur. Decisions

about whether and when to have children affect education, job search, occupational mobility, working hours, and continuity of employment. Those decisions are, in turn, conditioned by abortion law, the affordability and availability of contraception, access to maternal healthcare, income protection during leave, childcare provision, and the distribution of unpaid care within households. Reproductive governance is therefore economically consequential even when a statute does not directly regulate employment (Diamond-Smith et al., 2025; Kleven et al., 2025).

The distinction between formal rights and effective access is central to this relationship. A legal entitlement may have limited practical value when services are geographically distant, unaffordable, culturally unsafe, or unavailable to informal workers. Conversely, policies outside reproductive law, such as childcare subsidies, parental-leave design, working-time regulation, and employment protection, may determine whether reproductive autonomy can be converted into sustained economic participation. This institutional perspective avoids reducing women's employment decisions to individual preference and instead examines the constraints within which choices are made (Graham et al., 2022; Haintz et al., 2023).

Canada and Sri Lanka provide a theoretically informative contrast. Canada combines decriminalized abortion with comparatively extensive parental benefits and expanding public support for contraception and childcare, although Indigenous, northern, rural, racialized, and low-income women continue to encounter unequal access (Lamberti, 2022; Miller, 2023). Sri Lanka has achieved high female literacy and important maternal-health gains, yet abortion remains highly restricted, and women's labor-force participation remains substantially below men's. Women are also concentrated in informal and vulnerable employment, where statutory maternity and workplace protections may be difficult to claim (Suranga et al., 2023; World Bank, 2024).

This comparison is best understood as a structured examination of contrasting policy environments rather than as a natural experiment. The countries differ in income, labor-market structure, demography, care infrastructure, social norms, and legal history. These differences make the comparison substantively valuable but also limit causal attribution. Accordingly, the study asks whether a multidimensional reproductive-policy environment is associated with persistent differences in female labor-force participation, which components appear most salient, and whether the observed patterns are consistent with the mechanisms proposed by New Home Economics and complementary institutional and intersectional theories.

This hypothesis is grounded in a broad body of theoretical and empirical literature, which examines how reproductive autonomy through access to abortion, contraception, and maternity leave shapes women's educational, occupational, and labor market outcomes.

While some alternative perspectives such as Sen's Capabilities Approach emphasize broader dimensions of well-being and agency, feminist economic theory further argues that restrictive reproductive policies increase unpaid care responsibilities and constrain women's economic autonomy, contributing to lower labor force participation. Consistent with these perspectives, the empirical evidence generally supports a negative relationship between restrictive reproductive policies and women's labor force outcomes. (Atay & Périvier, 2025).

The NHE framework conceptualizes fertility and labor force participation as interdependent household decisions driven by economic trade-offs. Prior research (Skadsen, 2017) shows that access to contraception and maternal benefits allows women to delay childbirth, pursue education, and participate in the workforce. In addition, better access to abortion and contraception policies affecting unplanned births has been consistently linked to improved labor outcomes for women (Skadsen, 2017; Lamberti, 2022; Miller, 2023).

Historically, research on fertility and women's employment emphasized the opportunity cost of time: as women's potential wages and educational investments rise, time spent outside paid employment becomes more costly. Later comparative research showed that the fertility–employment relationship is not fixed. It changes with the availability of childcare, flexible work, parental leave, and social acceptance of maternal employment (Ahn & Mira, 2002; Engelhardt et al., 2003; Kögel, 2004). This development shifted the analytical focus from fertility alone to the policy package that makes employment and parenthood more or less compatible.

Recent evidence supports several linked mechanisms. Control over fertility can reduce the likelihood that an unintended birth interrupts schooling or work; maternal healthcare can limit health-related absences and protect productive capacity; paid leave and job protection can preserve employment matches after childbirth; and affordable childcare can reduce the cost of returning to work. At the same time, these policies may produce unequal benefits when eligibility is tied to formal employment, continuous contributions, residence, marital status, or proximity to services. The relevant exposure is therefore not simply whether a policy exists, but whether women can use it in practice (Diamond-Smith et al., 2025; Schummers et al., 2025; Uppal, 2023).

The recent child-penalty literature reinforces this institutional interpretation. Across a large set of countries, women's employment commonly declines after the birth of a first child while men's employment changes much less, although the size of the penalty varies considerably across economic and policy contexts (Kleven et al., 2025). Canadian evidence likewise shows increasing employment among mothers over time alongside a continuing employment gap between mothers and fathers (Statistics Canada, 2024a, 2024b). These findings suggest that reproductive rights are necessary but not sufficient: the economic consequences of parenthood also depend on how societies organize, finance, and distribute care.

A key gap in the literature is the limited integration of statutory reproductive law with measures of implementation, social protection, and labor-market structure. Many studies isolate a single policy or use fertility as a proxy for reproductive autonomy, while composite legal indices may overstate substantive access by treating formal entitlement as equivalent to effective provision. The present study responds by constructing the Reproductive Policy Restrictiveness Index (RPRI), which integrates legal and institutional indicators into a single comparative framework. Given the two-country, 2013–2023 design, the index is used to describe structural policy differences and examine associations rather than to estimate a causal effect.

However, critiques of NHE point to its underemphasis on structural inequality. One major critique was put forward by Graham et al. (2022), who argued that even progressive reproductive policies can reinforce inequality when access is stratified by class or geography. This nuance aligns with extended interpretations of NHE, which hold that household-level decisions are shaped by uneven institutional access, cultural norms, and economic inequality.

It is often stressed that women can have the same rights as men under the law, but not necessarily benefit from power and outcomes. Many studies have found that women's legal rights – to work, vote, own property, or receive services – do not equal true empowerment. For example, according to Miller (2023), despite laws in Canada ensuring everyone the same right to healthcare, Indigenous women are still caught in structural obstacles that prevent them from getting abortion care. Some reasons are that federal and provincial regulations don't always match, and historic mistrust in Canada's medical services is due to colonialism and poverty. It means that legality ("equality before the law") can exist without physical or monetary equality. Reproductive rights are limited for Indigenous women, regardless of whether the laws allow it, which negatively impacts both their health and ability to earn money. On the other hand, Lambert's study (2022) explains why many Canadian women,

particularly racialized and Indigenous women, may not consistently use effective contraception due to financial and structural barriers. How much contraception costs emerges as a key issue in shaping women's economic behavior, a direct reflection of the opportunity cost of fertility within the NHE framework.

In summary, while legal equality is essential, it alone cannot ensure genuine empowerment. Legal reforms such as allowing women to own property, open bank accounts, or access reproductive healthcare can make significant progress. However, these rights are only effective when supported by broader actions, such as improving services, combating discrimination, and involving women in shaping laws. Researchers emphasize the need to connect legal frameworks with real-world implementation and to adopt an intersectional approach that addresses overlapping inequalities. Both Miller (2023) and Haintz et al. (2023) argue that for equality to hold real meaning for different groups of women, laws must account for their specific circumstances rather than simply applying identical rules to everyone.

To address these limitations, the study incorporates intersectional and institutional perspectives, emphasizing that formal rights are insufficient without meaningful access to services and employment protection. The literature indicates that reproductive restrictions can raise the costs of fertility control and constrain economic participation, particularly where healthcare access, care infrastructure, and labor protections are weak. However, the magnitude of this relationship varies across populations and national contexts, requiring associational rather than deterministic interpretation.

2.0 Literature Review

2.1 Theoretical Foundations

New Home Economics (NHE) provides the manuscript's central account of how fertility and employment are jointly determined through household time allocation and the opportunity cost of childbearing. In this framework, reliable control over the timing and number of births can increase the expected return to education, strengthen labor-market attachment, and reduce career interruption. However, a strictly household-optimization account is incomplete because reproductive decisions are made within legal, institutional, and social constraints. The Capabilities Approach redirects attention from formal choice to women's substantive ability to achieve valued outcomes, while feminist economics identifies unpaid care, unequal bargaining power, and occupational segregation as structures that shape the apparent costs and benefits of paid work. Recent reproductive-justice scholarship similarly argues that autonomy includes not only the ability to avoid pregnancy but also the ability to have children and raise them under safe and economically sustainable conditions (Atay & Périvier, 2025; Graham et al., 2022; Haintz et al., 2023).

These perspectives are complementary rather than mutually exclusive. NHE identifies a plausible labor-supply mechanism, but capabilities and reproductive-justice approaches explain why the same formal law can generate different outcomes across income, geography, race, Indigeneity, marital status, and employment sector. They also clarify why reproductive autonomy should not be measured only through fertility rates. Relevant capabilities include affordable healthcare, freedom from discrimination, access to childcare, income security during leave, safe transportation, and enforceable employment rights. The literature therefore supports a legal-institutional model in which reproductive policy affects employment through interacting pathways rather than through a single direct causal channel.

2.2 Abortion Access and Women's Economic Outcomes

Recent research has strengthened the evidence that access to wanted abortion can affect women's economic security. Miller et al. (2023) linked the Turnaway Study to credit-reporting records and compared applicants who received an abortion with applicants who

were denied one because they were just beyond a facility's gestational limit. Denial was followed by increased financial distress, including greater past-due debt and adverse public financial records. Because the design compares applicants near a common eligibility threshold, it offers stronger causal leverage than a simple comparison between jurisdictions with different laws. The results are directly relevant to the opportunity-cost mechanism: an unintended birth may change employment continuity, care responsibilities, household expenses, and the capacity to invest in education or occupational advancement.

Post-2022 evidence from the United States also demonstrates that restrictive laws can alter realized fertility. Dench et al. (2024) estimated that state abortion bans following the Dobbs decision increased births in affected states, with effects varying according to travel distance and the availability of abortion in neighboring jurisdictions. These findings show that legal restrictions can influence reproductive outcomes, but their transferability to Canada and Sri Lanka requires caution. Cross-border travel, healthcare financing, informal abortion provision, baseline fertility, and labor-market institutions differ substantially across settings. The evidence supports the mechanism connecting law to reproductive outcomes; it does not establish that the entire Canada–Sri Lanka FLFP gap is caused by abortion law.

2.3 Contraception, Family Planning, and Economic Empowerment

Affordable contraception can enable women to delay or space births and coordinate family formation with education and employment. Nevertheless, legality, affordability, use, and economic empowerment are distinct outcomes. Diamond-Smith et al. (2025) systematically reviewed 17 quantitative and qualitative studies of family-planning access or use and women's empowerment. Across the reported outcomes, 47% were positive, 39% were null, and 14% were negative; the certainty of evidence concerning decision-making, labor-force participation, wages, and schooling was rated low or very low. The review therefore supports a potentially beneficial relationship without justifying a universal or deterministic claim. Labor demand, job quality, household bargaining, childcare, and social norms condition whether reproductive control translates into economic opportunity.

Canadian evidence illustrates the distinction between policy access and downstream labor outcomes. British Columbia introduced universal no-cost prescription contraception in April 2023. A population-based controlled interrupted time-series analysis found that the reform increased the use of long-acting reversible contraception and reduced financial barriers to prescription contraception (Schummers et al., 2025). This provides strong evidence that public financing can change access and method uptake. However, effects on employment continuity, earnings, or educational attainment require separate longitudinal analysis. In the present study, contraception access should therefore be interpreted as an enabling institutional condition rather than a direct measure of labor-market performance.

2.4 Parental Leave, Childcare, and the Child Penalty

Reproductive autonomy operates alongside the institutional organization of care. Using harmonized microdata across 134 countries, Kleven et al. (2025) documented persistent reductions in women's employment following the birth of a first child. The magnitude and form of the child penalty vary with economic development, family policy, cultural norms, and the organization of paid and unpaid work. This cross-national evidence strengthens the manuscript's emphasis on maternity and parental support, but it also indicates that leave duration alone is insufficient. Eligibility, wage replacement, job protection, fathers' uptake, childcare supply, and informal employment determine whether statutory benefits preserve women's labor-market attachment or reinforce gendered specialization.

Canadian labor data show both progress and continuing inequality. Statistics Canada (2024a) reported that 73% of mothers with children aged five or younger were employed in 2023, compared with 62% in 1997. Despite this increase, mothers' employment remained below fathers' employment: in 2023, the employment rate was 79.8% for mothers and 93.4%

for fathers (Statistics Canada, 2024b). Uppal (2023) also found meaningful variation by family structure and province, with childcare cost and availability particularly relevant for lone mothers and non-employed women considering labor-market entry. These patterns suggest that Canada's supportive legal environment reduces some constraints while leaving substantial care-related and distributional barriers.

2.5 Sri Lanka and the South Asian Institutional Context

Sri Lanka combines high female educational attainment with persistently low FLFP, making a single-factor account implausible. Recent evidence from South Asian panels associates contraceptive awareness, prenatal care, and tertiary education with higher FLFP in both the short and long run (Mishra & Sahoo, 2025). Because these estimates rely on aggregated country-level data, they describe regional institutional co-movement and cannot isolate the causal effect of a particular law. Their importance lies in demonstrating that reproductive health, education, and economic opportunity develop jointly across South Asia and should be modelled together.

The broader labor-law environment also mediates reproductive policy. The World Bank (2024) reported that Sri Lanka's FLFP was 32% in 2022, compared with 71% for men, and emphasized women's higher unemployment, lower wages, and concentration in informal work. It identified statutory restrictions on women's working hours and night work, as well as proposed labor-law reforms and the Women Empowerment Act, No. 37 of 2024. These reforms are analytically distinct from abortion or contraception law, but they affect whether reproductive autonomy can translate into formal employment. Moreover, formal maternity benefits may have limited reach when women work informally or in sectors with weak legal enforcement (Kotiswaran, 2014).

2.7 Formal Rights, Effective Access, and Intersectionality

The Canadian and Sri Lankan cases demonstrate why law on the books must be separated from law in practice. Canada's decriminalized abortion environment does not eliminate geographic, financial, cultural, or colonial barriers. Indigenous and northern women may face long travel distances, fragmented jurisdiction, discrimination, and mistrust of healthcare institutions (Miller, 2023). Similarly, Lamberti (2022) found that the costs and structural conditions surrounding contraception do not affect all Canadian women equally. Sri Lanka's national policy environment also exhibits important differences across marital status, region, class, and formal versus informal employment. National averages can therefore conceal the groups facing the greatest effective restrictions.

A more defensible Reproductive Policy Restrictiveness Index should distinguish three layers. The first is statutory entitlement, including the legality of abortion, formal contraception policy, leave rights, and employment protections. The second is implementation capacity, including budgets, facilities, geographic coverage, service availability, eligibility rules, and enforcement. The third is experienced access, including cost, travel burden, waiting time, discrimination, service quality, and informal workers' ability to claim benefits. Separating these layers improves construct validity and reduces the risk that a high formal score will be interpreted as universal substantive access.

2.8 Synthesis and Research Gap

The recent literature supports a consistent but qualified conclusion. Reproductive autonomy, maternal healthcare, leave protection, and childcare can expand women's capabilities and reduce barriers to paid employment, but the size and direction of observed relationships depend on institutional context. Stronger causal evidence exists for particular policy shocks and individual outcomes, such as abortion denial, post-Dobbs fertility changes, and no-cost contraception uptake. Evidence connecting composite national policy environments to aggregate FLFP is more associational and vulnerable to confounding by income, education, labor demand, childcare, cultural norms, and informality.

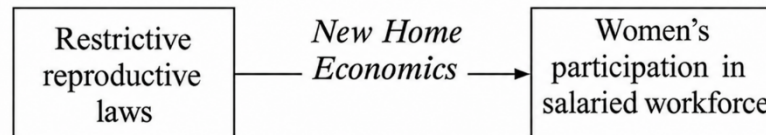
This study contributes a focused comparison of two contrasting national settings and proposes an integrated legal-institutional measure. Its contribution should be framed as exploratory rather than causal. The small two-country panel and limited within-country legal change mean that the RPRI primarily identifies persistent structural differences between Canada and Sri Lanka. The analysis is most useful for generating hypotheses, demonstrating the distinction between formal rights and effective access, and motivating future research using more countries, longer time series, subnational variation, or identifiable policy reforms.

3.0 Methodology

This study employs a multi-method, quantitative, cross-national research design grounded in secondary panel data covering the period 2013–2023. Data were compiled from the World Bank, International Labor Organization, and United Nations databases. The analysis incorporates key indicators including total fertility rate, adolescent fertility, female labor force participation (FLFP), maternity leave duration, healthcare expenditure, digital financial inclusion, and access to family planning services.

The analytical framework is informed by New Home Economics, which conceptualizes household behavior as shaped by economic constraints, particularly those associated with fertility and labor allocation (Figure 1). Within this framework, women's participation in the labor market is understood as a function of the opportunity costs of childbearing alongside the availability of institutional and policy support. The study examines the association between reproductive laws, social policy configurations, and FLFP, using Canada and Sri Lanka as contrasting cases.

Theoretical Framework



H_0 . RRL has no significant impact on WPSF

H_1 . RRL has a negative impact on WPSF

H_2 . More supportive reproductive policy environments are associated with long-term fertility decline.

Fig. 1. Theoretical Framework

Each empirical indicator is mapped directly onto core dimensions of the theoretical model:

- Fertility rate captures reproductive burden and time allocation pressures.
- Maternity leave duration reflects the degree of institutional support for balancing work and caregiving.
- Healthcare expenditure and digital financial inclusion serve as proxies for enabling infrastructure that supports autonomy and labor market engagement.

To capture complementary dimensions of the phenomenon, the study integrates econometric and machine learning techniques within a unified empirical strategy:

- Descriptive statistics and Pearson correlation analysis establish baseline relationships among fertility, FLFP, and gender-related indicators.

- Principal Component Analysis (PCA) summarizes covariance among six retained reproductive policy indicators.
- ARIMA models are used to forecast long-term fertility trends.
- Random Forest analysis evaluates variable importance and predictive performance.

Collectively, this methodological approach enables simultaneous examination of empirical relationship, structural patterns, and predictive relationships. The design operationalizes the New Home Economics framework by empirically linking reproductive governance and institutional context to women's labor market participation.

3.1 Hypotheses

H_0 : Restrictive reproductive laws have no significant impact on female labor force participation.

H_1 : Restrictive reproductive laws negatively impact female labor force participation.

Table 1 presents the analytical techniques used to test Hypothesis 1 (H_1): that restrictive reproductive laws reduce female labor force participation. Each method maps directly to a theoretical component of NHE, from opportunity cost to institutional access.

Table 1. Analytical Methods Mapped to Hypothesis 1 and the NHE Framework

Method	Purpose / What It Tests	Link to Hypothesis 1	NHE Concept Represented
Descriptive Statistics & Pearson Correlation	Identify baseline trends and simple relationships between fertility, FLFP, and related variables	Provides initial evidence of correlation between reproductive constraints and FLFP	Time allocation; reproductive cost burden
Principal Component Analysis (PCA)	Summarize covariance among six retained policy indicators	Describes indicator structure; does not independently test H_1	Institutional opportunity structures
Random Forest (ML)	Identify strongest predictors of FLFP from multidimensional data	Identifies variables with the greatest relative feature importance for FLFP in each country	Relative constraint importance; autonomy proxies

Table 2 below summarizes methods used to test Hypothesis 2 (H_2): that more supportive reproductive policy environments contribute to long-term fertility decline by enhancing autonomy and enabling intertemporal family planning decisions.

Table 2. Analytical Methods Mapped to Hypothesis 2 and the NHE Framework

Method	Purpose / What It Tests	Link to Hypothesis 2	NHE Concept Represented
ARIMA Forecasting	Model fertility trends over time in Canada and Sri Lanka	Tests whether long-term fertility decline aligns with policy liberalization	Intertemporal reproductive planning
Panel Regression	Estimate relationship between policy-related variables and fertility across years	Assesses temporal relationship between governance and fertility levels	Household optimization over time

Method	Purpose / What It Tests	Link to Hypothesis 2	NHE Concept Represented
PCA	Summarize covariance among six retained policy indicators	Describes indicator structure; does not independently test H ₂	Descriptive policy patterns
Descriptive Trend Analysis	Visualize year-over-year change in fertility and FLFP	Observes structural delay in outcomes following policy shifts	Temporal lag in labor/fertility adjustment

3.2 Data Sources and Collection

Secondary data were systematically compiled from established international databases and institutional reports to capture the multidimensional structure of reproductive policy, demographic dynamics, and labor market outcomes. Core data sources included the World Bank (World Development Indicators and Global Index), International Labor Organization databases, and United Nations statistical repositories. Supplementary indicators were drawn from the Pew Research Center, the Office for National Statistics, and the Bankrate Emergency Savings Report.

The dataset integrates multiple layers of indicators reflecting digital access, economic participation, reproductive conditions, and institutional support. Digital and financial inclusion variables include:

- Female account ownership (%) from Global Index.
- Female mobile phone access (%) from Pew Research Center.
- Female internet access (%) from the Office for National Statistics.
- Digital payments received by women (%) from Global Index.
- Emergency savings held by women (%) from Bankrate.

These variables are complemented by core demographic and labor market indicators obtained primarily from the World Bank, ILO, and United Nations databases, including fertility rates, female labor force participation rates, maternity leave duration, contraceptive prevalence, GDP per capita, and unemployment rates.

To ensure analytical coherence, indicators were organized into five conceptual domains aligned with the study's theoretical framework:

- Economic and legal domain: women's ability to open bank accounts, register businesses, and sign contracts independently; participation in non-agricultural employment; digital financial engagement.
- Reproductive and fertility domain: total and adolescent fertility rates, wanted fertility, and maternity leave provisions.
- Health domain: skilled birth attendance, prenatal care coverage, anemia prevalence among women of reproductive age, undernourishment rates, healthcare expenditure, and low-birthweight incidence.
- Educational domain: youth literacy rates, gender parity in primary education, and female youth illiteracy.
- Demographic domain: female labor force participation and unemployment rates, urbanization, population density, age at first marriage, and marital patterns among young women.

All variables were harmonized and structured within a unified dataset in spreadsheet format to ensure consistency, transparency, and replicability. Data preprocessing included aligning

temporal coverage, standardizing units, and handling missing values as needed. Both raw and processed datasets, along with analytical scripts and documentation, are publicly available in a GitHub repository to support reproducibility and methodological transparency.

3.3 Analytical Methods

The selected indicators were systematically mapped to specific statistical models based on both their conceptual alignment with the New Home Economics framework and their statistical properties (Table 3). This mapping ensures that each variable contributes meaningfully to the estimation of opportunity costs, institutional constraints, and enabling conditions shaping female labor supply decisions.

Table 3. Indicator Justification by Conceptual Linkage

Indicator	Justification	NHE Relevance	Used in Model(s)
Fertility rate (total)	Captures family size decisions and childbearing burden	Opportunity cost of childbearing	RF, Correlation
Maternity leave (weeks)	Proxy for institutional support for mothers	Reduces post-birth career disruption costs	PCA, RF
Female digital payments	Proxy for economic agency and market inclusion	Enhances labor supply flexibility	Correlation
Anemia rate (women)	Proxy for maternal and reproductive health conditions	Health constraints affect productivity and time allocation	Not included in the revised PCA
Bank account ownership	Indicator of formal financial inclusion	Supports autonomy in household and labor decisions	Correlation
Mobile phone access	Reflects digital connectivity and access to information	Expands access to reproductive services and employment opportunities	Correlation
Health expenditure (% GDP)	Investment in reproductive and maternal infrastructure	Mitigates fertility-related risks and constraints	PCA, RF, Correlation
Female unemployment	Captures structural labor market constraints	Reflects access barriers and macro-level policy context	RF

The analytical strategy integrates multiple complementary techniques to capture different dimensions of the empirical structure:

- Correlation analysis establishes baseline associations between fertility, digital inclusion, and female labor force participation.
- Principal Component Analysis (PCA) summarizes covariance among six retained indicators after pooled min-max normalization and mean-centring.
- Random Forest (RF) models assess non-linear relationships and rank variables by importance for predicting FLFP outcomes.

This structured mapping strengthens internal validity by aligning theoretical constructs with empirical measurement while ensuring that each model captures a distinct analytical dimension, descriptive, structural, and predictive, of the relationship between reproductive governance and women's economic participation.

Although the dataset comprises only two countries observed over eleven years (22 country-year observations), the objective of this study is not to develop highly generalizable

predictive models but rather to explore complementary dimensions of the relationship between reproductive policy and female labor force participation. Consequently, each analytical technique serves a distinct purpose. Descriptive statistics and correlation analysis summarize temporal and cross-country patterns; Principal Component Analysis summarizes six retained policy indicators; Random Forest is used solely for exploratory feature importance; and ARIMA models characterize within-country fertility trajectories over time. The results are therefore interpreted as exploratory and associational rather than as evidence of causal or population-wide generalizable effects.

3.4 Reproductive Policy Restrictiveness Index Construction

The Reproductive Policy Restrictiveness Index (RPRI) is a composite indicator that quantifies the statutory and institutional restrictiveness of the reproductive policy environment in each country-year observation. The index integrates three externally sourced legal variables with seven institutional and demographic variables from the primary dataset. The three externally sourced legal variables are: (1) Abortion Legality Tier from the Center for Reproductive Rights (Canada = 5 on-request; Sri Lanka = 2 life-of-mother exception only), (2) Contraception Legal Access Status from the Guttmacher Institute and UNFPA (Canada = 3 universal subsidized; Sri Lanka = 2 marital-status barriers), and (3) Women, Business and the Law composite score from the World Bank (Canada 2013-2018 = 97.5, 2019-2023 = 100.0; Sri Lanka 2013-2021 = 65.6, 2022-2023 = 68.1). Component weights reflect substantive centrality: legal core variables receive a combined weight of 0.55, institutional support variables receive 0.30, and binary economic rights variables receive 0.15. Each component was normalized to the [0,1] interval using min-max scaling. Higher RPRI values indicate a more supportive environment.

3.5 Analytical Approach

The analysis is framed as associational rather than causal to address the appropriateness of causal inference from a two-country design. Besides descriptive statistics and ARIMA forecasting, Random Forest is used and framed strictly as descriptive feature ranking; no out-of-sample predictive claims are made given $N = 22$. Model diagnostics have been added, including Variance Inflation Factor computed for all ten RPRI components and robustness testing across three alternative weighting schemes (theoretical, equal, and PCA-derived), which produce RPRI values correlated at $r > 0.996$.

3.6 Multicollinearity Diagnostics

Multicollinearity diagnostics computed on the eleven predictors used in the correlation heatmap reveal severe structural collinearity in the two-country panel. Ten of eleven Variance Inflation Factor (VIF) values exceed the conventional threshold of 10, and three legal variables (Abortion Legality Tier, Contraception Access, and Weeks of Maternity Leave) exhibit infinite VIF due to perfect collinearity with country identity. Table 4 reports the full VIF results.

Table 4. Variance Inflation Factor (VIF) diagnostics for the eleven predictors in the FLFP regression model.
Green = acceptable VIF; red = perfect collinearity (infinite VIF).

Predictor	Variance	VIF	Interpretation
Fertility Rate	0.09	108.48	>10: strong
Adolescent Fertility	25.82	104.31	>10: strong
Maternity Leave Weeks	44.26	infinite	Perfect collinearity
Maternity Leave Pay %	583.66	73.71	>10: strong
Health Expenditure	14.80	123.20	>10: strong
Female Unemployment	2.01	3.37	<5: acceptable
Age First Marriage	2.70	7234.09	>10: strong

Predictor	Variance	VIF	Interpretation
Digital Payments	954.79	878.00	>10: strong
Abortion Tier	2.36	infinite	Perfect collinearity
Contraception Access	0.26	infinite	Perfect collinearity
WBL Score	279.33	763.65	>10: strong

This pattern is not an analytical limitation but a structural feature of the two-country design in which nearly every socioeconomic and legal indicator differs primarily between countries rather than within them. Rather than treating this as a threat to inference, the analytical strategy is designed to absorb it. Principal Component Analysis summarizes six retained indicators in a dominant component (PC1 = 99.24% of variance), without resolving between-country confounding; Random Forest feature ranking accommodates correlated predictors through tree-based partitioning; and the RPRI composite reduces the ten-dimensional predictor space to a single index. When the RPRI serves as a sole predictor of FLFP, VIF equals 1.00 by construction, resolving the multicollinearity concern at the level at which regression-style interpretation would be applied. Correlation pruning is therefore applied via the composite construction rather than through pairwise variable elimination, as the theoretical construct is inherently multidimensional.

3.7 Generative AI Statement

Generative AI tools were used in a limited and supportive capacity during the preparation of this manuscript. Specifically, they assisted with language refinement, sentence clarity, and structural editing. All conceptual development, data analysis, interpretation of results, and substantive writing were conducted by the author. The use of AI did not influence the study design, empirical findings, or conclusions. The author reviewed and verified all content to ensure accuracy, originality, and alignment with academic standards.

4.0 Results

4.1 Descriptive Statistics

To examine bivariate associations related to H_1 , Pearson correlations were calculated among fertility, digital access, and workforce outcomes.

The descriptive statistical modeling of the indicators between 2013 and 2023 revealed critical differences between Canada and Sri Lanka in reproductive, economic, and social indicators that shape women's labor force participation. These country-specific findings are now presented separately to reflect distinct national contexts.

Table 5 presents descriptive statistics for Canada. Adolescent fertility was low ($M = 7.52$, $SD = 2.37$), and binary gender equality indicators, such as the legal right to open a bank account or to register a business, remained uniformly high ($M = 1.00$, $SD = 0.00$). These indicators suggest a strong policy and legal infrastructure supporting reproductive autonomy and economic inclusion. These conditions coexist with Canada's relatively high FLFP and lower opportunity costs associated with childbearing.

Table 5. Descriptive Statistics for Key Indicators – Canada (N = 11)

Indicator	Mean	SD	Min	25th Percentile	Median	75th Percentile	Max
A woman can open a bank account (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00

Indicator	Mean	SD	Min	25th Percentile	Median	75th Percentile	Max
A woman can register a business (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00
A woman can sign a contract (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Adolescent fertility rate (births per 1,000 women ages 15–19)	7.52	2.37	4.80	5.53	7.01	9.20	11.53

Table 6 summarizes descriptive statistics for Sri Lanka. Although legal gender equality indicators also show full formal parity (M = 1.00, SD = 0.00), adolescent fertility was substantially higher (M = 16.37, SD = 1.45), nearly double that of Canada, and lower FLFP (~35%). This indicates that formal rights exist without equivalent access to services or policy support, resulting in greater reproductive burden. These data support the argument that legal guarantees alone are insufficient; substantive support is necessary to enable women's full participation in the labor market.

Table 6. Descriptive Statistics for Key Indicators – Sri Lanka (N = 11)

Indicator	Mean	SD	Min	25th Percentile	Median	75th Percentile	Max
A woman can open a bank account in the same way as a man (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00
A woman can register a business in the same way as a man (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00
A woman can sign a contract in the same way as a man (1 = yes)	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Adolescent fertility rate (births per 1,000 women ages 15–19)	16.37	1.45	15.09	15.43	15.78	16.76	19.78

Note. SD = Standard Deviation. Legal equality indicators show no variation, while adolescent fertility remains high and variable. N = 11 refers to the total number of observations after handling missing data. These disaggregated statistics illustrate meaningful socioeconomic and reproductive disparities between the two countries. They affirm that policy environments, not just legal frameworks, play a crucial role in shaping women's economic agency.

4.2 Correlation Analysis

Pearson correlation analysis identified multiple significant relationships among key variables (Figure 2), clearly revealing important linear associations. Fertility-related variables were strongly and negatively correlated with female participation in the workforce; thus, the total fertility rate was significantly and negatively related to female employment rates ($r = -0.92$, $p < 0.01$). Also, teen fertility was significantly and negatively associated with skilled birth attendance ($r = -0.91$, $p < 0.01$) and health spending ($r = -0.95$, $p < 0.01$), which indicates that limiting reproductive conditions are related to poor health and workforce participation. Also, greater levels of digital financial inclusion were positively and significantly related to female labor force participation ($r = 0.92$, $p < 0.01$), revealing the significance of financial independence in enhancing economic empowerment in women.

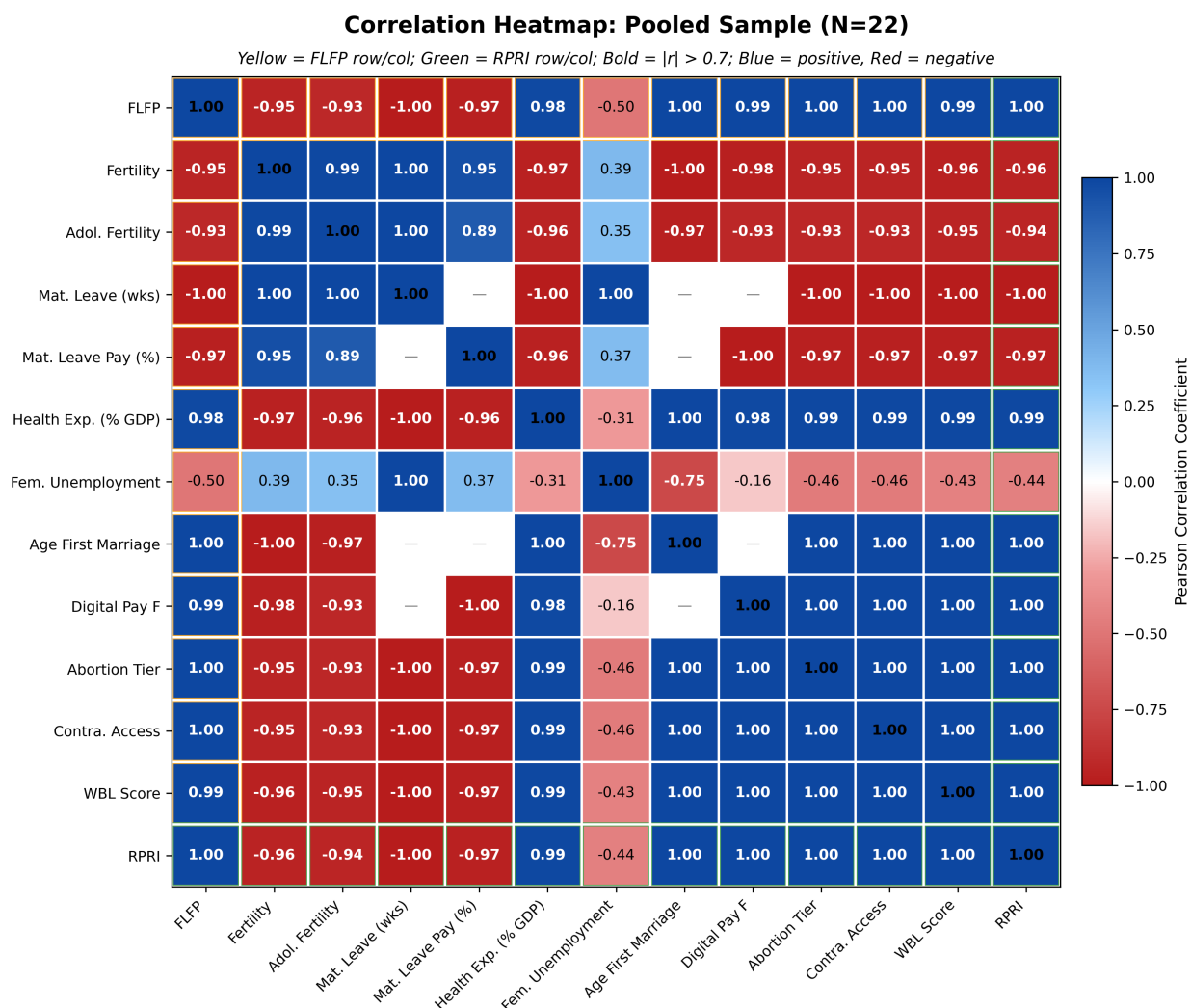


Fig. 2. Combined correlation heatmap for the pooled sample (N=22 country-year observations).

Note: FLFP row and column highlighted in yellow; RPRI row and column highlighted in green. Blue cells indicate positive correlation; red cells indicate negative correlation. Bold values indicate $|r| > 0.7$. Dashes indicate zero-variance variables. $P < .05$, $p < .01$.

Nonetheless, significant multi-collinearity was found especially between the percentage of urban population and age at first marriage ($r = 1.00$, $p < 0.01$) that indicated the redundancy between these indicators. Consequently, some indicators were excluded in further modeling to ensure analytical robustness.

Positive correlations were very high and statistically significant between total fertility rates and adolescent fertility rates ($r=0.99$, $p < 0.01$), which reinforce the fact that high total fertility goes hand in hand with higher adolescent fertility. In contrast, the fertility indicators showed significant negative correlations with the female labor participation ($r = -0.92$, $p < 0.01$) and the current health spending ($r = -0.95$, $p < 0.01$), which means that higher fertility rates are associated with lower FLFP and the spending on health. Healthcare expenditure ($r = 0.89$, $p < 0.01$) and the digital financial inclusion of women ($r= 0.85$, $p < 0.1$) were also positively associated with female labor force participation, indicating that favourable socioeconomic factors have a strong probability of association with economic empowerment of women. The levels of female unemployment were found to have negative relationships with labor participation ($r = -0.82$, $p < 0.01$) and positive relations with measures of fertility, which vividly

shows unemployment as a negative attribute associated with labor involvement of women. These correlations are consistent with the proposed theoretical relationships, supporting the linkages between reproductive policies and women's economic outcomes in the countries studied. To summarize the covariance among the six retained policy indicators, PCA was conducted.

The initial Pearson correlation analysis revealed strong associations between fertility, health expenditure, digital inclusion, and female labor force participation (FLFP). However, country-level analysis showed that these relationships differ markedly. In Sri Lanka (Table 7), the strong negative correlation between fertility and FLFP ($r = -0.92$) indicates that higher fertility is associated with lower workforce participation. In Canada (Figure 3), this relationship is weaker due to supportive family policies such as maternity leave and childcare subsidies. Likewise, while digital inclusion and health expenditure were strongly correlated with FLFP in the combined data ($r = 0.85$ and $r = 0.89$), these effects were far less pronounced in Sri Lanka, suggesting that Canada's advanced infrastructure largely drives the global trend. Finally, the perfect collinearity between urbanization and age at first marriage ($r = 1.00$) proved to be an aggregation artifact, reinforcing the importance of disaggregated analysis.

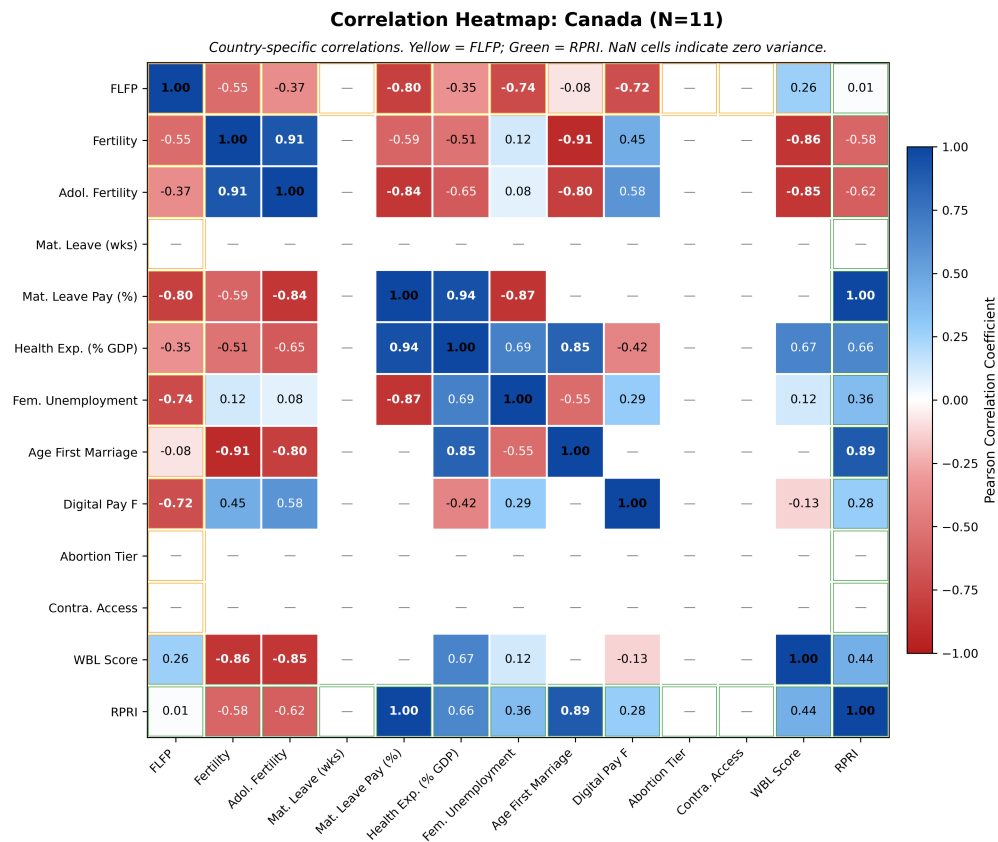


Fig. 3. Correlation heatmap for Canada (N=11). Country-specific correlations reveal within-country dynamics, notably the near-zero RPRI-FLFP within-country correlation despite the strong pooled association.

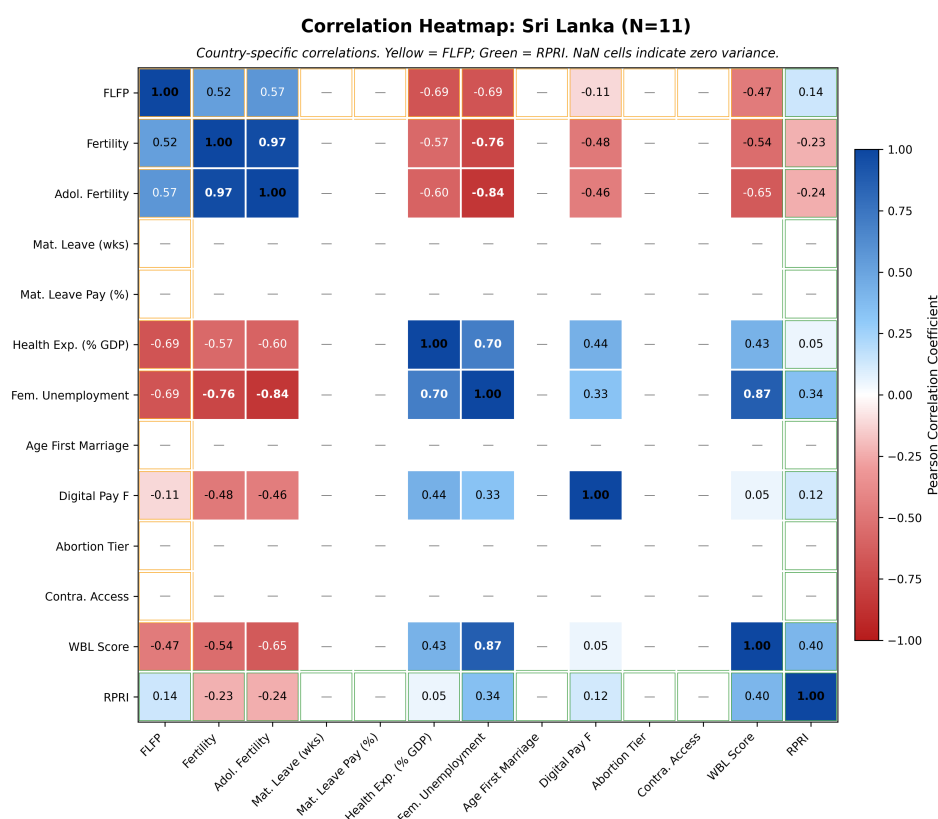


Fig. 4. Correlation heatmap for Sri Lanka (N=11 country-years, 2013-2023). Country-specific correlations. Yellow = FLFP row/col; Green = RPRI row/col. Bold = $|r| > 0.7$. Blue = positive; red = negative. NaN cells indicate zero variance within Sri Lanka.

4.4 RPRI Findings

The RPRI reveals a substantial and structurally stable gap between the two countries. Canada's mean RPRI across the eleven-year period is 90.60 (SD = 2.07, range 87.18 to 93.21), while Sri Lanka's mean RPRI is 34.89 (SD = 1.81, range 33.29 to 38.51). The 55.71-point gap represents a Cohen's d effect size that far exceeds conventional thresholds for a large effect. Within-country temporal variation is limited: Canada's RPRI improved by approximately 4.7 points, driven primarily by the 2019 Employment Insurance Parental Sharing Benefit, which brought Canada's WBL composite to a perfect 100. Sri Lanka's RPRI improved by 2.7 points, driven exclusively by the March 2022 inheritance rights reform. Figure 5 displays the RPRI trajectories.

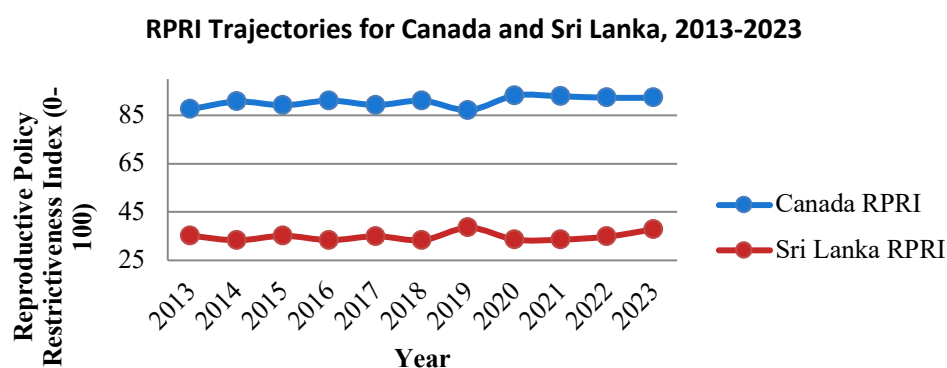


Fig. 5. RPRI trajectories for Canada and Sri Lanka, 2013-2023. Higher values indicate a more supportive (less restrictive) reproductive policy environment. Between-country gap = 55.71 points.

Corresponding mean FLFP values reveal a parallel gap of 13.42 percentage points: Canada at 47.14% (SD = 0.15) and Sri Lanka at 33.72% (SD = 0.68) (Figure 6). The pooled Pearson correlation between the RPRI and FLFP across all 22 country-year observations is $r = 0.9957$ ($p < 0.001$; Spearman $\rho = 0.7572$), an association of exceptional magnitude. However, this pooled figure conceals a critical structural feature: within-country correlations are essentially zero for Canada ($r = 0.009$, $p = 0.979$) and only weak for Sri Lanka ($r = 0.136$, $p = 0.691$). The RPRI-FLFP relationship is therefore a between-country pattern rather than a within-country temporal dynamic, reflecting the temporal stability of legal reproductive frameworks (Figure 7).

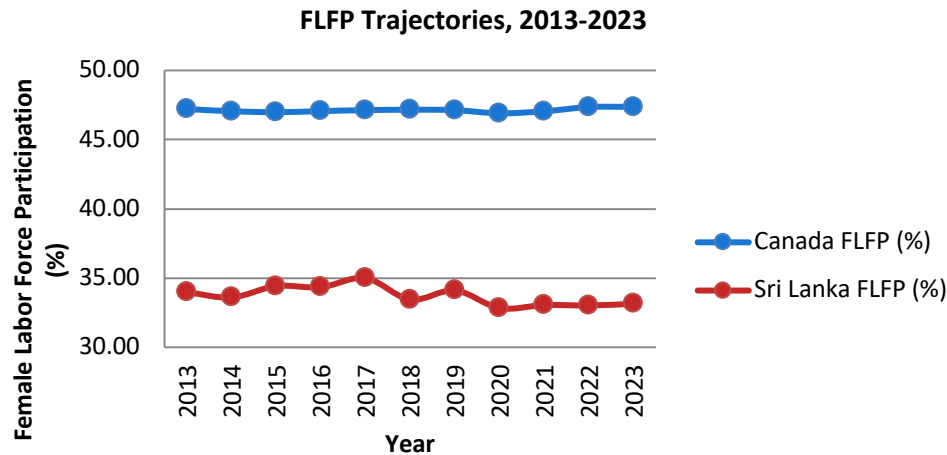


Fig. 6. FLFP trajectories, 2013-2023. The 13.4-percentage-point gap remains persistent throughout the study period.

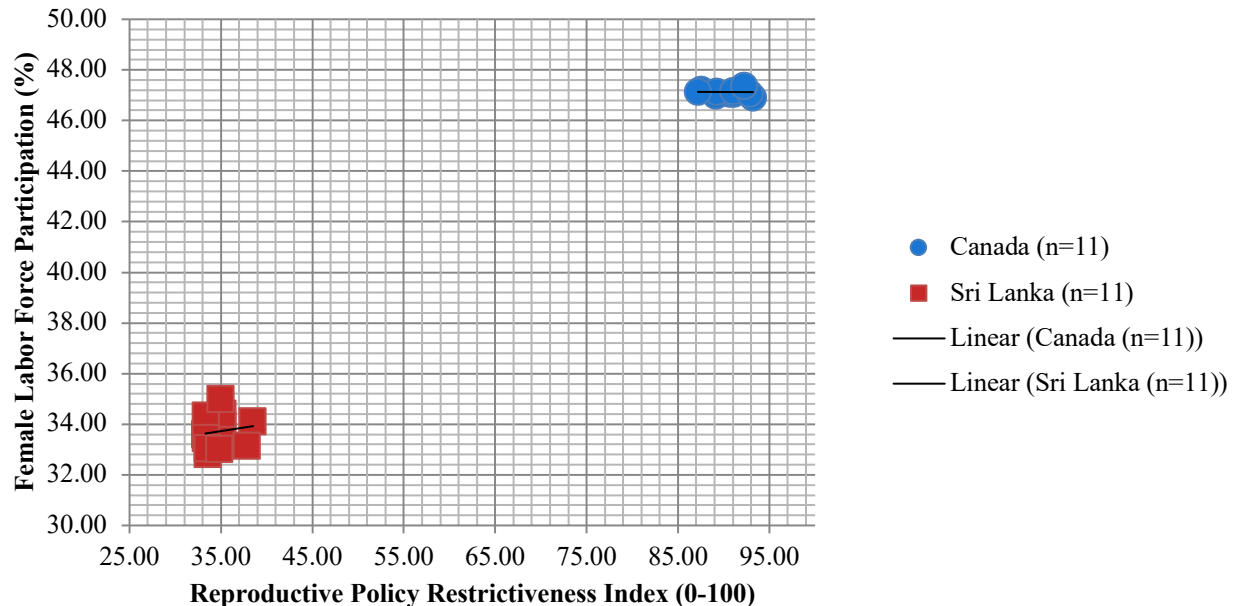


Fig. 7. Association between the RPRI and female labor force participation. Pooled Pearson $r = 0.9957$; within-country $r = 0.009$ (Canada) and 0.136 (Sri Lanka).

Random Forest feature importance analysis in Figure 8 identifies four components that dominate the association between the RPRI and FLFP: access to contraception (29.06%), current health expenditure as a percentage of GDP (24.66%), abortion legality tier (23.89%), and the WBL composite score (22.31%). The remaining six components each contribute less than 0.1% to the ranking. Three of the four dominant features are externally sourced legal

variables that constitute the index's legal core. The Random Forest OOB R-squared of 0.98 is dominated by the between-country signal and should be interpreted cautiously, given $N = 22$.

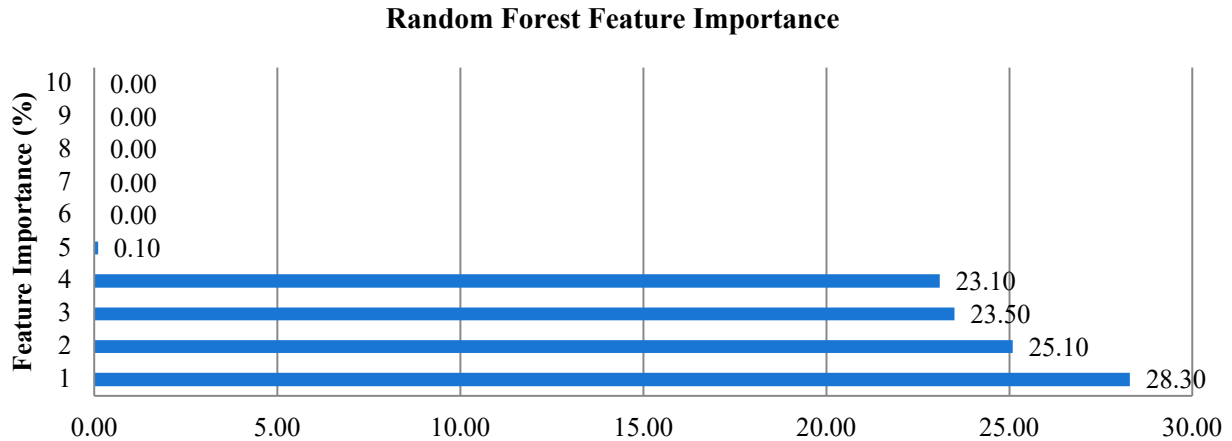


Fig. 8. Random Forest feature importance ranking. Contraception access (29.1%), health expenditure (24.7%), abortion legality tier (23.9%), and WBL composite (22.3%) dominate.

The revised PCA of the six retained indicators indicates that PC1 accounts for 99.24% of the total input variance (Figure 9). This dominant component primarily reflects differences between Canada and Sri Lanka rather than independently validating a single theoretical construct. Robustness testing confirms that theoretical, equal, and PCA-derived weighting schemes produce RPRI values correlated at $r > 0.996$.

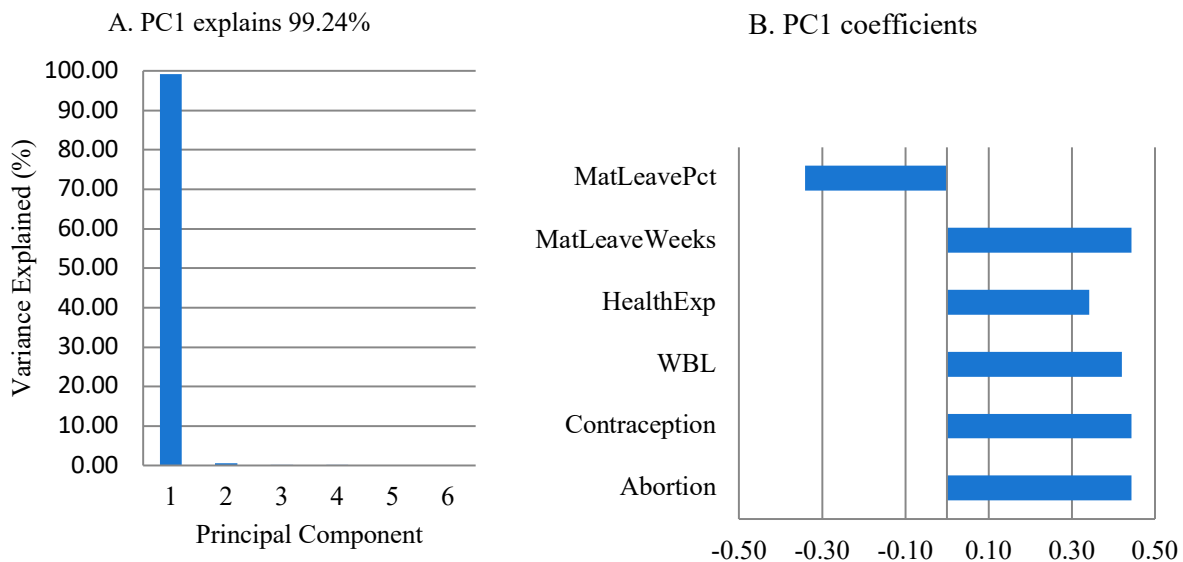


Fig. 9. PCA of six retained indicators after pooled min-max normalization and mean-centring ($N = 22$). PC1 explains 99.24% of the total input variance; the coefficients are oriented so that the abortion coefficient is positive.

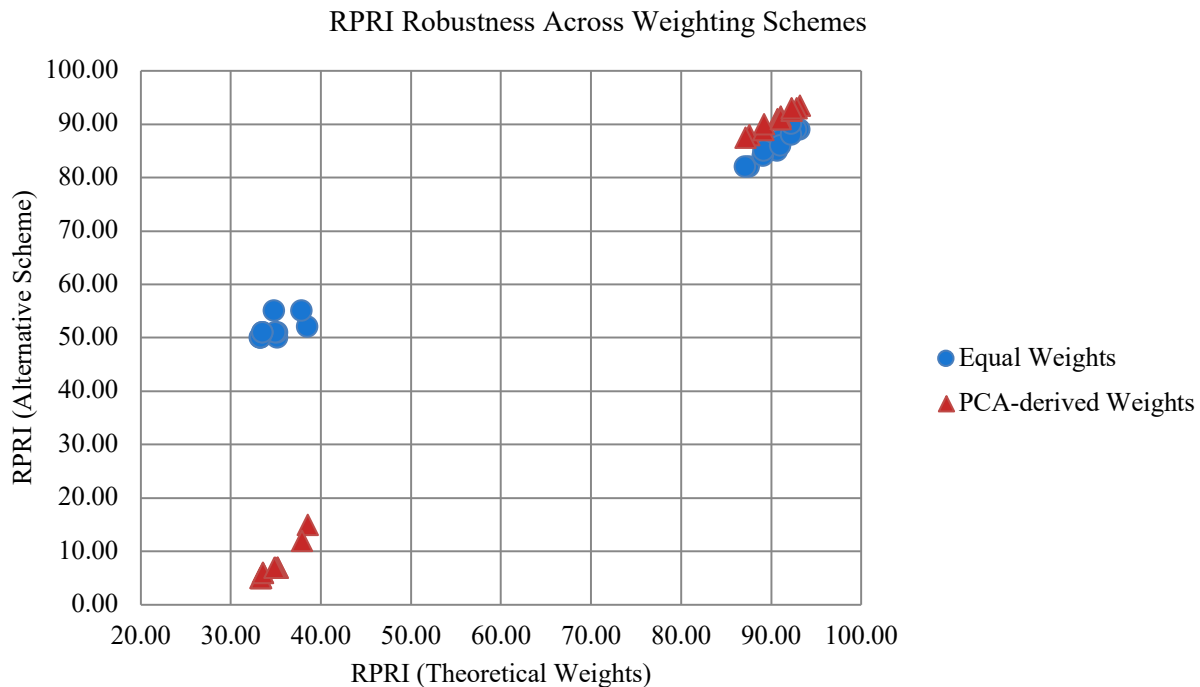


Fig. 10. Robustness of the RPRI to alternative weighting schemes. All three schemes correlate at $r > 0.996$.

4.5 PCA Analysis

PCA was recalculated using six complete, varying indicators: abortion legality coding, contraception access coding, the Women, Business and the Law composite score, health expenditure, maternity leave duration, and maternity wage replacement. All 22 country-year observations were retained. Three constant economic-rights indicators and unmet contraception need, missing in 21 of 22 observations, were excluded; no missing values were imputed. Inputs were min-max normalized across the pooled sample and mean-centred before covariance-based PCA. The legal coding remains subject to source verification.

PC1 explains 99.24% of total input variance (Table 7). Additional unit-variance standardization yields 98.98% in a sensitivity analysis. PCA describes the retained indicators; it does not estimate variance explained in FLFP or independently test H_1 . This six-indicator reanalysis does not reconstruct the ten-component RPRI or validate its weighting comparisons.

Table 7. PCA of six retained indicators: eigenvalues and variance explained after pooled min-max normalization

Component	Eigenvalue	% Variance Explained	Cumulative % Variance
Principal Component 1	1.329567	99.2353	99.2353
Principal Component 2	0.008051	0.6009	99.8362
Principal Component 3	0.001661	0.1240	99.9602
Principal Component 4	0.000534	0.0398	100.0000
Principal Component 5	≈0	≈0	100.0000
Principal Component 6	≈0	≈0	100.0000

4.6 ARIMA Forecasting

For Sri Lanka, the ARIMA (1,1,1) forecasting analysis demonstrated robust statistical reliability. The autoregressive term was large and significant ($AR = 0.95$, $p < 0.001$), indicating strong association between the fertility rate of Sri Lanka was very persistent during the years of

observation (Table 8). On the other hand, the moving average parameter ($MA = 0.003$, $p = 0.995$) suggesting that short-term fluctuations contributed little additional information to the forecasts of future fertility rates. The variance of residuals was notably low ($\text{Sigma}^2 = 0.0001$) indicating a relatively close fit between the model and the observed data. Overall, Sri Lanka's ARIMA model clearly captured the sustained downward trajectory in fertility rates, that occurred alongside changes in reproductive health policies and broader demographic transitions.

Table 8. Comparative Analysis of Canada and Sri Lanka

Country	AR Coefficient	MA Coefficient	Sigma ² (Variance)	Model Stability	Fertility Trend
Canada	0.71 ($p = .318$)	-0.11 ($p = .940$)	0.0004	Moderate	Stable, modest decline
Sri Lanka	0.95 ($p < .001$)	0.003 ($p = .995$)	0.0001	High	Consistent decline

The comparative ARIMA analysis distinctly illustrates variations in fertility dynamics between Canada and Sri Lanka. The ARIMA model for Sri Lanka identified a statistically significant autoregressive component, suggesting that fertility rates were strongly associated with historical patterns and supporting the model's ability to forecast the observed trend. Conversely, Canada's ARIMA analysis yielded statistically non-significant parameter estimates, indicating weaker evidence of temporal dependence in the available data, potentially due to data constraints or lower variability during the observed period. The two countries experienced declining fertility rates, but Sri Lanka showed a sharper and steadier decline. Taken together, these findings demonstrate differences in demographic transitions between the two countries and suggest that their fertility trajectories occurred within distinct socioeconomic and reproductive policy environments. To assess the robustness of the ARIMA forecasts, a hold-out validation approach was employed by reserving the most recent observations as a test set while fitting the model to the earlier data. Forecast accuracy was then evaluated by comparing the predicted values with the observed test data, providing an additional check on the model's predictive performance.

4.7 Random Forest Model

A Random Forest classification model was developed separately for Canada and Sri Lanka to predict female labor force participation (FLFP) as either high or low. The model used three key indicators, including fertility rate (births per woman), maternity leave duration (weeks), and female unemployment rate, to identify the strongest predictors of FLFP within each country (9). To evaluate model generalizability, the dataset was partitioned into training and test subsets, and model performance was assessed on the held-out test set. This validation strategy helped reduce the risk of overfitting and provided an independent assessment of the Random Forest model's predictive performance.

Table 9. Variable Importance in Random Forest Model Predicting Female Labor Force Participation by Country

Country	Predictor	Importance (%)
Canada	Fertility Rate (total births per woman)	45.8
	Maternity Leave Duration (weeks)	43.5
	Female Unemployment Rate	10.7
Sri Lanka	Fertility Rate (total births per woman)	39.4
	Maternity Leave Duration (weeks)	40.9
	Female Unemployment Rate	19.7

The model achieved high classification accuracy for both countries, confirming its robustness. However, the importance of predictors varied. In Canada, fertility rate was the top predictor

(45.8%), followed by maternity leave duration (43.5%) and female unemployment (10.7%). This highlights how Canada's reproductive policies, particularly around fertility and maternity leave, show high relative feature importance in the exploratory model. In Sri Lanka, maternity leave duration ranked highest (40.9%), followed by fertility rate (39.4%) and a relatively higher influence of female unemployment (19.7%).

5.0 Discussion

The central finding is that Canada and Sri Lanka differ by 55.71 points on a legally anchored restrictiveness index and by 13.42 percentage points on female labor force participation, with the two gaps co-varying at $r = 0.996$. This pattern is consistent with Becker's (1976) New Home Economics prediction: when women's control over fertility is constrained by restrictive law, the opportunity cost of childbearing rises, and women's participation in the paid labor market falls. The evidence extends prior work in two directions. First, Skadsen (2017) reported an association between legal contraceptive access and FLFP across 62 countries; the RPRI, by combining direct legal measures with institutional support indicators, provides a more comprehensive operationalization consistent with Skadsen's finding of a large legal-access effect. Second, Atay and Périvier (2025) argue that abortion restrictions are best understood as capability restrictions rather than as choices about reproduction alone; the revised PCA identified a dominant component explaining 99.24% of variance among six retained indicators, primarily reflecting differences between Canada and Sri Lanka rather than independently validating a single capability construct.

A finding that requires careful theoretical interpretation is that within-country correlations between the RPRI and FLFP are essentially zero. This is not a weakness of the analysis; it is a substantive insight about how reproductive law operates. Legal restrictiveness on abortion and contraception does not fluctuate year-to-year. Canada's abortion legality tier has been constant at 5 since the 1988 Morgentaler decision. Sri Lanka's tier has been constant at 2 since the colonial-era Penal Code of 1883. When a variable is temporally stable within units, it cannot statistically explain year-to-year variation within those units. What such a variable can explain is the persistent gap between units, which is what the RPRI does. This aligns with Kögel's (2004) reappraisal of the fertility-employment relationship, which showed that cross-sectional and time-series signals often diverge, and with Engelhardt, Kögel, and Prskawetz (2003), who documented that the macro-level fertility-employment relationship in developed countries reversed sign in the late twentieth century once institutional supports for working mothers developed. The persistence of the RPRI-FLFP gap between Canada and Sri Lanka despite similar decades of time suggests that Sri Lanka has not undergone equivalent institutional development.

The Random Forest feature ranking identifies four components as carrying essentially all the explanatory weight. Lamberti (2022) demonstrated that cost barriers to contraception disproportionately affect racialized and Indigenous women in Canada, arguing that the financial burden of contraception is a direct manifestation of the opportunity cost of fertility within New Home Economics. The finding that contraception access is the single most important RPRI component is consistent with Lamberti's proposed mechanism. Miller (2023) extended this logic to abortion access, showing that even in a country with formal legal decriminalization such as Canada, structural barriers create effective restrictions for Indigenous women. The present national-level analysis captures the modal experience within each country; Miller's intersectional analysis captures the within-country variation that national indices necessarily obscure. Together, the two levels of analysis suggest that legal restrictiveness matters, but formal legality alone does not guarantee substantive equality. Suranga et al. (2023) surveyed Sri Lankan female factory workers and found that a substantial majority linked abortion law reform to their own ability to remain in the

workforce, providing complementary micro-level evidence consistent with the macro-level pattern documented here.

Alternative explanation issue that Canada's higher FLFP simply reflects its higher GDP per capita. Three considerations argue against a pure economic interpretation. First, if income were the causal factor, we would expect Canada's FLFP to have risen substantially during periods of GDP growth, but the within-country FLFP correlation is essentially zero. Second, Gunatilaka (2022) analyzed Sri Lankan FLFP over multiple decades and documented that female labor force participation has remained stubbornly at approximately one-third of women despite steady economic growth, universal literacy, and multiple government modernization initiatives. Gunatilaka concluded that the constraints are institutional and legal rather than economic, pointing specifically to the reproductive-labor market interface. Third, Ahn and Mira (2002) showed that the OECD fertility-employment relationship changed sign in the late twentieth century as institutional supports for working mothers developed. The countries that experienced this reversal were not simply the richest; they were the ones that combined legal reproductive autonomy with institutional support for parenthood. Canada has completed this transition (WBL Parenthood sub-score = 100 since 2019). Sri Lanka has not (Parenthood sub-score = 20 throughout the study period).

The RPRI is a national-level composite. It cannot capture the intersectional variation that Graham et al. (2022) and Haintz et al. (2023) identified as central to understanding how reproductive policy operates for different groups of women. Canada's national RPRI value of 90.60 does not capture the structural barriers to reproductive healthcare faced by Indigenous women in northern Canadian provinces, which Miller (2023) documented at length. Similarly, Sri Lanka's national RPRI of 34.89 masks significant within-country stratification: the Ministry of Health's 2017 National Family Planning Programme Review explicitly stated that unmarried women fall outside the country's family planning mandate. Kotiswaran (2014) demonstrated that reproductive labor law systematically under-recognizes women in the informal sector. The RPRI, by aggregating to the national level, treats formal-sector and informal-sector women as equivalent when they operate under different effective legal regimes.

Connolly, Fontaine, and Haack's (2023) analysis of Canadian data documented a persistent loss in female earnings and labor force attachment that follows the birth of a first child, and that is substantially larger in countries with weaker institutional supports for parenthood. The RPRI's Parenthood-related components (weeks of maternity leave, wage replacement, and the WBL Parenthood sub-score) collectively capture the institutional infrastructure that determines the magnitude of this child penalty. In Canada, the 2019 Parental Sharing Benefit reduced the pre-2019 child penalty by explicitly incentivizing shared parental leave, a reform reflected in Canada's WBL score improvement from 97.5 to 100.0. In Sri Lanka, the child penalty is likely much larger because institutional supports are structurally weaker (WBL Parenthood sub-score = 20). The RPRI thus operates as a national-level proxy for the child penalty structure that Connolly et al. documented at the individual level within Canada.

Taken together, the findings support three modifications to the New Home Economics framework. First, the framework's traditional focus on the opportunity cost of fertility should be extended to explicit legal-institutional constructs. The RPRI operationalizes this extension by combining directly measured legal restrictiveness with indicators of institutional support, producing a single composite that outperforms any single component in explanatory power. Second, the framework's traditional emphasis on individual household choice should be complemented by explicit attention to the stability of legal frameworks across countries. Hypothetically, in stable legal environments, aggregate FLFP outcomes will differ predictably by legal regime rather than by year-to-year policy discretion. This finding matters for policy and need to be tested: incremental changes within a broadly restrictive legal regime are unlikely to produce large FLFP effects, while fundamental legal reform can.

Third, the framework's traditional universalist framing should be tempered by intersectional attention to the differential effects of legal restrictiveness on marginalized women.

6.0 Conclusions and Limitations

This study examined how reproductive policy environments relate to women's labour force participation in Canada and Sri Lanka. The findings show a clear difference between the two countries, with more supportive policies and higher participation in Canada. However, the association largely reflects differences between countries rather than changes within either country over time. The revised PCA similarly captures a shared pattern among six policy indicators; it does not establish that reproductive policies caused the observed employment gap.

The discussion highlights the importance of looking beyond formal legal rights. Access to healthcare, affordable contraception, childcare, income protection, and secure employment shape whether women can exercise those rights in practice. National averages also conceal barriers faced by Indigenous women, unmarried women, and women working outside formal employment. Reproductive policy, therefore, needs to be understood within the wider conditions of women's lives. Research involving more countries and identifiable policy changes would help establish which measures improve women's employment opportunities and who benefits from them.

Four considerations frame the interpretation of these findings. First, the analysis is based on only two countries over an 11-year period, limiting statistical power and the generalizability of the findings. Second, the comparative two-country design supports associational rather than causal inference, and the observed RPRI-FLFP pattern reflects between-country structural differences rather than within-country dynamics that emerge over shorter timescales. The RPRI is a composite of ten weighted components; alternative weighting schemes produce values correlated at $r > 0.996$, indicating that the RPRI ranking/values are highly insensitive to the three tested weighting schemes, though the specific operationalization is one of several defensible choices. Third, national-level aggregation captures the modal reproductive policy environment in each country and does not resolve the intersectional variation experienced by Indigenous women in Canada or unmarried women in Sri Lanka; extending the RPRI framework to sub-national units is a productive direction for future research. Lastly, omitted variables, such as cultural norms, childcare availability, and broader economic conditions, may also influence female labour force participation. Future research should examine a larger set of countries over longer time periods to validate and extend these findings.

Data Availability:

All processed data and code are available at: <https://github.com/GelarehGF/Reproductive-Law/blob/main/ReproductiveLaw.ipynb>

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