

Enhancing
Human Capital
through
Sexual and
Reproductive
Health
Investments and
Family Support
Policies in
Malaysia



This report identifies the pathways through which investments in sexual and reproductive health (SRH) contribute to the stock of human capital in Malaysia, and promote health, social and economic well-being within the country. It also undertakes a review of relevant literature and conducts empirical analyses aimed at assessing the magnitude of the returns associated with SRH investments. Results point to SRH investments being a plausible and cost-beneficial pathway to inclusively improve social welfare in Malaysia.



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RASHMI DAYALU

MADDALENA FERRANNA

EDA ALGUR

LIH YOONG TAN

NUR FAKHRINA AB RASHID

RASHA BAYOUMI

DAVID E. BLOOM

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Foreword

The right to sexual and reproductive health – to make decisions over one’s own body and future – is central to gender equality and empowerment, which in turn will accelerate attainment of the Sustainable Development Goals, and can accelerate progress towards meeting the objectives of the Twelfth Malaysia Plan (12MP).

Worldwide, multiple intersecting crises have compounded the risks and vulnerabilities facing women and girls. Nearly half of all pregnancies in the world are unintended.

There are substantive, demonstrated gains that could be met by securing women’s reproductive health and reproductive rights. In country after country, data and evidence consistently show that investing in sexual and reproductive health is smart economics which yields huge returns. Every additional dollar invested in family planning can save governments around the world costs for pregnancy-related and newborn care. Over time, this investment can yield health and economic benefits by helping girls stay in school and boosting women’s lifetime earnings potential – along with significant social and economic benefits for both individuals and countries. The leadership combination of women and men will make for a more peaceful world.

Yet, globally, investment is not matching the needs.

The United Nations Population Fund’s (UNFPA’s) Strategic Plan 2022–2025, aims to achieve universal access to sexual and reproductive health and reproductive rights and accelerate the implementation of the International Conference on Population and Development (ICPD) Programme of Action. In Malaysia, the UNFPA works closely with the Government of Malaysia towards this aim.

This study is the result of our substantive collaborative research partnership commissioned to the Harvard T.H. Chan School of Public Health to explore how human capital can be enhanced through sexual and reproductive health investments and family support policies in Malaysia.

The study estimates how investments in sexual and reproductive health and reproductive rights, integrated with childcare and family support policies, could increase the female labour force participation rate and socioeconomic well-being, accelerating Malaysia’s transition to high-income status. The study convincingly demonstrates that investing in age-appropriate sexuality education, voluntary rights-based family planning services and early detection of cervical cancer – paired with adequate family support policies, including childcare – will generate significant socioeconomic benefits in

Malaysia and build up the country's most valuable asset, its human capital.

The study reveals that these investments would lead to significant economic returns, even using conservative estimates for each Ringgit invested. These benefits stem from several social and economic domains, such as preventing morbidity and deaths while increasing workforce participation, particularly for women and girls. Furthermore, integrating family support policies with investment in rights-based family planning policies and programmes would increase Malaysia's female labour force participation. This is because the ability to attain the desired number, timing and spacing of births increases the likelihood that women will participate in the labour force both at the beginning of their careers and later in life. More generally, better family planning leads to higher female productivity and earnings, and contributes to women's empowerment.

The study additionally shows that, while in 2017, approximately one-tenth of female workers in the informal sector were unpaid family workers – a percentage almost double that of unpaid males – the percentage of women in the informal sector increased to 43.7 per cent in 2019, leaving them particularly vulnerable to income instability and a lack of health and social benefits during market shocks such as the COVID-19 pandemic. As foreseen in the newly launched 12MP, efforts will be undertaken to ensure the well-being of those in informal employment is included within the decent work agenda.

The 12MP proposes promising steps in this direction, including the tabling of a new law

that will mandate employers to offer more supportive social policies – including childcare facilities and other measures to increase female labour force participation – towards a prosperous Malaysia. Flexible working arrangements as well as expansion of minimum maternity leave and the provision of better childcare facilities are also considered.

Every girl and woman should be able to complete her education, pursue her dreams, and make a living that protects her from poverty and vulnerability.

The findings from the Harvard T.H. Chan School of Public Health have resulted in six policy recommendations for the consideration of the Malaysian Government. With their implementation, by 2025, there can be improved integration of sexual and reproductive health and reproductive rights – as well as prevention of and response to gender-based violence and other harmful practices – into universal health coverage-related policies and plans, and other relevant laws, policies, plans and accountability frameworks.

The study shows that investments in this direction are not only the right thing to do; they make sound economic sense. The investment case is strong. What we need now is the political will that will provide the impetus for targeted policies and adequate financing to transform women's and girls' lives, and the surrounding society, towards a prosperous Malaysia.

We sincerely hope the study recommendations will be instrumental in enhancing female human capital while promoting health, social and economic well-being for all.

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Abbreviations

AIDS	Acquired immunodeficiency syndrome	mCPR	Modern contraceptive prevalence rate
ASEAN	Association of Southeast Asian Nations	MMR	Maternal mortality ratio
B40	Bottom 40 per cent household income group	MOH	Ministry of Health
CEMD	Confidential enquiry into maternal deaths	MWFCD	Ministry of Women, Family and Community Development
CSE	Comprehensive sexuality education	OECD	Organisation for Economic Co-operation and Development
DALY	Disability-adjusted life year	PEERS	Pendidikan Kesihatan Reproduksi dan Sosial (Reproductive and Social Health Education)
DOSM	Department of Statistics Malaysia	RM	Malaysian ringgit
GDP	Gross domestic product	ROI	Return on investment
HIV	Human immunodeficiency virus	SRH	Sexual and reproductive health
HPV	Human papilloma virus	STI	Sexually transmitted infection
ICPD25	International Conference on Population and Development, 25th anniversary (Nairobi Summit)	TFR	Total fertility rate
IPI	Interpregnancy interval	UN	United Nations
IUD	Intra-uterine device	UNFPA	United Nations Population Fund
LFPR	Labour force participation rate	VSLY	Value of statistical life year
		WHO	World Health Organization

Glossary

Family Planning Effort Index. Long-standing measure quantifying the strength of national family planning programmes. It has been collected since 1972 and provides results across four key components: policies, services, evaluation and access.

Labour productivity gap. Sustained difference in measured output per worker (or gross domestic product per person employed) between one country and another. Productivity is a measure of the efficiency of factor inputs such as labour and capital.

Low birthweight (LBW). Baby who weighs less than 2,500 grams regardless of gestational age. LBW is further subdivided into very low birthweight (VLBW) for a baby weighing less than 1,500 grams and extremely low birthweight (ELBW) for a baby weighing less than 1,000 grams.

Maternal death or mortality. Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. These maternal deaths are divided into two categories: direct obstetric deaths and indirect obstetric deaths. The latter are deaths for which there was a pre-existing disease that was aggravated by the pregnancy.

Maternal mortality ratio (MMR). Number of maternal deaths during a given time period per 100,000 live births during the same time period (traditionally for a calendar year).

Maternal near-miss. When a woman nearly dies but survives a complication during pregnancy, childbirth or within 42 days of termination of pregnancy.

Middle-income trap. Economic development situation in which a country attains middle-income status (due to given advantages) and gets stuck at that level.

Preterm or premature baby. Baby born alive before 37 weeks of pregnancy are completed. There are subcategories of preterm birth, based on gestational age: extremely preterm (<28 weeks); very preterm (28 to <32 weeks); moderate to late preterm (32 to <37 weeks).

Return on investment (ROI). Metric used to assess the value of an intervention. The ROI measures the amount of (monetary) benefits of a particular intervention relative to the costs of the intervention itself. It is computed by dividing the return on an intervention by its costs.

Total fertility rate (TFR). Number of children who would be born per woman if she were to pass through the childbearing years bearing children according to a current schedule of age-specific fertility rates.



Executive Summary

Over the past 50 years, Malaysia has made significant progress as indicated by measures of economic growth, health outcomes and educational attainment, outpacing comparable countries in the East Asia and Pacific region. However, despite the country's remarkable human capital potential, Malaysia's transition to high-income status is impeded by relatively low female labour force participation rates and persistent income inequality. To sustainably revitalize economic growth in the short and long term, investments that leverage underutilized human capital potential in Malaysia must be prioritized, particularly for women. The need to address barriers to economic growth has lately gained special prominence due to the COVID-19 pandemic, which led to a 5.5 per cent contraction of Malaysia's gross domestic product (GDP) in 2020. Inclusive human capital investments pertaining to sexual and reproductive health and reproductive rights (SRH/RR), along with corresponding family support policies, can increase socioeconomic well-being across population strata, thereby sustainably accelerating Malaysia's transition to high-income status. The purpose of this report is to estimate the value of SRH/RR investments on human capital accumulation in Malaysia, and to provide recommendations for strategic SRH/RR and family support policies that promote inclusive socioeconomic well-being.

Methods

We focus on SRH/RR investments and family support policies as they relate to maternal health, family planning, human papillomavirus (HPV) vaccination and screening, comprehensive sexuality education (CSE), paid parental leave and childcare services. This report is organized into four main sections in which we discuss the current state of SRH/RR and family support policies in Malaysia (Section 2); present a general conceptual framework for the life course impacts of SRH/RR investment on human capital and socioeconomic well-being (Section 3); identify five main channels through which life course SRH/RR investments enhance human capital in Malaysia (Section 4); and conduct empirical analyses aimed at assessing the magnitude of the returns associated with SRH/RR investments in the Malaysian context (Section 5).

Results

CURRENT STATE OF SRH AND FAMILY SUPPORT POLICIES IN MALAYSIA

- Malaysia has made remarkable improvements in maternal health as measured by the maternal mortality ratio, coverage of antenatal care visits, and skilled birth attendance. However, maternal morbidity and mortality rates have stagnated over the past few decades, suggesting that

poor-quality maternal healthcare is emerging as a greater barrier than insufficient access.

- The modern contraceptive prevalence rate in Malaysia (34.3 per cent) is considerably lower than both the average in high-income countries (67 per cent) and the world average (54 per cent). It is possible that Malaysia's low rate contributes to greater uncertainty for couples regarding the timing and spacing of births – and therefore reproduction beyond the first or second child is avoided through non-contraceptive methods such as abortion or postpartum abstinence, leading to a declining total fertility rate. Family planning is ultimately about exercising the human right to plan and provide for oneself and one's family. In accordance with the comprehensive, rights-based outlook of the Nairobi Summit on the 25th anniversary of the International Conference on Population and Development (ICPD25), addressing the unmet need for high-quality family planning services in Malaysia is a key human capital investment towards greater socioeconomic well-being.
- About 1.1 per cent of Malaysian women are at risk of developing cervical cancer before age 75. The national HPV immunization programme, introduced in Malaysia in 2010, annually covers approximately 90 per cent of the targeted population (girls age 13). However, uptake of the pap smear screening programme has been relatively low in Malaysia – only 36.6 per cent of women age 20 and older had a pap smear examination in the past three years.
- Malaysia has implemented various adolescent SRH/RR policies, including the National Policy in Reproductive Health and Social Education and Plan of Action and the Plan of Action and Pendidikan Kesihatan Reproduksi dan Sosial (PEERS) CSE curriculum. However, among children aged 13–17 years recently surveyed, 7.3 per cent disclosed that they have engaged in sexual

intercourse; and less than one-third of these sexually active adolescents used condoms or some other form of birth control. The adolescent birth rate is estimated at 8.5 births per 1,000 women aged 15–19 years in 2018, and approximately 100 cases of “baby dumping” are discovered annually.

- The main challenges that Malaysian families face include the economic demands of bearing and rearing children as well as the lack of social support for high-quality childcare. Malaysia's new maternity leave policy guarantees women a minimum of 90 days of maternity leave in both the private and public sectors. Implementation of this policy will ideally target the bottom 40 per cent household income group (B40) with at least some support for the informal sector. The majority of childcare providers in Malaysia are private, but little public support for childcare is provided for children from low-income households.

CONCEPTUAL FRAMEWORK FOR THE LIFE COURSE IMPACTS OF SRH AND FAMILY SUPPORT POLICIES

Life course SRH/RR investments that result in inclusive socioeconomic well-being at the individual and collective levels start with age-appropriate CSE, and move to support for deliberate pregnancy and family formation, contraceptive choices, high-quality maternal health services, protection against gender-based violence and access to screening, diagnostics and treatment for other SRH/RR conditions (see the full conceptual framework in [Section 3](#)). In this report, we characterize inclusive well-being and economic growth as experienced by the country's full population through equiproportional distribution of benefits such as income, human capital development, health and education.

MAIN CHANNELS THROUGH WHICH LIFE COURSE SRH INVESTMENTS ENHANCE HUMAN CAPITAL

We identify five main channels through which SRH investments enhance human capital and inclusive socioeconomic well-being in the Malaysian context:

- 1. Increased female labour force participation.** Childcare policies coupled with family planning interventions that improve women's control over the timing of births are effective ways to improve women's work/family balance, increasing both female labour force participation and satisfaction of labour force preferences.
- 2. Increased female educational attainment.** By increasing educational attainment and expected wages, CSE and family planning can help break the cycle of poverty for adolescents and women from low-income backgrounds who are at higher risk for unintended pregnancies or HIV/STIs.
- 3. Lower depreciation of female human capital through increased job experience and productivity.** Women's labour productivity and their potential earnings depend on three main factors: educational attainment, health and on-the-job experience. Reductions in mistimed fertility can prevent the depreciation of female human capital that results from unintended interruptions in

labour market experience. If a woman can freely decide the timing of births, she can also minimize the negative impact of fertility on her accumulation of human capital – and, as a consequence, on her potential level of earnings.

- 4. Improvements in the health of women and their children.** Direct investments in maternal health, family planning, gender-based and intimate partner violence prevention and response, CSE and HPV prevention/screening can yield sizable health benefits for infants, mothers and women in general.
- 5. Greater accumulation of savings.** SRH investments can increase monetary savings for individuals/families via (1) reductions in unintended expenditures on mistimed pregnancies; (2) reductions in out-of-pocket medical costs associated with maternal/infant health conditions, HPV infections and cervical cancer; and (3) potential increases in labour income due to increased female educational attainment, labour force participation and productivity. Greater accumulation of personal savings reduces dependence on social protection, especially at older ages, thereby alleviating the societal burden of a rapidly ageing population.

RETURN ON INVESTMENT¹ FOR SRH/RR POLICIES IN MALAYSIA

Policy	Key benefits	ROI	Main assumptions
Comprehensive reproductive health and social education: 5-year fully implemented PEERS CSE programme	<ul style="list-style-type: none"> Increased lifetime earnings due to decreased number of school dropouts Decreased incidence of HIV infections among adolescents and young adults 	1.13:1	<ul style="list-style-type: none"> When monetizing the impact of reducing HIV mortality, the value of one additional year of life is assumed to be equal to GDP per capita Only girls who are exposed to the programme for 5 full years benefit from it Some of the impacts not included: reduction in unsafe abortions, improved maternal and infant/child health, increased HPV screening, reduced incidence of cervical cancers
HPV vaccination and screening: Elimination of cervical cancer by 2070	Reduction in cervical cancer deaths	9.6:1	<ul style="list-style-type: none"> When monetizing the impact of reducing HPV mortality, the value of one additional year of life is assumed to be equal to GDP per capita Number of averted deaths is based on global average estimates of the effectiveness of HPV vaccination and screening Some of the impacts not included: reduction in morbidity, improvement in quality of life, medical costs of treatment, prevention of other end-points through HPV vaccination (e.g. anal cancer, vulva and vaginal cancer, oral cancer, genital warts)
Family planning: Satisfying all unmet need for modern contraception in a year	Increased female labour force participation	2.2:1	<ul style="list-style-type: none"> To account for inadequate family support policies and a desire to raise children rather than work, only 34.4% of the women with an averted unintended birth re-enter the labour force Some of the impacts not included: reduction in maternal and newborn deaths, reduction in unsafe abortions, reduction in STIs, increased educational attainment, increased labour productivity, increased savings
Integrated portfolio of family planning and family support policies: Satisfying all unmet need for modern contraception in a year under the presence of more generous family support policies	Increased female labour force participation	3.27:1	<ul style="list-style-type: none"> To account for the impact of more generous family support policies, 50% of the women with an averted unintended birth re-enter the labour force (corresponding to the percentage of surveyed mothers with a desire to work) Some of the impacts not included: reduction in maternal and newborn deaths, reduction in unsafe abortions, reduction in STIs, increased educational attainment, increased labour productivity, increased savings

¹ Return on investment (ROI) is a metric used to assess the value of an intervention. The ROI measures the amount of (monetary) benefits on a particular intervention relative to the costs of the intervention itself. It is computed by dividing the return on an intervention by its costs.

Policy recommendations

A comprehensive SRH portfolio that includes the following investments is directly aligned with at least two of the three strategic dimensions of the Twelfth Malaysia Plan, 2021–2025 (i.e. economic empowerment and social re-engineering). While we recommend that these investments be made universally across Malaysia, strategic geographic targeting could improve the economic prospects of the poorest households, thereby reducing inequality.

1. High-quality maternal health services.

Maternal mortality and morbidity rates in Malaysia have stagnated over the past few decades despite near-universal access to maternal health services. It is likely that poor-quality care is emerging as a greater barrier to poor maternal and newborn outcomes than insufficient access. Therefore, we propose that Malaysia continue with the confidential enquiry into maternal deaths (CEMD) that has contributed significantly to reducing maternal mortality, with the goal of eliminating preventable maternal deaths by 2030. In particular, we propose a scale-up of the near-miss investigation/audit that has been started, in line with World Health Organization guidelines for near-miss audits for maternal care. To diagnose problems of health system quality for maternal and newborn healthcare, we recommend that the findings of both the CEMD and near-miss investigations be studied in depth to detect any shortfall in quality so remedial actions can be taken. To diagnose problems of health system quality for maternal and newborn healthcare, we also recommend tracking a representative cohort of approximately 1,000 women through pregnancy, delivery and postpartum care using the E-cohorts for Longitudinal Care Quality tool, which is currently under development by researchers affiliated with the QuEST Network (Quality Evidence for Health System Transformation) at the Harvard T.H. Chan

School of Public Health (see [Section 6](#) for sample size justification).

2. **Family planning.** We recommend developing universal, rights-based family planning policies and programmes integrated with the existing national population policy, rather than as an isolated vertical programme. The programme can be developed in collaboration with key stakeholders (e.g. public/private sector representatives and religious leaders) and can be regularly monitored for logistics, supply, quality of care and adherence. While the programme is designed for universal access, targeted beneficiaries will ideally include the B40 population, adolescents, informal sector workers, migrant workers and other vulnerable groups. Although Malaysia has yet to decide to be a member of the FP2030 (Family Planning 2030; previously named FP2020) partnership, it is recommended that Malaysia follow the progress of this partnership so relevant best practices can be implemented.
3. **Comprehensive sexuality education.** The success of CSE programmes in Malaysia can be strategically improved by addressing a number of factors including: (1) cultural sensitivity and understanding around the impacts of CSE; (2) consensus on a national curriculum; (3) consistency in skills and attitudes of teachers and trainers; (4) increased family and parental buy-in and involvement; (5) effective collaboration among stakeholders; and (6) sustainable, targeted funding for CSE design, implementation and evaluation.
4. **HPV vaccination and screening.** We recommend emphasizing information on HPV vaccinations and screening in the PEERS CSE curriculum, and normalizing these interventions through primary healthcare visits and strategic public health messaging campaigns.
5. **Family support policies.** As Malaysia continues to invest in family support policies,

financing/programme parameters from high-income countries can be strategically adapted for the Malaysian context (e.g. duration of parental leave, wage replacement rates, public/private cost sharing and childcare subsidies). To facilitate shared responsibility and greater gender equity within the home and the labour market, parental leave can be incentivized for fathers. The economic and social returns of family planning are enhanced if accompanied by adequate family support policies. In addition, the desire to have children will increase with better family support policies.

- 6. Other SRH/RR investments.** To provide empirical estimates for the value of interventions against gender-based

violence, Malaysia-specific data including on gender-based violence prevalence and its health/labour impacts are required. In addition, given that breast cancer is the leading cause of cancer among Malaysian women, we recommend future research on the value of breast cancer screening, diagnosis and treatment.

This report identifies tangible pathways through which investments in SRH/RR enhance female human capital, thereby promoting health, social and economic well-being. **Our results point to SRH/RR investments being a plausible and cost-beneficial pathway to promoting inclusive growth in Malaysia.**



Ringkasan Eksekutif¹

Sepanjang 50 tahun yang lalu, Malaysia telah mencapai kemajuan ketara seperti yang ternyata dalam petunjuk pertumbuhan ekonomi, taraf kesihatan dan pencapaian pendidikan, yang lebih baik berbanding dengan negara-negara setaraf di rantau Asia Tenggara dan Pasifik. Walau bagaimanapun, di sebalik potensi modal insan yang luar biasa ini, transisi Malaysia sebagai status negara berpendapatan tinggi (*high income country*) dicabar oleh kadar penyertaan tenaga buruh wanita (*female labour force participation rate*) yang agak rendah; dan ketaksamarataan pendapatan yang berterusan. Bagi meningkatkan semula pertumbuhan ekonomi dalam tempoh jangka masa pendek dan jangka masa panjang secara mampan, pelaburan yang dapat memanfaatkan potensi modal insan ini perlu diutamakan, khususnya bagi kalangan wanita. Baru-baru ini, terdapat kesedaran mengenai kepentingan untuk negara menangani faktor-faktor yang menghalang pertumbuhan ekonomi khususnya pandemik COVID-19, yang telah menyebabkan penguncupan Keluaran Dalam Negeri Kasar (KDNK) sebanyak 5.5 peratus pada tahun 2020. Pelaburan modal insan yang berkaitan dengan hak kesihatan seksual dan reproduktif dan hak reproduktif (*sexual and reproductive*

health and reproductive rights atau SRH/RR), yang inklusif disertai dasar sewajarnya yang boleh membantu dan menyokong keluarga seterusnya dapat meningkatkan kesejahteraan sosioekonomi untuk semua lapisan masyarakat, dan mempercepatkan peralihan Malaysia dalam mencapai status negara berpendapatan tinggi. Laporan ini bertujuan untuk menunjukkan anggaran nilai mampu diperolehi daripada pelaburan dalam SRH ke atas pengumpulan modal insan di Malaysia, dan mengemukakan cadangan untuk penghasilan dasar yang strategik bagi meningkatkan SRH serta sokongan keluarga yang kukuh bagi menggalakkan kesejahteraan sosioekonomi yang holistik dan inklusif.

Metodologi

Kajian ini memberi tumpuan kepada pelaburan dalam SRH dan sokongan untuk keluarga yang berkaitan dengan kesihatan ibu (*maternal health*), perancangan keluarga, pencegahan penyakit kanser serviks (*cervical cancer*) melalui vaksinasi dan ujian saringan untuk HPV pendidikan seksualiti komprehensif (*comprehensive sexuality education* atau CSE), cuti bergaji untuk ibu bapa selepas kelahiran anak dan perkhidmatan penjagaan kanak-kanak. Laporan ini dibahagikan kepada empat bahagian utama yang membincangkan situasi semasa SRH dan dasar sokongan keluarga di Malaysia ([Bahagian 2](#));

¹ In the event of any conflict, discrepancy, or inconsistency between Bahasa Malaysia version and English version, the English version shall prevail.

membentang rangka konseptual mengenai kesan sepanjang hayat (*life course*) pelaburan SRH ke atas kesejahteraan insan dan pembangunan sosioekonomi (Bahagian 3); mengenal pasti lima (5) saluran utama yang melaluinya pelaburan SRH sepanjang hayat dapat membangunkan modal insan di Malaysia (Bahagian 4); dan menjalankan analisis empirikal untuk menilai kesan pelaburan SRH dalam konteks Malaysia (Bahagian 5).

Hasil Kajian

KEDUDUKAN SEMASA SRH DAN DASAR SOKONGAN KELUARGA DI MALAYSIA

- Malaysia telah mencapai kemajuan yang sangat ketara dalam kesihatan ibu (*maternal health*) seperti yang terbukti dalam petunjuk-petunjuk terpilih seperti kadar kematian ibu (*maternal mortality ratio*), liputan penjagaan antenatal dan liputan kelahiran bayi yang dikendali oleh anggota terlatih (*skilled birth attendants*). Walau bagaimanapun, kadar morbiditi dan kematian ibu dalam beberapa dekad yang lepas tidak menunjukkan banyak perubahan; dan ini menunjukkan bahawa perkhidmatan kesihatan ibu yang berkualiti rendah merupakan halangan utama yang lebih besar berbanding dengan akses untuk mendapatkan penjagaan kesihatan.
 - Kadar penggunaan (*prevalence rate*) kontraseptif moden di Malaysia (34.3 peratus) lebih rendah berbanding dengan kadar purata di negara berpendapatan tinggi (67 peratus) dan kadar purata dunia (54 peratus). Ini menyumbang kepada ketidakyakinan pasangan kelamin ke atas tahap kesuburan dan sela tempoh masa kelahiran sesuai di antara anak dan seterusnya mengelakkan kehamilan selepas anak pertama atau kedua melalui kaedah perancangan keluarga, selain daripada kontraseptif moden seperti pengguguran atau berpantang daripada melakukan hubungan intim. Ini telah
- menyebabkan kadar kesuburan keseluruhan (*total fertility rate*) semakin menurun. Perancangan keluarga merupakan hak asasi manusia untuk merancang dan menyara diri mereka dan keluarga mereka. Selari dengan syor menyeluruh yang dicapai semasa Persidangan Ulang Tahun ke-25 Persidangan Antarabangsa Kependudukan dan Pembangunan atau *International Conference of Population and Development* (ICPD25) yang berlangsung di Nairobi (November 2019), usaha menangani masalah keperluan perancangan keluarga yang tidak dipenuhi (*unmet need of family planning*) di Malaysia merupakan pelaburan modal insan yang dapat menyumbang bagi mencapai kesejahteraan sosioekonomi.
- Dianggarkan lebih kurang 1.1 peratus wanita Malaysia menghadapi risiko menghidap kanser serviks sebelum mencapai usia 75 tahun. Program imunisasi HPV nasional, yang diperkenalkan di Malaysia pada tahun 2010, meliputi sasaran kira-kira 90 peratus penduduk (remaja perempuan berusia 13 tahun) setiap tahun. Walau bagaimanapun, penyertaan dalam program saringan kanser serviks melalui ujian *Paps smear* didapati masih rendah di Malaysia kerana dilaporkan hanya 36.6 peratus wanita yang berusia 20 tahun ke atas telah menjalani pemeriksaan *Paps smear* dalam tempoh tiga tahun terkini.
 - Malaysia telah melaksanakan beberapa dasar SRH/RR remaja, seperti Dasar Kebangsaan dan Pelan Tindakan Pendidikan Kesihatan Reproktif dan Sosial (PEKERTI). Walau bagaimanapun, dalam kalangan remaja berusia antara 13 hingga 17 tahun yang terlibat dalam kajian baru-baru ini, 7.3 peratus daripada mereka mengakui terlibat dalam hubungan seks; dan kurang daripada satu pertiga remaja yang aktif secara seksual ini menggunakan kondom atau cara lain untuk mengelakkan kehamilan. Kadar kelahiran dalam kalangan remaja (*adolescent birth rate*) dianggarkan

sebanyak 8.5 kelahiran bagi setiap 1,000 wanita berusia 15 hingga 19 tahun pada tahun 2018, dan dianggarkan sebanyak 100 kes "pembuangan bayi" dilaporkan setiap tahun.

- Antara cabaran utama yang dihadapi oleh keluarga di Malaysia adalah termasuk cabaran ekonomi semasa ibu hamil dan setelah melahirkan anak. Selepas melahirkan anak, terdapat pula cabaran kekurangan sokongan sosial untuk memperolehi penjagaan anak yang berkualiti. Dasar cuti bersalin di Malaysia memberikan cuti bersalin minimum 90 hari kepada wanita di sektor swasta dan awam. Pelaksanaan dasar ini memberi faedah kepada semua golongan terutamanya keluarga berpendapatan rendah (kumpulan B40). Sebahagian besar perkhidmatan penjagaan kanak-kanak di Malaysia ditawarkan oleh pihak swasta, sementara sokongan dari sektor awam untuk penjagaan kanak-kanak daripada keluarga berpendapatan rendah masih rendah.

RANGKA KERJA KONSEPTUAL BAGI KESAN SRH/RR DAN DASAR SOKONGAN KELUARGA KE ATAS PERJALANAN HIDUP (LIFE COURSE)

Pelaburan SRH/RR sepanjang perjalanan hidup yang menghasilkan kesejahteraan sosioekonomi yang inklusif di peringkat individu dan kolektif bermula dengan pendidikan seksualiti komprehensif yang sesuai mengikut umur dan seterusnya menuju ke arah perancangan keluarga melalui penyediaan pilihan kontraseptif, perkhidmatan kesihatan maternal berkualiti tinggi dengan kehamilan yang dirancang, perlindungan dari keganasan berasaskan jantina (*gender-based violence*) dan mendapatkan akses kepada perkhidmatan SRH/RR termasuk diagnosis dan rawatan kanser serviks (lihat rangka kerja konseptual yang lengkap dalam [Bahagian 3](#)). Laporan ini akan mencirikan pertumbuhan dan kesejahteraan ekonomi yang dialami oleh

seluruh penduduk negara melalui pengagihan faedah seperti pendapatan, pembangunan modal insan, serta perkhidmatan kesihatan dan pendidikan yang saksama.

SALURAN UTAMA UNTUK PELABURAN SRH/RR SEPANJANG PERJALANAN HIDUP YANG MENYUMBANG KEPADA PEMBANGUNAN MODAL INSAN

Kami telah mengenal pasti lima (5) saluran utama untuk pelaburan SRH/RR untuk membangunkan modal insan dan kesejahteraan sosioekonomi yang inklusif dalam konteks Malaysia:

1. **Meningkatkan penyertaan tenaga buruh wanita.** Dasar penjagaan kanak-kanak disertai intervensi perancangan keluarga yang memberi kuasa dan pilihan kepada wanita terhadap masa kelahiran merupakan cara yang berkesan untuk meningkatkan keseimbangan antara kerja dan keluarga (*work-family balance*).
2. **Meningkatkan pencapaian pendidikan wanita.** Dengan menambahbaik beberapa perkara termasuk pendidikan bagi wanita, tawaran pekerjaan dan gaji yang berpatutan, pendidikan seksual dan reproduktif yang komprehensif, dan perkhidmatan perancang keluarga dapat membantu mengatasi kemiskinan khususnya golongan remaja dan wanita daripada latar belakang berpendapatan rendah yang berisiko lebih tinggi untuk kehamilan tidak dirancang serta dijangkiti HIV/STI.
3. **Susut nilai yang lebih rendah bagi modal insan wanita melalui peningkatan pengalaman kerja dan produktiviti.** Produktiviti pekerja wanita dan potensi pendapatan mereka bergantung kepada tiga faktor utama iaitu pencapaian pendidikan, tahap kesihatan dan pengalaman semasa kerja. Sekiranya wanita boleh mengawal kesuburan mereka, kadar kehamilan yang tidak terancang akan berkurangan,

dan ini akan mengurangkan gangguan dalam pekerjaan mereka, dan seterusnya menyumbang dalam membangunkan modal insan. Jika wanita bebas membuat keputusan bila mereka mahukan anak, kesan negatif atas kesuburan mereka akan berkurangan dan ini akan membawa kepada pengumpulan modal insan serta potensi menjana pendapatan.

- 4. Penambahbaikan tahap kesihatan wanita dan anak mereka.** Pelaburan secara langsung dalam kesihatan ibu dan anak, perancangan keluarga, pencegahan dan tindakan terhadap keganasan terhadap wanita, pendidikan seksualiti yang komprehensif dan pencegahan/saringan HPV boleh memberi faedah yang ketara kepada kesihatan bayi, ibu dan wanita secara amnya.

- 5. Pengumpulan simpanan yang lebih tinggi.**

Pelaburan dalam kesihatan seksual dan reproduktif dan hak reproduktif (SRH/RR) boleh meningkatkan simpanan kewangan untuk individu/keluarga melalui pengurangan dalam perbelanjaan disebabkan kehamilan yang tidak dirancang. Pengurangan kos perubatan yang dibiayai sendiri (*out-of-pocket expenditure*) untuk kesihatan ibu dan anak, pengendalian jangkitan HPV dan kanser serviks dan peningkatan pendapatan pekerja berikutan pencapaian pendidikan wanita, penyertaan dan produktiviti tenaga pekerja. Pengumpulan simpanan individu yang lebih juga dapat mengurangkan kebergantungan kepada perlindungan sosial terutamanya bagi warga emas dan seterusnya meringankan beban masyarakat.



PULANGAN KE ATAS PELABURAN² UNTUK DASAR SRH/RR DI MALAYSIA

Dasar	Faedah utama	ROI	Andaian utama (main assumptions)
Pendidikan Kesihatan Reprodktif dan Sosial: Melaksanakan PEKERTI/PEERS selama 5 tahun	<ul style="list-style-type: none"> Pendapatan tinggi sepanjang hayat disebabkan oleh kekurangan keciciran sekolah Penurunan kes HIV dalam kalangan remaja dan dewasa 	1.13:1	<ul style="list-style-type: none"> Apabila dihitung nilai wang impak daripada penurunan mortaliti akibat HIV, nilai setahun tambahan hayat diandaikan sama dengan nilai KDNK per kapita (<i>GDP per capita</i>) Hanya gadis/wanita yang mendapatkan pendidikan ini akan mendapat faedah Antara impak yang tidak diambil kira: penurunan pengguguran anak secara tidak selamat, penambahbaikan kesihatan ibu dan anak, penambahan saringan HIV dan penurunan kes kanser serviks
Vaksinasi HPV dan ujian saringan kanser serviks: Penghapusan kanser serviks menjelang tahun 2070	Penurunan kematian akibat kanser serviks	9.6:1	<ul style="list-style-type: none"> Apabila dihitung nilai wang impak penurunan kematian akibat kanser serviks nilai setahun tambahan hayat diandaikan sama dengan nilai KDNK per kapita (<i>GDP per capita</i>) Bilangan kematian daripada kanser serviks yang dihindar berdasarkan anggaran purata sedunia untuk keberkesanan vaksinasi HPV dan saringan kanser serviks Antara impak yang tidak diambil kira: Penurunan kadar kematian dan penambahan kualiti penghidupan, kos untuk rawatan, pencegahan penyakit lain akibat vaksinasi HPV seperti kanser dubur, kanser faraj, kanser mulut dan kutil kelamin (<i>genital warts</i>)
Perancangan keluarga: Memenuhi semua kehendak yang tidak tercapai untuk kontraseptif cara moden (<i>unmet need for modern contraceptives</i>) dalam masa satu tahun	Penambahan penglibatan wanita dalam tenaga buruh (<i>female labour force participation</i>)	2.2:1	<ul style="list-style-type: none"> Dianggarkan hanya 34.4% wanita yang dapat menghindari daripada kehamilan yang tidak dirancang akibat tiada dasar sokongan keluarga (<i>family support</i>) akan memasuki tenaga buruh Antara impak yang tidak diambil kira: Penurunan kadar kematian ibu dan bayi baru lahir (<i>neonate</i>), penurunan pengguguran bayi tidak selamat, penurunan penyakit kelamin (<i>sexually transmitted infections</i>), peningkatan pencapaian pendidikan, peningkatan pengeluaran tenaga buruh dan penambahan simpanan wang
Portfolio perancangan keluarga serta dasar sokongan untuk keluarga yang bersepadu: Memenuhi semua kehendak yang belum tercapai untuk kontraseptif cara moden (<i>unmet need for modern contraceptives</i>) dalam masa satu tahun bersama sokongan keluarga yang lebih mantap	Penambahan penglibatan wanita dalam tenaga buruh (<i>female labour force participation</i>)	3.27:1	<ul style="list-style-type: none"> Untuk mengambil kira sokongan keluarga yang lebih mantap, 50% daripada wanita yang dapat menghindar kehamilan yang tidak dirancang akan memasuki semula tenaga buruh (daripada peratus wanita yang dikaji tentang keinginan mereka untuk bekerja) Antara impak yang tidak diambil kira: Penurunan kadar kematian ibu dan bayi baru lahir (<i>neonate</i>), penurunan pengguguran bayi tidak selamat, penurunan penyakit kelamin (<i>sexually transmitted infections</i>), peningkatan pencapaian pendidikan, peningkatan pengeluaran tenaga buruh dan penambahan simpanan wang

²Pulangan ke atas pelaburan (ROI) ialah metrik yang digunakan untuk menaksir nilai intervensi. ROI mengukur amaun (monetari) manfaat ke atas intervensi tertentu berbanding kos intervensi tersebut. Ia dikira dengan membahagikan pulangan ke atas intervensi dengan kosnya.

Cadangan dasar

Portfolio lengkap SRH/RR yang mempunyai pelaburan ke dalam perkara-perkara di bawah didapati selari dengan dua daripada tiga dimensi strategik yang terkandung di dalam Rancangan Malaysia Kedua Belas, 2021-2025 (iaitu pemerikasaan ekonomi dan penyusunan semula sosial). Kami mengesyorkan pelaburan ini diperluas untuk seluruh Malaysia; namun begitu penyasaran kedudukan geografik yang strategik boleh dibuat untuk meningkatkan keupayaan ekonomi bagi isi rumah termiskin, sekaligus mengurangkan ketaksamarataan.

1. Perkhidmatan kesihatan ibu berkualiti tinggi. Kadar kematian dan morbiditi ibu mengandung di Malaysia tidak menunjukkan perubahan sepanjang beberapa dekad yang lepas walaupun terdapat akses hampir menyeluruh kepada perkhidmatan kesihatan ibu mengandung. Ini mungkin menunjukkan bahawa bukanlah akses tetapi kualiti perkhidmatan kesihatan yang rendah merupakan halangan yang terbesar. Oleh itu, kami mencadangkan supaya Malaysia meneruskan siasatan terhadap kematian maternal melalui *Confidential Enquiry into Maternal Deaths* (CEMD) yang telah menyumbang kepada pengurangan kematian maternal yang ketara, dengan matlamat menghapuskan kematian maternal yang boleh dicegah (*preventable maternal deaths*) menjelang tahun 2030. Secara khususnya, kami mencadangkan siasatan/audit dijalankan ke atas kes-kes ibu hamil dan bersalin yang hampir maut (*near-miss maternal morbidity*). Siasatan ini telah pun dimulakan, dan ia perlu ditingkatkan lagi selaras dengan garis panduan yang dikeluarkan oleh Pertubuhan Kesihatan Sedunia (WHO). Kami mencadangkan supaya siasatan CEMD dan *near-miss* ini terus dikaji secara mendalam untuk mengenalpasti masalah kualiti di dalam sistem penyampaian kesihatan ibu dan anak supaya tindakan pemulihan

boleh diambil. Kami juga mengesyorkan supaya sebuah kohort yang terdiri daripada kira-kira 1,000 wanita yang hamil, bersalin dan dalam pantang dikaji menggunakan E-Cohort sebagai alat Kualiti Penjagaan Membujur, yang kini sedang dibangunkan oleh penyelidik yang bekerjasama dengan QuEST Network (*Quality Evidence for Health System Transformation*) di Harvard T.H. Chan School of Public Health (lihat [Bahagian 6](#) untuk justifikasi saiz sampel).

2. Perancangan keluarga. Kami mencadangkan penghasilan dasar dan program perancangan keluarga diintegrasikan dengan dasar kependudukan negara, supaya ia tidak dilaksanakan berasingan. Program tersebut boleh dihasilkan dengan kerjasama pihak berkepentingan seperti wakil sektor awam/swasta dan pemimpin agama dan program ini boleh dipantau secara bersama dari segi logistik, bekalan, kualiti penjagaan dan pematuhan. Walaupun program ini dirangka untuk akses secara menyeluruh, penerima faedah yang disasarkan meliputi golongan B40, remaja, pekerja sektor tidak formal, pekerja asing dan kumpulan lain yang terjejas. Walaupun Malaysia masih lagi menimbang keputusan untuk menjadi ahli FP2030 (yang dulunya digelar FP2020), adalah disyorkan Malaysia mengikut perkembangan perkongsian ini supaya amalan baik yang relevan boleh dijadikan pembelajaran dan dicontohi untuk dilaksanakan.

3. Pendidikan seksualiti yang komprehensif. Kejayaan program pendidikan seksualiti yang komprehensif di Malaysia boleh diperkemas secara strategik dengan mengambil kira beberapa faktor termasuk: (1) sensitiviti budaya dan memahami kesannya dan ini telah diambil kira di dalam Dasar dan Pelan Tindakan Pendidikan kesihatan Reproktif dan Sosial atau PEKERTI; (2) mendapatkan persetujuan dari semua pihak berkaitan tentang kurikulum

kebangsaan; (3) kemahiran serta sikap guru dan jurulatih yang sewajarnya konsisten; (4) persetujuan dan penglibatan keluarga dan ibu bapa; (5) kerjasama yang lebih berkesan dari semua pihak berkepentingan; dan (6) belanjawan tetap dan bersasar untuk perangkaan, pelaksanaan dan penilaian program pendidikan seksualiti dan kesihatan reproduktif.

4. Vaksinasi HPV dan saringan untuk mencegah kanser serviks. Kami mengesyorkan supaya program pencegahan kanser serviks melalui ujian saringan dan vaksinasi HPV diteruskan dan diperkukuhkan lagi. Selain itu, maklumat tentang vaksinasi dan saringan HPV perlu diberikan penekanan dalam kurikulum PEERS CSE.

5. Dasar untuk memberi sokongan kepada keluarga. Sementara Malaysia terus membuat pelaburan dalam dasar sokongan keluarga, adalah disyorkan supaya Malaysia mendapatkan contoh dari negara-negara berpendapatan tinggi yang telah berjaya dalam usaha ini (contohnya, cuti untuk ibu dan bapa selepas kelahiran anak, kadar penggantian gaji, perkongsian kos awam/swasta dan subsidi penjagaan kanak-kanak). Bagi meningkatkan perkongsian tanggungjawab di rumah dan dalam pasaran pekerja, insentif boleh diberikan kepada golongan bapa dalam bentuk cuti paterniti. Pulangan ekonomi

dan sosial daripada perancangan keluarga dapat ditingkatkan jika disertai dengan dasar sokongan keluarga yang lengkap. Selain itu, keinginan untuk mempunyai anak akan meningkat dengan adanya dasar sokongan keluarga yang lebih baik.

6. Pelaburan SRH/RR yang lain. Untuk menyediakan anggaran empirikal bagi nilai intervensi terhadap keganasan terhadap wanita (*gender-based violence*), maklumat mengenai kadar berlakunya (*prevalence*) perkara ini, dan kesannya ke atas kesihatan dan pekerjaan wanita yang khusus kepada Malaysia diperlukan. Selain itu, memandangkan kanser payudara adalah penyebab kanser utama dalam kalangan wanita Malaysia, kami mengesyorkan supaya penyelidikan dilaksanakan atas nilai yang diperolehi dari saringan, diagnosis dan rawatan kanser payudara.

Laporan ini mengenal pasti hala tuju yang nyata di mana pelaburan dalam SRH/RR boleh membangunkan modal insan wanita, dan ini menggalakkan kesejahteraan kesihatan, sosial dan ekonomi. **Penemuan kajian kami menunjukkan pelaburan SRH/RR merupakan pendekatan yang wajar dan berkesan dari segi kos (*cost-effective*) untuk menggalakkan pertumbuhan inklusif di Malaysia.**



SECTION 1

Socioeconomic Outlook in Malaysia

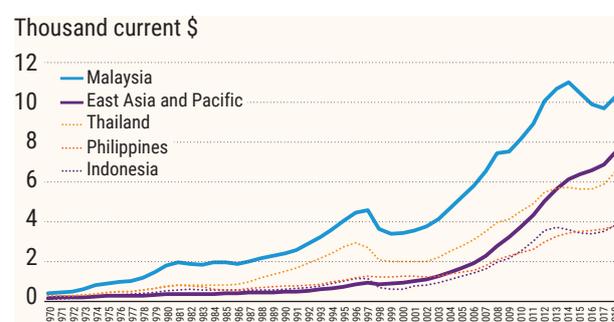
1.1 Prospective growth towards high-income status

Over the past 50 years, Malaysia has made significant progress as indicated by measures of economic growth, health outcomes and educational attainment, outpacing comparable countries in the East Asia and Pacific region (Figures 1.1, 1.2 and 1.3).⁽¹⁾⁽²⁾

As a result, Malaysia has been expected to achieve its target of high-income status within the next few years.⁽³⁾ However, **despite the country's remarkable human capital potential, Malaysia's transition to high-income status is impeded by relatively low labour force participation rates and persistent income inequality** (Figures 1.4 and 1.5).⁽⁴⁾

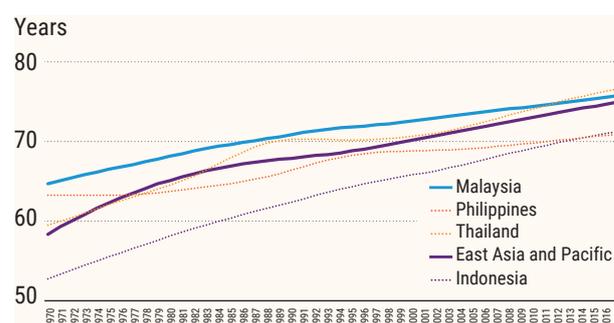
The need to address these barriers has lately gained special prominence due to the COVID-19 pandemic, which led to a 5.6 per cent contraction of Malaysia's gross domestic product (GDP) in 2020.⁽⁵⁾⁽⁶⁾ To facilitate sustainable growth and post-pandemic recovery, the Government of Malaysia has finalized the Twelfth Malaysia Plan, 2021–2025, centred on three strategic dimensions that encapsulate the United Nations Sustainable Development Goals: (1) economic empowerment, (2) social re-engineering and (3) environmental sustainability.⁽⁷⁾⁽⁸⁾

FIGURE 1.1
Gross national income per capita over time, Malaysia and East Asia and Pacific region countries



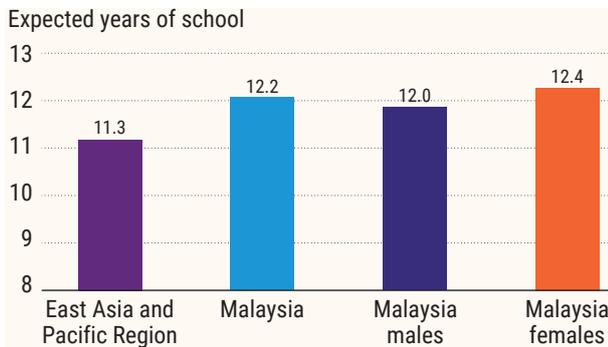
Source: World Bank.

FIGURE 1.2
Life expectancy at birth over time, Malaysia and East Asia and Pacific region countries



Source: World Bank.

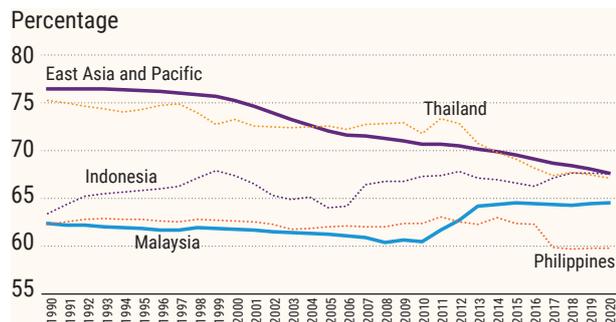
FIGURE 1.3
Expected years of schooling, Malaysia and East Asia and Pacific region countries



Source: World Bank, components of the Human Capital Index.

Note: East Asia and Pacific region countries exclude high-income countries.

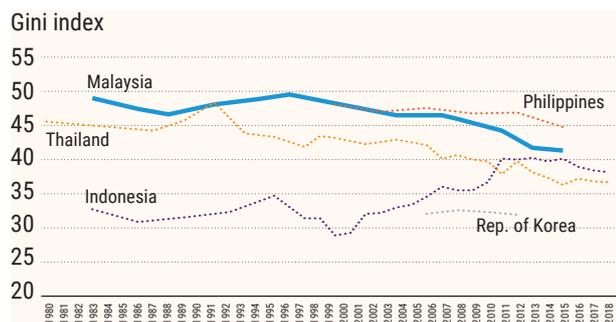
FIGURE 1.4
Labour force participation rate over time, Malaysia and East Asia and Pacific region countries



Source: World Bank. Labour force participation rate = % of total population age 15+; modelled International Labour Organization estimate.

Note: East Asia and Pacific region countries exclude high-income countries.

FIGURE 1.5
Gini index over time, Malaysia and East Asia and Pacific region countries



Source: World Bank.

1.1 Labour force participation and productivity

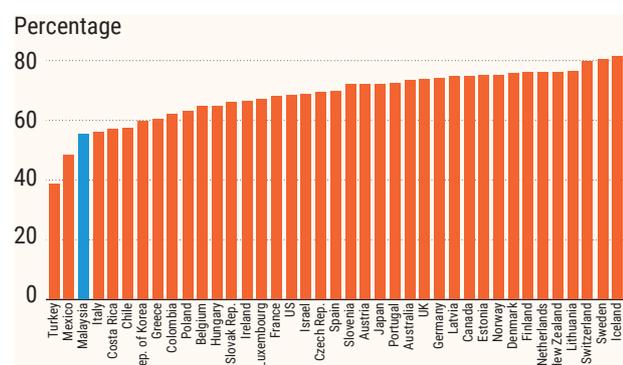
All three dimensions outlined in the Twelfth Malaysia Plan require inclusive human capital investments for sustainable labour force participation and productivity.⁽⁹⁾⁽¹⁰⁾⁽¹¹⁾ A preliminary analysis suggests that by 2022, the GDP shortfall for emerging market and developing economies will be almost double that of high-income countries, when compared to pre-pandemic projections.⁽¹²⁾ **To sustainably revitalize economic growth in the short and long term, investments that leverage underutilized human capital potential in Malaysia must be prioritized, particularly for women.**⁽¹³⁾⁽¹⁴⁾⁽¹⁵⁾⁽¹⁶⁾

Despite the fact that female educational attainment rates are higher than that of males, the overall female labour force participation rate (LFPR) continues to lag significantly behind that for males (Malaysia LFPR 2019: females = 55.6 per cent, males = 80.8 per cent).⁽¹⁴⁾⁽¹⁷⁾ Given Malaysia's advanced stage of development, female LFPR is much lower than expected, especially when compared with Organisation for Economic Co-operation and Development (OECD) member countries (Figure 1.6).⁽¹⁸⁾

Preliminary data suggest that this pattern might have been further exacerbated by the Malaysian Government Movement Control Order to contain COVID-19, as signalled by increased rates of skill- and time-related underemployment.⁽⁵⁾ Evidence supports the fact that lower female LFPRs directly and significantly contribute to Malaysia's labour productivity gap, especially in consideration of the underutilized labour potential of women with secondary and tertiary education (Figures 1.7 and 1.8).⁽¹⁷⁾⁽¹⁹⁾⁽²⁰⁾

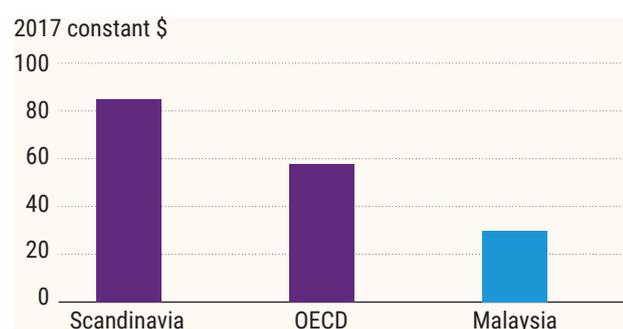
We define the **labour productivity gap** as the sustained difference in measured output per worker, or GDP per person employed, between one country and another. Productivity is a measure of the efficiency of factor inputs

FIGURE 1.6
Female labour force participation rate (2019):
Malaysia and OECD member countries



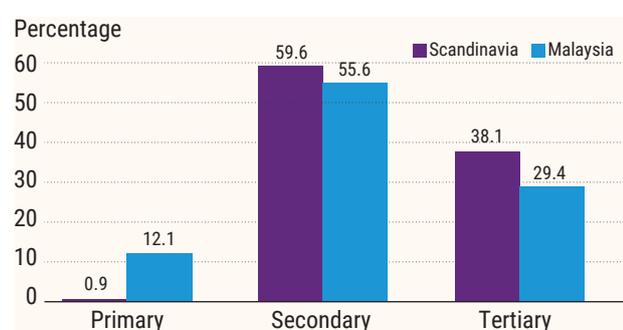
Source: OECD.

FIGURE 1.7
GDP per hour worked (2018): Malaysia, OECD
(average) and Scandinavia (average)



Source: World Bank and OECD.

FIGURE 1.8
Highest educational attainment of employed persons:
Malaysia (2019) and Scandinavia (2013)



Source: Malaysia Labour Force Survey, OECD.

such as labour and capital. The resulting gap in labour productivity between Malaysia and other high-income countries illustrates the importance of investing in and mobilizing female human capital for economic growth. In 2018, labour productivity in Malaysia was 48 per cent less than the OECD average and 65 per cent less than the Scandinavian average.¹ This “middle-income trap” has been observed globally, whereby significant labour productivity gaps impede the transition of upper-middle-income countries to high-income country status.⁽²⁰⁾⁽²¹⁾ Strategic measures must be implemented to enhance and mobilize female labour force participation and productivity in Malaysia, including the provision of high-quality childcare services.⁽²²⁾ Other relevant issues pertain to the enhancement of human capital in Malaysia, including an increasing reliance on foreign workers, a decline in quality of education based on international assessments such as the Program for International Student Assessment (PISA), and the brain drain phenomenon.⁽²³⁾⁽²⁴⁾ These issues are outside the scope of this report. Leveraging the underutilized potential of women that we present here is one component of an integrated portfolio of strategies to enhance human capital and sustain inclusive economic growth.

1.2 Social inequality

Although inequality in Malaysia has been on the decline since the late 1990s, relative income distribution is still comparable to low-middle-income countries in the region (Figure 1.5). Inequality in household income appears to follow ethnic lines, with the Bumiputera having a lower average household income and bearing

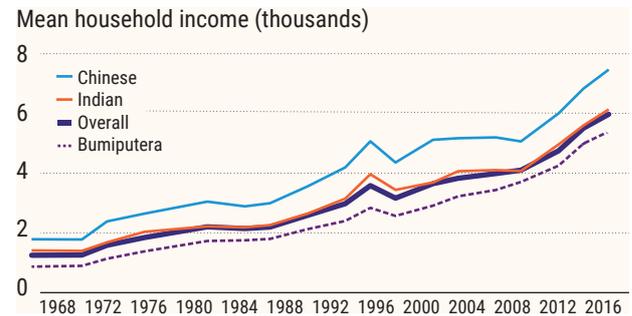
¹ When relevant and possible, we introduce comparisons between Malaysia and Scandinavia (i.e. Denmark, Norway and Sweden) since the latter is a high-income region with the highest gender equity in the world, and is looked to as the “gold standard” for investments and outcomes in female human capital and sexual and reproductive health.
(225)(226)(227)(228)

a higher share of the poverty burden compared to the Chinese and Indian populations in Malaysia (Figures 1.9 and 1.10).⁽²⁵⁾

In recognition of the higher minimally acceptable standards of living within the country, the Government of Malaysia raised its poverty line income level from RM980 to RM2,208, which resulted in an overall poverty incidence of 5.6 per cent in 2019 compared to 0.4 per cent in 2016.⁽⁵⁾⁽²⁶⁾ Geographic variation in poverty incidence continues to be notable under this new threshold, as observed during previous years.⁽²⁷⁾ As expected, mortality and morbidity indicators are correlated with income status. For example, life expectancy at the state level is directly proportional to GDP per capita by state, and under-five mortality rates for the bottom socioeconomic quintile are more than 1.5 times higher than that of the top quintile.⁽²⁸⁾ Compounded with direct determinants of health such as physical environment and overcrowding, the higher prevalence of chronic diseases such as hypertension and diabetes leaves individuals in lower socioeconomic quintiles at a higher risk during health crises such as COVID-19.⁽²⁹⁾ These persisting health and socioeconomic inequalities highlight the urgency to alleviate cost-of-living pressures for the following vulnerable populations in Malaysia:

- The bottom 40 per cent household income group (i.e. the B40) held only 16.0 per cent of the country's income share in 2019: the top 20 per cent (T20) has an income level more than RM10,970; the middle 40 per cent (M40) has an income level of RM4,850 to RM10,970; and the B40 has an income level less than RM4,850. While poverty rates tend to be higher in rural areas, rapid urbanization requires targeted human capital investments for both the country's urban and rural poor.
- The informal sector represents 8.3 per cent of the labour market and is composed of almost 90 per cent of individuals with less than tertiary education (Figure 1.11).⁽³⁰⁾ In

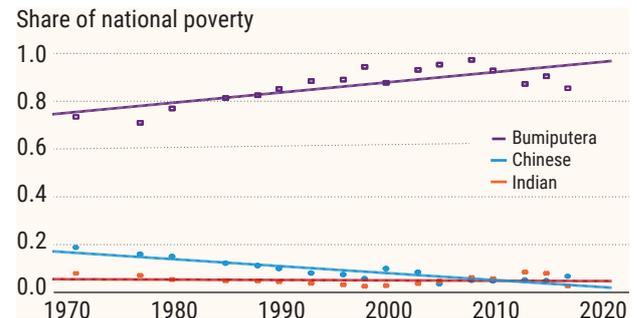
FIGURE 1.9
Household income by ethnicity, Malaysia



Source: M. Ravallion, *Ethnic Inequality and Poverty in Malaysia Since 1969*, NBER Working Paper No. 25640, National Bureau of Economic Research, Cambridge, MA, 2019.

Note: Household income is in 2010 prices; this analysis was published before the new poverty line was established. The Household Income & Basic Amenities Survey Report 2019 by Department of Statistics, Malaysia, provides the latest data (2019).

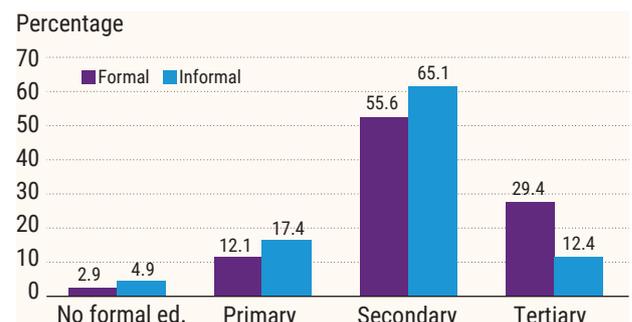
FIGURE 1.10
Shares of national poverty by ethnicity, Malaysia



Source: Ravallion, M. 2019. *Ethnic Inequality and Poverty in Malaysia Since 1969*. NBER Working Paper No. 25640. National Bureau of Economic Research, Cambridge, MA.

Note: This analysis was published before the new poverty line was established.

FIGURE 1.11
Education attainment of employed persons: formal versus informal sectors (2019)



Source: Department of Statistics Malaysia, *Informal Sector Work Force Survey Report*, 2019.

2017, approximately one-tenth of female workers in the informal sector were unpaid family workers – a proportion almost double that of unpaid males.⁽²⁶⁾ The fraction of women in the informal sector increased to 43.7 per cent in 2019, leaving them particularly vulnerable to income instability and the lack of health and social benefits during market shocks such as the COVID-19 pandemic.⁽²⁹⁾⁽³¹⁾

- Low-paid and low- to semi-skilled foreign workers (both documented and undocumented) are estimated to make up approximately 15 per cent of the employed workforce in Malaysia.⁽²⁸⁾ These workers have limited health, financial and legal protections. Without intentionally inclusive human capital investments, these populations are less likely to contribute to and benefit from collective socioeconomic well-being.

As detailed in the following sections, **inclusive human capital investments pertaining to sexual and reproductive health (SRH) along with corresponding family support policies can increase socioeconomic well-being across population strata, thereby sustainably accelerating Malaysia's transition to high-income status.** In this report, we characterize inclusive well-being and economic growth as experienced by the country's full population through equiproportional distribution of benefits such as income, human capital development, health, education etc.

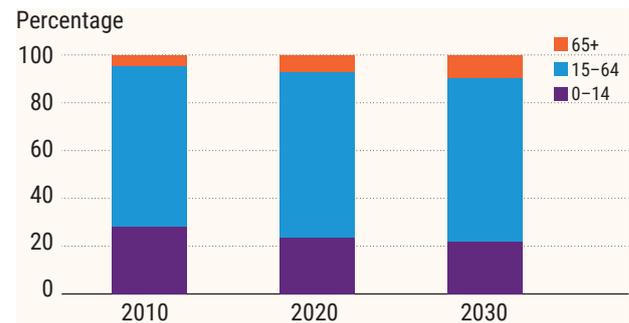
1.3 Demographic trends

Malaysia is expected to reach “aged country” status over the next decade, when the share of people age 60+ will reach 15 per cent, and the share of the working-age population will gradually shrink (Figure 1.12).⁽³²⁾⁽³³⁾ Increased life expectancy and reductions in fertility rates both contribute to this process.

The total fertility rate (TFR) in Malaysia has been decreasing over time, and was estimated

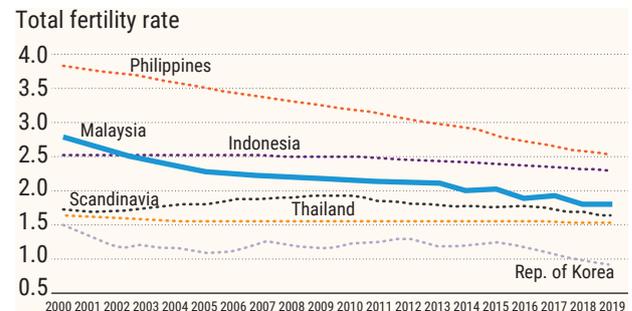
at 1.8 live births per woman in 2019.⁽³⁴⁾ The current TFR is higher than in Thailand, Republic of Korea and Scandinavia (Figure 1.13). Fertility rates are higher among women age 30–34; in the past, women age 25–29 were the most fertile (Figure 1.14). Over time, fertility rates have

FIGURE 1.12
Percentage of population by age-group from 2010 to 2030



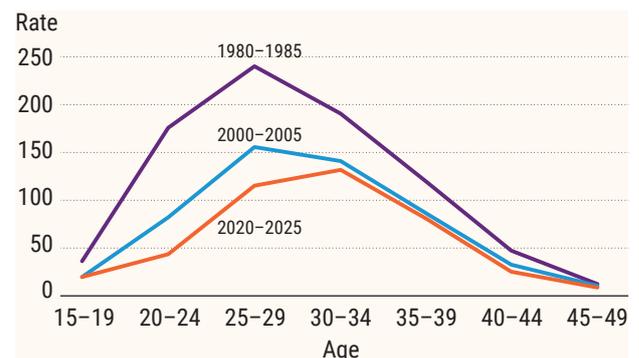
Source: UN World Population Prospects 2019.

FIGURE 1.13
Total fertility rate by region and country



Source: World Bank and Department of Statistics Malaysia (2014–2019*).

FIGURE 1.14
Age-specific fertility rates in Malaysia

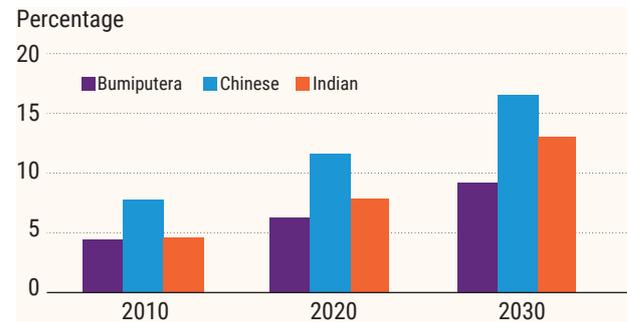


Source: UN World Population Prospects 2019.

decreased for all age groups, with the largest reductions having occurred among young women, especially those age 20–24. The consequences of this trend are an increase in the mean age of childbirth and a reduction in the TFR. This pattern suggests a shift in cultural and societal norms, with women staying longer at school and delaying marriage and childbirth.

There are striking differences in fertility rates across ethnic groups. Malay fertility is about twice as high as that of the Chinese and Indians, and such a gap has persisted for more than a decade.⁽³⁵⁾ In 2019, the TFR was 2.3 for Bumiputera, 1.1 for Chinese and 1.2 for Indians (and 1.8 for the whole population).⁽³⁶⁾ These differences in fertility rates are linked to differences in contraceptive use and propensity to marriage among ethnic groups, and we can expect relatively higher fertility rates to continue for the Bumiputera population in the future. The main ethnic groups in Malaysia also present different age structures. In 2010, the proportion of people age 65+ was 4.5 per cent for the Bumiputera, 7.8 per cent for the Chinese and 4.6 per cent for the Indians. The Chinese and Indian ethnic groups are expected to age faster than the Malay one (Figure 1.15). In 2030, 9.3 per cent of the Bumiputera population will be in the 65+ age group, compared to 16.7 per cent of the Chinese and 13.1 per cent of the Indians.

FIGURE 1.15
Share of the population age 65 and over by ethnic group, 2010–2030



Source: Department of Statistics Malaysia, Population projections 2010–2040.

In addition to population ageing and declining TFR, other key demographic trends in Malaysia include the migration of lower-skilled foreign workers and rapid urbanization.

In the long term, the country's reliance on low-paid, lower-skilled foreign workers leads to job displacement and wage suppression for Malaysia's B40 population, and could dampen the country's ability to harness the Fourth Industrial Revolution.⁽³⁷⁾ Because urbanization in Malaysia is increasing (urbanization rate in 2020 was 76.7 per cent), interventions must be designed to address widening regional and socioeconomic disparities by helping the country's population afford the rising costs of housing, education and healthcare.⁽³⁸⁾⁽³⁹⁾⁽⁴⁰⁾

Considering these key demographic trends in Malaysia, sustainable drivers of inclusive socioeconomic well-being require strategic SRH investments in female human capital that can result in improved health and education outcomes, LFPRs, worker productivity, income generation and savings accumulation.



SECTION 2

Sexual and Reproductive Health and Family Support Policies in Malaysia

Comprehensive human capital investments that result in inclusive socioeconomic well-being must strengthen health outcomes, education and training opportunities, and family support structures across the actual and prospective workforce (Flowchart 2.1). In particular, **sexual and reproductive health (SRH) is an essential element of inclusive human capital development and human rights.**⁽⁴¹⁾⁽⁴²⁾ The Nairobi Summit on ICPD25 in 2019 identified the nine key components of a comprehensive, life course approach to SRH (Figure 2.1).

These components include maternal health; family planning; comprehensive sexuality education (CSE) for adolescents; and the prevention, detection and management of reproductive cancers. Global research demonstrates that SRH investments directly enhance human capital while improving maternal/infant health outcomes, resulting in better-educated societies, long-term productivity of the female workforce and poverty alleviation.⁽⁴³⁾⁽⁴⁴⁾⁽⁴⁵⁾ Harnessing the full value of SRH investments for human capital must be considered alongside relevant family support structures such as paid parental leave and affordable, high-quality childcare, which are instrumental to the health, employment security and mobilization of the female workforce.⁽⁴⁶⁾⁽⁴⁷⁾⁽⁴⁸⁾

The purpose of this report is to estimate the value of SRH investments on human capital accumulation in Malaysia, and to provide recommendations for strategic SRH and family support policies that promote inclusive socioeconomic well-being. In the context of the current state of SRH and family support policies in Malaysia, we discuss the value of a strategic subset of SRH¹ and family support investments to enhance women's dual productive and reproductive capacities:²⁽¹⁵⁾⁽⁴⁹⁾

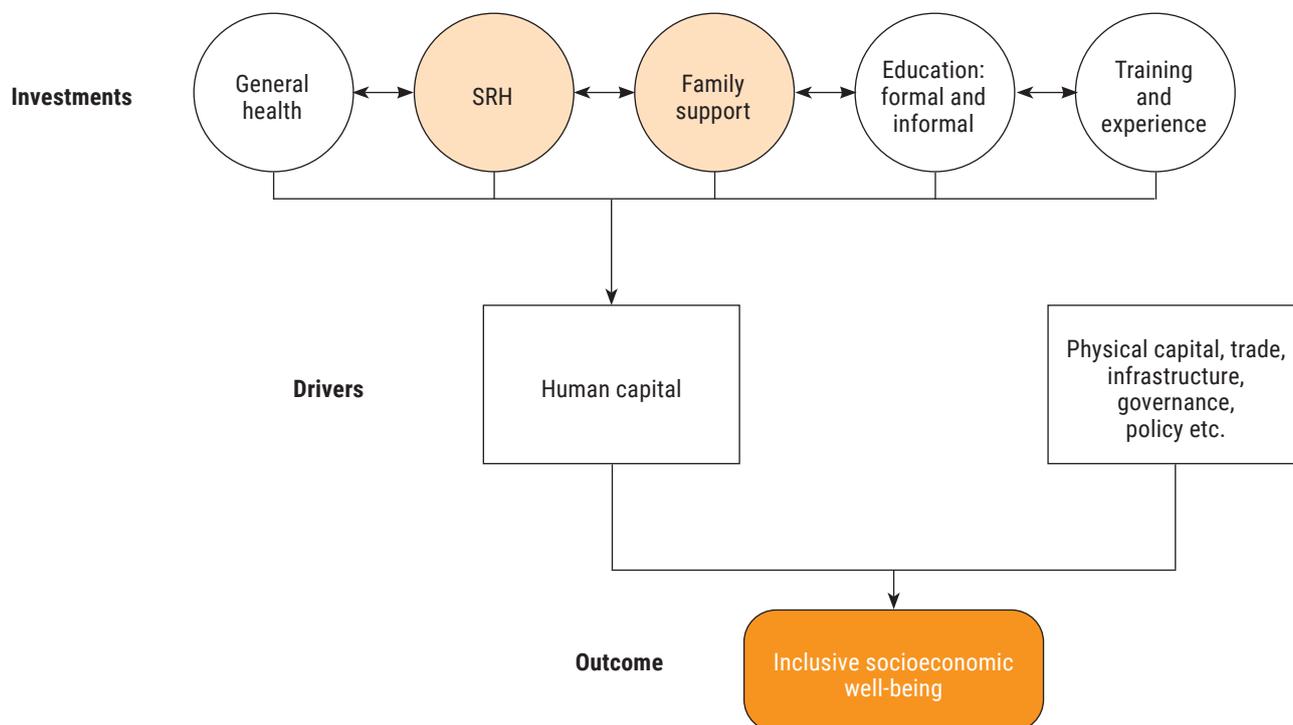
- High-quality maternal health, family planning, and human papillomavirus (HPV) vaccination and screening;
- CSE;
- Paid parental leave;
- Affordable, high-quality childcare services.

¹ In terms of SRH, we focus on family planning, maternal health, human papillomavirus vaccination and screening, and CSE. The impacts of other STIs (including HIV) are addressed in a separate report by the World Health Organization. Due to data constraints in Malaysia regarding the prevalence of gender-based violence and the costing of corresponding interventions, we cannot include this SRH focus area in our study.

² Investments in SRH have implications for all human capital, regardless of gender. For the purposes of this research, we focus on the impacts of SRH and family support investments on the human capital embodied in women and children, while acknowledging that future analyses must explicitly include the human capital embodied in post-childhood males.

FLOWCHART 2.1

Investments in human capital to drive inclusive socioeconomic well-being



2.1 Maternal health

Malaysia has made remarkable improvements in maternal health. In the past 50 years, the maternal mortality ratio (MMR) has decreased from 162 to 24 maternal deaths per 100,000 live births.⁽⁵⁰⁾ Currently, 97.4 per cent of mothers receive at least four antenatal care visits, and 99.5 per cent of births are attended by a skilled birth attendant.⁽⁵¹⁾ However, as Malaysia aims to reach high-income status over the next few years, there is room for further progress. MMR and neonatal mortality rates have stagnated (and even slightly increased) over the past few decades (MMR in 1990 = 18.6 and in 2018 = 23.5; the neonatal mortality rate in 2000 = 3.1, and in 2018 = 4.6).⁽⁵²⁾ In developed countries, the MMR is approximately 12 maternal deaths per 100,000 live births, half the current rate in Malaysia.⁽⁵³⁾ Moreover, a considerable percentage of women in Malaysia suffer from maternal morbidities: 29.3 per cent of new mothers suffer from anaemia, 14.6 per cent

from obesity, 13.5 per cent from gestational diabetes, 12.7 per cent from postnatal depression and 5.8 per cent from hypertensive disease.

⁽⁵¹⁾ Maternal morbidities negatively impact the well-being of women and their children, and the costs associated with the treatment/management of these conditions can weaken individual financial security and the sustainability of the healthcare system. The paradox of high access and stagnating maternal mortality and morbidity rates is a global phenomenon, as detailed by the Lancet Global Health Commission on High Quality Health Systems in the SDG (Sustainable Development Goal) Era.⁽⁵⁴⁾ **It is likely that poor-quality care is emerging as a greater barrier to reducing maternal morbidity and mortality than insufficient access.** Standard measures of access (e.g. percentage of women who received four antenatal care visits or percentage of women whose births were attended by a skilled birth attendant) do not necessarily distinguish between high or low maternal care quality provided

FIGURE 2.1

A comprehensive definition of sexual and reproductive health and rights



Source: UNFPA (2019). Sexual and Reproductive Health and Rights: An Essential Element of Universal Health Coverage. <https://www.unfpa.org/featured-publication/sexual-and-reproductive-health-and-rights-essential-element-universal-health>

during pregnancy and delivery. In order to gain a clearer picture of maternal healthcare quality, the World Health Organization suggests the “near-miss approach” whereby the number of women who survived a life-threatening maternal condition are systematically tracked in addition to the number of maternal deaths.³⁽⁵⁵⁾ Maternal near-miss is when a woman nearly dies but survives a complication during pregnancy, childbirth or within 42 days of termination of a pregnancy. Near-miss audits are carried out only by countries that are already conducting maternal death audits. Malaysia

is one of the few countries that conducts the most comprehensive form of maternal audits, the confidential enquiry into maternal deaths (CEMD).⁽⁵⁶⁾ In order to address issues of maternal health quality and subsequently adverse maternal outcomes in Malaysia, a more systematic tracking of near-miss statistics is recommended:

- Near-miss mortality ratio (i.e. the number of near-miss cases to the number of maternal deaths) is expected to be lower in poorer-quality settings. A recent study shows that the near-miss mortality ratio is much lower in Malaysia compared to high-income countries, indicating that severe acute maternal morbidity is more

³ Malaysia was one of the first countries in the world to introduce the near-miss audit in 2007 as a pilot; however, the report is not yet publicly available.

likely to result in death in Malaysia due to poorer-quality care.⁽⁵⁷⁾⁽⁵⁸⁾

- The near-miss ratio per 1,000 live births in Malaysia is higher than the near-miss ratio in high-income and higher-middle-income countries.⁴⁽⁵⁷⁾⁽⁵⁸⁾⁽⁵⁹⁾

A qualitative study revealed that maternal healthcare quality from the antenatal phase through delivery and postpartum was a problem for women who experienced near-misses.⁽⁶⁰⁾ Maternal care quality issues included misdiagnoses, long waiting times, and inefficient care during antenatal checks. Other quality issues including disrespectful care and lack of clear communication from healthcare providers during delivery. **To reduce persistent maternal morbidity and mortality in Malaysia, an expanded health system focus must emphasize maternal care quality in addition to access.**

2.2. Family planning

A recent analysis shows that only 6.1 per cent of Malaysia's total health expenditure is spent on preventative care such as family planning services/commodities.⁽⁶¹⁾ **The modern contraceptive prevalence rate (mCPR) in Malaysia is considerably lower than both the average in high-income countries and the world average.**⁽⁶²⁾ In 2014, the contraceptive prevalence rate for married women in Malaysia age 15–49 was 52.2 per cent, while the prevalence rate of modern methods was 34.3 per cent.⁽⁶³⁾ During the same time, 62.6 per cent of women of reproductive age globally were using any contraceptive method, and 56.2 per cent

were using modern contraception.⁽⁶⁴⁾ Using data from the Fifth Malaysian Population and Family Survey 2014, we determined that 12.5 per cent of surveyed married women age 15–49 reported an unmet need for contraception, and 27.0 per cent reported an unmet need for modern methods ([Supplementary Table 1](#)). As a consequence, at least one in eight married women of reproductive age would like stop or delay childbearing but is not using any method of contraception.⁵ Unmet need is correlated with socioeconomic status – women with at least a post-secondary education are significantly less likely to report an unmet need than women with lower education (8.9 per cent versus 13.6 per cent, $p < 0.001$) ([Figure 2.2](#)).

The paradox of declining total fertility rate (TFR) in the context of stagnant mCPR is puzzling. Three possible factors could be leading to this phenomenon:

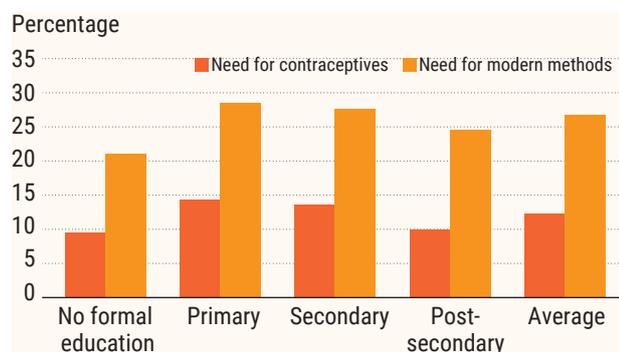
- Abortion in Malaysia is legal up to 22 weeks of gestational age and under specific circumstances such as medical necessity, rape or incest.⁽⁶⁵⁾ The approximate abortion rate in Malaysia is 12.9 per 1,000 women age 15–44, but this is possibly an underestimate since legal, economic and social barriers are likely leading to higher numbers of unsafe and unrecorded abortions – which could also explain the declining TFR in Malaysia.⁽⁶⁶⁾ To put this in context, the regional abortion rate in Southeast Asia is almost three times that of Malaysia's.⁽⁶⁷⁾ It is also important to note the relationship between mCPR and abortion. **In countries like Malaysia where TFR is relatively constant at lower levels, subsequent increases in mCPR can lead to decreases in induced abortion without causing significant**

⁴The near-miss study conducted in Malaysia included cross-sectional data from two tertiary referral hospitals in the state of Kelantan and is therefore not necessarily representative of the country as whole. Near-miss statistics from non-tertiary birthing facilities need to be tracked for a more comprehensive assessment of maternal healthcare quality in Malaysia.

⁵Note that almost 30 per cent of potentially fertile women age 15–49 did not answer questions about family planning. The reported percentages of unmet need are likely to underestimate the size of the unmet need.

FIGURE 2.2

Unmet need for family planning among ever-married women age 15–49, by education level



Source: Own estimation based on data for ever-married women age 15–59 from the Fifth Malaysian Population and Family Survey (2014). Note: The sample size for the “no schooling” group was small (<4 per cent of the survey population), so the unmet need for this particular group alone should not be considered representative.

declines in TFR, strengthening the case that investments in contraception access and quality must be continued even in low TFR settings.⁽⁶⁹⁾

- There are some concerns about rising infertility rates in Malaysia contributing to the decline in TFR, though official statistics are not available.⁽⁶⁹⁾⁽⁷⁰⁾ Increases in infertility have been attributed to higher ages at marriage for women, but the median age at marriage for women in 2019 was 27 years – an age that does not exhibit notable decreases in fertility compared to younger age groups.⁽⁷¹⁾⁽⁷²⁾⁽⁷³⁾ Rising infertility among men has also been accessed as a problem.⁽⁷⁰⁾ Causes of increasing infertility in Malaysia are unknown, and may be related to a combination of age, psychosexual and environmental factors.
- Official mCPR statistics are currently available only for married women in Malaysia. It is possible that mCPR is higher across all women of reproductive age, which might be more in expectation with declining TFR. However, the relationship between mCPR and TFR is not purely bivariate. Factors such as economic uncertainty and the lack of social support structures could cause

individuals or couples to limit their family size to smaller than desired, leading to declining TFR.⁽⁷⁴⁾⁽⁷⁵⁾ **It is possible that Malaysia’s low mCPR contributes to greater uncertainty for couples regarding timing and spacing of births, and therefore reproduction beyond the first or second child is avoided through non-contraceptive methods such as abortion or postpartum abstinence, leading to declining TFR.**⁽⁷⁶⁾ This hypothesis is supported by the fact that the desired number of children in Malaysia is higher than the ideal number of children.⁽⁶⁾⁽⁶³⁾ Reducing the uncertainty about the spacing and timing of birth through universal mCPR will not only minimize the negative impacts of unintended pregnancy and child rearing on female human capital, but might even lead to a sustainable increase in TFR.

While the strength of Malaysia’s national family planning programme is notable (Family Planning Effort Index⁷ in 2014 = 63.2), specific policies with quantitative, rights-based and service quality targets must be implemented, while also addressing cultural factors that lead to low contraceptive uptake.⁽⁷⁷⁾⁽⁷⁸⁾ Family planning is ultimately about exercising the human right to plan and provide for oneself and one’s family. **In accordance with the comprehensive, rights-based outlook of ICPD25, addressing the unmet need for high-quality family planning services in Malaysia is a key human capital investment towards greater socio-economic well-being.**

⁶ Desired number of children does not take into account current circumstances such as finances, while ideal number of children does.

⁷ The Family Planning Effort Index (FPE) is a long-standing measure that quantifies the strength of national family planning programmes. The FPE has been collected periodically since 1972, and provides results across four key components: policies, services, evaluation and access.

2.3 HPV infection and cervical cancer

The Global Cancer Observatory estimates that 1,740 Malaysian women were diagnosed with cervical cancer in 2020, resulting in 991 deaths.⁽⁷⁹⁾ Cervical cancer ranks as the fourth leading cause of female cancer in Malaysia (after breast, colorectal and ovarian cancers), and is the second most common cancer among women age 15–44 (Table 2.1). About 1.1 per cent of Malaysian women are at risk of developing cervical cancer before age 75. Nearly all cervical cancer cases (99 per cent) are related to infection with high-risk HPV, a sexually transmitted virus; in particular, HPV strains 16 and 18 account for 70 per cent of cases globally.⁽⁸⁰⁾ The two major investments in preventing and controlling cervical cancer and boosting female human capital include HPV vaccination and screening for precancerous lesions (using cytology examinations such as pap smear or detecting the presence of HPV using HPV-DNA tests). Treating and managing cases of cervical cancer using several modalities has major cost implications, besides necessitating a woman to be away from work for a considerable period of time. The national HPV immunization programme was introduced in Malaysia in 2010, and it annually covers approximately 90 per cent of the targeted

population (girls aged 13 years).⁽⁸¹⁾ Uptake of the pap smear screening programme has been relatively low in Malaysia. **According to the National Health and Morbidity Survey 2019, only 36.6 per cent of women age 20 and older had a pap smear examination in the past three years.**⁽⁸²⁾ In 2019, the Ministry of Health (MOH) and the Ministry of Women, Family, and Community Development (MWFCD) started a pilot programme on the use of an HPV self-sampling test as a screening tool for cervical cancer, with the target of full adoption by 2023.⁽⁸³⁾

2.4 Adolescent sexual and reproductive health

CSE for adolescents helps prevent teen pregnancies and HIV/STIs, averts school dropouts, and precludes poverty traps by enhancing lifetime earnings and general well-being.⁽⁸⁴⁾⁽⁸⁵⁾ Recognizing the importance of adolescent SRH, Malaysia has implemented various policies including the National Policy in Reproductive Health and Social Education (PEKERTI) and Plan of Action, and Sexual and Reproductive Health Education (PEERS), which focus on reproductive health and CSE.⁽⁸⁶⁾ However, less than 60 per cent of adolescents in Malaysia have basic knowledge of sexual reproductive organs.⁽⁸³⁾ The level of knowledge with respect to sexual intercourse is even lower. Among 13–17 year-olds surveyed in 2017, 7.3 per cent disclosed that they have engaged in sexual intercourse, and less than one-third used condoms or some other form of birth control.⁽⁸⁷⁾ In 2018, the adolescent birth rate was estimated at 8.8 births per 1,000 women aged 15–19 years.⁽⁸⁸⁾ During the same time period, approximately 15,000 cases of child marriage were recorded, with an estimated 100 cases of “baby dumping” discovered annually since 2008.⁽⁸⁹⁾⁽⁹⁰⁾⁽⁹¹⁾ The success of CSE programmes in Malaysia can be strategically improved by addressing a number of factors including (1) cultural sensitivity and understanding around the impacts of CSE; (2) consensus on a national curriculum;

TABLE 2.1
Estimated burden of cervical cancer in Malaysia: 2020

	Incidence	Mortality
Number of new cases/deaths	1,740	991
Age-standardized incidence rate per 100,000 women	10.2	5.8
Risk of developing/dying from cervical cancer before age 75 (%)	1.12	0.67
Rank (all ages)	4th	5th
Rank (ages 15–44)	2nd	3rd

Source: Global Cancer Observatory, International Agency for Research on Cancer.

(3) consistency in skills and attitudes of teachers and trainers; (4) increased family and parental buy-in and involvement; (5) effective collaboration among stakeholders; and (6) sustainable, targeted funding for CSE design, implementation and evaluation.

2.5 Gender-based violence

Between 2010 and 2017, 22,134 children in Malaysia reported being sexually abused; most of those children were girls.⁽⁹²⁾ A 2013 study reported that 8 per cent of women in Malaysia had experienced intimate partner violence, though this might be an underestimate given the higher intimate partner violence rates in the Southeast Asia region (37.7 per cent).⁽⁹³⁾⁽⁹⁴⁾ Gender-based and intimate partner violence affect women's and girls' physical and mental health, and the influence of abuse can persist long after the violence has ceased.⁽⁹⁵⁾ Beyond the health, emotional and social impacts, gender-based violence has economic costs at the individual and societal levels, including health treatment costs, legal and counselling service costs, inability to work, and productivity losses due to injury and mental distress. While we are not able to estimate the prevalence and costs of gender-based violence interventions in Malaysia due to sparse data, **this report conceptually identifies the main channels through which gender-based violence prevention and surveillance can enhance human capital and socioeconomic well-being.**

2.6 Family support investments

Paid maternity leave and high-quality childcare are two crucial family support policies of any human capital development portfolio. As outlined by the National Population and Family Development Board, the main challenges Malaysian families face include the economic demands of bearing and rearing children as well as the lack of social support

for high-quality childcare.⁽⁹⁶⁾ Recent studies find that the main reasons for women being outside the workforce included lack of work-life balance and expensive, poor-quality childcare.⁽⁹⁷⁾ To address these demands, the Government of Malaysia formalized a maternity leave policy which guarantees women a minimum of 90 days of maternity leave in both the private and public sectors.⁽⁹⁸⁾ In addition, key initiatives under Budget 2020 aim to increase female labour force participation through establishment of childcare centres in the public sector (initiated since 2019), and the introduction of tax and work incentives for women returning to work, especially for the bottom 40 per cent household income group (B40) population.⁽²²⁾⁽⁹⁹⁾

Malaysia's recent family support policies are commendable and must be strategically targeted, evaluated and adapted to enhance female human capital, facilitate healthy and stable children and families, and generate inclusive socioeconomic well-being (Flowchart 2.2).⁽⁴⁷⁾⁽¹⁰⁰⁾⁽¹⁰¹⁾⁽¹⁰²⁾⁽¹⁰³⁾⁽¹⁰⁴⁾⁽¹⁰⁵⁾⁽¹⁰⁶⁾

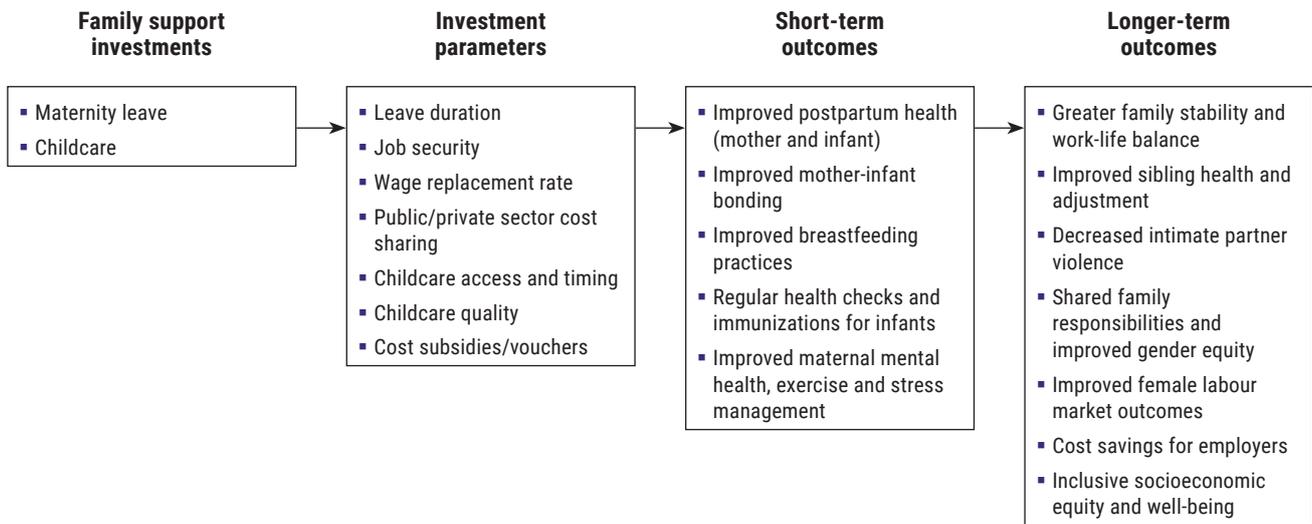
As Malaysia continues to invest in family support policies, financing/programme parameters from high-income countries can be strategically adapted for the Malaysian context:

- As of January 2020, 33 out of 36 Organisation for Economic Co-operation and Development (OECD) countries offered paid maternity leave for an average of 16 weeks with a wage replacement rate between 55 and 100 per cent.⁽¹⁰⁷⁾ **In most OECD countries, these maternity leave programmes are financed through contributions from the government, employers, employees, taxes and health insurance.** No OECD country finances maternity benefits solely through employer contributions.

⁸ It appears that at least 60 days of maternity leave are required to be fully paid in both the public and private sectors. The wage replacement rate for the remaining 30 days is unclear.⁽²²⁹⁾

FLOWCHART 2.2

Family support investments to enhance female human capital



- Various studies indicate that the short- and long-term benefits of paid maternity leave are particularly amplified for disadvantaged groups, suggesting that **successful family support policies will continue to target the B40 population**. In Norway, paid maternity leave conferred significant benefits on maternal health and behavioural outcomes as well as on education and wage outcomes for children, especially among low-income families.⁽¹⁰⁴⁾⁽¹⁰⁸⁾ In the United States, paid maternity leave reduced the incidence of preterm birth and low birth-weight, particularly for unmarried and Black mothers.⁽¹⁰⁹⁾ While the beneficial impacts of maternity leave have been more systematically examined in high-income countries, recent studies suggest that paid maternity leave policies are viable, cost-effective investments for lower-middle-income countries, especially in the context of socioeconomic well-being and sustainable development.⁽⁴⁶⁾⁽¹¹⁰⁾⁽¹¹¹⁾
- Fathers who take parental leave are more likely to bond with their children and share childcare responsibilities with their partners.⁽¹¹²⁾ Evidence suggests that child education outcomes and female labour

outcomes also benefit from close involvement of fathers.⁽¹¹³⁾ While fathers are eligible to take paid parental leave in the majority of OECD countries, uptake by men tends to be low, often due to fear of career implications.⁽¹¹⁴⁾ **To encourage men to make use of parental leave, some countries offer bonus time for fathers, reserve portions of parental leave solely for fathers, or ensure that parental leave arrangements are flexible for both parents** (e.g. shift sharing for parents who cannot stop work completely). Increased uptake of parental leave by fathers could help dilute the negative impacts of maternity leave that have been observed in some contexts (e.g. hesitation to hire women of reproductive age, gender wage gaps and occupational segregation).⁽⁴⁸⁾⁽¹¹⁵⁾

- **To facilitate continued long-term benefits beyond the period of maternity/parental leave, accessible, affordable and high-quality childcare options and flexible work arrangements must be made widely available for more Malaysian families.** As of 2017, the majority of childcare providers in Malaysia were private, but public support for childcare was provided for only up

to 41,000 children from low-income households.⁽⁹⁷⁾ A more recent qualitative study of low-income urban residents in Malaysia shows that mothers who wished to join the labour force were unable to do so due to the lack of dependable, affordable childcare options.⁽⁹⁷⁾ Childcare in Scandinavia is seen as both a parental responsibility and a social right, with access to state-sponsored childcare largely meeting demand.⁽¹¹⁶⁾ As a result, this region has often been looked to as the gold standard for family support policies.⁽¹¹⁷⁾ Norwegian parents receive a child benefit allowance each month, which covers at least 50 per cent of childcare services for up to 10 hours per day. In Denmark, parents are only responsible for up

to 30 per cent of total childcare costs. The Ministry of Women, Family and Community Development of Malaysia has made various initiatives related to childcare centres such as childcare fee subsidies for parents by income status, incentives for carers' training (Kursus Asuhan PERMATA), grants for the establishment of childcare centres in the public sector and tax exemption to childcare operators.⁽¹¹⁸⁾ Similar programmes can be adapted and implemented elsewhere in Malaysia, in both the public and private sectors. Eventually, work incentives and childcare subsidies might also be extended to workers in the informal sector.



SECTION 3

Life Course Approach to Enhance Human Capital through SRH Investments

Strategic investments in needs- and rights-based sexual and reproductive health (SRH) can enhance human capital throughout the life course, resulting in inclusive socioeconomic well-being at the individual and collective levels.⁽¹¹⁹⁾ As diagrammed in [Flowchart 3.1](#), life course human capital investments in SRH start with age-appropriate, comprehensive sexuality education (CSE), and move to support for deliberate pregnancy and family formation, contraceptive choices, high-quality maternal health services, protection against gender-based violence, and access to screening, diagnostics and treatment for other SRH conditions. We identify five main channels through which SRH investments enhance human capital and inclusive socioeconomic well-being in the Malaysian context.

3.1 Increased female labour force participation

Difficulties in balancing work and family are the main reason women do not participate in the labour force. According to the Fifth Malaysian Population and Family Survey Report (2014), 32.4 per cent of the women who used to work and are now not participating any longer report childcare as the main reason for dropping out of the labour force.⁽⁶³⁾ **Childcare policies coupled with family planning interventions that improve women's control over the timing of**

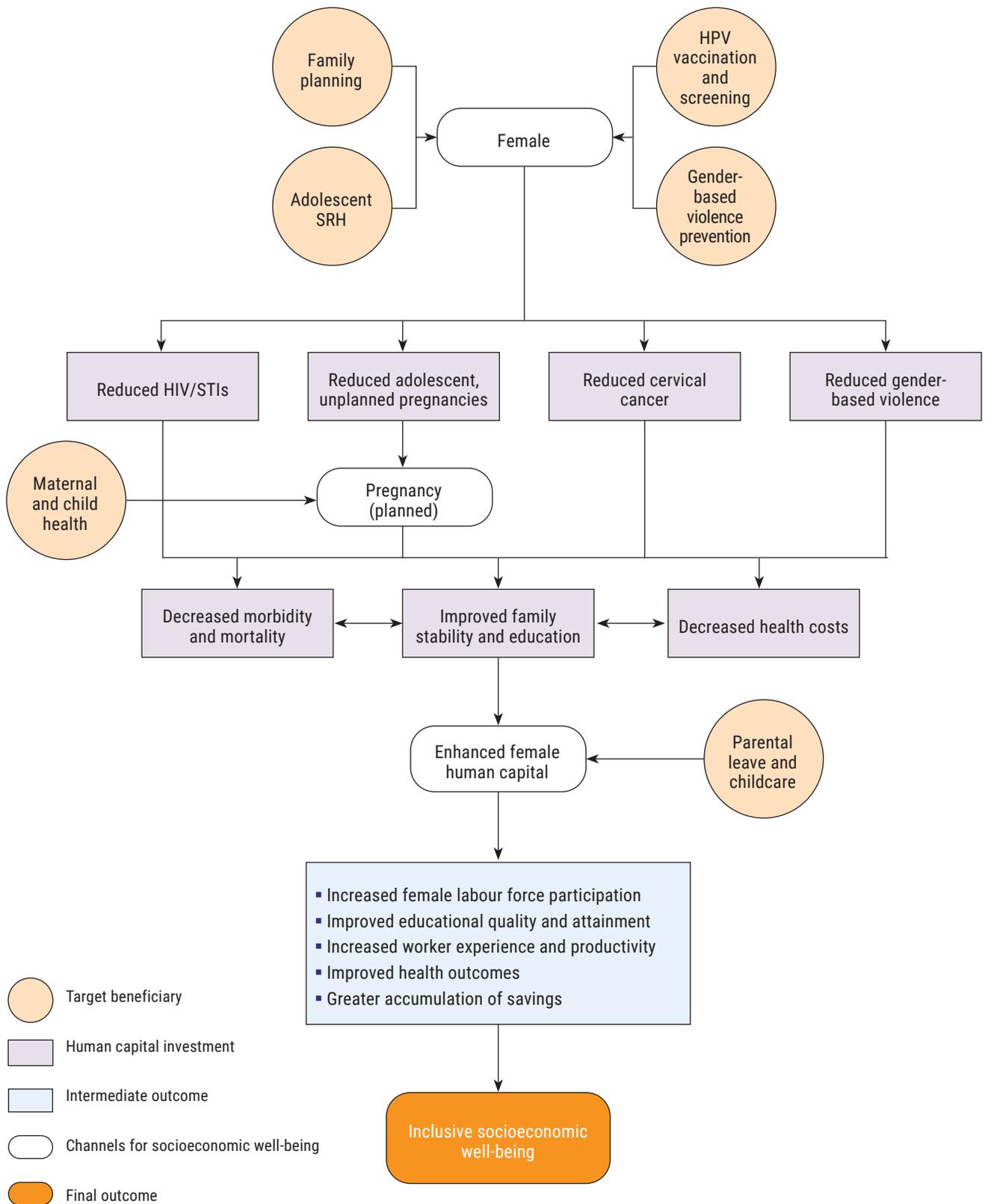
births are effective ways to improve women's work/family balance, increasing both female labour force participation and satisfaction of labour force preferences.

3.2 Increased female educational attainment

Returns to education are very high in Malaysia, especially for women. A World Bank study finds that in Malaysia an additional year of schooling increases wages by 12 per cent on average.⁽¹²⁰⁾ Even though secondary school completion rates tend to be higher for girls, over 12,000 live births are registered by adolescents age 10–19 annually, leading to school dropouts and lower educational attainment levels, especially among girls with unintended pregnancies.⁽³⁴⁾⁽¹²¹⁾⁽¹²²⁾ CSE is a proven, cost-effective intervention to decrease risky sexual behaviour, unintended pregnancy and HIV/STIs transmission among adolescents.⁽¹²³⁾⁽¹²⁴⁾⁽¹²⁵⁾ **By increasing educational attainment and expected wages, CSE can help break the cycle of poverty for adolescents from low-income backgrounds who are at higher risk for unintended pregnancies or HIV/STIs.**⁽¹²²⁾⁽¹²⁶⁾

FLOWCHART 3.1

A life course approach to enhance human capital and socioeconomic well-being: Needs- and rights-based SRH and family support investments



3.3 Lower depreciation of female human capital through increased job experience and productivity

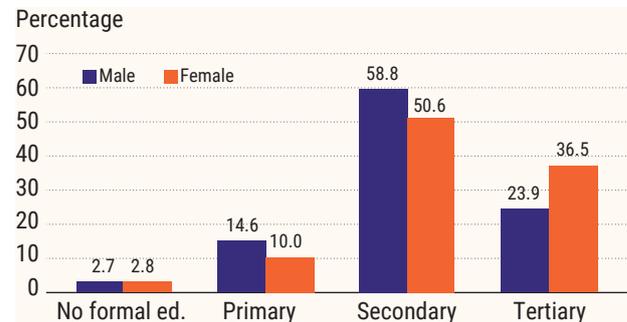
Women's labour productivity and their potential earnings depend on three main factors: educational attainment, health and on-the-job experience.⁽¹²⁷⁾ In Malaysia, women have higher educational attainment than men – almost 40 per cent of employed females have tertiary education, compared to about 23 per cent of the male workforce (Figure 3.1).⁽¹⁷⁾ However, the time spent out of the labour force because of childcare duties inevitably diminishes the actual experience of a female worker compared to a male one with the same level of education, health and age. **Reductions in mistimed fertility can prevent the depreciation of female human capital that results from unplanned interruptions in labour market experience.** If a woman can freely decide the timing of births, she can also minimize the negative impact of fertility on her accumulation of human capital and, as a consequence, on her potential level of earnings. As described earlier, reducing the uncertainty about the timing of birth can not only minimize the negative impact of bearing children on female human capital, but it might also increase fertility overall.

3.4 Improvements in the health of women and their children

Direct investments in maternal health, family planning, gender-based and intimate partner violence prevention and response, CSE, and human papilloma virus (HPV) prevention/screening can yield sizable health benefits for infants, mothers and women in general. Unintended adolescent pregnancies and short interpregnancy intervals have been associated with increased risks of adverse maternal, perinatal and infant outcomes (e.g. preterm birth, low birthweight and childhood stunting).⁽¹²⁸⁾⁽¹²⁹⁾⁽¹³⁰⁾ Since cervical cancer is one of the leading

FIGURE 3.1

Educational attainment of the labour force by gender in Malaysia (2018)



Source: Department of Statistics Malaysia, Labour Force Survey statistics.

causes of cancer death among women, reductions in HPV infections can also achieve considerable health benefits for Malaysian women.

3.5 Greater accumulation of savings

SRH investments can increase monetary savings for individuals/families via (1) reductions in unplanned expenditures on mistimed pregnancies; (2) reductions in out-of-pocket medical costs associated with maternal/infant health conditions, HPV infections and cervical cancer; and (3) potential increases in labour income due to increased female educational attainment, labour force participation and productivity. **Greater accumulation of personal savings reduces dependence on social protection, especially at older ages, thereby alleviating the societal burden of a rapidly ageing population.**

Taking a life course approach to SRH investments is particularly relevant and timely in the context of Malaysia's ageing population. Within the next decade, approximately 10 per cent of the population is projected to be 65 years and older.⁽³²⁾ **Calling to simply increase the total fertility rate in response to Malaysia's ageing is not a sustainable long-term solution**

as this does not address the ongoing issues around human capital development and socio-economic well-being in the context of the Fourth Industrial Revolution. While Malaysia is currently leading emerging and developing Asian economies in terms of overall networked readiness, with respect to specific readiness domains such as human capital digital skills, affordability and infrastructure, Malaysia ranks 73 out of 139 countries, far behind the majority of high-income Organisation for Economic Co-operation and Development (OECD) countries.⁽¹³¹⁾ In the context of Malaysia's high-income status goals, the dawning of the Fourth Industrial Revolution and the country's ageing population, a sustainable economic model will emphasize worker productivity and a more efficient allocation of human resources – especially by leveraging

the underutilized potential of the female workforce – rather than call for raw labour accumulation through population expansion. As described in this report, investments in SRH and family support policies can directly contribute to this strategic economic plan. In addition, since health and reproductive health are positively correlated with socioeconomic status, investments in SRH have the potential to reduce economic inequality in Malaysia by disproportionately benefiting individuals at the bottom of the income distribution.⁽¹⁵⁾ Our analysis confirms that lower educational attainment is correlated with a greater number of children and that education is a predictor of income. Geographically strategic SRH investments could improve the economic prospects of the poorest households, thereby reducing between-district inequality.





Impacts of Sexual and Reproductive Health Investments

This section presents evidence of the potential socioeconomic benefits of investments in sexual and reproductive health (SRH) in Malaysia along the five channels previously identified: labour force participation, education, productivity, health and savings. The discussion is based on review of the relevant literature and empirical analysis of Malaysian data, as well as simulation exercises. For the empirical analysis, we rely mainly on indicators from the Department of Statistics Malaysia (DOSM), data on ever-married women age 15–59 from the Fifth Malaysian Population and Family Survey, and data on older adults from the first wave (2018–2019) of the Malaysia Ageing and Retirement Study.⁽¹³²⁾

4.1 Labour force participation

The female labour force participation rate (LFPR) has steadily increased in Malaysia over time, although it is still lagging behind that of men¹. According to the Labour Force Survey Report 2019, total LFPR was 68.7 per cent in 2019, with a wide gap between the female rate at 55.6 per cent and the male one at 80.8 per cent.⁽¹⁷⁾ Figure 4.1 displays the time

¹ Female LFPR is defined as the share of women between ages 15 and 64 who are either employed or looking for employment.

path of female LFPR since 1982; it clearly shows the rapid growth experienced in the last decade (female LFPR has increased by more than 8 percentage points since 2010).² Following the rapid increase in female LFPR in the last decade, the labour force participation gap between men and women has shrunk, reaching 25.2 per cent in 2019 (Figure 4.2). The reduction is considerably larger for the young generations. Figure 4.3 documents the progressive increase in female LFPR with respect to the male one for individuals in the 25–29 age group. While in 1980 only 40 per cent of women age 25–29 were participating in the labour market, in 2018 more than 70 per cent of them were in the labour force. Delaying marriage and age at first birth clearly contributed to this increase.

Despite the steady increase, female labour force participation is still lower than that observed in high-income countries (Figure 1.6). The average female LFPR in high-income Organisation

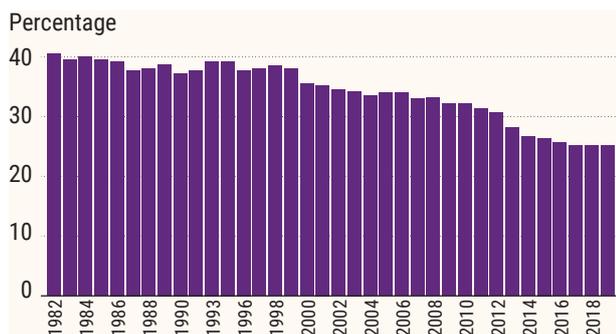
² In 2010 the female LFPR was 46.8 per cent. Note that in the same time period, the average female LFPR among Association of Southeast Asian Nations (ASEAN) member countries decreased by 0.4 percentage points, and the world average female LFPR decreased by 0.8. In the period 2010–2018, only Botswana, Dominican Republic and Malta had larger increases in female labour force participation than Malaysia. In Botswana, female LFPR increased by 12.6 percentage points; in Dominican Republic and Malta, it increased by 9.2 percentage points.

FIGURE 4.1
Female labour force participation rate in Malaysia, 1982–2019



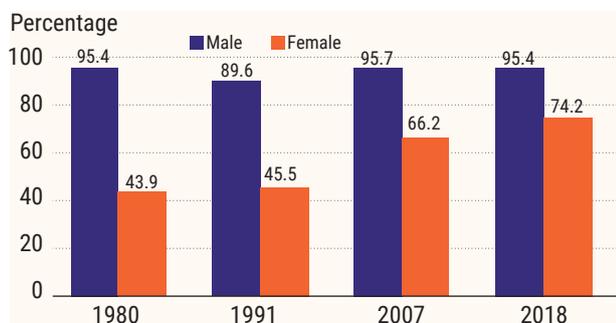
Source: Department of Statistics Malaysia, Labour Force Survey statistics.

FIGURE 4.2
Labour force participation gap between men and women, Malaysia, 1982–2019



Source: Department of Statistics Malaysia, Labour Force Survey statistics.

FIGURE 4.3
Labour force participation rate in the 25–29 age group, Malaysia



Source: Department of Statistics Malaysia, Labour Force Survey statistics.

for Economic Co-operation and Development (OECD) member countries is 68 per cent – almost 13 percentage points higher than the Malaysian female LFPR. Female LFPR is also lower than in most Association of Southeast Asian Nations (ASEAN) countries (Figure 4.4). Moreover, although the gap in labour force participation between men and women has decreased over time, it is significantly higher than that in high-income OECD countries. The average gap among high-income OECD countries was 11.7 per cent in 2018, half the participation gap in Malaysia (Figure 4.5). In most of these countries, the gender gap in LFPR is lower than 10 per cent.

Women do not participate in the labour force mainly because of family-related responsibilities. According to the Labour Force Survey Report 2018, **60.2 per cent of the women out of the labour force do not participate because of housework duties, which include childcare and eldercare.**⁽¹³³⁾ In contrast, education is the main reason why men do not participate in the labour force (Figure 4.6).

The Fifth Malaysian Population and Family Survey Report (2014) confirms that childcare is the main reason for dropping out of the labour force, accounting for 32.4 per cent of the married women who used to work and are now not participating any longer.⁽⁶³⁾ Similarly, the gender gap in mean hours worked is especially large for women in their 30s, who are not only participating less in the labour force but also working fewer hours than men.⁽¹³⁴⁾

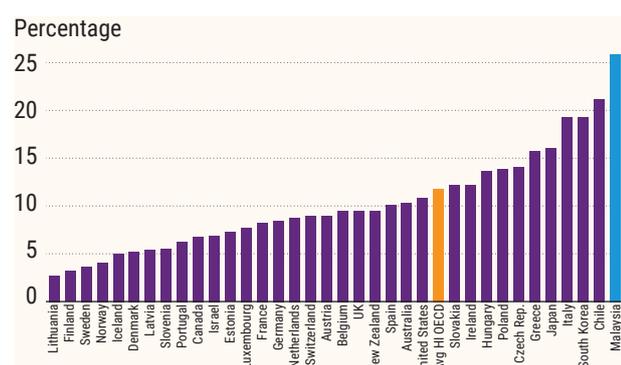
Based on the Fifth Malaysian Population and Family Survey, we estimate that half of the women who are not currently working report a desire to work, accounting for more than 22 per cent of the total sample of ever-married women age 15–59 (Supplementary Table 3). This suggests that **a substantial share of married women not currently employed would join the labour force if the obstacles to their employability were removed.** In particular, the

FIGURE 4.4
Female labour force participation rates in ASEAN member countries (2018)



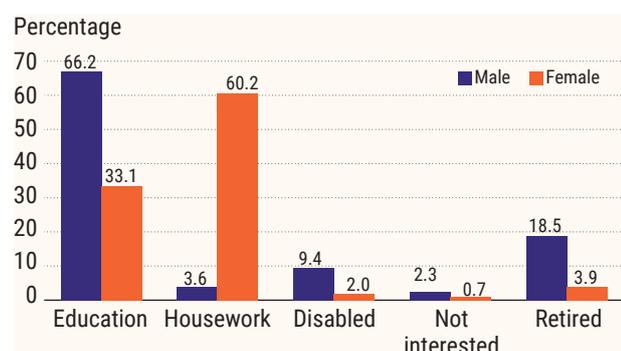
Source: International Labour Organization.

FIGURE 4.5
Gender gap in labour force participation rate (2018): Malaysia and high-income OECD countries



Source: International Labour Organization. Data are reported in [Supplementary Table 2](#).

FIGURE 4.6
Reasons for being out of the labour force, Malaysia 2018



Source: Department of Statistics Malaysia, Labour Force Survey statistics, 2018. The education category includes "schooling" and "going for further studies."

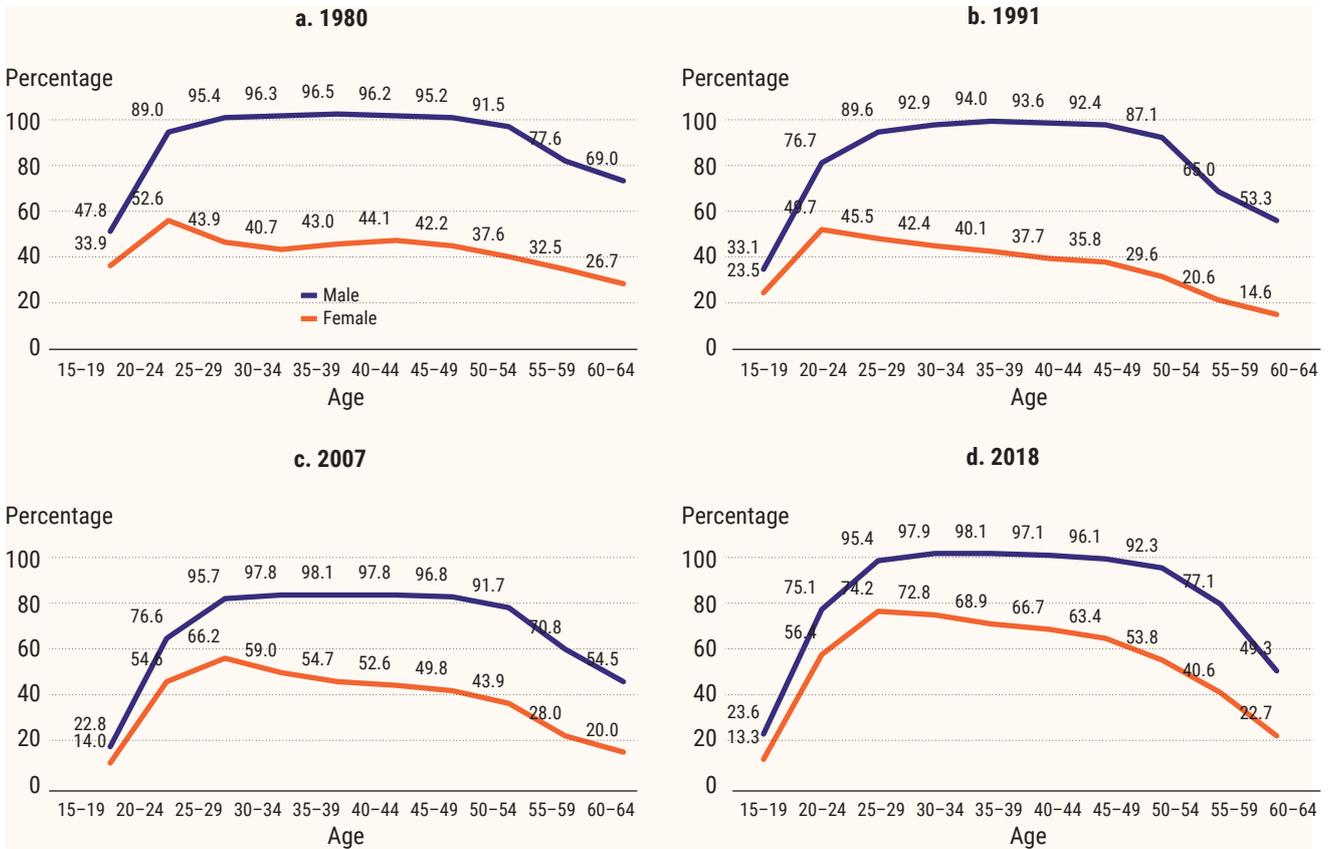
desire to work is significantly higher among women who are not employed because of childcare issues than among women not employed for other reasons: 50.9 per cent of women with childcare issues express a desire to work compared to 30.4 per cent of women with no childcare issues ($p < 0.0001$). This speaks to the key role of childcare policies in facilitating female labour force participation. Since about 30 per cent of married women are not employed because of childcare issues and half of them express a desire to work, as a ballpark estimate, childcare policies could increase the employment rate of married women by 15 percentage points, reducing the labour force participation gap between men and women to a level comparable to that currently observed in high-income countries.

The age profile of female LFP highlights the difficulties of retaining women in the labour force. The LFP increases in early adulthood as women enter the labour force, but then steadily declines and remains at a substantial low level for older cohorts ([Figure 4.7](#)).

This age profile suggests that women do not re-enter the labour force after getting married and having children. This feature of Malaysian female labour force participation has been documented at least since 1980. Although the gap between male and female participation rates has been reduced at all ages, female LFP has maintained a single-peaked pattern.⁽³⁵⁾⁽¹³⁵⁾ In contrast, in a typical developed economy, female LFP tends to decrease after early adulthood as women devote more time to their family but rises again as women re-enter the labour force. [Figure 4.8](#) shows the age profile of LFP in two high-income countries – Japan and the United States. In those countries, female LFP at older ages is comparable to that of young female adults.

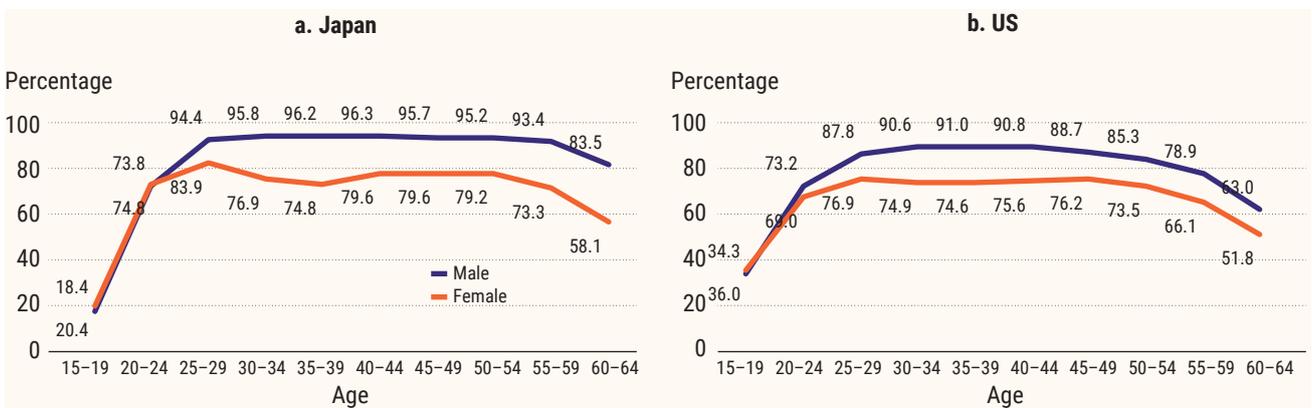
There exists a large body of literature (although mainly applied to Western developed countries) documenting the positive impact of family

FIGURE 4.7
Labour force participation rate by age in Malaysia, from 1980 to 2018



Sources: Department of Statistics Malaysia, Labour Force Survey statistics for the years 2007 and 2018. International Labour Organization for the years 1980 and 1991, citing the Malaysian Population and Housing Censuses.

FIGURE 4.8
Labour force participation rate by age in Japan and the US (2018)



Source: International Labour Organization.

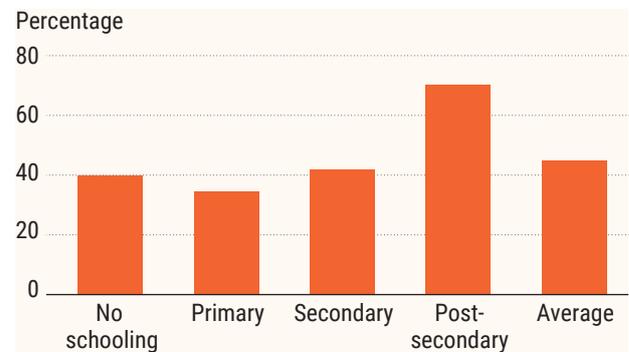
planning on female labour force participation and earnings.⁽¹³⁶⁾ This positive effect is apparent both at the macro and micro levels. From a macroeconomic perspective, there is some evidence that reductions in fertility spur female labour force participation.⁽⁴⁵⁾ This effect is strictly linked to the demographic dividend and the changing age structure of the population due to smaller young cohorts. The microeconomic literature focuses, among other things, on the positive labour market effects of empowering women with the ability to choose whether and when to have children.⁽¹³⁷⁾⁽¹³⁸⁾⁽¹³⁹⁾⁽¹⁴⁰⁾ In particular, **the ability to reach the desired timing and spacing of births (and not just the desired fertility level) is found to increase the likelihood that women will participate in the labour force both at the beginning of their career and later in life.**⁽¹⁴¹⁾ More generally, better planning leads to higher female productivity and earnings.

Using the Fifth Malaysian Population and Family Survey, we assess the association between women's pregnancy history and the probability of being employed in Malaysia. About 44.5 per cent of the surveyed women (ever-married women age 15–59) declare to be currently working (Supplementary Table 3).³ However, women with children are less likely to be employed than women without any children (43.4 per cent versus 59 per cent, significant at 0.01 per cent). Having a post-secondary education is also highly correlated with the probability of being employed: 69.7 per cent of surveyed women with post-secondary education are working, compared to 38.3 per cent of surveyed women with secondary or lower-level education (Figure 4.9).

³ The employment rate of the survey respondents is lower than that reported in the Labour Force Survey in 2014 (the LFPR in 2014 was 53.7 per cent, with an unemployment rate of 2.9 per cent). The difference can be partially explained by the fact that the sample includes only married women.

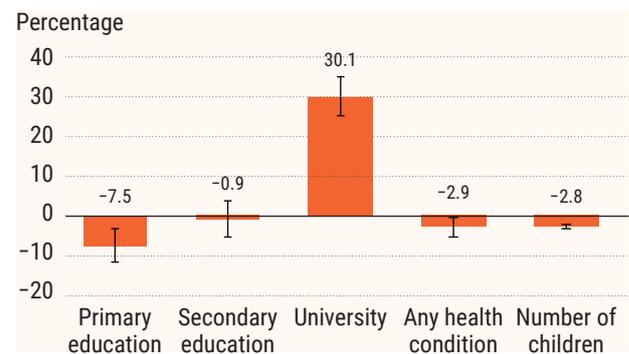
We estimate that the reduction in the probability of being employed for each child born is about 2.8 percentage points (Figure 4.10). In other words, the probability that a woman with a child is working is on average 2.8 percentage points lower than the employment probability of a woman with no children and similar qualification. If the woman has two children, her probability of being employed is 5.6 percentage points lower than the probability of being

FIGURE 4.9
Percentage of ever-married women age 15–59 currently working, by education level



Source: Own estimation, Fifth Malaysian Population and Family Survey.

FIGURE 4.10
Impact of selected variables on the probability of being employed for ever-married women age 15–59



Source: Own estimates, Fifth Malaysian Population and Family Survey. Vertical bars denote the 95 per cent confidence interval of the estimated impacts. The graph shows (1) the change in the probability of being employed if the woman has primary education, secondary education or a university degree compared to a woman with no formal education; (2) the reduction in the probability of being employed if the woman has a health condition compared to a woman with no health condition; (3) the reduction in the probability of being employed per additional child (e.g. the probability of being employed of a woman with one child is 2.8 per cent points lower than the probability of being employed of a woman with no child). Data are reported in Supplementary Table 4.

employed of a woman with no children. The reduction in probability per child increases with age, and then stays constantly low from age 30 onwards, signalling the fact that women tend not to re-enter the labour force once they have children (Figure 4.11). The **employment loss due to children is particularly strong for women with a low education level, thereby suggesting that balancing work and family is more difficult for low socioeconomic status women** (Figure 4.12).

We also considered the impact of timing and spacing on the probability of being employed. Focusing on women age 50+ (i.e. women whose fertility history is complete) with at least two children, we find that those who delayed their first birth and those who did not have short interpregnancy intervals are more likely to be employed in the long term. However, once we control for the number of children, the impact of timing and spacing is no longer significant (Supplementary Table 5). Thus, the presence of children reduces women's ability to participate in the labour force independently of when women have children, and this negative effect increases with the number of children. This highlights the importance of better childcare policies to reduce the burden of family care on women and untap their full potential. We should also note that we did not have employment history information on the surveyed women; therefore, we were not able to estimate the short-term impact of timing and spacing, which is likely to be larger than the long-term impact. In addition, we did not have information on the type of employment women have, e.g. whether it is part time or full time, in the informal or formal sector.

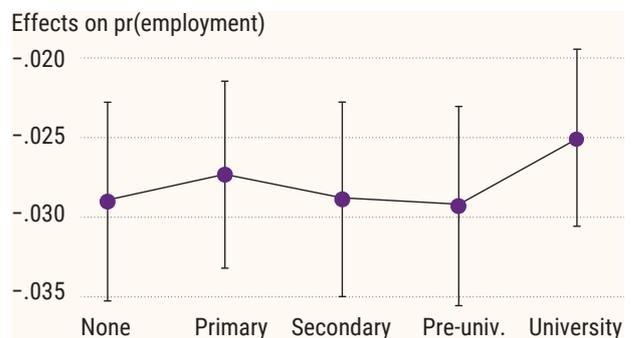
Finally, note that the type of job (e.g. formal versus informal sector, with a lower time out of the labour force for women working in the informal sector), household arrangements (who manages the home and takes care of the family) and the presence of social enablers (e.g. job flexibility, adequate maternity leave,

FIGURE 4.11
Percentage point reduction in probability of being employed per child as a function of age, ever-married women age 15–59



Source: Average marginal effects of number of children, 95% confidence intervals. Own estimate, Fifth Malaysian Population and Family Survey (2014).

FIGURE 4.12
Percentage point reduction in probability of being employed per child as a function of education level, ever-married women age 15–59



Source: Average marginal effects of number of children, 95% confidence intervals. Own estimate, Fifth Malaysian Population and Family Survey (2014).

access to and quality of childcare services) will either magnify or shrink the effects of family planning on female labour market outcomes. ⁽¹⁴²⁾⁽¹⁴³⁾

Although we cannot exclude the presence of confounding factors that determine both the probability of being employed and the number/timing of children (e.g. preferences for looking after the family rather than work) and that we are not able to control for, the results speak about the difficulties of women with children

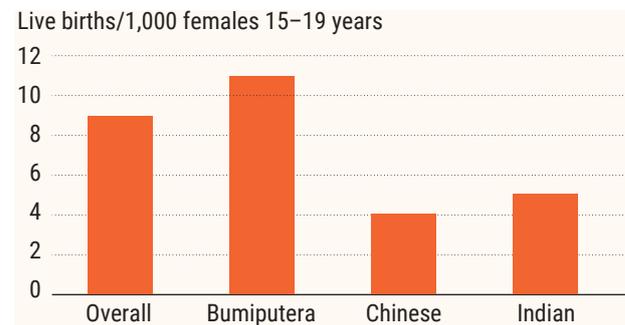
to reconcile work and family. Improvements in childcare policies can certainly alleviate some of these difficulties. Experience from other countries has shown that investments in SRH can also contribute to this goal.

4.2 Educational attainment

Educational quality and attainment are key drivers in human capital development and socioeconomic well-being.⁽¹⁴⁴⁾ Malaysia has nearly universal primary school enrollment and completion rates.⁽¹⁴⁵⁾⁽¹⁴⁶⁾ Secondary school completion rates averaged 87.9 per cent over the past five years, which is on par with the average graduation rate in high-income OECD countries.⁽¹⁴⁷⁾⁽¹⁴⁸⁾ However, a recent analysis highlighted that secondary school dropout rates in lower-income states were almost double that of the national average.⁽¹⁴⁹⁾ Some qualitative factors leading to secondary school dropout in Malaysia include lack of student interest, domestic barriers and insufficient parental involvement. Even though secondary school completion rates tend to be higher for girls, over 12,000 live births are registered by adolescents aged 10–19 annually, leading to lower educational attainment levels, especially among girls with unintended pregnancies.⁽³⁴⁾⁽¹²¹⁾⁽¹²²⁾ The overall teen birth rate in 2017 was 9.1 live births/1,000 adolescents aged 15–19 years⁽¹⁵⁰⁾ (Figure 4.13), and 8.5 per 1,000 adolescents in 2018. In 2017, the teen birth rate for Bumiputera was more than double those of Chinese and Indian adolescent girls (11 versus 4 and 5, respectively).

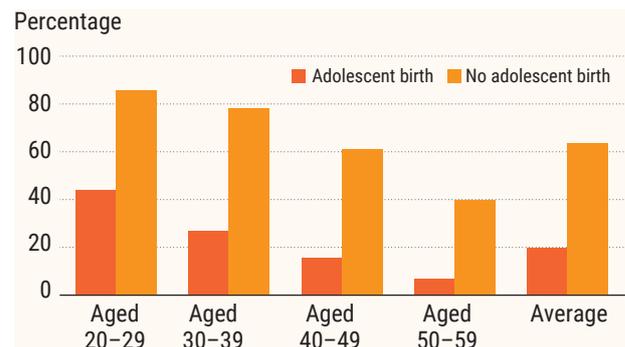
Data from the Fifth Malaysian Population and Family Survey confirm the negative association between having an adolescent birth and educational attainment. **Among ever-married women age 15–59 with at least one child, only 20 per cent of those who had a birth when they were adolescents obtained at least a secondary education, compared to 65 per cent of women who had their first birth after age 20** (Figure 4.14). The negative association holds for all cohorts of women.

FIGURE 4.13
Teen birth rate by ethnicity, 2017



Source: Department of Statistics Malaysia.

FIGURE 4.14
Percentage of ever-married women age 20–59 with at least one child who completed secondary education, by age group and age of first birth (when adolescent or not)



Source: Own estimates, Fifth Malaysian Population and Family Survey (2014). A woman had an “adolescent birth” if her live first birth recorded in the sample occurred when she was younger than 20 years old.

Comprehensive sexuality education (CSE) is a proven, cost-effective intervention to decrease risky sexual behaviour, unintended pregnancy and HIV/STI transmission among adolescents.⁽¹²³⁾⁽¹²⁴⁾⁽¹²⁵⁾ According to the Malaysian Ministry of Education, the Pendidikan Kesihatan Reproduktif dan Sosial (PEERS) CSE programme is an evidence-based, culturally sensitive, age-appropriate curriculum designed to help children “understand and prepare for experiences in life that deal with the physical, emotional, mental, and social aspects of human sexuality.”⁽¹⁵¹⁾ Given the negative correlation between educational attainment and having a birth at an adolescent age, appropriate

investments in a CSE programme such as PEERS can prevent school dropouts caused by unintended pregnancies. Continued, sustainable and strategic investments in the PEERS programme and the National Policy in Reproductive Health and Social Education (PEKERTI) are instrumental in ensuring strong educational outcomes for Malaysian adolescents in the coming decades.⁽⁸⁶⁾ This will have life-long positive impacts, due to the relatively high returns from education for women in Malaysia. In turn, the **increased potential lifetime earnings can help break the cycle of poverty for adolescents from low-income backgrounds who are at a higher risk for unintended pregnancies or HIV/STIs.**⁽¹²²⁾⁽¹²⁶⁾

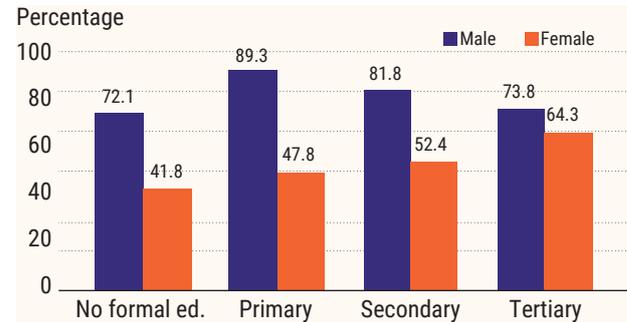
4.3 Worker experience, income and productivity

Returns from education are relatively high in Malaysia, especially for women. Data suggest that having a higher educational attainment pays off for women by increasing their probability of being employed. According to the 2018 Labour Force Survey, women with tertiary education are more likely to participate in the labour force than women with no formal education.⁽¹³³⁾ The participation gap between these two groups is larger than 20 percentage points (Figure 4.15). In contrast, high educational attainment does not seem to affect men's likelihood of participating in the labour force.⁴ The main consequence of this pattern is that the female labour force has a higher educational attainment than the male one (Figure 3.1). Almost 40 per cent of the female labour force has tertiary education, compared to about 25 per cent of the male labour force.

A 2014 World Bank study shows that higher educational attainment also pays off for Malaysian women by increasing their wage.⁽¹⁵²⁾ In the most

⁴ Similar trends would hold if we looked at employment rates instead of LFPRs.

FIGURE 4.15
Labour force participation rate by educational attainment in Malaysia (2018)



Source: Department of Statistics Malaysia, Labour Force Survey statistics.

recent year of the study (2010), the authors find that in Malaysia an additional year of education increases potential wages by 12 per cent on average. Returns are higher for women than men: an additional year of education increases potential wages for women by 13.8 per cent.⁵ The increased returns from education for women are present at most levels (Table 4.1). For example, at the tertiary education level, one additional year of schooling increases women's wages by 23.1 per cent, while the returns for men are equal to 21.8 per cent. In contrast, the returns from primary schooling are lower for women than for men.

Investments in SRH may further increase the returns on educational investment, thereby raising women's productivity and their wage.⁽¹⁵³⁾

SRH investments can help women better reconcile work and motherhood. Women with improved SRH are likely to be able to participate productively in the labour market by reducing the time spent out of the labour force due to unintended pregnancies, and by enhancing both the mother's and the child's health. Moreover, if the presence of children is no longer perceived as an impediment to women's labour force participation and productivity (either because they limit the number

⁵ Personal communication with study authors.

TABLE 4.1
Returns to schooling in Malaysia, 2010 (percentage increase in wage for each additional year of schooling by level of education)

Level of education	Women	Men
Primary education	6.8	7.6
Secondary education	12.3	9.3
Tertiary education	23.1	21.8

Source: H.A. Patrinos and C.E. Montenegro, Comparable Estimates of Returns to Schooling around the World, World Bank, 2014.

or because they have a better planned child-bearing timing), the value of investing in women rises. Women are more likely to be offered a job consistent with their qualification, and to experience career advancement opportunities and increases in earnings. SRH investments can also enhance female human capital accumulation in terms of further investment in female education, encouragement in pursuing long-path educational careers (e.g. law and medicine) and investment in training. **Increasing productivity and female labour force participation through SRH investments will eventually generate more income for the entire household, which can be partly saved for the future and help the adjustment to an ageing society.**

We can distinguish three components of human capital: education, training and work experience, and health.⁽¹²⁷⁾ The level of human capital affects women's productivity, and, as a result, their potential earnings. Healthy women, women with high educational attainment and women with more work experience are likely to be more productive, and hence generate more income. Motherhood and childcare may slow down the accumulation of female human capital (and accelerate its depreciation) for three main reasons: (1) the time spent out of the labour force reduces work experience, (2) maternal morbidities may have long-term consequences on women's

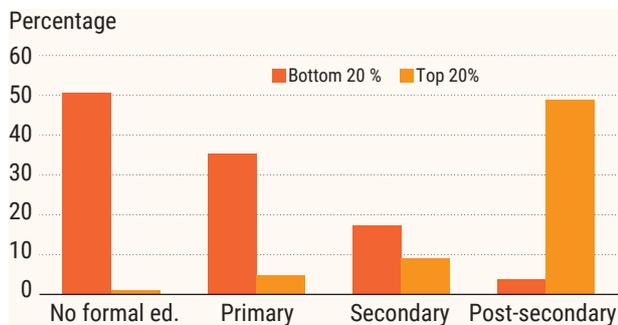
health and (3) children (or the expectation that a woman will have children) may reduce the investment in female education. **If childcare prevents women from participating in the labour market for a long period of time, female human capital depreciates to the point that it will be impossible for women to re-enter the labour force.**

Using data from the Fifth Malaysian Population and Family Survey (2014) we analyse the impact of education, experience, health and fertility history on monthly wage (as a proxy of women's labour productivity). In line with the World Bank study,⁽¹²⁰⁾ we find that the returns to education among ever-married women in Malaysia are high. Almost half of women with tertiary education (49 per cent) have a monthly salary in the high end of the income distribution, while the majority of women with no education have a monthly salary in the bottom end of the income distribution (50.8 per cent, [Figure 4.16](#) and [Supplementary Table 6](#)). In addition, women with many children tend to earn less than women with no or fewer children. The average monthly income of a working woman with three or more children is 7 per cent lower than that of a working woman fewer or no children (RM1,802 versus RM1,933, $p < 0.01$). Birth at a young age is especially detrimental for income opportunities: 39 per cent of women who had their first birth before age 20 are at the bottom of the income distribution, compared to 17.6 per cent of women who had their first birth after age 20 ([Figure 4.17](#) and [Supplementary Table 6](#)).

After controlling for self-selection into the labour force, a woman who finishes high school earns on average 80 per cent more than a woman of similar age and demographic characteristics with no education ([Supplementary Table 7](#)). The returns of tertiary education are considerably higher, with a salary that is twice as high compared to that earned by women with no education. **On average, an additional child corresponds to a 3.8 per cent reduction in monthly labour income.** Being in good

FIGURE 4.16

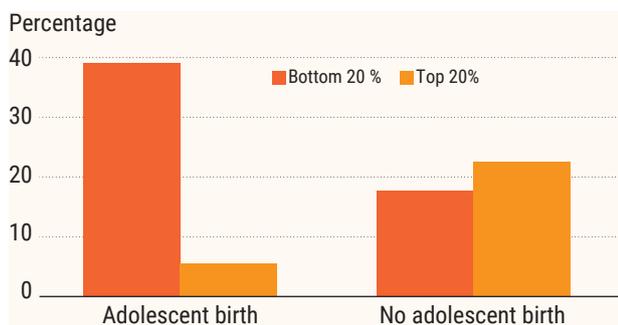
Percentage of currently employed ever-married women age 15–59 in the bottom 20 per cent and top 20 per cent of the labour income distribution, by education level



Source: Own estimates, Fifth Malaysian Population and Family Survey (2014).

FIGURE 4.17

Percentage of currently employed ever-married women age 15–59 in the bottom 20 per cent and top 20 per cent of the labour income distribution, by age of first birth (<20 years old, 20+ years old)



Source: Own estimates, Fifth Malaysian Population and Family Survey (2014).

health and having many years of experience also increase monthly income.

Women who had their first birth when adolescents are particularly at risk of low earnings because they are less likely to have achieved higher education. Although they may not be less likely to participate in the labour force than women who had their first child at higher ages, the negative association between age at first birth and educational attainment implies that women with an adolescent birth may be especially penalized in the labour market.

4.4 Health impacts

Investments in SRH confer multiple health benefits throughout the life course of both women and children (Flowchart 3.1).⁽¹⁵⁴⁾⁽¹⁵⁵⁾⁽¹⁵⁶⁾⁽¹⁵⁷⁾⁽¹⁵⁸⁾⁽¹⁵⁹⁾⁽¹⁶⁰⁾⁽¹⁶¹⁾⁽¹⁶²⁾⁽¹⁶³⁾ These benefits include couples having the desired number of children with optimal spacing, improved maternal and child morbidity and mortality outcomes during and after pregnancy and delivery, decreased rates of STIs, decreased rates of reproductive cancers (e.g. cervical and breast cancer) and improved mental health.

MATERNAL HEALTH AND FAMILY PLANNING

Modern family planning practices improve birth spacing/timing. Unintended pregnancies and short interpregnancy intervals (IPIs) have been associated with increased risks of adverse maternal, perinatal and infant outcomes (e.g. preterm birth, low birthweight, and childhood stunting).⁽¹²⁸⁾⁽¹²⁹⁾⁽¹³⁰⁾ Short IPIs, defined as intervals less than 18 months between pregnancies, are associated with multiple adverse maternal, perinatal, infant and child outcomes.⁽¹²⁸⁾⁽¹⁶⁴⁾

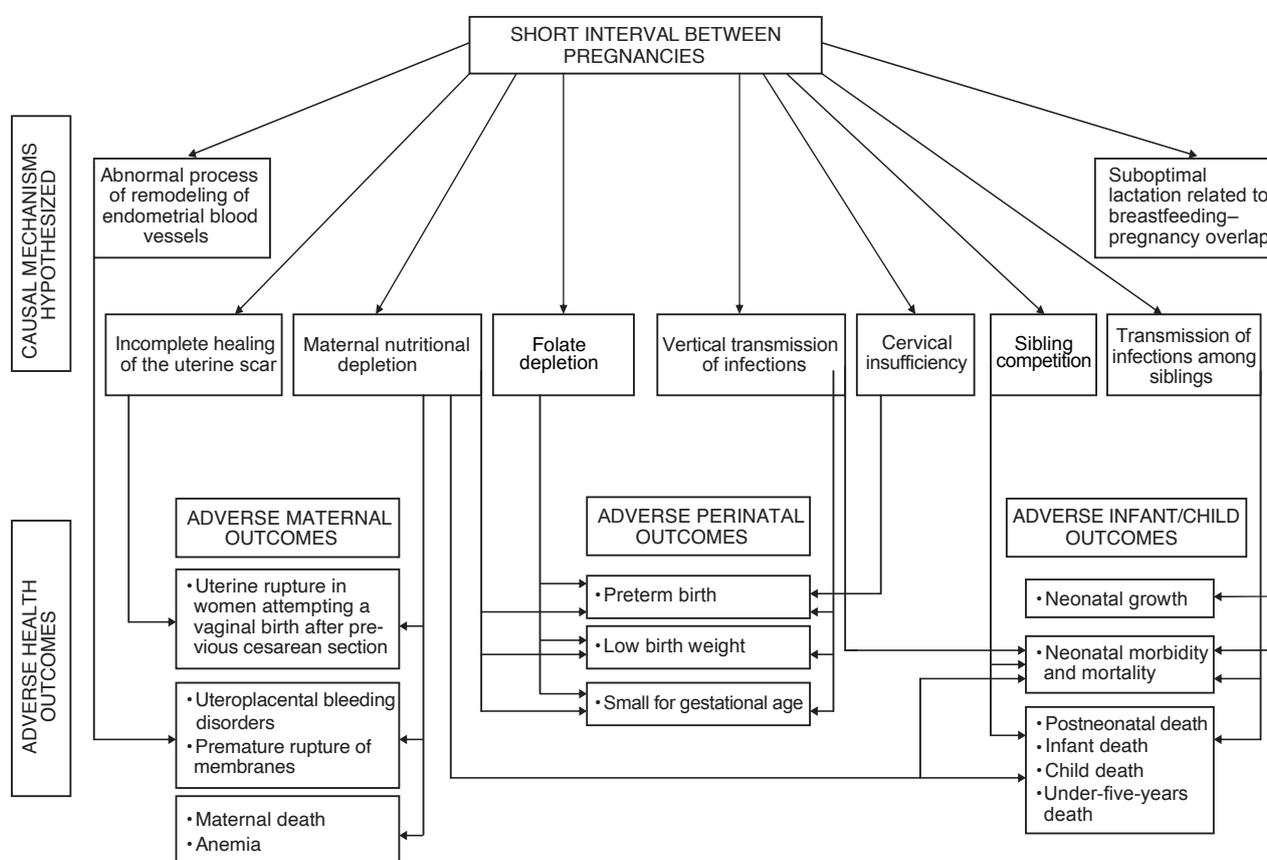
Adverse maternal outcomes include uterine rupture, bleeding disorders and a higher risk of maternal mortality (Figure 4.18). Almost one in five women who had a live birth in 2018 had a short IPI.⁽¹⁶⁵⁾ **Women from lower-income states in Malaysia were almost twice as likely to have short IPIs, exposing them to a higher risk of poor health and economic outcomes.** Working mothers with preterm and low birthweight babies are likely to need to be away from work for a longer time than mothers of term and normal weight babies.

INFANT/CHILD HEALTH

Short IPIs are also associated with higher rates of preterm birth, low birthweight and small for gestational age.⁽¹⁶⁶⁾ **Babies born to adolescent mothers aged 10–19 in Malaysia are at a 29 per cent higher risk of being born preterm**

FIGURE 4.18

Causal mechanisms for the association between short interpregnancy intervals and the increased risk of adverse maternal, perinatal, infant and child outcomes



Source: Conde-Agudelo 2012.

compared to babies born to mothers 20 years of age or older (preterm births to adolescent mothers = 24.0 per cent, preterm births to mothers \geq 20 years of age = 18.6 per cent).⁽¹⁶⁷⁾

Preterm birth, low birthweight and small for gestational age are all associated with childhood stunting.⁽¹⁶⁶⁾ A child is defined as stunted if its height for age is more than two standard deviations below the World Health Organization's (WHO's) Child Growth Standards median. Stunting in childhood leads to lower cognitive and socio-emotional development, lower levels of educational attainment and lost human capital.

⁽¹⁶⁸⁾ The stunting prevalence rate in Malaysia is 20.7 per cent for children under age 5, which translates into 36,765,005 disability-adjusted life years (DALYs) over the next 70 years.⁽⁵¹⁾ For stunting, the population-attributable fraction of adolescent motherhood and short IPI is 1.3 per cent in the Asia-Pacific region, which means that **68,278 DALYs in Malaysia over the next 10 years are attributable to adolescent pregnancy and short IPI.**⁽¹⁶⁶⁾ A notable proportion of these DALYs can be averted through SRH investments such as CSE and family planning.

ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH

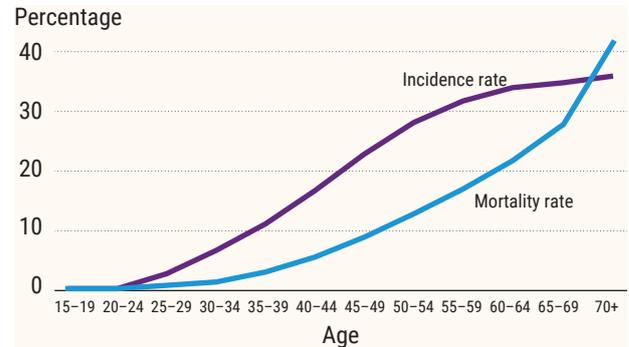
Complications during pregnancy and childbirth are the leading cause of death for adolescent girls aged 15–19 globally.⁽¹⁶⁹⁾⁽¹⁷⁰⁾ **Through the reduction of unintended adolescent pregnancies and unsafe abortions, CSE interventions can help avert maternal mortality and morbidity for female adolescents, which can compromise a woman's health and future fertility.**⁽¹²³⁾⁽¹⁷¹⁾ CSE goes beyond simply providing education about reproduction, risks and diseases by also addressing positive sexuality and relationships within the broader sociocultural and gender influences on SRH, with an emphasis on developing life skills.⁽¹⁷²⁾

CERVICAL CANCER, HPV VACCINATION AND SCREENING

Although the incidence rate of cervical cancer in Malaysia is below the world average (10.2 per 100,000 women compared to 13.3, according to estimates from the Global Cancer Observatory), its burden is substantial, making it one of the leading causes of cancer deaths among women in Malaysia (Table 2.1). Cervical cancer tends also to affect women during their working age, suggesting that the benefits of eliminating cervical cancer go well beyond direct morbidity and mortality impacts.⁽¹⁷³⁾⁽¹⁷⁴⁾ The age-specific incidence rate of cervical cancer starts rising after the age of 25 and continues to rise markedly with age (Figure 4.19). Globally, the average age at diagnosis is 53 years, and the average age of death is 59 years.⁽¹⁷⁵⁾ Cervical cancer typically develops 15–20 years after human papilloma virus (HPV) exposure in healthy women.⁽¹⁷⁶⁾

In addition, at the global level, cervical cancer tends to be highly correlated with low socioeconomic status, mainly due to lower screening access or uptake among low socioeconomic status communities/individuals.⁽¹⁷⁷⁾ Similar patterns can be seen in Malaysia. According to the Malaysia National Cancer Registry Report

FIGURE 4.19
Age-standardized cervical cancer incidence and mortality rates in Malaysia, 2020

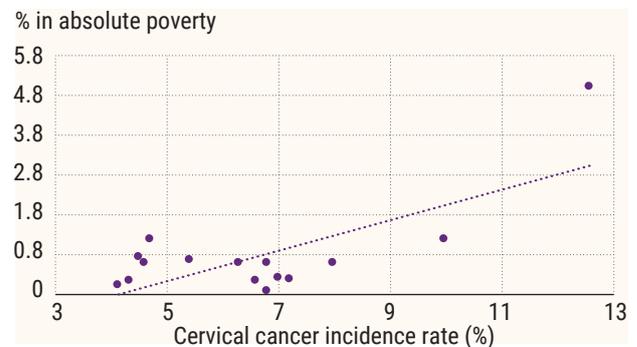


Source: Global Cancer Observatory, International Agency for Research on Cancer, <https://gco.iarc.fr/today/home>.

2012–2016, there is ample geographical variation in the number of registered cases, with age-standardized incidence rates in Sabah and Sarawak that are about three times the incidence rates in Selangor and W.P. Kuala Lumpur.⁽¹⁷⁸⁾ **Geographical variation in cervical cancer incidence rates is highly correlated with geographical variation in absolute poverty** (Figure 4.20 and Supplementary Table 7; Pearson correlation coefficient 0.7).

HPV vaccination and screening tests (pap smear tests or HPV tests) are very effective

FIGURE 4.20
Cervical cancer incidence rate and incidence of absolute poverty by state, 2012–2016



Sources: Malaysia National Cancer Registry Report 2012–2016; Department of Statistics Malaysia, Household Income and Basic Amenities Survey Report 2019.

Note: See Supplementary Table 7.

methods for preventing cases of and deaths from cervical cancer.⁽¹⁷⁹⁾⁽¹⁸⁰⁾⁽¹⁸¹⁾ There are currently three licensed vaccines for HPV, all protecting against both HPV16 and HPV18 (which are responsible for 70 per cent of all cervical cancer cases). One of the three vaccines protects against five additional carcinogenic HPV types, which cause a further 20 per cent of cervical cancer cases.⁽¹⁸²⁾ According to the World Health Organization, there are no safety issues regarding HPV vaccines.⁽¹⁸³⁾

Traditionally, the screening of cervical cancer occurs through a pap smear test. The pap smear screening programme was introduced in Malaysia in 1969; the test is recommended every three years for all women age 30–65 who are or have been sexually active. However, the uptake of the pap smear screening has been relatively low. According to the National Health and Morbidity Survey 2019, only 36.6 per cent of women age 20 and older had a pap smear examination in the past three years.⁽⁸²⁾ Although more expensive than the pap smear test, the HPV test is considered more effective to identify women at risk of developing cervical cancer; it is recommended every five years instead of three, and the self-sampling method encourages uptake by increasing patient autonomy and convenience.⁽¹⁸⁴⁾

Protection against cervical cancer is boosted if paired with adequate knowledge about HPV infection. A 2016 study finds that knowledge about HPV infection and HPV vaccine among HPV-vaccinated female students in Malaysia was very poor.⁽¹⁸⁵⁾ In particular, the majority did not know that screening for cervical cancer (pap smear test or HPV test) is also required for vaccinated women as the vaccine does not protect against all HPV strains responsible for cervical cancer. CSE programmes should incorporate lessons about the health risks of HPV infection and the properties of HPV vaccines.

4.5 Savings accumulation

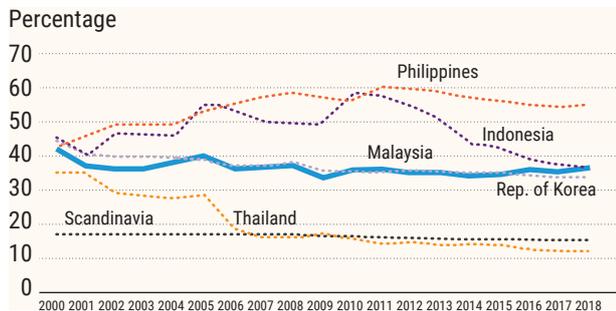
SRH investments can increase monetary savings for individuals/families via (1) reductions in unplanned expenditures on mistimed pregnancies; (2) reductions in out-of-pocket medical costs associated with maternal/infant health conditions, HPV infections and cervical cancer; and (3) potential increases in labour income due to increased female educational attainment, labour force participation and productivity.

First, **the cumulative costs involved in bearing, delivering and rearing a child in Malaysia have been informally estimated to range between RM400,000 and RM1.1 million** (including healthcare, childcare, education and other necessities).⁽¹⁸⁶⁾ Given that the median annual household income in 2019 was RM43,848, mistimed pregnancies can significantly derail a family's financial stability, especially among the bottom 40 per cent household income group (B40) population.⁽²⁶⁾ Access to high-quality family planning services can help couples establish a stronger financial foundation, with the goal of providing sufficient opportunity and resources for their children.

Second, private household out-of-pocket expenditure accounted for 38 per cent of the country's total health expenditure in 2016, in direct contrast to Scandinavian countries (Figure 4.21).⁽¹⁸⁷⁾

Investments in universal SRH services can help offset catastrophic health spending for individuals and families, thereby contributing to human capital development and socioeconomic well-being.⁽¹⁸⁸⁾ For example, it is estimated that the total annual cost of managing and treating cervical cancer across Malaysia is RM323,731,553.⁽¹⁸⁹⁾ Given that 26.9 per cent of health expenditure at all hospitals came from household out-of-pocket spending, a significant proportion of these costs to manage and treat cervical cancer

FIGURE 4.21
Out-of-pocket expenditure as percentage of current health expenditure by country



Source: World Bank.

likely falls on the individual/family. A recent systematic review also indicates that maternal morbidity results in a proportionally larger economic burden compared to healthy pregnancies (Table 4.2).⁽¹⁸⁶⁾⁽¹⁹⁰⁾

Third, reductions in unintended pregnancies (especially at young ages) lead to higher female labour force participation and higher productivity by preventing interruptions in the educational path or in work training. In turn, women's expected earnings will increase, thereby providing an additional source of income for the entire household. These additional resources could be invested either in children's education and well-being (further enhancing their human capital), or transferred to the old dependants in the household, or saved for the future. Children have traditionally

TABLE 4.2
Estimated out-of-pocket costs (RM) for antenatal care and vaginal delivery by maternal morbidity

Maternal morbidity	Public facility	Private facility
Healthy pregnancy	1,030	5,550
Epilepsy	1,545	8,325
Gestational diabetes	1,236	6,660
Hypertension	1,854	9,990
Obesity	1,133	6,105

represented for parents a form of savings after retirement, especially in countries with limited access to capital markets.⁽¹⁹¹⁾ Given the progressive ageing of the population, reliance on the younger generation to sustain the socio-economic well-being of the older generation is no longer a sustainable strategy. **Providing women with opportunities to invest for old age contributes to reducing the burden of ageing on the economy.**⁽¹⁹²⁾

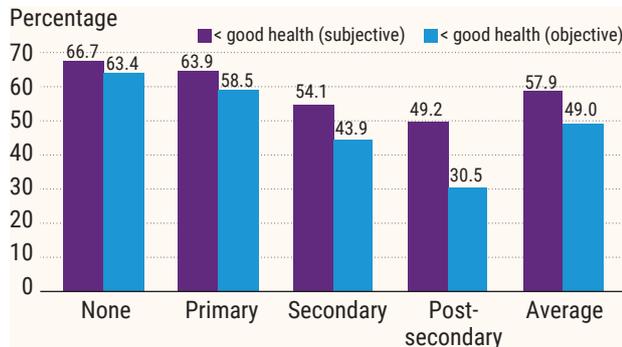
The Malaysia Ageing and Retirement Survey is a nationally representative survey to examine ageing and retirement among Malaysian older adults age 40 and over.⁽¹³²⁾ The first wave was conducted in 2018–2019, and it covers about 5,600 individuals; 56 per cent of them are women. The survey contains questions related to five domains: respondent background, health, work and employment, income and consumption, assets, and savings.

The data set offers a picture of the health and economic conditions of older adults in Malaysia. About 50 per cent of the sample reports health issues (self-rated health less than good) or problems in performing instrumental activities of daily living (e.g. shopping, using public transportation, preparing food); 3 per cent of the respondents report problems in performing activities of daily living such as bathing, dressing or walking. Low socioeconomic status individuals (proxied by their educational attainment) are more likely to suffer from a health condition (Figure 4.22). For example, only 0.6 per cent of individuals with post-secondary education need help in performing activities of daily living, compared to 8.3 per cent of individuals with no formal education (Figure 4.23). The top three diagnosed illnesses (high blood pressure, high cholesterol and diabetes) are also diagnosed disproportionately more among low socioeconomic status individuals (Supplementary Table 8).

On average, women report worse health indicators than men, thereby suggesting a possible

FIGURE 4.22

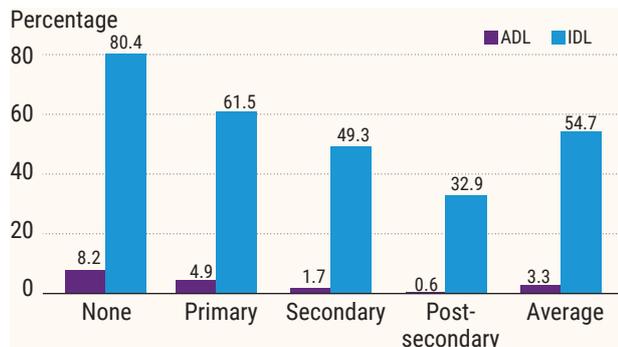
Percentage of older adults age 40+ in less than good health and percentage with at least one health condition, by education level



Source: Own estimation, Malaysia Ageing and Retirement Survey 2018–2019. We categorized individuals who responded “good” or “very good” to the subjective health question as being in good health. The list of morbidities to construct the objective health indicator includes asthma, bladder disorder, cancer or malignant tumour, stroke, chronic lung disease, dementia/Alzheimer’s, depression or emotional disorder, diabetes, femoral neck fracture, heart disease, high blood pressure/hypertension, high cholesterol, joint disorder, liver disease, osteoporosis, ulcer or other gastrointestinal disorder, vertigo and other conditions.

FIGURE 4.23

Percentage of older adults age 40+ with problems performing activities of daily living or instrumental activities of daily living, by education level

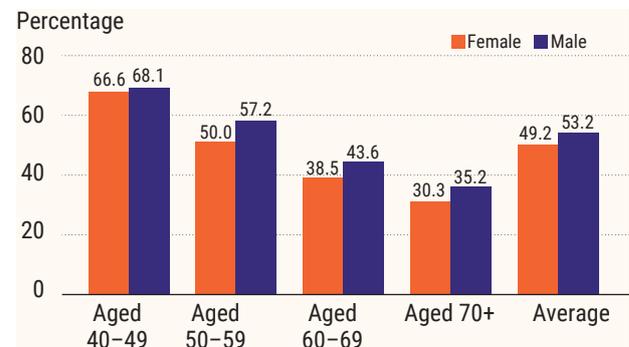


Source: Own estimation, Malaysia Ageing and Retirement Survey 2018–2019. Activities of daily living (ADL) dependency was determined by the six-item Katz ADL index (feeding, dressing, bathing, toileting, transferring and walking). Katz scores range from 0 to 6 points; a higher score indicates lower dependency and a lower score means greater dependency in doing ADL activities. ADL dependency implies the need for help in any of the six ADLs, while ADL independency implies no help is needed to perform those activities. Instrumental activities of daily living (IADL) dependency was determined using the Lawton and Brody index (the ability to use a phone, shopping, meal preparation, housekeeping, laundry, using public transportation, managing medications and the ability to handle finance). IADL scores range from 0 to 8 points; a higher score means lower dependency. IADL dependency implies the need for help in doing any of the eight IADLs, while IADL independency implies no help is needed to perform those activities. The high percentage of individuals who are IADL dependent partially reflects gender roles in performing those activities.

gender inequality in health status and health-care utilization. This relation holds for all ages. Figures 4.24 and 4.25 depict, respectively, the percentage of men and women who report good health (subjective indicator of health), and the percentage of men and women who report at least one medical condition (objective indicator of health). For all age groups, women present worse health than men.

FIGURE 4.24

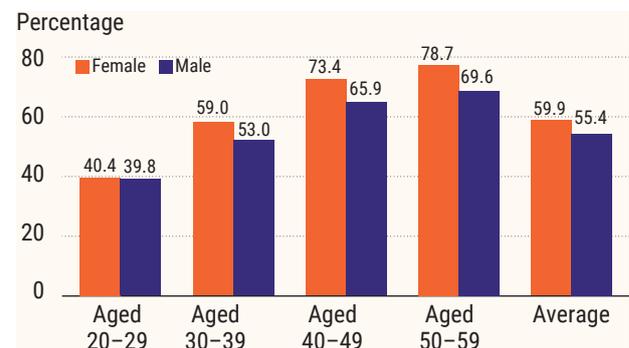
Percentage in good health (subjective evaluation) among older adults age 40+, by age group and gender



Source: Own estimation, Malaysia Ageing and Retirement Survey 2018–2019. We categorized individuals who responded “good” or “very good” to the subjective health question as being in good health.

FIGURE 4.25

Percentage of older adults age 40+ with at least one morbidity, by age group and gender



Source: Own estimation, Malaysia Ageing and Retirement Survey 2018–2019. The list of morbidities includes asthma, bladder disorder, cancer or malignant tumour, stroke, chronic lung disease, dementia/Alzheimer’s, depression or emotional disorder, diabetes, femoral neck fracture, heart disease, high blood pressure/hypertension, high cholesterol, joint disorder, liver disease, osteoporosis, ulcer or other gastrointestinal disorder, vertigo and other conditions.

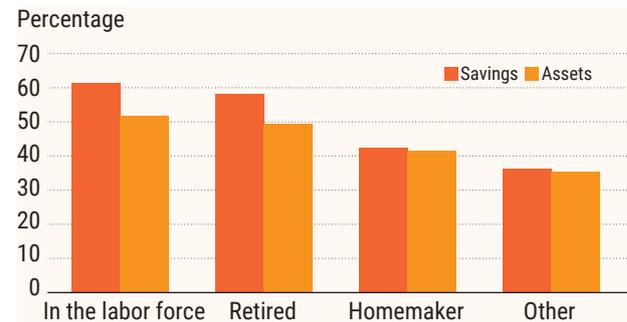
Older adult women also tend to be more economically and financially insecure than older adult men (Supplementary Table 9). Only 23.2 per cent of women age 40+ currently work, compared to 58.8 per cent of men; 39.5 per cent of women state that they do not participate in the management of household finances compared to 23.3 per cent of men. In addition, only 48.3 per cent of women declare to have savings, and 44.5 per cent own assets. In comparison, 52.2 per cent of men have savings, and 61.9 per cent own assets.

Individuals with higher education are more likely to have savings and assets. Among women, those who define themselves as a “homemaker” (i.e. women who are not currently participating in the labour force and who are not retired, meaning they may not have ever worked) are even less likely to have savings or assets (42.8 per cent have savings and 41.7 per cent have assets; Figure 4.26). Note that almost two-thirds of the sampled women are homemakers. This points to the widespread financial and economic insecurity that Malaysian women face because of their role as family caretakers.

The higher economic and financial insecurity among women is due to their lower labour force participation and the gender wage gap between men and women. In turn, these are due to women’s difficulties in balancing family and work. Allowing women to have the ability to control when to have children will improve the family/work balance, and ensure a more economically and financially sustainable old age.

FIGURE 4.26

Percentage of women age 40+ with assets or savings by labour force participation status



Source: Own estimates, Malaysia Ageing and Retirement Survey 2018–2019. Among women, 22.1 per cent are in the labour force (i.e. employed, unemployed and actively seeking, or on temporary leave), 9.5 per cent are retired, 63.5 per cent are homemakers and 4.9 per cent are “other” (which includes disabled and other unspecified reasons).

In addition to monetary benefits at the individual/family level, appropriate SRH coverage can lead to cost savings for the healthcare system. Short IPI pregnancies are at approximately 14–48 per cent higher risk for preterm birth, depending on the actual duration of the IPI.⁽¹⁹³⁾ Since we do not have categorical ranges for IPI duration in Malaysia, we assume that the average woman with a short IPI is 31 per cent more likely to have a preterm birth compared to women with an IPI greater than 18 months. This translates into 5,188 preterm births in 2017 attributable to short IPIs, which could be averted through modern family planning. Using the most conservative coefficient estimates for length of hospital stay and birthweight for preterm infants, **we estimate universal family planning services can lead to an annual total cost savings of RM19,659,754 for the healthcare system, as a result of decreased preterm birth due to short IPIs.**⁽¹⁹⁴⁾



SECTION 5

Return on Investment for Sexual and Reproductive Health Policies

Return on investment (ROI) is a metric used to assess the value of an intervention. The ROI measures the amount of (monetary) benefits of a particular intervention relative to the costs of the intervention itself. It is computed by dividing the return on an intervention by its costs. This section presents ROI estimates for three types of sexual and reproductive health (SRH) interventions: comprehensive sexuality education (CSE), human papilloma virus (HPV) vaccination and screening, family planning and family support policies. The estimates presented here incorporate only some of the economic channels described in this report that can be quantified with available data. Therefore, the ROIs are likely to be underestimated.

5.1 Return on investment for comprehensive sexuality education

CSE must be “medically accurate, evidence-based, and age-appropriate, and should include the benefits of delaying sexual intercourse, while also providing information about normal reproductive development, contraception to prevent unintended pregnancies, as well as barrier protection to prevent STIs.”¹⁹⁵

CSE has proven to be very effective at reducing the number of unintended pregnancies and

STIs among adolescents,⁽¹²³⁾⁽¹²⁴⁾⁽¹²⁵⁾ including HIV and HPV. Since adolescent pregnancies are at increased risk of unsafe abortions and adverse maternal, perinatal and infant outcomes, CSE yields direct health benefits by preventing mortality and morbidity impacts associated with adolescent pregnancy and STI. In addition, unintended adolescent pregnancies are associated with decreased educational attainment. For example, our empirical analysis has found that, among the respondents to the Fifth Malaysian Population and Family Survey, the risk of not completing secondary education is three times greater among girls with an adolescent pregnancy compared to women who had their first pregnancy after age 20 (Figure 4.9). Given the large returns to schooling in Malaysia, especially for women, low educational attainment has lifetime negative consequences.

In this section, we provide a rough estimate of the ROI for a five-year, fully implemented Pendidikan Kesihatan Reproktif dan Sosial (PEERS) CSE programme,⁽¹⁵¹⁾ looking at two positive outcomes of CSE: increased lifetime earnings due to decreased number of school dropouts, and decreased incidence of HIV infections. The computation thus excludes other benefits, e.g. reduced incidence of other STIs, and improved maternal and child health from preventing high-risk adolescent pregnancies.

An estimated 12,944 adolescent pregnancies were recorded in 2017, including 12,748 live births, 96 stillbirths and 100 cases of “baby dumping” (for adolescents aged 10–19 years).⁽³⁴⁾⁽⁹⁰⁾⁽⁹¹⁾⁽¹⁶⁷⁾ Miscarriage and abortion rates among adolescents are currently unknown, so this number is an underestimate of the extent of adolescent pregnancies. We do not know how many of these pregnancies and births are unintended. However, the Demographic and Health Survey reports that the percentage of unintended births among adolescents in Southeast Asia is, on average, 13.8 per cent.⁽¹⁹⁶⁾ As a consequence, using this number, roughly 1,800 births among adolescents are estimated to be unintended. This can be considered the lower bound in the number of unintended births among adolescents. In addition, an estimated 4,500 pregnancies each year are reported to be out of wedlock. Assuming that all these pregnancies end in an unintended birth, and that 13.8 per cent of births among married adolescents are unintended, 44.2 per cent of all births are unintended – i.e. roughly 5,600 births (Table 5.1). This can be considered the (conservative) upper bound in the number of unintended births among adolescents. Thus, we estimate that annually about 1,800–5,600 births among adolescents are unintended, i.e. 3,700 births on average.

Based on average measures of CSE effectiveness from developed countries,⁽¹⁹⁸⁾⁽¹⁹⁹⁾ we assume that a minimum of five years of exposure to CSE can reduce unintended adolescent pregnancies by 49 per cent, which means that approximately 1,800 live births from unintended pregnancies could be averted through CSE (i.e. between 870 and 2,700). This is the reduction in unintended births if one birth cohort of adolescent girls is exposed to a five-year, fully implemented CSE programme. Thus, we are conservatively assuming that only full attendance to the programme will be effective at reducing the number of adolescent pregnancies.

TABLE 5.1
Estimates for live births among adolescents: upper bound, 2017 (reported)

Age group	Intended live births		Unintended live births	
	Married	Unmarried	Married	Unmarried
10–14	0	0	0	176
15–19	7,110	0	1,138	4,324
Subtotal	7,110 (55.8%)		5,638 (44.2%)	
Total	12,748			

Source: Department of Statistics Malaysia, Vital Statistics 2018, for the number of live births among adolescents age 10–14 and 15–19. Demographic and Health Survey for the percent of unintended births among adolescents, and ⁽¹⁹⁷⁾ for an estimate of the out-of-wedlock births.

Note: Excludes unreported pregnancies, undiscovered baby dumping, miscarriage and abortion. All girls aged 10–14 years are assumed to be unmarried and their pregnancies are assumed to be unintended.

Using the returns to schooling estimates from the World Bank study (where the returns from an additional year of schooling are 13.8 per cent for women), we calculate that just one year of decreased educational attainment can lead to an average decrease in discounted lifetime earnings of roughly RM120,000 (discounted at a rate of 3.0 per cent).⁽¹⁵²⁾ We obtain this number using a Mincerian-type wage equation,⁽¹²⁷⁾ according to which earnings are a function of years of schooling and on-the-job experience:

$$\log w_a = c + \alpha_0 s + \alpha_1 e + \alpha_2 e^2$$

where w_a is wage at age a ; s the years of schooling; $e = \text{age} - 6 - s$ the years of potential on-the-job experience; c a constant; and α_0 , α_1 and α_2 the returns from an additional year of schooling, an additional year of experience and an additional year of experience squared, respectively. We set $s = 12.4$ (the average years of schooling in Malaysia),⁽²⁾ $\alpha_0 = 13.8$ per cent, $\alpha_1 = 4.44$ per cent and $\alpha_2 = -0.055$ per cent.¹ Based on an average monthly wage of RM3,108⁽²⁰⁰⁾ and the fact that the average working age is roughly 40 years old, we determine

¹ Source: personal communication with the authors of the World Bank study.

$c = 5.7$. Discounted lifetime earnings are thus equal to

$$\sum_{a=6}^{64} \frac{W_a}{(1.03)^{15-a}}$$

If a woman loses one year of schooling (e.g. because of an adolescent pregnancy), her discounted lifetime earnings decrease by

$$(1 - e^{-\alpha_0}) \sum_{a=6}^{64} \frac{W_a}{(1.03)^{15-a}} \simeq \text{RM}120,000.$$

Assuming that each woman with an unintended adolescent birth loses one year of schooling, an effective CSE programme can prevent total lost lifetime earnings of roughly RM215,834,000 (i.e. between RM104,841,000 and RM326,171,900).

CSE programmes can also decrease the incidence of HIV/STIs. Currently, the HIV incidence rate in Malaysia is around 0.17–0.20 per 1,000 people, and has remained constant over the last 10 years.⁽²⁰¹⁾ More than 70 per cent of new HIV infections are among people aged 20–39 years, and approximately 95 per cent of these new HIV infections are sexually transmitted. Life expectancy among HIV-positive individuals has increased over the years thanks to improved treatments, often reaching levels close to the general population.⁽²⁰²⁾⁽²⁰³⁾

The Global Burden of Disease estimates that in Malaysia HIV results in 6,364.29 years lived with disability (2019 estimate).⁽²⁰⁴⁾⁽²⁰⁵⁾ Given that 77,903 individuals are currently living with HIV,⁽²⁰¹⁾ the average years lived with disability per person associated with HIV are 0.082 – i.e. HIV-positive persons live on average 8.2 per cent of their life years with a disability. This loss in health is due to HIV disease sequelae, e.g. mycobacterial infection or AIDS.

Assuming that the average age of HIV infection is 25 years old, and that, optimistically, the life expectancy of an HIV-positive person is 10 per cent lower than the life expectancy of the rest of the population, HIV-positive

individuals lose about 7.5 years of life (68.30 versus 75.83), and live 8.2 per cent of the rest of their life (i.e. 43.3 years) with a disability. This results in a burden of disease of 11 disability-adjusted life years (DALYs) per person, where the number is obtained by summing the years of life lost (7.5) and the years lived with a disability (43.3*0.082).

We use the value of statistical life method to monetize the burden of disease due to HIV.⁽²⁰⁶⁾⁽²⁰⁷⁾

The value of an additional (disability-adjusted) year of life can be measured using the value of statistical life year (VSLY) concept, which represents the amount of money an individual is willing to sacrifice for an additional year of life.⁽²⁰⁸⁾ The VSLY is generally assumed to be one to three times income per capita.⁽²⁰⁹⁾ With a gross domestic product (GDP) per capita of RM46,450,⁽²¹⁰⁾ one averted case of HIV is valued between RM516,953 and RM1,550,800, where the numbers have been computed by multiplying the DALYs per person associated with HIV by the VSLY.²

Based on average measures of CSE effectiveness from the literature,⁽¹²⁴⁾⁽¹⁹⁸⁾ we assume that a five-year exposure to CSE in Malaysia is 62 per cent effective at averting new HIV infections. Based on current incidence rates, we assume that the yearly HIV incidence rate for the rest of the population is 0.17 per 1,000, while the yearly incidence rate for the birth cohort exposed to the full CSE programme is 62 per cent lower, i.e. 0.07 per 1,000. Let us further assume that the programme is effective at reducing the incidence rate of HIV for adolescents and young adults (ages 15–29), while we neglect the longer-term effects due to uncertainty over the HIV incidence rate that might prevail in the future. For a birth cohort reaching adolescent age, the risk of contracting an HIV infection before age 30 is approximately equal to 0.25 per cent. This number accounts

² Note that we are implicitly assuming that the growth rate of GDP is equal to the discount rate.

for the yearly HIV incidence rate of 0.17 per 1,000, and for the population survival curve between ages 15 and 30. Given that the size of one birth cohort reaching adolescent age is about 522,000 people,⁽¹⁵⁰⁾ roughly 1,300 of them are expected to be infected with HIV before age 30. Exposure to the CSE programme can reduce the incidence of HIV by 823 cases. Multiplying by the monetary value of one averted case of HIV, the total value of the programme for one cohort is between RM425,519,800 and RM1,276,559,600.

Considering both the gains in lifetime earnings due to increased years of schooling that would otherwise be lost due to teenage pregnancy and the decrease in DALYs due to lower HIV prevalence, lifetime benefits for a single birth cohort resulting from investing in CSE are estimated to be RM641,353,900 if the VSLY is valued at GDP per capita (or RM135 per student), and RM1,492,393,600 if the VSLY is valued at three times GDP per capita (or RM315 per student).

We use Ministry of Education budget data to estimate the cost of a five-year, fully implemented PEERS CSE programme.⁽¹⁵¹⁾ Training is estimated to cost RM4,000 per trainer/teacher. Assuming that all 10,208 primary and secondary schools will have at least two trained teachers to deliver the PEERS curriculum each year, we included one-time training costs for a five-year period and teacher salary for 22 hours per class (16 hours in-class time as recommended by the birthweight, plus an additional 6 hours of teacher preparation time per class). The costs of the universal five-year CSE programme across all primary and secondary public schools in Malaysia are estimated to be RM565,505,049 or \$137.7 million, which translates to RM119 per student for all five years.

Given the estimated benefits and costs, the ROI for fully investing in universal CSE for a five-year period is on average 13 per cent (1.13:1) if one year of life is valued at GDP per capita; it increases to 264 per cent (2.64:1) if

one year of life is valued at three times GDP per capita. Despite the potential benefits of the PEERS CSE curriculum, funding dropped by a factor of 10 over the past five years (from RM120,000 in 2015 to RM12,000 in 2019).⁽¹⁵¹⁾

The analysis has several limitations. We estimated the costs of a five-year fully implemented CSE programme, but we assume that only the birth cohort that completes the programme will benefit from it. As a consequence, we are likely overestimating the costs compared to the benefits considered in the analysis. The effectiveness of the CSE programme at decreasing teen pregnancy and HIV infection is based on research from developed countries and on the value of newly implemented programmes, while the PEERS CSE programme is well established. There are no data on the number of unintended births among adolescents; as a central estimate, and based on existing literature, we assume that roughly 30 per cent of births among adolescents are unintended, but this might be an underestimate (or overestimate). We also include only the potential short-term reductions in HIV infection among adolescents exposed to the CSE programme, although such an exposure is likely to have lifelong positive impacts. Moreover, we rely on population-level estimates of HIV infection, although a better approach would be to develop a HIV epidemiological model for Malaysia to capture the transmission dynamics of HIV. Finally, the ROI estimate does not account for the positive impacts of CSE in other areas, e.g. averted costs due to unsafe abortion, improved maternal and infant/child health (e.g. reduction in the risk of stunting), or increased HPV screening uptake and reduced incidence of cervical cancers through better knowledge about HPV vaccine and HPV infections.

5.2 Return on investment for HPV vaccination and screening

Cervical cancer is one of the most successfully treatable forms of cancer if detected early and effectively treated.⁽¹⁷⁶⁾ The burden of cervical cancer depends on insufficient uptake of control measures (i.e. vaccination and screening); in particular, the burden falls harder on women who lack access to health services.⁽¹⁷⁷⁾ In 2018 the World Health Organization announced a global call to action towards the elimination of cervical cancer, which is defined as less than 4 new cases per 100,000 women per year.⁽²¹¹⁾

HPV testing of adult women is crucial to reducing cervical cancer rates in the short term (since women who get vaccinated after becoming sexually active may have already been infected with HPV and cancer typically takes 15–20 years to develop after exposure), while vaccination of women before the initiation of sexual activity is key to drive down incidence rates in the long term. Additionally, since available vaccines do not protect against all HPV strains responsible for cervical cancer, vaccinated women still need regular cancer screening.

A recent study estimates the mortality impacts of scaling up HPV vaccination and HPV screening around the world.⁽²¹²⁾ The study finds that the global average reduction in cervical cancer mortality due to high HPV vaccination coverage (90 per cent of the targeted population) is only 0.1 per cent by 2030. By 2070, HPV vaccination alone can prevent 61.7 per cent of global deaths. If HPV screening is added to HPV vaccination (at least once in lifetime, with 45 per cent HPV screening coverage by 2023, 70 per cent by 2030 and 90 per cent by 2045), cervical cancer mortality reduces on average by 34.2 per cent by 2030, and 88.9 per cent by 2070. These results suggest that the optimal strategy to eliminate cervical cancer should include both HPV vaccination and HPV

screening. This complementary strategy would easily achieve the goal of eliminating cervical cancer at the global level.⁽²¹³⁾

The study does not provide results specifically for Malaysia. Using the global average reductions in cervical cancer mortality from the accessed study,⁽²¹²⁾ the age-specific cervical cancer mortality rates for Malaysia projected by the Global Cancer Observatory, and United Nations (UN) population projections by age and sex, we estimate that by 2070 there would be approximately 103,000 total deaths from cervical cancer if no HPV vaccination and no HPV screening were implemented.³ Vaccinating 90 per cent of targeted girls would avert about 32,000 deaths by 2070; if rapid scale-up of HPV screening is added to HPV vaccination, about 61,900 deaths could be averted by 2070.

Table 5.2 presents available information on the costs of HPV vaccines and screening methods. Given UN population projections,⁽³³⁾ 10.7 million girls will be vaccinated and at least 10.5 million women will be screened for HPV by 2070. Using

TABLE 5.2
Costs of cervical cancer screening and HPV vaccine in Malaysia

Type of service	Cost (RM)
Conventional pap smear	40
Liquid-based pap smear	80
HPV DNA test	250
Liquid-based paps and HPV DNA	330
Cervarix vaccine	550
Gardasil 4 vaccine	730
Gardasil 9 vaccine	1,350 ^a

a. Assumed price of three doses.

³ Note that the ageing of the Malaysia population implies that more women will be in the ages at risk for cervical cancer in the future, thereby increasing the yearly number of cases.

the price of HPV vaccine Gardasil 9 (which covers 90 per cent of HPV strains responsible for cervical cancer) and the price of an HPV test, we estimated that vaccinating 90 per cent of girls will cost about RM452,000 per death averted by 2070, while a strategy combining HPV vaccination and HPV screening will cost RM277,000 per death averted by 2070.⁴

Since age of death from cervical cancer is around 59 years, and life expectancy in Malaysia for women is about 78 years,⁽²¹⁴⁾ women will live on average for 19 additional years if they do not die of cervical cancer. As before, the value of an additional year of life can be measured using the VSLY concept, which is generally assumed to be one to three times income per capita. With a GDP per capita of RM46,450,⁽²¹⁰⁾ one averted death is valued between RM883,500 and RM2,650,500. The benefits of preventing cervical cancer deaths outweigh the expected costs. **The return of investing in HPV vaccination and HPV screening until at least 2070 is estimated to be 9.6:1 if the VSLY is taken to be equal to GDP per capita.**

The numbers presented here have to be interpreted with caution. On the one hand, the estimated number of averted deaths is based on global average reductions in cervical cancer deaths. More precise estimates require an epidemiological model of HPV transmission specific for the Malaysian context. On the other hand, we have included only the potential benefits of reducing cervical cancer deaths, thereby ignoring the reductions in incidence rates, and the improvements in quality of life associated with prevented cases of cancer. The estimates have also ignored the medical costs of treatment, which affect both the cost and the benefit estimates (i.e. reductions in healthcare costs due to fewer cases and fewer advanced cases). In addition, note that

⁴The total costs have been computed assuming that the discount rate is equal to the price increase.

HPV vaccination can protect not only from cervical cancer, but also from other end-points (e.g. anal cancer, vulva and vaginal cancer, oral cancer, genital warts). The value of preventing these outcomes should also be included in a full analysis.

There is growing evidence that health technologies provide a broad range of socioeconomic benefits, well beyond the reduction in mortality, morbidity and healthcare costs. These broad benefits include, for instance, increased labour force participation and productivity due to improved health (women affected by cancer temporarily or permanently withdraw from the labour force), and increased savings and educational expenditures due to prevented losses in income (medical expenditures may have a negative effect on household income, thereby preventing its use for other purposes). To estimate the value of preventing cervical cancer deaths, we employed the concept of VSLY, which is meant to implicitly capture some of the broad socioeconomic benefits of HPV vaccination and screening.

5.3 Return on investment for family planning

Family planning investments involve small costs, but have the potential to yield sizable returns along health, economic and social dimensions.⁽¹⁶⁰⁾⁽²¹⁵⁾ To realize the benefits of family planning globally, the Sustainable Development Goals set a target to increase “contraceptive demand satisfied by modern methods” to at least 75 per cent in all countries by 2030.⁽²¹⁶⁾⁽²¹⁷⁾ Given the fact that the modern contraceptive prevalence rate (mCPR) in Malaysia is significantly lower than the Organisation for Economic Co-operation and Development (OECD) average, strategic improvements in family planning investments in Malaysia present a low-cost way to sustainably boost domestic human capital in the coming years (mCPR: Malaysia = 34.3 per cent, OECD average = 64.7 per cent).⁽³⁵⁾⁽²¹⁸⁾

The evidence presented in the previous sections suggests that increasing the mCPR enhances human capital through various channels, including increases in female labour force participation, educational attainment, labour productivity, earnings and savings for old age. **In this section, we provide an approximate estimate of the ROI for fully meeting women's contraceptive needs in Malaysia in 2021 by comparing the commodity and service delivery costs with the potential returns in terms of increased in female labour force participation.** Thus, this is a conservative estimate of the potential ROI for family planning because it neglects other positive impacts, including enhancing educational outcomes, labour productivity and savings, and preventing negative health outcomes such as maternal and newborn deaths and STIs. Note that the positive impacts of SRH interventions on educational outcomes are partially considered in the estimation of the ROI for CSE ([Subsection 5.1](#)).

To estimate the potential benefits of fully meeting women's contraceptive needs in Malaysia, we compare three scenarios:

- Current case scenario, where we use current estimates of contraceptive prevalence rates and unmet need for family planning. Current estimates refer to levels of care and unmet need in 2021.
- All-needs-met scenario, where we assume that there is no unmet need for family planning, and all women's contraceptive needs are satisfied with modern methods.
- All-needs-met scenario, where we assume that there is no unmet need for family planning, and all women's contraceptive needs are satisfied with modern methods, and providing more generous family support policies.

We first estimate the number of unintended pregnancies that can be averted in 2021 if all contraceptive needs were met compared to the "current case" scenario. Then, we determine

the number of maternal deaths averted, and the number of women who do not leave the labour force as a result of their motherhood. The potential impact of family planning policies on female labour force participation is mediated by the existence and quality of family support policies, such as paid parental leave, breastfeeding breaks, quality childcare and child benefits. Preventing an unintended birth will induce a woman to participate in the labour force if the children she already has are well taken care of. This points to the fact that the economic and social returns of family planning are enhanced if accompanied by adequate family support policies. In addition, the desire to have children is going to increase with better family support policies.

We estimate that in 2021, the "all-needs-met" scenario can prevent 30 maternal deaths and increase the labour force by 0.27 per cent, which translates into economic benefits equal to 0.11 per cent of GDP. We used UNFPA unit commodity pricing combined with projected contraceptive consumption patterns from satisfying all women's needs for contraception. We computed contraceptive costs for each method and multiplied these commodity costs by a factor of five to account for service delivery costs. The additional estimated cost is equal to \$195.6 million (including service delivery estimates), or 0.05 per cent of current GDP. A conservative estimate of the return for investment in family planning yields an ROI of 2:1 (0.11 per cent divided by 0.05 per cent) – i.e. each RM invested in family planning yields at least RM2. We also estimate that, if more generous family support policies were in place, the "all-needs-met" scenario can increase the labour force by 0.4 per cent, which translates into economic benefits equal to 0.16 per cent of GDP. An integrated portfolio of strategies including family planning investments and enhanced family support policies yield an ROI of 3.27:1, i.e. each RM invested in such an integrated strategy yields at least RM3.

The methodology for estimating the benefits of an “all-needs-met” family planning policy followed these steps: (1) we determined the number of unintended pregnancies in the two scenarios in 2021, and the number of unintended pregnancies averted if all unmet demand for modern contraception is satisfied; (2) given the number of unintended pregnancies averted, we estimated the number of abortions, stillbirths, miscarriages and live births averted; (3) from the number of live births averted, we derived the number of maternal deaths averted; and (4) the number of live births averted also determines the potential additional number of women who participate in the labour force. The value of increasing female labour force participation is assessed by estimating the additional GDP that can be generated from expanding the labour force.

In the “current case” scenario, unintended pregnancies are due to either contraceptive method failure or unmet demand for family planning. In the “all-needs-met” scenario, unintended pregnancies are due only to method failure. [Supplementary Table 10](#) summarizes the demand for family planning satisfied with modern and traditional methods and the unmet demand in the two scenarios.

For the unintended pregnancies due to method failure, we use a 2018 report on contraceptive use in the US by the Guttmacher Institute to determine the effectiveness rate of each contraceptive method.⁽²¹⁹⁾ [Supplementary Table 11](#) reports the effectiveness rates of each method and the percentage of users of each method out of all modern method users as documented in the Fifth Malaysian Population and Family Report. For instance, 13 per cent of the women relying on male condom become pregnant (male condom is effective in 87 per cent of the cases). In contrast, only 0.8 per cent of the women using an intra-uterine device (IUD) become pregnant (IUD is effective in 99.2 per cent of the cases). As a result, the average effectiveness rate of the modern mix

in Malaysia is 94.4 per cent (6.6 per cent of women using modern contraceptives get pregnant). According to the Guttmacher report, withdrawal fails 20 per cent of the cases, while fertility awareness methods⁵ fail 24 per cent of the cases. We thus assume that the effectiveness rate of traditional methods is 0.78. Given the modern and traditional prevalence contraceptive rates summarized in Table 7, the average effectiveness rate of the Malaysian method mix is around 90 per cent in the “current case” scenario, and increases to 94.4 per cent in the “all-needs-met scenario.” The pregnancy rate for women with an unmet need for contraception is assumed to be 31 per cent.⁽¹⁷¹⁾

We estimate that, if all need for contraception is satisfied, about 320,000 unintended pregnancies will be averted. On average, in developed regions, 59 per cent of unintended pregnancies end in induced abortion, compared to 55 per cent in developing regions.⁽²²⁰⁾ Given a stillbirth rate at 5.4 per 1,000 live births in 2019, an intervention aimed at satisfying all demand for family planning prevents about 190,000 abortions, 700 stillbirths and 128,000 live births.⁽²⁴⁾ The maternal mortality rate is equal to 24 deaths per 100,000 live births. As a consequence, the policy would also prevent 30 maternal deaths.

On a global average, a child costs about 1.9 years of work.⁽⁴⁵⁾ However, the length of time out of the workforce due to maternity depends on the type of job. In particular, if women are employed in the informal sector, the time cost is expected to be considerably lower.⁽²²¹⁾ In 2017, 9.4 per cent of employed women were working in the informal sector, which constitutes a non-negligible share.⁽²²²⁾ As an ad hoc assumption, we assume that for women working in the informal sector the time cost is about six months per child. Given the number of

⁵ Fertility awareness methods include periodic abstinence, body temperature methods and cervical mucus methods.

unintended births averted and the size of the informal sector, 121,900 working-age women are positively affected by the policy in a year.⁶ Not all of them would participate in the labour force if they prevented the unintended birth. If women leave the labour force forever after the first child (which seems to be suggested by the low proportion of older women in the labour force), the time cost per child depends on the level of parity. In particular, the positive impacts of delaying the first child would be extremely high, while the benefits of limiting or spacing higher-order births would be negligible, unless adequate family support policies are implemented. Based on Department of Statistics Malaysia (DOSM) 2017 data, 34.3 per cent of births are first-order births.⁽³⁴⁾ As a conservative estimate, we can assume that only these women would enter the labour force if the family planning policy that eliminates all unmet need is implemented. This corresponds to an additional 41,800 women participating in the labour force, which corresponds to a 0.27 per cent increase in labour force compared to the “current case” scenario (with 15.6 million people in the labour force).⁽³⁴⁾ In 2017 (the most recent estimate), the labour share of income was equal to 41.8 per cent.⁽²²³⁾ In other words, a 1 per cent increase in the labour force induces a 0.418 per cent increase in income (or GDP). By meeting all needs for modern contraception, we estimate a 0.11 per cent increase in GDP. **The benefits from investing in an “all-needs-met” scenario outweigh the costs (equal to 0.05 per cent of GDP), yielding a ROI of 2.2:1.**

⁶ A total of 128,000 women have an averted unintended live birth: 9.4 per cent of them work in the informal sector, and would have stayed out of the labour force only for six months; 90.6 per cent of women would have stayed out of the labour force for the entire year.

5.4 Return on investment for family support policies

If appropriate family support policies were in place, we can expect more women to participate in the labour force by preventing unintended births through family planning interventions. In particular, we might also see substantial improvements in labour force participation among older women who already have children and are at their second or higher birth order. Family planning interventions coupled with generous family support policies are effective ways to improve women’s work/family balance and can contribute to preventing the steep decline in labour force participation among adult women that is typical of the Malaysian labour market. Based on the Fifth Malaysian Population and Family Survey, half of the women with children who are currently not working report a desire to work (Supplementary Table 3). We can expect that at least 50 per cent of working-age women with an averted unintended pregnancy would participate in the labour force if improved family support policies were in place, inducing a 0.4 per cent increase in the labour force compared to the “current case” scenario and a 0.16 per cent increase in GDP. **The benefits from investing in an “all-needs-met” scenario and from improved family support policies yield an ROI of 3.27:1.⁷**

5.5 Return on investment summary

In Table 5.3, we present a summary of the ROIs for CSE, HPV vaccination and screening, and family planning, along with the key benefits and assumptions.

⁷ However, note that the costs of implementing family support policies are not included in the determination of the ROI. In other words, we determine what would be the benefits from investing in an “all-needs-met” scenario if family support policies were already in place.

TABLE 5.3

Return on investment summary: SRH in Malaysia

Policy	Key benefits	ROI	Main assumptions
Comprehensive sexuality education: 5-year fully implemented PEERS CSE programme	<ul style="list-style-type: none"> Increased lifetime earnings due to decreased number of school drop-outs Decreased incidence of HIV infections among adolescents and young adults 	1.13:1	<ul style="list-style-type: none"> When monetizing the impact of reducing HIV mortality, the value of one additional year of life is assumed to be equal to GDP per capita Only girls who are exposed to the programme for 5 full years benefit from it Some of the impacts not included: reduction in unsafe abortions, improved maternal and infant/child health, increased HPV screening, reduced incidence of cervical cancers
HPV vaccination and screening: Elimination of cervical cancer by 2070	Reduction in cervical cancer deaths	9.6:1	<ul style="list-style-type: none"> When monetizing the impact of reducing HPV mortality, the value of one additional year of life is assumed to be equal to GDP per capita Number of averted deaths is based on global average estimates of the effectiveness of HPV vaccination and screening Some of the impacts not included: reduction in morbidity, improvement in quality of life, medical costs of treatment, prevention of other end-points through HPV vaccination (e.g. anal cancer, vulva and vaginal cancer, oral cancer, genital warts)
Family planning: Satisfying all unmet need for modern contraception in a year	Increased female labour force participation	2.2:1	<ul style="list-style-type: none"> To account for inadequate family support policies and a desire to raise children rather than work, only 34.4% of the women with an averted unintended birth re-enter the labour force Some of the impacts not included: reduction in maternal and newborn deaths, reduction in unsafe abortions, reduction in STIs, increased educational attainment, increased labour productivity, increased savings
Integrated portfolio of family planning and family support policies: Satisfying all unmet need for modern contraception in a year under the presence of more generous family support policies	Increased female labour force participation	3.27:1	<ul style="list-style-type: none"> To account for the impact of more generous family support policies, 50% of the women with an averted unintended birth re-enter the labour force (corresponding to the percentage of surveyed mothers with a desire to work) Some of the impacts not included: reduction in maternal and newborn deaths, reduction in unsafe abortions, reduction in STIs, increased educational attainment, increased labour productivity, increased savings

CAVEATS

- To address some of the underlying assumptions in our analysis, up-to-date microdata for Malaysia can be used to explore the implications of unintended fertility and of contraceptive use on both female and male labour supply (both labour force participation and hours worked), hourly earnings and annual income (covering individual, family and household income).
- In addition to the impact of SRH on human capital, other relevant issues must be analysed (e.g. the increasing reliance on foreign workers, quality of education in Malaysia and the brain drain phenomenon).
- For a more complete picture, the impact of SRH investments on adult male human capital must also be investigated.
- Data on key SRH statistics such as the modern contraceptive prevalence rate for all women of reproductive age and safe and unsafe abortion rates are required for more accurate return on investment calculations.
- Return on investment was computed only for three SRH interventions. Resources available for the study did not permit inclusion of other key interventions (e.g. gender-based violence prevention, breast cancer screening and treatment). Despite any limitations in the scope of this study, we provide a strong case for investing in SRH. Broadening the scope of this analysis will only make the case for SRH investments more compelling.

Policy Recommendations and Conclusion

A comprehensive sexual and reproductive health (SRH) portfolio that includes the following investments is directly aligned with at least two of the three strategic dimensions of the Twelfth Malaysia Plan, 2021–2025 (i.e. economic empowerment and social re-engineering). While we recommend that these investments be made universally across Malaysia, strategic geographic targeting could improve the economic prospects of the poorest households, thereby reducing inequality.

6.1 Recommendations

1. High-quality maternal health services.

Maternal mortality and morbidity rates in Malaysia have stagnated over the past few decades despite near-universal access to maternal health services. It is likely that poor-quality care is emerging as a greater barrier to poor maternal and newborn outcomes compared to insufficient access. Therefore, we propose that Malaysia continue with the confidential enquiry into maternal deaths (CEMD) that has contributed significantly to reducing maternal mortality, with the goal of eliminating preventable maternal deaths by 2030. In particular, we propose a scale-up of the near-miss investigation/audit that has been started, in line with the World Health

Organization guidelines for near-miss audits for maternal care. To diagnose problems of health system quality for maternal and newborn healthcare, we recommend that the findings of both the CEMD and near-miss investigations be studied in depth to detect any shortfall in quality so that remedial actions can be taken. We also recommend tracking a representative cohort of approximately 1,000 women through pregnancy, delivery and postpartum care using the **E-cohorts for Longitudinal Care Quality** tool, which is currently under development by researchers affiliated with the QuEST Network (Quality Evidence for Health System Transformation) at the Harvard T.H. Chan School of Public Health.⁽²²⁴⁾ The e-cohort sample size proposed here consists of women recruited from one urban and one rural area within Malaysia. We estimate that 420 women per area will be needed to obtain estimates that are representative of the selected area (based on the single population proportion formula, with estimated prevalence of 50 per cent, at the 5 per cent confidence level). We also estimate a maximum loss to follow-up of 18 per cent. In each of the two areas, we therefore suggest recruiting 496 women (420 +18 per cent) from health facilities for a total of approximately 1,000 women. Considerations might also be made to oversample women most at risk

for poor health outcomes (e.g. women with prior hemorrhages, prior neonatal deaths, or older/younger women).

2. **Family planning.** We recommend developing universal, rights-based family planning policies and programmes integrated with the existing national population policy, rather than as an isolated vertical programme. The programme can be developed in collaboration with key stakeholders (e.g. public/private sector representatives and religious leaders) and can be regularly monitored for logistics, supply, quality of care and adherence. While the programme is designed for universal access, targeted beneficiaries will ideally include the bottom 40 per cent household income group (B40) population, adolescents, informal sector workers, migrant workers and other vulnerable groups. Although Malaysia has yet to decide to be a member of the FP2030 (Family Planning 2030; previously named FP2020) partnership, it is recommended that Malaysia follow the progress of this partnership so relevant best practices can be implemented.
3. **Comprehensive sexuality education (CSE).** The success of CSE programmes in Malaysia can be strategically improved by addressing a number of factors including: (1) cultural sensitivity and understanding around the impacts of CSE; (2) consensus on a national curriculum; (3) consistency in skills and attitudes of teachers and trainers; (4) increased family and parental buy-in and involvement; (5) effective collaboration among stakeholders; and (6) sustainable, targeted funding for CSE design, implementation and evaluation.
4. **HPV vaccination and screening.** We recommend emphasizing information on human papilloma virus (HPV) vaccinations and screening in the Pendidikan Kesihatan Reproduksi dan Sosial (PEERS) CSE curriculum, and normalizing these interventions through primary healthcare visits and

strategic public health messaging campaigns.

5. **Family support policies.** As Malaysia continues to invest in family support policies, financing/programme parameters from high-income countries can be strategically adapted for the Malaysian context (e.g. duration of parental leave, wage replacement rates, public/private cost sharing and childcare subsidies). To facilitate shared responsibility and greater gender equity within the home and the labour market, parental leave can be incentivized for fathers. The economic and social returns of family planning are enhanced if accompanied by adequate family support policies. In addition, the desire to have children will increase with better family support policies.
6. **Other SRH investments.** To provide empirical estimates for the value of interventions against gender-based violence, Malaysia-specific data including on gender-based violence prevalence and its health/labour impacts are required. In addition, given that breast cancer is the leading cause of cancer among Malaysian women, we recommend future research on the value of breast cancer screening, diagnosis and treatment.

6.2 Conclusion

This report identifies tangible pathways through which investments in SRH (in the form of CSE, family planning, and cervical cancer prevention and early detection) contribute to the stock of human capital in Malaysia. Combined with family support policies, these investments can thereby promote health, social and economic well-being within the country. **Our results point to SRH investments being a plausible and cost-beneficial pathway to promoting inclusive growth in Malaysia.**





Supplementary Tables

SUPPLEMENTARY TABLE 1

Unmet need for family planning among married women age 15–49 by sociodemographic group

Variable	Unmet need for family planning (%)	p-value	Unmet need for modern family planning (%)	p-value
Married women 15–49	12.5		27	
Age group				
15–19	8.2		12.2	
20–29	7.7		16.7	
30–39	8.9		23.7	
40–49	18.4	< 0.001	35.6	< 0.001
Highest education level				
No schooling	9.6		21.1	
Primary	14.3		28.6	
Secondary	13.7		27.9	
Post-secondary	8.9	< 0.001	24.8	0.0472
Ethnicity				
Malay	13.1	0.0136	27.8	
Chinese	9.1	(excluding	24.5	
Indian	10.6	“Others”)	29.5	
Indigenous	11.9		30.3	
Others	15.3		24.1	
Strata				
Urban	12.2	0.3981	27.6	0.1776
Rural	13		25.9	

Source: Fifth Malaysian Population and Family Survey. No sample weights are included.

Note: We assume that a woman has an unmet need for family planning if she replies “No” to the question of whether she is currently using any family planning method and: (1) she replies “No” to the question of whether she desires another baby (unmet need for limiting); (2) she does not reply “No” to the question of whether she desires another baby, and she reports wanting another baby in at least more than two years, $n \geq 2$ (unmet need for spacing). Unmet need for modern family planning includes the women with an unmet need and the women who reply “Yes” to the question of whether they are currently using any family planning method, select a traditional method when asked about which method they are using, and: (1) she replies “No” to the question of whether she desires another baby (unmet modern need for limiting); (2) she does not reply “No” to the question of whether she desires another baby, and she reports wanting another baby in at least more than two years, $n \geq 2$ (unmet modern need for spacing). The number of women with unmet need for family planning/modern family planning need includes only women who report they “have not ended menstruation.”

SUPPLEMENTARY TABLE 2

Data associated with Figure 4.5: Gender gap in labour force participation rates in Malaysia and high-income OECD countries, 2018 (%)

Country	%	Country	%	Country	%
Lithuania	2.7	Luxembourg	7.7	Average high-income OECD	11.7
Finland	3.2	France	8.2	Slovakia	12.1
Sweden	3.7	Germany	8.3	Ireland	12.1
Norway	4.0	Netherlands	8.8	Hungary	13.7
Iceland	5.0	Switzerland	8.9	Poland	13.8
Denmark	5.3	Austria	9.0	Czech Republic	14.0
Latvia	5.3	Belgium	9.4	Greece	15.6
Slovenia	5.6	United Kingdom	9.4	Japan	15.9
Portugal	6.3	New Zealand	9.5	Italy	19.2
Canada	6.8	Spain	10.1	Republic of Korea	19.2
Israel	6.9	Australia	10.2	Chile	21.1
Estonia	7.3	United States	10.9	Malaysia	25.9

SUPPLEMENTARY TABLE 3

Descriptive statistics related to employment and desire to work by sociodemographic groups, ever-married women age 15–59

Variable	Employed (%)	p-value	Desire to work (%)	p-value
Ever-married women age 15–59	44.5		22.7	
Age group				
15–19	14.8		75.9	
20–29	38.8		44.7	
30–39	49.6		30.2	
40–49	50.2		16.3	
50–59	37		9.2	
Highest education level				
No schooling	39.6		14	
Primary	34.2		22.1	
Secondary	41.4		27.4	
Post-secondary	69.7	< 0.001	18.3	
Ethnicity				
Malay	45.3		21.2	
Chinese	44.8		20.7	
Indian	42		22.6	
Indigenous	42.2		33.1	
Others	38.7		34.6	
Strata				
Urban	46.5	< 0.001	27.8	< 0.01
Rural	41.3		24.3	
Children				
None	59	< 0.001	25.5	0.1077
At least one	43.4		22.5	

Source: Fifth Malaysian Population and Family Survey. No sample weights are included.

SUPPLEMENTARY TABLE 4

Regression results associated with Figure 4.10

Variable	Marginal effect	Standard error	95% confidence interval
Age	0.003***	0.0006	[0.002, 0.004]
Marital status			
Married			
Separated/divorced	0.269***	0.0242	[0.222, 0.317]
Widow	0.151***	0.0239	[0.104, 0.198]
Education			
None			
Primary	-0.075***	0.0215	[-0.117, -0.033]
Secondary	-0.009	0.0226	[-0.053, 0.036]
Pre-university	0.142***	0.0351	[0.073, 0.211]
University	0.301***	0.0253	[0.251, 0.351]
Any health condition	-0.029**	0.0121	[-0.052, -0.005]
Currently pregnant	-0.051*	0.0261	[-0.1012, 0.001]
Number of children	-0.028***	0.03	[-0.034, -0.022]
Location			
Rural			
Urban	-0.006	0.0116	[-0.029, 0.0169]
Ethnicity			
Chinese			
Indian	-0.019	0.0252	[-0.068, 0.03]
Indigenous	0.503**	0.0244	[0.002, 0.098]
Malay	0.032*	0.0178	[-0.003, 0.067]
Other	0.015	0.0375	[0.067, 0.089]

Source: Own estimate, Fifth Malaysian Population and Family Survey (2014).

Note: Number of observations: 7,630. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Results of a probit model with employment status (working, not working) as the independent variable, and the following explanatory variables: age, age squared, educational attainment, any health condition, currently pregnant, number of children, marital status, ethnicity, location.

SUPPLEMENTARY TABLE 5

Impact of timing and spacing on the probability of being employed, ever-married women age 50–59

	Specification 1	Specification 2
Marital status		
Married		
Separated/divorced	0.187*** (0.056)	0.176*** (0.0566)
Widow	0.705** (0.032)	0.068** (0.032)
Urban location	-0.061*** (0.023)	-0.068*** (0.0234)
Ethnicity		
Chinese		
Indian	-0.105** (0.0476)	-0.106** (0.0465)
Indigenous	0.138** (0.0545)	0.145*** (0.0542)
Malay	-0.036 (0.034)	-0.019 (0.0342)
Other	0.098 (0.08)	0.117 (0.08)
Educational attainment		
None		
Primary	0.0041 (0.0292)	0.001 (0.0293)
Secondary	-0.0178 (0.0345)	-0.024 (0.0345)
Pre-university	0.207*** (0.07)	0.202*** (0.07)
University	0.36*** (0.0542)	0.354*** (0.0544)
Any health condition	-0.086*** (0.0229)	-0.0898*** (0.0229)
Age first birth	0.0062** (0.0025)	0.0034 (0.0027)
Short IPI	-0.037* (0.0221)	-0.019 (0.023)
Number of children		-0.0166*** (0.006)

Source: Own estimate, Fifth Malaysian Population and Family Survey (2014).

Note: Number of observations: 7,630. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Results of a probit model with employment status (working, not working) as the independent variable, and the following explanatory variables: educational attainment, any health condition, location, marital status, ethnicity, age at first birth, short interpregnancy interval and number of children (only in model specification 2).

SUPPLEMENTARY TABLE 6

Data associated with Figure 4.16 and Figure 4.17: Quintiles of monthly labour income by sociodemographic groups, ever-married women age 15–59 currently employed (%)

Variable	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Education					
None	50.8	29.4	16.7	2.0	1.2
Primary	35.4	30.2	20.6	8.9	4.8
Secondary	17.3	23.6	28.0	21.9	9.2
Post-secondary	3.6	5.5	11.0	30.9	49.0
Number of children					
None	16.8	18.1	24.4	22.5	18.1
1–2	13.9	17.7	21.7	26.6	20.2
3+	24.2	21.7	18.2	15.6	20.2
Adolescent birth ^a					
Yes	39.0	29.6	18.6	7.3	5.5
No	17.6	18.8	19.7	21.6	22.4

Source: Own estimates, Fifth Malaysian Population and Family Survey (2014). No sample weights are included.

Note: Number of observations: 3,301. This sub-sample includes only working women that reported a monthly income different from zero. We also excluded the top and bottom 0.5% of the sample to avoid possible biases due to reported wage outliers. Number of hours worked is not included in the dataset. Average monthly labour income by quintile: 1st RM 328; 2nd RM 743; 3rd RM 1200; 4th RM 2202; 5th RM 4828.

a. Only women with at least one child.

SUPPLEMENTARY TABLE 7

Data associated with Figure 4.20: Cervical cancer incidence rate and incidence of absolute poverty by state, 2012–2016

State	Cervical cancer incidence rate 2012–2016 (per 100,000 women)	Incidence of absolute poverty 2012–2016 (%)
Selangor	4.1	0.2
W.P. KL & P.	4.3	0.3
Terengganu	4.5	0.9
Kedah	4.6	0.73
Kelantan	4.7	1.33
Perak	5.4	0.8
Pahang	6.3	0.73
Johor	6.6	0.3
W.P. Labuan	6.8	0.73
Melaka	6.8	0.07
N. Sembilan	7.0	0.37
Penang	7.2	0.33
Perlis	8.0	0.73
Sarawak	10.0	1.3
Sabah	12.6	5.0
Malaysia	6.2	0.9

Sources: Malaysia National Cancer Registry Report 2012–2016; Department of Statistics Malaysia, Household Income and Basic Amenities Survey Report 2019. The incidence of absolute poverty for the period 2012–2016 has been computed averaging the poverty rates for the years 2012, 2014 and 2016.

SUPPLEMENTARY TABLE 8

Top three diagnosed illnesses among older adults 40+, by sociodemographic variables

Variable	High blood pressure n (%)	Chi-square	High cholesterol n (%)	Chi-square	Diabetes n (%)	Chi-square
Gender						
Female	1257 (40.1)	40.945**	703 (22.4)	9.047**	595 (19.0)	0.114
Male	790 (31.9)		475 (19.2)		480 (19.4)	
Education level						
No schooling	329 (49.2)	155.643**	173 (25.9)	43.766**	141 (21.1)	8.369*
Primary	730 (44.1)		407 (24.6)		346 (20.9)	
Secondary	826 (31.4)		502 (19.1)		467 (17.7)	
Post-secondary	162 (24.8)		96 (14.7)		121 (18.5)	
Ethnicity						
Malay	1103 (35.3)	9.947*	598 (19.1)	29.172**	635 (20.3)	199.478**
Chinese	235 (37.8)		159 (25.6)		95 (15.3)	
Indian	188 (41.6)		127 (28.1)		184 (40.7)	
Other Bumiputera	470 (37.7)		265 (21.2)		147 (11.8)	
Others	51 (31.7)		29 (18.0)		14 (8.7)	

Source: Own estimation, Malaysia Ageing and Retirement Survey 2018–2019. The prevalence of the top three diagnosed incidence is: 36.5% for high blood pressure/hypertension, 21% for high cholesterol and 19.2% for diabetes.

SUPPLEMENTARY TABLE 9

Percentage of older adults 40+ who are currently working, participate in the management of household finances, have assets or have savings, by sociodemographic variables

Variable	Currently working	Participating in management of household finances	With assets	With savings
Age group				
40–49	60.1	73.6	48.0	50.1
50–59	47.6	69.1	53.9	52.4
60–69	21.0	66.2	54.6	50.0
70 and older	9.5	55.2	53.6	44.3
Gender				
Female	23.2	60.5	44.6	48.3
Male	58.8	76.7	62.3	52.2
Education level				
No schooling	81.1	54.5	45.8	27.8
Primary	69.2	64.7	48.8	40.0
Secondary	56.1	69.6	52.2	54.6
Post-secondary	40.0	80.9	69.4	79.6
Ethnicity				
Malay	60.6	68.1	54.1	58.8
Chinese	65.1	66.3	50.4	63.4
Indian	69.1	54.9	40.9	39.1
Other Bumiputera	58.1	72.6	56.3	28.4
Others	56.9	63.1	29.4	26.9

Source: Own estimates, Malaysia Ageing and Retirement Survey 2018–2019

Note: Working status (D101) was regroup into two categories: “currently working” and “currently not working.” The percentage of individuals participating in the management of household finances include those that responds either “mostly myself” or “jointly together” to the question: “Who mostly manages household finances?”

SUPPLEMENTARY TABLE 10

Contraceptive prevalence rates and unmet need for family planning in Malaysia (%)

	Current case scenario		All-needs-met scenario	
	Married	Unmarried	Married	Unmarried
Women using modern methods	40.7	1.5	72.6	2.1
Women using traditional methods	16.6	0.1	0	0
Women with unmet demand	15.3	0.5	0	0

Source: 2019 World Population Prospects, UN. Data refers to the year 2021. We assume that the total demand for contraception is unaffected by the intervention.

SUPPLEMENTARY TABLE 11

Percentage of women using a modern method out of all women using modern contraceptive methods and effectiveness rate of each method

Modern contraceptive method	Percentage of users	Effectiveness rate
Intra-uterine device (IUD)	7.9	0.992
Female sterilization	20.1	0.995
Male sterilization	2.2	0.9985
Injection	14.3	0.96
Implant	2.0	0.995
Pill	38.5	0.93
Other hormonal (patch, ring)	0.7	0.91
Male condom	16.3	0.87
Total	100	

Source: Percentages of users are from authors' computations based on the Fifth Malaysian Population and Family Survey Report (2014). Effectiveness rates refer to the typical effectiveness of each method among US women: <https://www.guttmacher.org/fact-sheet/contraceptive-use-united-states>

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