

TIME TO CARE: GENDER INEQUALITY, UNPAID CARE WORK AND TIME USE SURVEY



©2019 Khazanah Research Institute October 2019

Time to Care: Gender Inequality, Unpaid Care Work and Time Use Survey. – Kuala Lumpur, Malaysia: Khazanah Research Institute

This work is available under the Creative Commons Attribution 3.0 Unported license (CC BY3.0) <http://creativecommons.org/licenses/by/3.0/>. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following attributions:

Attribution – Please cite the work as follows: Khazanah Research Institute. 2019. Time to Care: Gender Inequality, Unpaid Care Work and Time Use Survey. Kuala Lumpur: Khazanah Research Institute. License: Creative Commons Attribution CC BY 3.0.

Translations – If you create a translation of this work, please add the following disclaimer along with the attribution: This translation was not created by Khazanah Research Institute and should not be considered an official Khazanah Research Institute translation. Khazanah Research Institute shall not be liable for any content or error in this translation.

Published October 2019. Published by Khazanah Research Institute at Level 25, Mercu UEM, Jalan Stesen Sentral 5, Kuala Lumpur Sentral 50470 Kuala Lumpur, Malaysia.
Fax: +603 2265 0088; email: enquiries@KRInstitute.org

All queries on rights and licenses should be addressed to the Chairman's Office, Khazanah Research Institute at the address stated above.

Information on Khazanah Research Institute publications and digital products can be found at www.KRInstitute.org

Cover photo by Nur Alya Zahirah Hazril Faeiz

This report was prepared by the researchers of the Khazanah Research Institute (KRI): Christopher Choong, Adam Manaf Mohamed Firouz, Alyssa Farha Jasmin, Nazihah Muhamad Noor and Rachel Gong*.

It was authorised for web publication by the Board of Trustees of KRI.

ACKNOWLEDGEMENTS

The team is grateful to the overall leadership and guidance provided by Dr Nungsari Ahmad Radhi, Chairman, KRI and Professor Jomo Kwame Sundaram, Senior Research Advisor, KRI. We would like to express our heartfelt appreciation to numerous esteemed persons for providing insightful comments on the report: Professor Jayati Ghosh, Centre for Economic Studies and Planning, Jawaharlal Nehru University, Dr Bahbibah Rahmatullah, National Child Development Research Centre (NCDRC), Dr Tan Beng Hui and Tan Theng Theng.

We want to acknowledge the constant support and contributions from our colleagues, present and past, at the Khazanah Research Institute: Dr Suraya Ismail, Gregory Ho, Tan Zhai Gen, Hawati Abdul Hamid, Siti Najyah Johar Salim and Tan Theng Theng, as well as Nicholas Khaw from Khazanah Nasional Berhad. We would also like to thank Reuben Dass, Nur Aseken Md Ya'cob, Syafiq Jumerian, Kok Chun Chee, Sabreena Zahri, John Loh, Wong Ee Kin, Julia Loh Hui Ern and Cheong Ruoh Wen for their diligent assistance for this report during their time as interns at the Institute. We are grateful to the team at NCDRC, particularly Dr Bahbibah Rahmatullah, Dr Suzani Mohamad Samuri and Nurul Salini Mohamed Salleh, for providing us with the data requested and for facilitating our research on childcare in Malaysia. We want to give a special thanks to the Merdeka Centre for their dedication and untiring contributions during the fieldwork.

In writing this book, we have benefited tremendously from the contributions of the people mentioned above and others whom we have not mentioned but interacted with us at different points of the research process. In the true spirit of the report, we would like to express our deepest gratitude to the people who have done unpaid care work for us, most of the time in the background, so that we could have the time to undertake and complete this report.

*Except the lead author, remaining authors are listed alphabetically.

CONTENTS

ABBREVIATIONS	iv
GLOSSARY	vi
EXECUTIVE SUMMARY	x

SECTION 1	
THE CASE FOR CARE	3
1.1 Overview of the Care Economy	3
1.2 Unpaid Care Work as a Pressing Issue of the Nation	6
1.2.1 Care burden is rising in Malaysia	6
1.2.2 Unpaid care work widens gender gaps in labour market outcomes	9
1.2.3 Unpaid care work impacts poverty and inequality	13
1.3 Measurement of Unpaid Care Work and Production Boundaries	16
SECTION 2	
KRI'S PILOT TIME USE STUDY	24
2.1 Introduction	24
2.1.1 TUS design overview	26
2.1.2 Time use of respondents	29
2.1.3 Realities of unpaid care work	35
2.2 Unpaid Care Work and Labour Market Outcomes	59
2.2.1 Labour supply theory	59
2.2.2 Labour supply equation	61
2.2.3 Regression results	64
2.3 Household Production, Poverty and Inequality	67
2.3.1 Unpaid care work as part of household production	67
2.3.2 Poverty and unpaid care work	76
2.3.3 Inequality and unpaid care work	82
2.4 Key Takeaways from KRI's Pilot Time Use Study	89

SECTION 3	
CARE POLICIES	93
3.1 Framing Care Policies: Theory and Practice	93
3.1.1 Theory and ideals of care	93
3.1.2 Evolution of care policies in Malaysia	95
3.1.3 Malaysia's care policies in action	97
3.2 Care Policy Outcomes in Malaysia: The Case of Childcare	101
3.2.1 The landscape of childcare in Malaysia	101
3.2.2 Formal childcare: options and challenges	102
3.2.3 Informal childcare: options and challenges	113
3.3 Policy Aspirations and Options	116
3.3.1 Care as a productive economic sector	116
3.3.2 Gender equality at both market and domestic spheres	117
3.3.3 Childminding standards: ensuring quality without undue burden	120
APPENDICES	125
REFERENCES	146

ABBREVIATIONS

AUD	:	Australian Dollar
ARCPM	:	Association of Registered Childcare Providers Malaysia
b	:	billion
B40	:	Bottom 40%
BR1M	:	Bantuan Rakyat 1Malaysia
CDR	:	Care dependency ratio
CED	:	Committee for Economic Development of the Conference Board
DOS	:	Department of Statistics
ECCE	:	Early Childhood Care and Education
ECLAC	:	Economic Commission for Latin America and the Caribbean
EIS	:	Employment Insurance Scheme
EPU	:	Economic Planning Unit
GBP	:	British Pound Sterling
GDP	:	Gross domestic product
GOM	:	Government of Malaysia
HIES	:	Household Income and Expenditure Survey
ICATUS	:	The International Classification of Activities for Time Use Statistics
ILO	:	International Labour Organization
JKM	:	<i>Jabatan Kebajikan Masyarakat</i> (Department of Social Welfare)
k	:	thousands
KAP	:	<i>Kursus Asuhan dan Didikan Kanak-Kanak PERMATA</i> (PERMATA Basic Child Care Course)
Kela	:	<i>Kansaneläkelaistos</i> (The Social Insurance Institution of Finland)
KL	:	Kuala Lumpur
km	:	Kilometre
KEMAS	:	<i>Jabatan Kemajuan Masyarakat</i> (Ministry of Rural Development)
KPWKM	:	<i>Kementerian Pembangunan Wanita, Keluarga dan Masyarakat</i> (Ministry of Women, Family and Community Development)
KRI	:	Khazanah Research Institute
LFS	:	Labour Force Survey
LFPR	:	Labour force participation rate
LPPKN	:	<i>Lembaga Penduduk dan Pembangunan Keluarga Negara</i> (The National Population and Family Development Board)
M40	:	Middle 40%
m	:	million
MEA	:	Ministry of Economic Affairs
MEF	:	Malaysian Employers Federation
MOF	:	Ministry of Finance
MOHR	:	Ministry of Human Resources

ABBREVIATIONS

MOM	:	Ministry of Manpower, Singapore
MP	:	Malaysia Plan
MPFS	:	Malaysian Population and Family Survey
MPI	:	Multidimensional Poverty Index
MSF	:	Ministry of Social and Family Development, Singapore
MSIC	:	Malaysian Standard International Classification
MTR	:	Mid-Term Review
MWFD	:	Ministry of Women, Family and Development
NCDC	:	National Child Data Centre
NCDRC	:	National Child Development Research Centre
NEP	:	The New Economic Policy
NPW	:	National Policy for Women
OECD	:	Organisation for Economic Co-operation and Development
OLS	:	Ordinary Least Squares
PERMATA	:	National Permata Programme
PLI	:	Poverty line income
PMO	:	Prime Minister's Office
PWD	:	People with disabilities
RM	:	Ringgit Malaysia
SNA	:	System of National Accounts
SVB	:	<i>Sociale Verzekeringbank</i> (Social Insurance Bank, the Netherlands)
SWR	:	Salaries and Wages Survey Report
T20	:	Top 20%
TABIKA	:	<i>Taman Bimbingan Kanak-Kanak</i>
TADIKA	:	<i>Taman Didikan Kanak-Kanak</i>
TASKA	:	<i>Taman Asuhan Kanak-Kanak</i>
tr	:	trillion
TUS	:	Time use survey
UK	:	United Kingdom
UNDP	:	United Nations Development Programme
UNECE	:	United Nations Economic Commission for Europe
UPM	:	Universiti Putra Malaysia
UNDESA	:	United Nations Department of Economic and Social Affairs
US	:	United States
UWV	:	<i>Uitvoeringsinstituut Werknemersverzekeringen</i> (Social Security Agency, the Netherlands)
YPKT	:	<i>Yayasan Pembangunan Keluarga Terengganu</i> (Terengganu Family Development Foundation)

GLOSSARY

- Ageing population** : A phenomenon that occurs when there is an increasing share of older individuals in the population, usually aged 65 years and above. This results from a decline in fertility rates and an increase in life expectancy rates, causing a decrease in the portion of children and an increase in the portion of older persons. This can mean that each successive cohort of older persons has fewer adult children as sources of support when they reach old age.
Source: UNDESA (2015)
- Care work** : The act of attending to the physical, emotional, psychological and developmental needs of other individuals. It consists of two types of activities, which are direct, personal and relational care activities, such as feeding a baby or nursing an ill partner; and indirect care activities such as cooking and cleaning.
Source: ILO (2018)
- Childbearing years** : The age range in which a woman may become pregnant. Women of childbearing age would be between the ages of 15 and 49 years old.
Source: WHO (2006)
- Cohort effect** : The impact of a group bonded by time or common life experience. It occurs at the intersection of impact of age and period. It can be considered a categorial division similar to social class, which are driven by collective identities.
Source: Christin et al. (2016)
- Committed time** : A component of the time framework, which includes activities to which a person has committed to in order to maintain a home or dwelling and family. Examples include housework, childcare, help and assistance to members of the household or shopping for daily and durable goods.
Source: UNECE (2013)
- Contracted time** : A component of the time framework, which includes the time a person spends on work or education, such as paid employment or participation in regular schools. Time used for self-employment is also considered to be in contracted time, as it involves money.
Source: UNECE (2013)
- Domestic worker** : Individuals who perform work in or for a household. Domestic workers conduct personal and household care. They may work full-time, part-time or on an hourly basis, and may or may not reside in the employer's home. A domestic worker may also be employed by a single household or have multiple employers.
Source: ILO (2015)

GLOSSARY

- Extended income** : The sum of income after tax and the value of goods and services from unpaid household production. Extended income includes estimates for non-market household production of services.
Source: Aslaksen and Koren (2010)
- Free time** : A component of the time framework, which is the remaining time after the other components of the framework are used, i.e. the time left aside from necessary time, contracted time and committed time. Activities during this time may include leisure and unstructured activities.
Source: UNECE (2013)
- Gini coefficient** : A measure of inequality ranging from 0 to 1, whereby 0 describes complete equality and 1 complete inequality. The Gini coefficient may be represented by the area between the line of equality and the Lorenz curve. It is the most commonly used measure of inequality.
Source: Bundervoet (2014)
- Household production** : The production of goods and services for own final use by members of the household. It consists of activities that are not involved in market production.
Source: OECD (2004)
- The International Classification of Activities for Time Use Statistics (ICATUS)** : A classification of all activities a person may spend time on during a given sampled duration of time. It aims to formulate a standard framework for time use statistics based on activities, with standardised concepts and definitions for internationally comparable time use statistics, regardless of the data collection method.
Source: UNSD (2017)
- Income poverty** : When a household income does not meet a nationally established threshold that varies across countries. An individual facing income poverty is considered to be poor when living in a household where the standard of living is below the poverty line.
Source: UNESCO (2017)
- Labour force participation rate (LFPR)** : The percentage of the working-age population in Malaysia who are employed or actively seeking to be employed. The working-age population in Malaysia is defined as people between the ages of 15 to 64 years old. LFPR provides an indicator on the size of the labour force available to engage in productive activities in the economy.
Source: ILMIA (2015)
- Labour market dynamics** : Changes in jobs which includes entries and departures from economic activities. It is affected by the hiring, separation and the establishment and closure of self-employment activities.
Source: OECD (2003)

GLOSSARY

- Life-cycle effect : A theory that discusses the differences in each life stage and how it is associated with varying sets of biological needs, cognitive functions and psychosocial characteristics.
Source: Nikolayenko (2008)
- Malaysia Standard Industrial Classification (MSIC) 2008 : A standard classification of productive economic activities. It aims to provide a set of categories that can be utilised for the collection and presentation of statistics in reference to the economic activities. It is closely conformed to the International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4 which is published by the United Nations Statistics Division.
Source: DOS (n.d.-a)
- Motherhood penalty : The disparity, usually in wages, that women with children face at the workplace compared to non-mothers. This could be due to a variety of factors, such as loss of human capital accumulation during child-rearing years.
Source: Budig and England (2001)
- Multidimensional Poverty Index (MPI) : An index identifying overlapping deprivations by households in three dimensions, which are education, living standards and health. The indicators used to construct the MPI are weighted to formulate a deprivation score. If the household deprivation score is higher than one-third of the weighted indicator, the household is then classified as multidimensionally poor. A deprivation score that is higher than 20.0% but less than 33.3% is classified as near multidimensional poverty. For households with a deprivation score higher than 50%, they are classified as being in severe multidimensional poverty.
Source: UNDP (2016)
- Necessary time : A component of the time framework, which includes activities that is directed towards satisfying basic physiological needs. Examples of necessary time are personal care, sleeping, eating, and hygiene-related activities.
Source: UNECE (2013)
- Non-productive activities : Activities that are not considered to be productive in any economic sense and is excluded from the general production boundary of the System of National Accounts. The activities may include education, training or study, leisure and culture, self-care, begging and stealing.
Source: ILO (2011)
- Paid care work : Care work activities conducted for pay or profit.
Source: ILO (2018)

GLOSSARY

- Poverty line income (PLI)** : The monthly income earned by a household below which the household would be considered poor. The PLI is composed of the Food PLI and the Non-Food PLI. The Food PLI is defined as the amount of income necessary to meet a household's daily nutritional requirements as determined by the Ministry of Health. The Non-Food PLI is defined as the amount of income necessary to meet the basic amenities required by a household.
Source: DOS (2017a)
- Productive activities** : Activities that produce goods and services that are included in the general production boundary of the System of National Accounts. It can be categorised into paid employment, self-employment, subsistence work, volunteer work, or unpaid household service work.
Source: ILO (2011)
- Reproductive role** : Child-rearing responsibilities and domestic duties performed to guarantee the maintenance and reproduction of the workforce. It is not only the biological reproduction by women but also the care of the workforce such as male partners and employed offspring and the future workforce (infants and children in school).
Source: ILO (1998)
- System of National Accounts (SNA)** : An international standard of recommendations on how to assemble measures of economic activity. It provides an overview of economic processes, how production is distributed among consumers, businesses, government and foreign countries. It gives a framework to facilitate the integration of statistical systems to achieve consistency with national accounts.
Source: UNSD (n.d.)
- Time poverty** : A phenomenon whereby an individual has insufficient time for leisure once all working hours are accounted for, whether in the labour market, in domestic work or other activities that contribute to household production. The individual is not able to reduce paid working hours without increasing the level of poverty of the household due to the loss in income resulting from the reduction of working time.
Source: Bardasi and Wodon (2010)
- Total fertility rate** : The expected number of children born to a woman who survives to the end of her childbearing years, subject to the prevailing rate of age-specific fertility rates in the population. It is used as a basic indicator for levels of fertility.
Source: UNDESA (2004)
- Unpaid care work** : Care work activities performed without a monetary reward.
Source: ILO (2018)

EXECUTIVE SUMMARY

Key Takeaways

1. Unpaid care is a pressing issue for the nation

An ageing demographic coupled with growing childcare needs would mean that the care burden from both ends of Malaysia's population spectrum will continue to rise. Unpaid care work also widens gender inequalities in the labour market as it has an outsized role in women's decisions to stay out of the workforce. Moreover, because the current measures of poverty and inequality do not account for unpaid care, they may not capture the full reality of household living standards.

2. Care work is undervalued despite being the backbone of the economy

Care work nurtures society and supports economic production. Yet much of the value generated by care work cannot be quantified and distributed to the producers of these services as most of it does not have a "price". Because household activities do not require a market transaction, they are ignored in traditional estimates of an economy. KRI piloted a time use survey (TUS) to measure unpaid care, as the value—and untapped economic potential—of such work is not accurately reflected in Malaysia's current national statistics.

3. Women face a "double burden" of family and career

Our TUS findings show that women shouldered more responsibility for unpaid care despite working almost the same number of hours as men in paid work. This phenomenon is known as the "double burden" or "second shift", as women tend to continue working in the household after office hours. This burden is made worse by the fact that women often have to multitask to achieve care goals, which further increases their time poverty.

4. Unpaid care work has a negative impact on labour market outcomes

Based on our sample, there is an inverse relationship between unpaid care work and market hours, as well as between unpaid care work and income. Every additional hour spent on unpaid care work translates to less time for market work and less income, widening the gap between those who do the bulk of unpaid care work—typically women—and those who do not.

5. Formal childcare services are hampered by affordability, accessibility

The vast majority of families use informal forms of childcare, relying mostly on relatives and unregistered childcare centres. Informal childcare providers are unregulated and are often associated with poorer quality of care. Meanwhile, most formal childcare centres (*Jabatan Kebajikan Masyarakat* licensed) in Malaysia are not operating at full capacity. Formal childcare services may be inaccessible and unaffordable in places, with some households in Kuala Lumpur paying 15% of their income on childcare fees alone.

6. Striving towards gender equality in the workplace and at home

Care work deserves to be recognised as a productive sector of the economy. Government subsidies and cash transfer programmes can be introduced to stimulate demand for formal childcare as well as enacting labour policies that encourage mothers and fathers to share care responsibilities. Childminding standards for informal and unregistered childcare providers can also be improved through incentivising training and registration.

Introduction

Gender inequality and unpaid care work are inextricably intertwined. Despite improvements made by women in labour force participation, job advancement and remuneration, unpaid care work is limiting progress and slowing the pace of gender convergence in the economy. Anecdotal evidence abounds and data from labour force surveys further lend credence to this aspect of non-market activity having an impact on market outcomes. There is broad agreement on the problem statement, captured considerably in official development planning and policy documents.

However, the nature of unpaid care work taking place predominantly at home—where there is no market transaction—poses a non-trivial challenge to our ability to grapple with the intricacies of the issues and advance understanding that can lead to better and more effective policy solutions. Discourses on the economy, gender inequality and unpaid care work exist in parallel but may not intersect in a meaningful way. The lack of empirical data, or the ability to count unpaid care work, often lead to the magnitude of the problem being underestimated, shifting unpaid care work down the hierarchy of issues that warrant attention and redress.

This is where the time use survey comes in. It is a methodology that comes with a set of instruments that can be used to enumerate non-market activities. Its historical roots are inseparable from unpaid care and its gender implications, but the time use survey has since taken off into many other interesting research directions. While certainly imperfect, many countries across regions and development levels are turning to time use surveys as the tool to bridge the gap between market and non-market activities. International and regional organisations are harmonising standards, and research centres are experimenting with innovative ways to conduct time use studies using new technology.

Our report, *Time to Care: Gender Inequality, Unpaid Care Work and Time Use Survey*, builds on this rich and growing tradition. It is based on a pilot time use survey that we conducted in 2018 but our larger motivation stems from wanting to strengthen the empirical work linking the economy, gender inequality and unpaid care work. We want to demonstrate the usefulness and potential of time use surveys, albeit at a small scale, and the insights that can be derived alongside more representative datasets to spur policy thinking. The report is structured as follows:

- Section 1: The Case for Care – The first section frames the way the report looks at the care economy and draws out measurement issues surrounding unpaid care work.
- Section 2: KRI's Pilot Time Use Study – The second section presents the results and findings of our pilot time use survey.
- Section 3: Care Policies – The third section focuses on policies related to care, both in theory and practice, and puts forward policy considerations that may depart from more conventional narratives.

Section 1: The Case for Care

The report starts off by putting a boundary around the care economy which encompasses the production and consumption of care services. The nature of care i.e. non-market and non-substitutable, strikes at the heart of the problem where care is not scalable, and its value not easily extracted and distributed. It explains why formal care is relatively small and expensive while informal care—comprising the bulk of unpaid care work—is often big and thriving. However, given the linkages of care with the national economy, it is important to configure the care economy not only to support economic growth but also to tap on the economic potential of care as a sector in its own right.

In this regard, unpaid care work surfaces as a critical and pressing issue for Malaysia. Demographic changes and labour market dynamics are accentuating the care burden for the general population, with direct and indirect impacts on the economy. However, the impacts are uneven, with gendered life-cycle patterns observed in the labour market. Women start off well in the workforce but gradually decline in participation, employment, hours worked and wages as they grow older, coinciding with childbearing and parenting years. A majority of women cited housework as an impediment.

Unpaid care work is also pivotal in shaping how we understand, and subsequently address, poverty and inequality in Malaysia, a development agenda that stretches back to the New Economic Policy. The links are not often drawn and may not be immediately clear, but poverty and inequality measures assume that people have time for unpaid care work in meeting their welfare needs. But that may not be true as the country persists in labour-intensive modes of production which consume time, coupled with more women joining the labour market and reducing the amount of time available for household production.

Therefore, it is important to systematically measure and value unpaid care work, situating it within the national accounting framework. Time use surveys have been used for this purpose and have been developed in such a way that they are comparable with the System of National Accounts which underpin gross domestic product (GDP) calculations. Malaysia has conducted a nationally representative time use survey in 2003 but a similar study on such a scale has not been done since.

The section concludes by arguing that having a time use survey as part of Malaysia's statistical apparatus is a crucial investment to unlock the full potential of our workforce in the next phase of the country's development. It segues into KRI's pilot time use study as the first part of a proposed phased approach to institutionalise time use surveys in Malaysia.

Section 2: KRI's Pilot Time Use Study

Our pilot time use study, though not generalisable, provides in-depth insights into the patterns of unpaid care work to supplement analysis using nationally representative datasets as well as confirm findings and claims made in the literature. Supplementing the time use survey, a tool that captures primarily quantity of time, we draw out the more qualitative aspects of time use with structured interviews. These are reported as “Voices from the respondents” throughout Section 2. We also geo-code our data in order to map the travel patterns of our respondents to assess the extent unpaid care work produces gendered spatial behaviour and constrains women’s mobility.

One of our key findings into which many other aspects dovetail is that women in our sample worked similar hours as men in paid employment but undertook more unpaid care work. If travel time is excluded from the calculations of paid working hours, then women worked more than men even in paid employment. All these point to evidence that women in our sample experienced the double burden of work and care. There are permutations to how the double burden is experienced that intensify the sense of time squeeze that confronts women. These find expressions in the fact that women also undertake more unpaid care work as secondary activities—in other words, often doing more than one thing at a time. This is compounded by women having to bear the mental labour of organising household production, proxied by the social context of how these activities are carried out, as well as the inclination for women to undertake tasks that are generally considered less pleasant.

These patterns and allocations of unpaid care work, with important distinctions between direct care and domestic work, have repercussions on labour market outcomes. Using a simple ordinary least squares (OLS) regression, we find empirical evidence that unpaid care work reduces paid working hours and incomes of our respondents regardless of gender. This, however, should not be used to dismiss the importance of gender in unpacking the intersection between unpaid care work and the labour market, especially since unpaid care work is borne more by women than men.

Our regression results also confirm the motherhood penalty for our respondents in terms of a time penalty i.e. mothers worked longer hours than non-mothers in our sample, contrary to the more frequently reported income penalty where mothers receive lower wages upon re-entry into the labour market after giving birth compared with non-mothers. Analysis by life cycle, defined by the presence and age of a child, further supports this narrative that childbearing and parenting years are definitive in shaping labour market outcomes, again more consequentially for women than men. This is in line with the gendered life-cycle patterns underlying labour market outcomes estimated using nationally-representative labour force surveys.

Finally, we use our data to construct a micro household satellite account to estimate the value of household production for our sample, a value which ranges between 30 and 35% of average household income. Using the same valuation method, we calculate new poverty and inequality rates for our respondents when unpaid care work is incorporated. Our analysis of what we call time-adjusted poverty and inequality rates reveal similar gender, income and life-cycle themes, raising pertinent questions on the role of policies when the space for household production diminishes with more women entering the labour force.

Section 3: Care Policies

We locate Malaysia's care policies within theoretical discourses on care models, showing how Malaysia has evolved from a traditional male breadwinner model to a universal breadwinner model that emphasises gender equality in the labour market, corresponding with economic development and structural change. We acknowledge the success in closing gender gaps, but also draw attention to the weakness of a lopsided articulation of gender equality that neglects the domestic space. The concern is the double burden, affirmed by our pilot time use study, and the plateauing of gender inequality reduction if the issue of unpaid care is not resolved.

Against this framing, the report dives into the childcare sector to tease out policy issues using the parameters of sufficiency, affordability, quality and accessibility. We find the formal childcare sector to be insufficient—with caveats that this does not imply physical expansion but rather having the appropriate types of childcare centres—and unaffordable. On the other hand, informal childcare is sufficient and affordable but suffers from quality concerns due to the lack of regulatory oversight.

Based on this, we argue that the policy aspiration is to strike a balance between expansion of the formal childcare sector and gradual formalisation of informal childcare that recognises and values unpaid care work. Expansion of the formal childcare sector requires investments on the demand side to address structural problems in the formal care market, and gradual formalisation requires appropriate standards as well as proportional incentives. These should be packaged together as a coherent set of family benefits that respect parental choice and should be designed in tandem with gender-sensitive parental leave policies that are built on the notions of gender equality in both market and domestic spheres.

SECTION

01

THE CASE FOR CARE	3
1.1 Overview of the Care Economy	3
1.2 Unpaid Care Work as a Pressing Issue of the Nation	6
1.2.1 Care burden is rising in Malaysia	6
1.2.2 Unpaid care work widens gender gaps in labour market outcomes	9
1.2.3 Unpaid care work impacts poverty and inequality	13
1.3 Measurement of Unpaid Care Work and Production Boundaries	16

“Work can be very productive and create value for society even if it's unpaid.”

Nancy Folbre
Interview in *Economic Rockstar*

SECTION 1

THE CASE FOR CARE

1.1 Overview of the Care Economy

Care work nurtures society and supports economic production. It is defined by the International Labour Organization (ILO) as “activities and relations involved in meeting the physical, psychological and emotional needs of adults and children, old and young, frail and able-bodied”¹. In this report, we use the term “care economy” to put a wider boundary around care work, encompassing the production and consumption of care services by different agents in the economy.

Within the care economy, care work can be defined by its relations to the market, remuneration of work, characteristics of the work being undertaken and profile of care beneficiaries². Care work can take place in both formal and informal markets as well as in households where there is no market transaction. The remunerative dimension further demarcates care work into paid and unpaid care work—the former usually takes place in formal and informal markets while the latter occurs in households as part of non-market household production.

In terms of work characteristics, care work comprises more direct provision of care that involves close interactions between provider and beneficiary e.g. reading to a child, giving medicine to the sick; and indirect provision of care in the form of domestic services e.g. cooking, laundry, cleaning. In this report, we use the term “care work” to represent both direct and indirect forms of care. In the event that we need to distinguish the two, we use “direct care work” and “domestic work”. As for care beneficiaries, they can be grouped into the following: children, the elderly, people with disabilities (PWD), the sick and adults. Adults are counted as beneficiaries because of the broader notion of care that includes domestic services.

Table 1.1 shows the boundary of the care economy used in this report. On the production side, state, market and families are institutions that operate across the formal-informal spectrum as producers of care services. On the consumption side, they are grouped according to the beneficiaries mentioned above. At the individual level, people are both producers and consumers of care services. We define the caregiving population as those aged 20 – 64 because we assume that individuals in this age group tend to be net producers of care services while those outside this age range are net consumers of care services.

¹ ILO (2018)

² Folbre (2006)

Table 1.1: Boundary of the care economy

Market	Remuneration	Work Characteristics	Children	Elderly	PWD	Sick	Adults
Formal	Paid	Direct Indirect	Registered care centres; Market provision of domestic services				
Informal	Paid	Direct Indirect	Unregistered family day care; Domestic workers in households ³				
Non-Market	Unpaid	Direct Indirect	Unpaid care and domestic services for household and family members				

Source: KRI's adaptation of Folbre (2006)

The outputs of the care economy are private goods in that they are generally rivalrous and excludable. For example, sending a child to a childcare centre would reduce one spot for another family (rivalrous) and a childcare centre can prevent those who do not pay their fees from sending their children to the centre (excludable). At the same time, there is also a merit good component to care services. The improvement of family well-being attributable to care work also improves the well-being of the entire community⁴, but care work is generally under-produced in the economy.

While we acknowledge that the care economy creates value for families and society, there is a disconnect with the value extraction process because the value that is generated as part of household production does not have a “price”⁵. The price discovery does not take place because the nature of production in this case does not require a market transaction. Given the likelihood that the bulk of care work takes place as unpaid work, this means that a large part of the value generated cannot be extracted and distributed to the producers of these services.

The existence of substantial amounts of unpaid care work have implications for the quality of care. By leaving a large portion of care work to the unpaid, informal sector, we assume that unpaid care work is unskilled and can be performed by untrained workers at home. However, we know that good quality early childhood education and geriatric care require skills and training.

In addition, unpaid care work tends to be socially unrecognised and undervalued, with little consideration for terms and conditions of such work. Such excessive unpaid care work, where the costs are absorbed by the providers, further reduces the quality of care services provided⁶. This creates a vicious cycle of care deficits for both the providers and recipients of care. These implications are gendered since women are more likely to do unpaid care work and may affect women's participation, employment and wages in the labour market.

³ Although domestic workers may have contracts with their employers, they are classified as informal because households are not registered entities. In Malaysia, domestic workers are also not covered by the Employment Act 1955. This classification is consistent with the System of National Accounts (SNA) where paid domestic workers are categorised under non-market production.

⁴ Folbre (2006)

⁵ Mazzucato (2018)

⁶ Razavi (2007)

On the other hand, in the formal market, care services suffer from the Baumol effect⁷. This is the increase in the cost of care driven by price and wage increases in other sectors without corresponding increases in the productivity of care services. This affects affordability and dampens market demand for care, further driving growth in the informal and non-market spheres. Increasing cost cannot be mitigated by productivity gains in the care economy without compromising quality. Using the analogy of a string quartet, Baumol once wrote, “neither cutting the number of players nor playing faster could raise its labour productivity without substantially changing the nature of what it produced.”⁸ Although technology could be deployed to increase productivity in domestic services e.g. vacuum cleaner and microwave, the effects of technology on gender inequality and household division of labour are mixed⁹. Moreover, the direct provision of care would still suffer from the Baumol effect.

The Baumol effect illustrates the more adverse relationship between care work and other sectors in the economy. It explains why informal and non-market care remain large while it is difficult to achieve economies of scale in formal care. However, there are also more benign linkages that should be highlighted.

Formal care contributes directly to the national economy in outputs, earnings and employment. In the United States (US), the childcare industry generated a total revenue of USD47.2b, a total employment of 1.5m and total earnings of USD18.8b in 2016¹⁰. In Australia, a childcare subsidy plan that was implemented in 2017 is estimated to add 29,000 full-time employment and increase real GDP by AUD7.6b by 2050—it even projected net fiscal savings of AUD4.3b in the long term¹¹. In the United Kingdom, similar estimation shows that a 2% GDP investment in care industries can produce an additional 1.5m employment opportunities¹².

Moreover, there are multiplier effects when revenue generated from the care economy is used to procure goods and services from other sectors¹³. Earnings from the care economy that are spent in other sectors would further amplify the economic multiplier¹⁴. Based on the above figures, the childcare industry in the US further generated USD52.1b in other sectors from the revenue of USD47.2b plus an estimated half a million additional jobs from a total employment of 1.5m¹⁵.

⁷ Baumol and Bowen (1993)

⁸ Ibid.

⁹ Shelton B.A. (2006), Voicu et al. (2009)

¹⁰ CED (2019)

¹¹ PWC (2016)

¹² De Henau et al. (2016)

¹³ This is known as indirect effects or Type I multiplier.

¹⁴ Earnings spent on other sectors generate the induced effects—the multiplier that comes from both indirect and induced effects is called the Type II multiplier.

¹⁵ CED (2019)

The size of unpaid care work suggests that there is untapped economic potential. The ILO estimates that unpaid care work is equivalent to 9% of global GDP or USD11tr valued at the minimum hourly wage¹⁶. Upper middle-income countries such as Turkey, China and Thailand have unpaid care values of 13.2%, 7.6%, and 5.5% of GDP, respectively¹⁷. In Latin American countries, the economic value of unpaid care work contributes between 18% and 24% of GDP¹⁸. Investing in the care economy as a productive sector and increasing the size of the formal care sector will increase employment and consequently expand the national economy. A simulation by the ILO shows that doubling investment in the care economy will create an additional 117m new jobs above the baseline scenario or a total of 269m new jobs globally by 2030¹⁹.

1.2 Unpaid Care Work as a Pressing Issue of the Nation

Care work, particularly unpaid care work, is a pressing issue for Malaysia. While we situate care work within the broader care economy described above, the focus is on unpaid care work because of its relative size compared with formal care as well as its significant impact on the labour market, household production, poverty and inequality. In this section, we expound three arguments on why care work should be considered a pressing issue of the nation.

1.2.1 Care burden is rising in Malaysia

Malaysians are living longer and giving birth to fewer children. Life expectancy at birth for women increased by 17.3% from 1970 to 2017; for men, it increased by 15.2% for the same period. Total fertility rate (TFR) went in the reverse direction at an even more rapid rate, decreasing by 66.7% (Figure 1.1). The trend suggests that the care burden will be increasingly driven by an ageing population underpinned by the formation of smaller households.

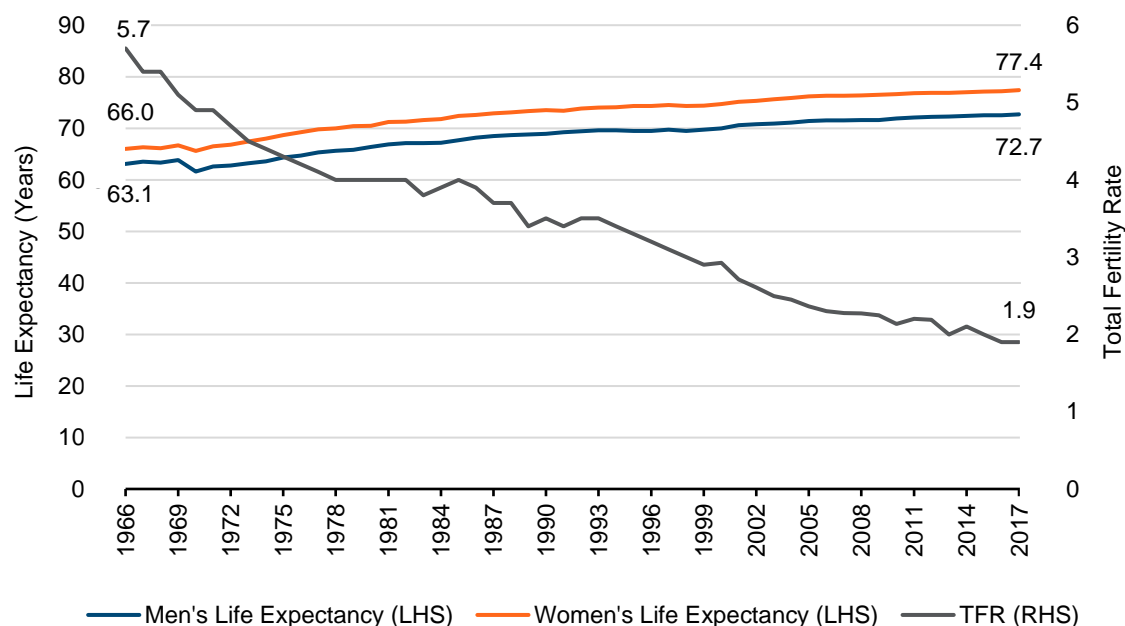
¹⁶ ILO (2018)

¹⁷ Ibid.

¹⁸ ECLAC (2017)

¹⁹ ILO (2018)

Figure 1.1: Life expectancy at birth and total fertility rate, 1966 – 2017



Note: Life expectancy is projected for 2016 and estimated for 2017.

Source: DOS (2017b)

However, even as we recognise the care burden from one end of the age spectrum, it is also important to note that the absolute number of children²⁰ was still 5.0 times the number of older people in 2018²¹. Moreover, as quality childcare becomes a growing priority for parents, the provider-to-child ratio will likely increase. This means that society will still be required to produce similar or a greater number of childcare providers despite the reduction in the number of children.

Hence, both ends of the age spectrum add on to Malaysia's care burden in different ways. We further argue that labour market dynamics play a crucial role in determining society's care burden. Increasing labour force participation without a parallel growth in formal care means augmenting the burden of those who must work and care at the same time, or disproportionately allocating more of the burden to those outside the labour force.

To assess the impact of demographic trends and labour market dynamics on the care burden, we have constructed care dependency ratios for Malaysia using a modified version of the Madrid Scale²². Our approach has two advantages. First, different weights are assigned to each age group to reflect variation in care needs. The highest weights are assigned to the oldest and youngest groups, and the weights progressively decline towards the middle age groups. Second, our care dependency ratios calculate the care needs of the entire population, not only groups at the two tails of the age distribution. This is consistent with our care economy boundary that includes adults and domestic services.

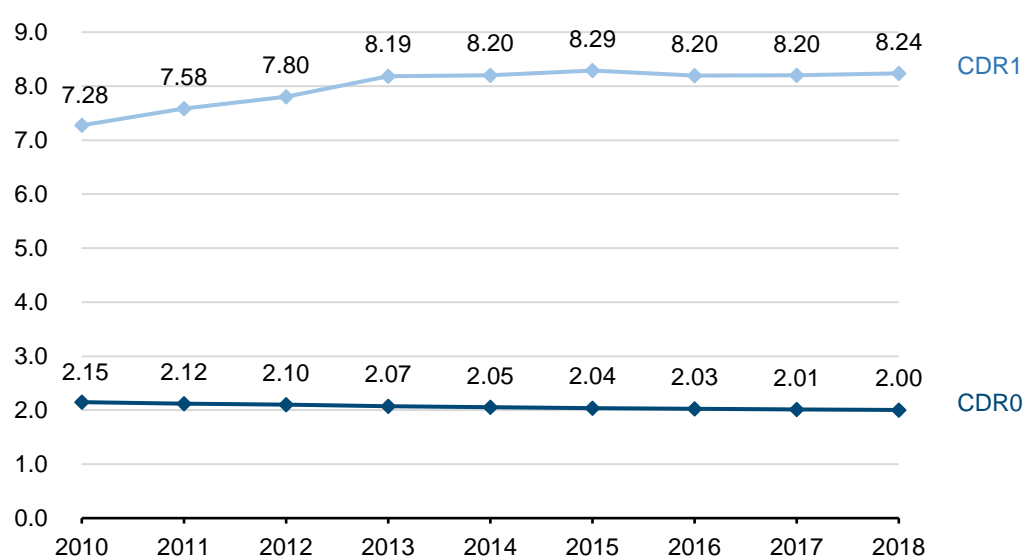
²⁰ Based on our earlier definition of caregiving population, we use age 19 and below to describe "children" as those who are net recipients of care. This is different from the legal definition of children i.e. below age 18.

²¹ Age 65 and above.

²² Moñtano and Rico (2007). The detailed methodology is described in Appendix A and first appeared in Choong et al. (2018).

Based on this approach, two care dependency ratios are constructed i.e. CDR0 and CDR1 (Figure 1.2). CDR0 measures society's care burden without taking labour market dynamics into account. It is a crude ratio of society's care burden on the total caregiving population. CDR1, on the other hand, incorporates labour market dynamics into its calculations. It is a crude ratio of society's care burden on the caregiving population outside the labour force. We argue that CDR1 is more realistic as it takes labour force participation as reducing caregiving time²³, and the assumption that care providers are mostly outside the labour force is reasonable because of the relatively small size of the formal care sector and the large number of women who cited housework as the reason for staying outside the labour force²⁴.

Figure 1.2: Care dependency ratios 0 and 1, 2010 – 2018



Source: DOS (Various years-a), DOS (Various years-b) and authors' calculations

As expected, CDR0 shows a small decline in care burden from 2.15 in 2010 to 2.00 in 2018. This is driven by the faster increase in the caregiving population (19.4%) compared with care recipients (11.4%). A slower increase in care recipients is caused by negative growth in the number of children (-0.6%) whereas the number of older people increased more than the caregiving population (46.2%). However, CDR0 does not factor in quality childcare and how it affects the provider-to-child ratio. Hence, it understates society's care burden.

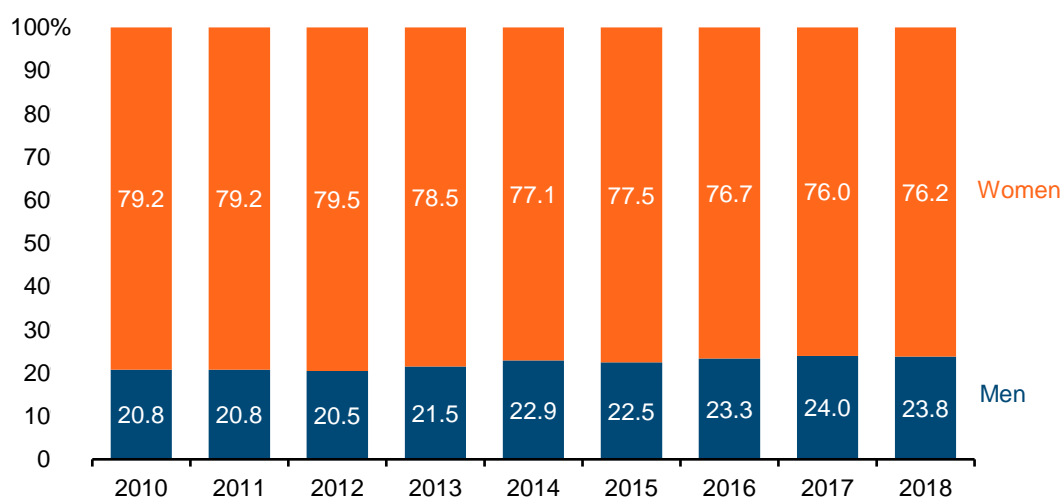
In contrast, CDR1 shows that the care burden increased from 7.28 in 2010 to 8.24 in 2018. The caregiving population in CDR1 includes only those outside the labour force, which has seen a small decline (-1.6%) on the back of improvements in the labour force participation rate (LFPR). Although CDR1 also does not factor in quality childcare, its inclusion of labour market dynamics captures the intensity of society's care burden when those aged 20 – 64 increasingly joined the labour force, leaving a large part of care needs to those outside the labour force.

²³ However, both CDR0 and CDR1 exclude the double burden of formal work and unpaid care work undertaken by those in the labour force. We argue that the double burden is best estimated using a time use survey.

²⁴ Choong et al. (2018)

Figure 1.3 shows that caregiving population outside the labour force was still predominantly women. In 2018, it was 76.2% women and 23.8% men. Although the proportion of men increased (14.4%) and the proportion of women decreased (-2.1%) between 2010 and 2018, care burden on those outside the labour force still fell disproportionately on women. This has implications for gender gaps in labour market outcomes which will be discussed in Section 1.2.2.

Figure 1.3: Caregiving population outside the labour force in Malaysia, by gender, 2010 – 2018



Source: DOS (Various years-a), DOS (Various years-b) and authors' calculations

1.2.2 Unpaid care work widens gender gaps in labour market outcomes

There are clear gendered life-cycle patterns when we observe gender gaps across a range of labour market indicators. We hypothesise that unpaid care work contributes significantly to these patterns. Our hypothesis is grounded in the Labour Force Survey (LFS) that shows that the majority of women in Malaysia cited housework and family responsibilities as the reason for not joining the labour force²⁵. This is a lost opportunity because more economic participation by women can boost the national economy, mitigate the impact of an ageing labour force and foster innovation²⁶.

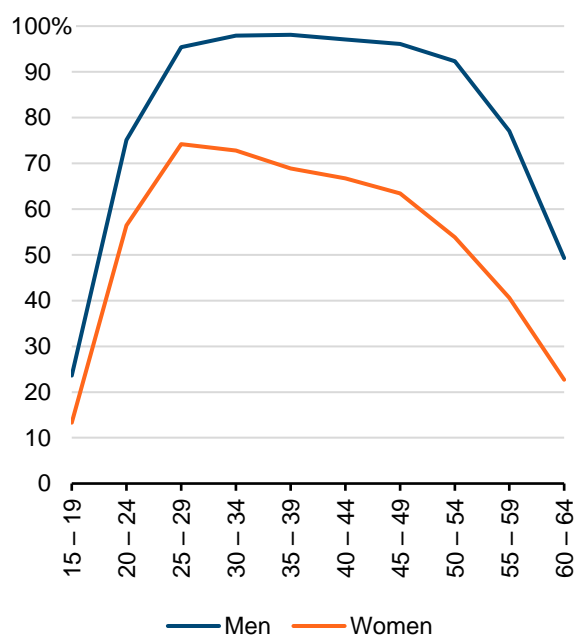
The gender gap in LFPR has been unevenly distributed across age groups at least as far back as twenty years ago. Compared with prime-age men who have recorded almost full participation in 2018, women's participation peaked at the 25 – 29 age group and thereafter decreased gradually for each subsequent age group (Figure 1.4). This results in a gender gap in LFPR that increased with age.

²⁵ The statistics only capture participation in the formal labour market. However, women could be working in the informal sector as well.

²⁶ KRI (2018a)

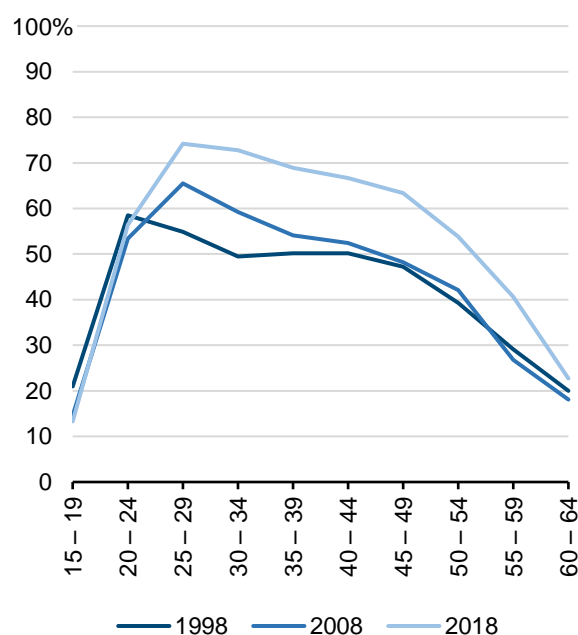
Although women's participation in the labour force has improved over the years, the single-peaked pattern of women's LFPR by age profile has remained persistent (Figure 1.5)²⁷. In other words, older women were still less likely to participate in the labour force than their younger counterparts. Either women did not return to the labour force after giving birth or older women left the labour force to help younger families, older parents or sick members of the family manage care and domestic responsibilities²⁸.

Figure 1.4: Labour force participation rate, by gender and age group, 2018



Source: DOS (2019)

Figure 1.5: Women's labour force participation rate, by age group, 1998, 2008, and 2018



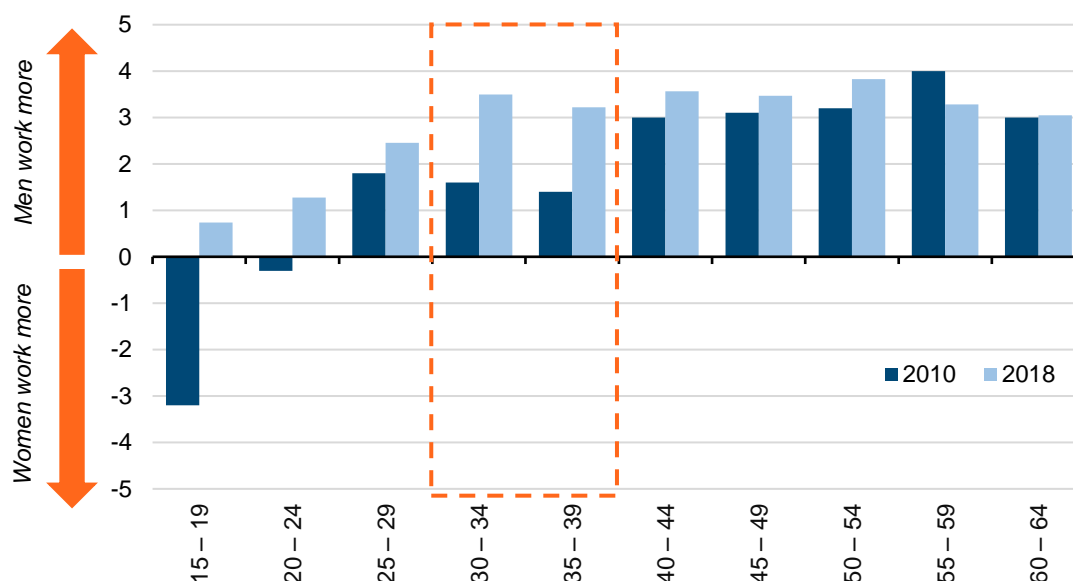
Source: DOS (Various years-b)

Labour force participation may not always be a binary decision. Faced with changing care and domestic responsibilities, decisions could be about increasing or decreasing paid working hours instead of staying or leaving the labour force completely. Statistics show that women on average worked fewer hours per week than men, and this gap also increased with age (Figure 1.6). The gender gap in hours worked was largest for those aged 50 – 54 in 2018, with women working on average 3.8 hours less than men.

²⁷ A snapshot of LFPR by age profile in a particular year hides two underlying effects, namely the cohort and life cycle effects. On the one hand, each age group represents individuals born in different years. Hence, their LFPR to a certain extent is a result of certain cultural and social norms prevalent in their generation. This includes their general educational environment and gender stereotypes—this is the cohort effect. On the other hand, each age group also represents different stages of life, influenced by age-specific decisions such as enrolment into tertiary education, entry into marriage and parenthood as well as retirement—this is the life-cycle effect (ibid.). It is impossible to disentangle both effects by observing the snapshot of LFPR in a particular year.

²⁸ Bettio et al. (2006)

Figure 1.6: Gender gap in mean hours worked, 2010 and 2018



Source: DOS (2011), DOS (2019)

In Figure 1.6, those aged 30 – 34 and 35 – 39 experienced the largest increase in the gender gap of hours worked between 2010 and 2018. This spike coincides with the increasing LFPR gap after the ages of 25 – 29. This means that women were not only participating less in the labour force after ages 25 – 29 age but also working fewer hours than men, reinforcing the non-binary way women balance work and care. Furthermore, women opted for jobs that gave them more flexibility, proxied by the large increase in own account workers in both formal and informal work²⁹. This was at the expense of job security, income stability and social protection³⁰.

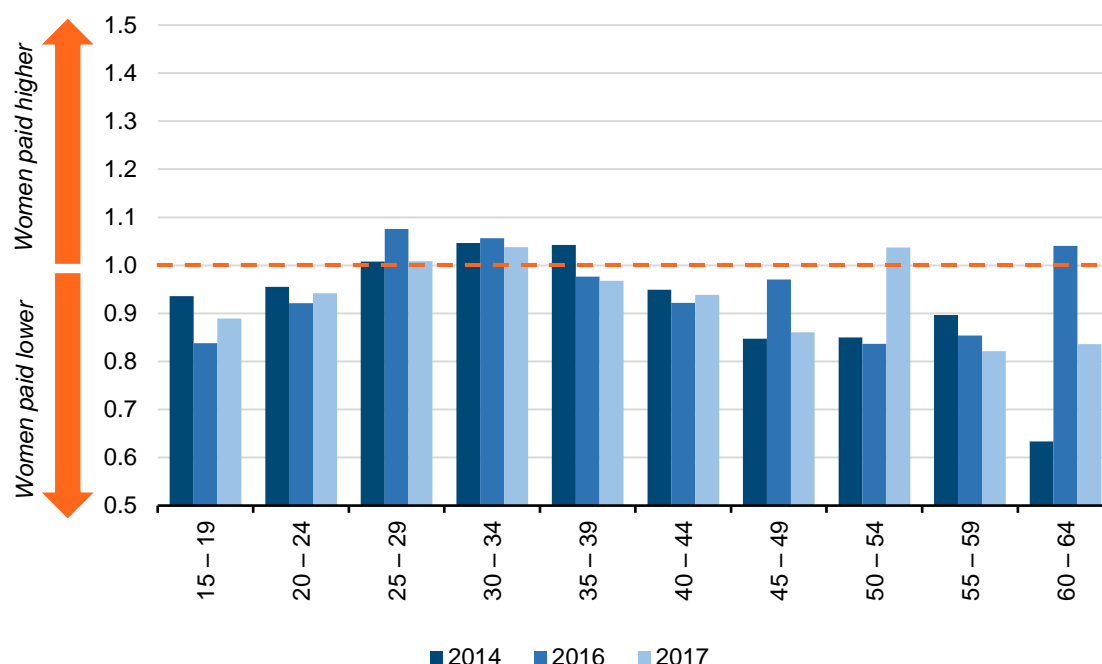
Disparity in labour force participation is intertwined with wages and salaries. The age distribution of the gender wage gap in Malaysia mirrors the women's LFPR curve by age profile observed earlier (Figure 1.7). Focusing on wages and salaries of prime-age earners, women in their early prime ages i.e. ages 25 – 34 generally earned more than men. This pattern, however, was reversed when they reached their later prime ages i.e. aged 35 and above, where men earned on average more than women³¹.

²⁹ KRI (2018a)

³⁰ Choong et al. (2018)

³¹ From 2017 onwards, the age breakdown of salaries and wages is published for Malaysian citizens only. Given the larger number of male non-Malaysian citizens who are low-waged workers, excluding non-Malaysian citizens is likely to increase the gender wage gap.

Figure 1.7: Gender gap in mean wages and salaries, 2014, 2016, and 2017



Source: DOS (2018b)

Women who return to the labour force after childbearing years are likely to receive a wage penalty for the loss of time and experience due to reproductive roles and responsibilities outside formal work³². The trend reversal in gender wage gaps from the mid-30s onwards underscores the importance of investigating the extent that unpaid care work has a bearing on the gender wage gap.

Based on the above, the narrative that can be pieced together is intuitive i.e. women in their childbearing years are participating less in the labour force and working fewer hours but could potentially return to the labour force in their mid-30s with a wage penalty. The turning point for women corresponds with women's childbearing and parenting years—female mean age of childbearing is 30.9 years³³. It supports the hypothesis that unpaid care work is crucial in explaining gender gaps in labour market outcomes. In 2018, almost 60.2% of women outside the labour force cited housework and family responsibilities as the reason for not being in the labour force compared with only 3.6% of men. Similarly, 31.5% of women were underemployed i.e. worked less than 30 hours weekly due to housework compared with only 4.1% of men.

³² Kleven et al. (2018)

³³ UNSD (2017)

1.2.3 Unpaid care work impacts poverty and inequality

Poverty and inequality have always been high on the national agenda. The New Economic Policy (NEP), formulated in 1970, has eradicating poverty regardless of race as one of its two major thrusts. Inclusive growth was also a mantra of the NEP, where inequality was addressed by enlarging the economic pie, not through direct income redistribution³⁴. The NEP has since been updated with the National Development Policy, National Vision Policy and the New Economic Model, but the twin goals of eradicating poverty and reducing inequality remain key priorities in all these subsequent policies.

The inadequacy of conventional poverty and inequality measures i.e. poverty line income (PLI) and Gini coefficient has led to a proliferation of new measures to capture deprivations and distribution. The bottom 40% (B40) household income group was introduced in the 9th Malaysia Plan and has both absolute and relative poverty elements in it. In the 11th Malaysia Plan, the government announced the Multidimensional Poverty Index (MPI) as a complement to the PLI. In the Mid-Term Review of the 11th Malaysia Plan, a relative poverty concept was introduced in the form of “low-income households”³⁵.

Despite efforts being made to improve poverty and inequality measures to better capture realities on the ground, all these measures suffer from one similar weakness: they rely exclusively on market income and exclude non-market work as measures of household living standards. The PLI, MPI³⁶, B40 and Gini coefficient are all derived from the Household Income and Expenditure Survey (HIES), a dataset that is published by the government twice every five years.

The exclusion of non-market work omits the value of goods and services produced by households for their own consumption. The outputs of household production include housing, nutrition, clothing, care, volunteer work and transport³⁷. These outputs are typically not assigned a monetary value because they are unpaid work and therefore not transacted in the market. Housing, nutrition and clothing can be categorised as unpaid domestic services and care is equivalent to unpaid care services based on our care economy boundary. Transport encompasses all travels related to household production. Volunteer work is work rendered to other households and communities.

³⁴ UNDP (2014)

³⁵ The term relative poverty is not officially used although its definition of 50% below the median and above the PLI is close to a standard relative poverty measure.

³⁶ The MPI uses the Basic Amenities Survey which is enumerated and published together with the HIES.

³⁷ Baigorri (2003)

Omitting non-market work is problematic because household production is an important substitute for, and facilitator of, market production. For example, a household that does its own laundry will not need to send clothes to laundry services which incur expenses and reduce market income. In the context of direct care, a household that takes care of dependents at home means that care services will not need to be procured from the market. Therefore, the exclusive use of market income and the exclusion of non-market work biases poverty and inequality estimates³⁸. This is especially pertinent in the case of Malaysia because of the increase in women's participation in the labour force over the years which reduces the time available for household production and increases the need for more market income to substitute for goods and services once produced at home.

What does this mean for poverty and inequality?

For poverty, it means that we should account for time deficits in determining the poverty threshold. Income poverty is premised on the idea of a minimum income that is required for households to purchase a set of goods and services necessary to meet a subsistence standard. Implicit in the construction of the poverty line is the assumption that households also have a minimum amount of time for household production³⁹. For example, in Malaysia's PLI, the food basket is predominantly made up of unprocessed food e.g. rice, flour, fresh fish, chicken and vegetables⁴⁰. Households would need a certain amount of time to convert unprocessed food into consumables.

However, if households have to work long hours and do not have the required minimum time for household production, it means that these basic goods and services will now need to be purchased as end products from the market. This pushes up the amount of minimum income required to afford this set of goods and services. In this sense, time deficits should be imputed with monetary value and added to the original poverty threshold to account for market substitutes of household production.

The schematic diagram in Figure 1.8 provides an illustration. The PLI in this economy is the straight horizontal line at M_0 . M_0 is the minimum income or poverty threshold. The assumption is that households have a sufficient amount of time, denoted here as between T_m and T_1 to undertake household production. T_m is the total amount of time available after deducting necessary time⁴¹ or time required for personal maintenance such as sleeping and eating. T_1 is the minimum time for unpaid care work. When time for unpaid care work falls below T_1 , say to T_2 , this means that households will need to substitute these goods and services from the market. This pushes the minimum income required to M_1 . As a result, the new poverty line or the time-adjusted poverty line is now the line ABC. A household (denoted as HH in the diagram) that earns between M_0 and M_1 and has between T_1 and T_2 time for unpaid care work i.e. located in the triangle BCD will be considered poor in the new poverty line but not poor in the original poverty line.

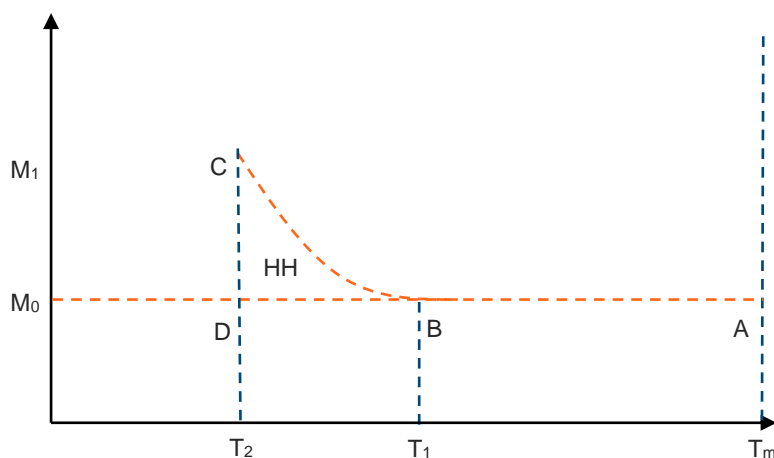
³⁸ Suh and Folbre (2017)

³⁹ Harvey and Mukhopadhyay (2007), Ghosh (2016)

⁴⁰ UNDP (2014)

⁴¹ Harvey and Mukhopadhyay (2007) divides time into four categories i.e. committed time, contracted time, necessary time and free or leisure time.

Figure 1.8: Time-adjusted income poverty



Source: KRI's own modification of Harvey and Mukhopadhyay (2007)

For inequality, it means valuing unpaid care work in the sense of imputing a monetary value to these activities. This generates what is called “extended income”⁴² and should be added to household income when we use income to estimate welfare and living standards. The purpose is to account for the role of own-account production in contributing to household welfare and living standards—otherwise, we tend to overestimate welfare improvements as well as overstate reduction in inequality over time. Nonetheless, from a policy standpoint, it does not mean that we should be aiming to increase extended income given the vulnerabilities surrounding unpaid care work and other implications discussed in Section 1.1.

In theory, including extended income to measure household income distribution will see a reduction in inequality because the non-transacted value of unpaid care work is now assigned a price. Interestingly, empirical evidence shows that the equalising effect of extended income does not come from low-income households doing more unpaid care work than high-income households, but due to the attribution of a constant value to most household incomes⁴³.

⁴² Suh and Folbre (2017)

⁴³ Folbre (2011). A constant value added across household incomes would see a larger percentage change for lower income households, hence the reduction in Gini coefficient.

Consider the scenario in Table 1.2⁴⁴. Household A earns RM5,000 and Household B earns RM4,000. Calculating inequality using market income will show that Household A is higher in the income distribution than Household B. However, Household A spends RM1,000 every month to consume food in shops and restaurants while Household B cooks at home and spends nothing on food in shops and restaurants. Assuming that the value of cooking at home is equivalent to RM1,000, this means that Household A and Household B actually produce the same amount of value in this economy⁴⁵. A Gini coefficient that does not include extended income will not be able to capture this.

Table 1.2: Example of household production and income distribution

	Income (RM)	Food (RM)
Household A	5,000	1,000
Household B	4,000	Cooks at home

Source: Example adapted from UNECE (2017)

In sum, unpaid care work is an important component of household production and, hence, pivotal in shaping how we measure poverty and inequality. It pushes up the poverty threshold by accounting for time deficits and demonstrates the equalising effect of extended income, with the total impact of providing a closer approximation of living standards. This helps not only in assessing and identifying social groups that require government support but also in deepening insights into how different segments of society balance household and market production. Having a higher market income is not necessarily better if it means higher cost of living when what used to be produced in households will now need to be procured from the market.

1.3 Measurement of Unpaid Care Work and Production Boundaries

Given the importance of unpaid care work highlighted in Section 1.2, there is a compelling case that unpaid care work needs to be measured and valued in a systematic way. The famous adage attributed to Peter Drucker goes, “you can’t manage what you don’t measure”. This is especially true for unpaid care work. The landmark Report by the Commission on the Measurement of Economic Performance and Social Progress recommends including non-market activities relevant for both economic and social development in statistical measurement⁴⁶. Efforts to advance measurement of unpaid care work can be traced back to important contributions by female economists e.g. Marilyn Waring⁴⁷, Margaret Reid and Hazel Kyrk⁴⁸. More recently, economist Diane Elson argues that the first of three steps to close the gender gap is to recognise and count unpaid care work⁴⁹.

⁴⁴ Example adapted from UNECE (2017).

⁴⁵ In this case, deducting RM1,000 instead of valuing domestic work is not consistent with the idea that welfare measurement is about measuring the value of one’s production. Household A produces a value worth RM5,000. RM1,000 is the value produced by people working in the restaurants. Moreover, in real life, households use a combination of household and market production; hence, they are not perfect substitutes.

⁴⁶ Stiglitz et al. (2009)

⁴⁷ Waring and Steinem (1988)

⁴⁸ Refer to Suh and Folbre (2017) for a good overview on the historical development of the measurement and valuation of unpaid care work.

⁴⁹ Elson (2017)

However, there are challenges associated with measuring unpaid care work because these activities take place within households and they are not transacted in the market. To better understand some of the issues surrounding the measurement of unpaid care work, it is important to locate unpaid care work within production boundaries (Table 1.3).

In general, activities are divided into productive and non-productive activities. Non-productive activities are also called personal activities. The distinction is based on Reid’s “third-person criterion”⁵⁰ where work or productive activities are those that “can be delegated to another person and yield the same desired results”⁵¹. For example, we can always hire another person to write a report or wash the dishes for us, but not to enjoy a glass of lemonade or learn a new skill on our behalf.

Table 1.3: Locating unpaid care work within production boundaries

General Production Boundary		Personal Activities
Market Production	Non-Market Production ⁵²	
P1 Formal employment or work in ‘formal enterprises’ to produce goods and services for pay or profit	P2 Production of goods by households for income or for own final use	<ul style="list-style-type: none"> • Learning • Socialising and community participation • Attending/visiting cultural, entertainment and sports events/venues • Engaging in hobbies, games and other pastime activities • Indoor and outdoor sports participation • Use of mass media • Personal care and maintenance
SNA Production Boundary	P3 Paid construction activities and construction for own capital formation	
	P4 Providing services for income, including employment in the informal sector e.g. paid domestic services	
	P5 Providing unpaid services for own final use e.g. unpaid care and domestic services within household	

Source: KRI’s conceptualisation based on Baigorri (2003) and UNDESA (2005)

Productive activities are circumscribed by the general production boundary. This is further broken down into market and non-market production. Market production is essentially the production of goods and services by formal enterprises. Non-market production is own-account production of goods and services coupled with volunteer work that results in goods and services⁵³.

From Table 1.3, we can see that unpaid care work is parked under P5 as the provision of unpaid services for own final use. It is considered as “work” because it falls within the general production boundary and fulfils the third-person criterion. It is non-market production because unpaid care work takes place within households without any market transaction.

⁵⁰ Suh and Folbre (2017)

⁵¹ UNDESA (2005)

⁵² Soenne (2016). Non-market production may include selling some products, but the prices paid do not cover the costs.

⁵³ Baigorri (2003)

Within the general production boundary, there is the System of National Accounts (SNA) production boundary. The SNA production boundary is a subset of the general production boundary selected to measure a country's GDP. It includes the production of all goods i.e. those sold in the market and for own consumption. However, for services, it only includes services that are sold in the market and excludes those for own consumption⁵⁴. The SNA production boundary is represented by the orange box in Table 1.3 encompassing P1 – P4 but excluding P5. Hence, unpaid care work is excluded from a country's national income accounting.

The reason for not including unpaid services in the calculations of GDP is because it is “too complicated technically, would upset existing time series and would produce estimates that are difficult to interpret”⁵⁵. Instead, the preferred approach is to use a national time use survey (TUS) as an instrument to measure unpaid care work. This forms the basis for the valuation of unpaid care work which is subsequently deployed to construct household satellite accounts. Household satellite accounts can be used alongside the SNA to study the relationship between market and non-market production.

A TUS uses time as a unit of measurement and provides quantitative summaries of how people spend their time over a specified period⁵⁶. Time use statistics provide information on how individuals within households allocate time between unpaid care work and market work. The International Classification of Activities for Time Use Statistics (ICATUS) uses a harmonised classification of activities in line with the SNA (Table 1.4)⁵⁷. This can then be used to extend and improve national income accounting.

Table 1.4: Tabulation of ICATUS major divisions using the SNA framework

Type of Activity	ICATUS Major Division
SNA Work	01 Employment and related activities
	02 Production of goods for own final use
Non-SNA Work	03 Unpaid domestic services for household and family members
	04 Unpaid caregiving services for household and family members
	05 Unpaid volunteer, trainee and other unpaid work
Non-Productive	06 Learning
	07 Socialising and communication, community participation and religious practice
	08 Culture, leisure, mass-media and sports practices
	09 Self-care and maintenance

Source: UNDESA (2005), UNSD (2017)

⁵⁴ Budlender (2008)

⁵⁵ Budlender (2007)

⁵⁶ UNDESA (2005)

⁵⁷ Ibid.

The TUS is a tool that captures quantity time e.g. it can tell you the amount of time a father spends with his daughter. But it doesn't measure the quality of the time spent. Reisch (2001) provides four dimensions of quality time i.e. chronometric time, chronologic time, time synchronisation and time sovereignty⁵⁸. Some dimensions of quality time can be addressed by adding contextual questions. For example, adding a social context column may help to assess time synchronisation. For other dimensions like time sovereignty, quality time issues can also be assessed using supplementary interviews. TUS has been used concurrently with some of these approaches to capture both quantity and quality time.

A background paper written for United Nations Development Programme's (UNDP) Human Development Report 2015 compiled a list of 65 countries that have conducted the TUS (Table 1.5)⁵⁹. The total number of surveys captured is 102 as at February 2016. The list is neither exhaustive nor the most updated but provides a glimpse of the wide range of countries from different continents and income levels that have embarked on using the TUS to measure unpaid care work. In Asia, the Republic of Korea has conducted three surveys and our neighbouring Thailand has carried out two surveys.

Table 1.5: List of countries and survey years, by region

Middle East and North Africa	Sub-Saharan Africa	Asia	Latin America	Europe	Transition countries	North America	Other developed countries
Algeria (2012)	Benin (1998)	Armenia (2004)	Colombia (2012 – 2013)	Austria (2009 – 2009)	Albania (2010 – 2011)	Canada (2005, 2010)	Australia (2006)
Islamic Republic of Iran (2009)	Ethiopia (2013)	Cambodia (2004)	Costa Rica (2004)	Belgium (2009 – 2010)	Bulgaria (2009 – 2010)	United States of America (2003 – 2014)	Japan (2001, 2006, 2011)
Iraq (2007)	Ghana (2009)	China (2008)	Ecuador (2012)	Denmark (2001)	Estonia (2009 – 2010)		New Zealand (1989 – 1999) (2009 – 2010)
Morocco (2011 – 2012)	Madagascar (2001)	India (1998 – 1999)	El Salvador (2010)	Finland (1979, 1987, 1999, 2009)	Hungary (1999 – 2000)		
Oman (2007 – 2008)	Mali (2008)	Republic of Korea (1999, 2004, 2009)	Mexico (2002, 2009)	France (1986, 1999, 2010)	Latvia (2003)		
State of Palestine (1999 – 2000) (2012 – 2013)	Mauritius (2003)	Kyrgyzstan (2010)	Panama (2011)	Germany (2001 – 2002)	Lithuania (2003)		
Qatar (2012 – 2013)	South Africa (2000, 2010)	Mongolia (2007, 2011)	Peru (2010)	Greece (2013 – 2014)	Former Yugoslav Republic of Macedonia (2014 – 2015)		
Tunisia (2005 – 2006)	United Republic of Tanzania (2006, 2014)	Pakistan (2007)		Ireland (2005)	Moldova (2011 – 2012)		

⁵⁸ Chronometric time is having the right amount of time to carry out activities; chronologic time is having time at the right time of day, week or season; time synchronisation is having time that is aligned with the time patterns and rhythms of our social circles; and time sovereignty is having the ability and flexibility to determine the pace and content of one's time.

⁵⁹ Charmes (2015)

Middle East and North Africa	Sub-Saharan Africa	Asia	Latin America	Europe	Transition countries	North America	Other developed countries
Turkey (2006)		Thailand (2004, 2009)		Italy (1988 – 1989) (2002 – 2003) (2008 – 2009)	Poland (2003 – 2004)		
				Netherlands (2005 – 2006)	Romania (2011 – 2012)		
				Norway (1970, 1980, 1990, 2000, 2010)	Serbia (2010 – 2011)		
				Portugal (1999)	Slovenia (2000 – 2001)		
				Spain (2002 – 2003) (2009 – 2010)			
				Sweden (2000 – 2001) (2010 – 2011)			
				United Kingdom (2000, 2005)			

Source: Charmes (2015)

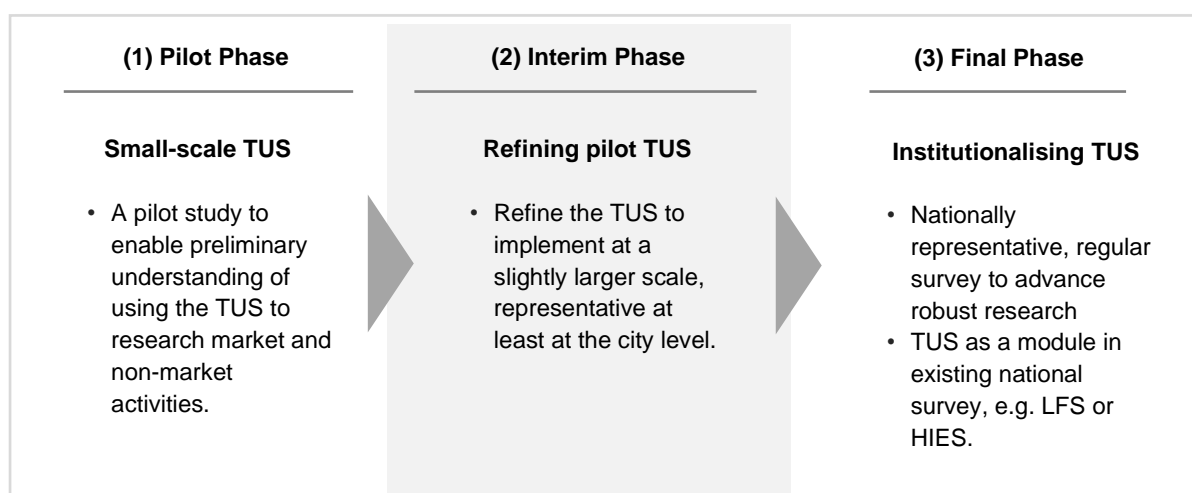
In Malaysia, the national statistical system does not collect time use data systematically and regularly. Hence, empirical research to study the relationship between unpaid care work and labour market outcomes is limited, and the construction of household production as well as valuation of unpaid care work—useful to improve poverty and inequality measures—is impossible.

The Ministry of Women, Family and Community Development (*Kementerian Pembangunan Wanita, Keluarga dan Masyarakat*, KPWK), together with the Department of Statistics (DOS) conducted a time use study in 2003. The study used a stratified two stage random sampling covering a total of 32,264 households from 15,640 residential areas in the whole of Malaysia. Respondents were from the working age population aged 15 – 64. It recorded the time use of respondents for two consecutive days. The findings have been cited in the Action Plan for the Advancement of Women. A similar study on such a scale has not been conducted in Malaysia since and it is unlikely that a large-scale TUS will be commissioned in the near future.

One of the usual concerns for rolling out a nationally-representative TUS is the cost. Nonetheless, as Malaysia moves to the next phase of its economic development, tapping into the full potential of the labour force is crucial. If unpaid care work escalates as a constraint that inhibits the country from exploiting its full potential, having a TUS as part of our national statistical apparatus is an investment that helps advance understanding on the underlying forces influencing labour market dynamics in the country. Moreover, a TUS can be rolled out as a module of an existing national survey, such as the LFS or HIES. This modular approach streamlines design and operational processes and saves costs. This is because the population coverage, sample design, selection of households and other major aspects of survey operations such as operational schedules and enumerators are already shared with the core module. This modular approach has been considered before, but as far as we know, it has either not been carried out or the results have not been made available to the public⁶⁰.

In fact, the process of institutionalising a TUS in our national statistical system can be a gradual one and implemented in phases (Figure 1.9).

Figure 1.9: The three phases of TUS implementation



In view of the above and the importance of measuring unpaid care work, we have conducted a small-scale TUS to kickstart the pilot phase. The small-scale TUS used together with larger datasets enables preliminary understanding and fills in data gaps in the interim⁶¹. At the same time, it also demonstrates the significance of time use statistics in enhancing and enriching market-based analysis and subsequently informing policy formulation. Section 2 presents the analysis and results from our pilot TUS.

⁶⁰ See ILO & UNDP (2018). The report states that the Ministry of Women has conducted a national modular time use survey but this may not be accurate and will require further verification.

⁶¹ We have developed a methodology to extend a small-scale TUS to be used together with the LFS. However, this will require individual-level data that is not publicly available. Refer to Appendix B for this.

SECTION

02

KRI'S PILOT TIME USE STUDY	24
2.1 Introduction	24
2.1.1 TUS design overview	26
2.1.2 Time use of respondents	29
2.1.3 Realities of unpaid care work	35
2.2 Unpaid Care Work and Labour Market Outcomes	59
2.2.1 Labour supply theory	59
2.2.2 Labour supply equation	61
2.2.3 Regression results	64
2.3 Household Production, Poverty and Inequality	67
2.3.1 Unpaid care work as part of household production	67
2.3.2 Poverty and unpaid care work	76
2.3.3 Inequality and unpaid care work	82
2.4 Key Takeaways from KRI's Pilot Time Use Study	89

“Some call women’s segregation into low-paid work a choice. But it’s a funny kind of choice when there is no realistic option other than the children not being cared for and the housework not getting done.”

Caroline Criado-Perez
Invisible Women

2.1 Introduction

As discussed in Section 1, there is a key statistical limitation within the framework of mainstream economic thinking, where priority in market work overshadows the importance of non-market work, and subsequently omits the latter from data collection and analysis. However, non-market work largely forms the basis of market production processes, and its omission may skew market-based analysis rendering it incomplete at best and distorted at worst.

Due to the lack of data on non-market activities in Malaysia, KRI has initiated a local TUS coupled with structured interviews for residents in a specific area of Kuala Lumpur (KL)⁶². The TUS was the main method of primary data collection in this research. The structured interviews supplement the TUS with qualitative questions on regularity, optionality and historical patterns of time use for our respondents.

The pilot TUS serves as a case study on the relationship between unpaid care work and market activities at the “micro” level—its results are not meant to be used as inferential statistics but rather to demonstrate how market and non-market activities can be analysed together using the TUS methodology. This section presents results with the objective of providing in-depth insights to complement national-level datasets e.g. LFS and highlights the potential of TUS on a nation-wide scale.

Given that this is a small-scale survey conducted to address very specific research questions, a heterogenous purposive sampling method was adopted to ensure an appropriate composition of the sample. The sampling covers the population aged 20 – 64 i.e. working-age population who are most likely to be net caregivers. It is a 24-hour time diary that aims to capture a typical work day. A more technical explanation of the survey methodology is outlined in Appendix C.

Using 15-minute time blocs as units of measurement, statistics on time use patterns of respondents as well as their socio-spatial contexts were collected. This provides quantitative summaries of how, where and with whom these individuals spend their time. Such statistics produce a wide range of activities that are interrelated, enabling analysis of how these activities are distributed in the lives of these individuals, and how these differ between individuals.

In analysing the data, we use gender, income and life cycle as the main lenses to better understand the data. Studies have shown that patterns in time use varies significantly by gender, especially for paid and unpaid work activities⁶³. Generally, and perhaps unsurprisingly, it is found that there is an unequal distribution of time for paid and unpaid care work, with women generally bearing a bigger proportion for the latter, resulting in less time for the former. Identifying this inequality for our case study, achievable through a TUS, is a small yet pivotal step in understanding gender inequality on a deeper level.

⁶² The selection of the area is based on consultation with the Kuala Lumpur City Hall (Dewan Bandaraya Kuala Lumpur). The zone was chosen because its ethnic composition resembles the national ethnic composition and the area has a light rail transit station, an important consideration given the study's emphasis on transportation options and patterns.

⁶³ Anxo et al. (2011)

However, analysis could go beyond simple gender differences. For example, it is expected that higher income individuals outsource activities related to care, as it is relatively more affordable to them. As was found in a World Bank study, “average gender differences in hours devoted to housework decline as couples get richer and more educated”⁶⁴, where the tightening of the gap is contributed by fewer hours of unpaid care work borne by women rather than more hours on such activity by men. Thus, it is imperative to unpack the patterns between income classes to investigate if there are differences between them.

Furthermore, this report makes the case for a life-cycle demarcation than merely an age group demarcation, which is commonly used in conventional studies. This is because men and women bear different levels of housework and family responsibilities at different stages of life. Consequently, this could affect their labour supply decisions. Moreover, mothers in more recent times tend to have children later in their lives⁶⁵, and children of different ages also require different treatment in terms of childcare. Thus, a more meaningful representation of life-cycle stages that is aligned with key milestones along the life course of a family is imperative, which we have defined as follows⁶⁶:

- Life Stage 1: Young individuals (<49) with no children in household
- Life Stage 2: Individuals (of any age) with youngest child <7 years old
- Life Stage 3: Individuals (of any age) with youngest child between 7 and 19 years old
- Life Stage 4: Individuals (>49) with no children OR youngest child > 19 years old

Therefore, the small-scale TUS was designed to answer three primary questions:

1. What is the difference in time spent on paid work and unpaid care work between men and women in different social, economic and spatial contexts?
2. How does this co-vary between men and women according to their income classes and life-cycle stages?
3. Is time spent on unpaid care work correlated with various labour market outcomes, including hours worked and labour market income?

In the rest of Section 2.1, we present the descriptive statistics of our respondents' profiles, their time use patterns and the socio-spatial contexts of these activities to situate the realities of unpaid care work. This is followed by an econometric analysis in Section 2.2 to empirically test the relationship between unpaid care work and labour market outcomes. Then, in Section 2.3, we use our TUS dataset as the core material to construct a household satellite account as well as improve poverty and inequality measurements. Qualitative research findings are interspersed throughout Section 2 to provide more texture and depth to our quantitative analysis. We draw these key findings together in Section 2.4.

⁶⁴ World Bank (2012)

⁶⁵ Goldin and Mitchell (2017)

⁶⁶ Drawn from Apps and Rees (2005), adapted to the Malaysian context.

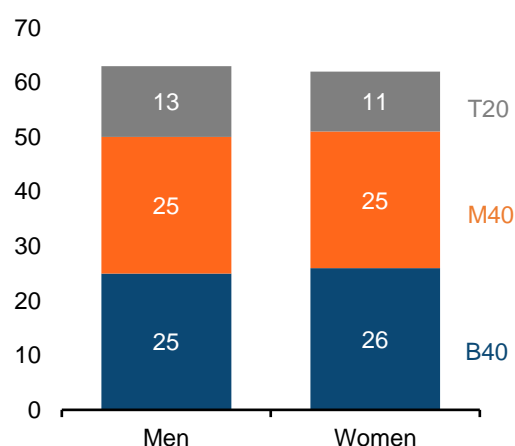
2.1.1 TUS design overview

Our sample is stratified by two dimensions. First, the sample is stratified by gender to achieve a 1:1 male:female ratio. Second, recognising that households of different income class could behave differently, the sample is stratified by household income to achieve a 2:2:1 ratio of lower:middle:upper income range distribution. The bottom 40% (B40) households of the income distribution for KL are defined as those having monthly household incomes of less than RM8,000, middle 40% (M40) households as having monthly household incomes from RM8,000 to RM15,000, and top 20% (T20) households as having monthly household incomes higher than RM15,000⁶⁷.

For this case study, the initial target of respondents was 100. However, we surpassed our target by conducting interviews with 125 individuals⁶⁸. Of these, 63 are men and 62 are women, satisfying our 1:1 male:female ratio. As depicted in Figure 2.1 we also achieved the 2:2:1 ratio for household income for both male and female respondents.

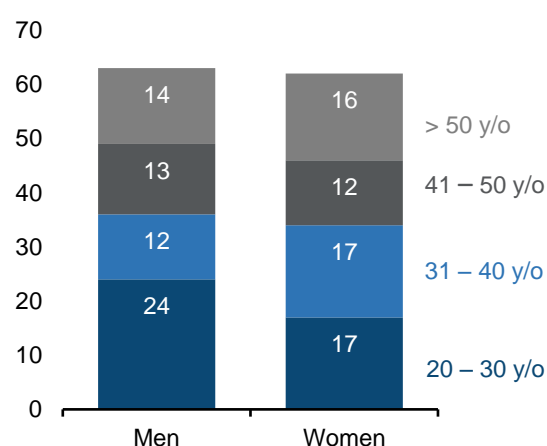
Before looking into the time use and contextual details of our respondents, it is important to be cognisant of the demographic characteristics underlying our sample. As seen in Figure 2.2, when individuals are grouped according to their age groups, we see that the number of individuals in the same age bracket across gender are very similar. Therefore, the primary data collected is fairly well distributed in terms of age. This enables us to meaningfully carry out age-related analysis and its life cycle correlates.

Figure 2.1: Breakdown of gender by income class (count)



Source: KRI (2019b)

Figure 2.2: Breakdown of gender by age group (count)



Source: KRI (2019b)

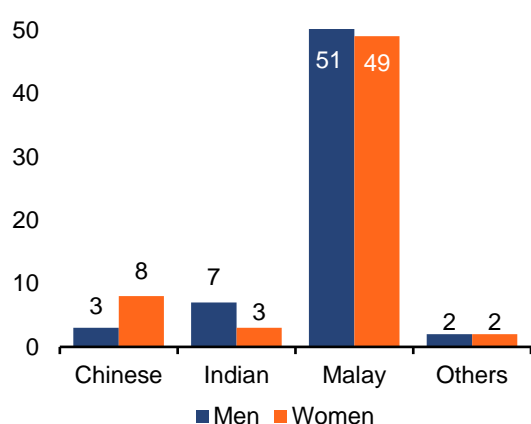
⁶⁷ Adapted from DOS (2017a). In the Household Income Survey 2016 report, DOS defined B40 KL households as having income of less than RM7,640, M40 households as having an income ranging from RM7,640 to RM15,159, whilst T20 households have greater than RM15,160. For this report, we asked respondents their household income range, from RM0 to RM15,000, in every RM1,000 blocks. We assume that respondents' actual income is in the mid-point of their stated range. For example, for an individual who state that their household income is in the RM8,000 to RM9,000 range, we assume that this individual has a household income of RM8,500. Furthermore, for those in the T20, we assumed that their income is the median of the T20 for KL, which is RM20,000.

⁶⁸ More details are available in Appendix C.

Our primary data also includes data on respondents' ethnicity, marital status, employment status, educational background and number and age of dependents. By collecting these, we can gauge some of the driving factors and understand in greater detail the time use and contextual realities of our respondents.

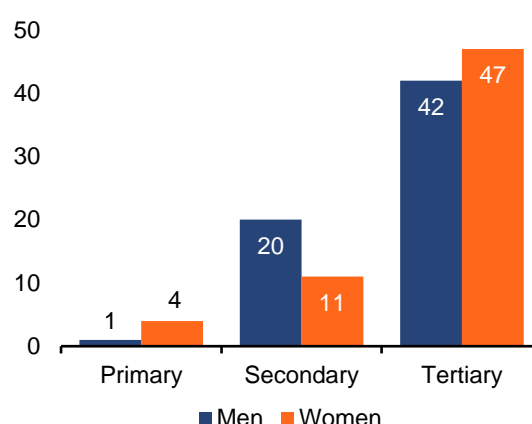
The majority of our respondents were Malay—81% of men, 80% of women (Figure 2.3)—and had tertiary education—76% of men, 66% of women (Figure 2.4). 60% of the sample were married, almost equal at 60% each of both men and women, followed by single—37% of men, 31% of women (Figure 2.5). In terms of employment status, most of the respondents were employed—83% of men, 71% of women (Figure 2.6).

Figure 2.3: Breakdown of respondents by ethnicity (count)



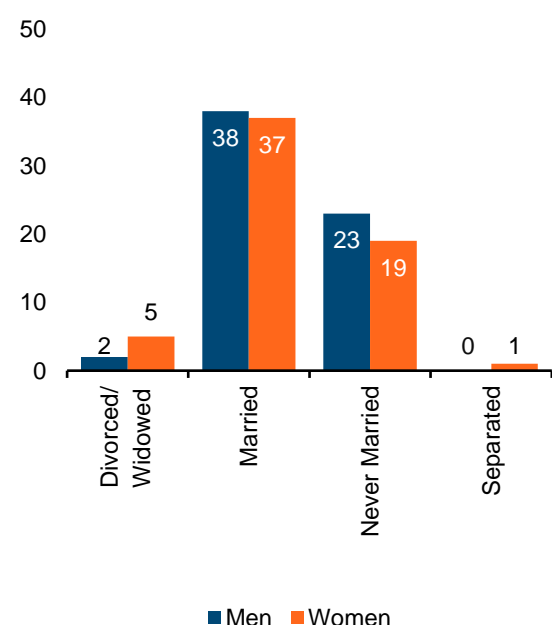
Source: KRI (2019b)

Figure 2.4: Breakdown of respondents by education background (count)



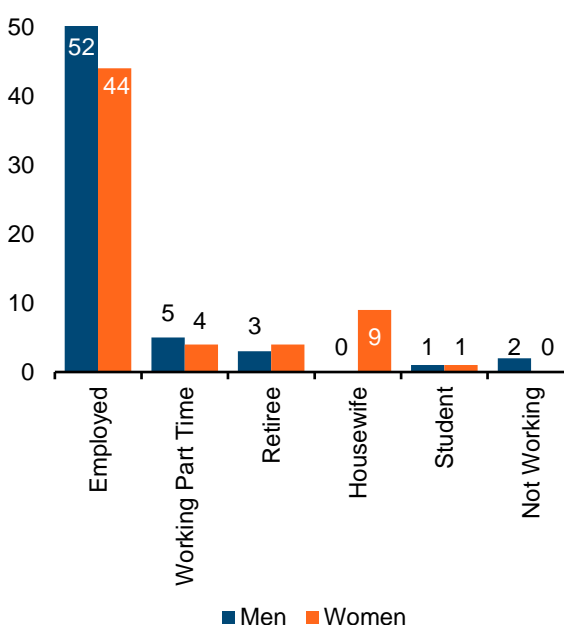
Source: KRI (2019b)

Figure 2.5: Breakdown of respondents by marital status (count)



Source: KRI (2019b)

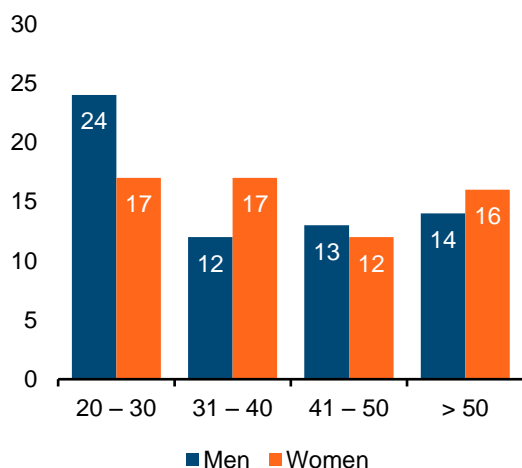
Figure 2.6: Breakdown of respondents by employment status (count)



Source: KRI (2019b)

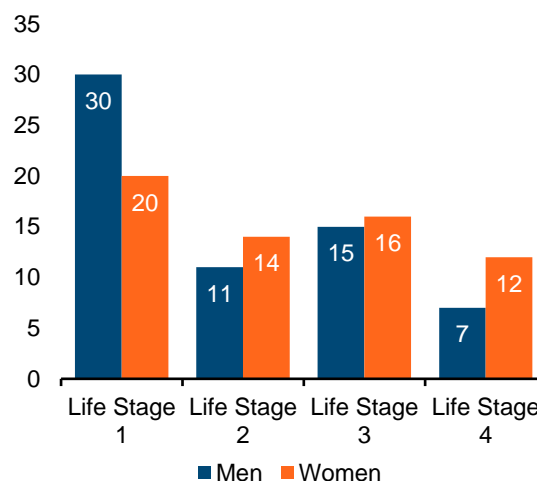
In terms of age group and life-cycle comparisons, we find that for the conventional life cycle defined by age, the number of men and women are relatively evenly distributed across age groups (Figure 2.7). However, when we group these individuals into life-cycle stages as defined in this report, the numbers change slightly and become less evenly distributed—more respondents fall into Life Stage 1 and Life Stage 3, and fewer into Life Stage 2 and Life Stage 4 (Figure 2.8)⁶⁹. The majority of the respondents are in Life Stage 1: about 48% of men and 32% of women.

Figure 2.7: Breakdown of respondents by age group (count)



Source: KRI (2019b)

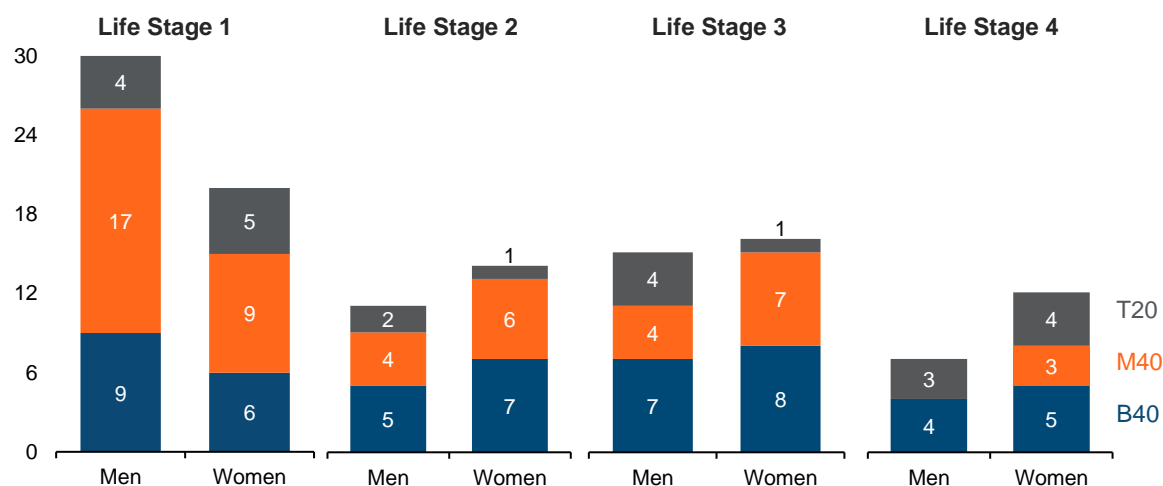
Figure 2.8: Breakdown of respondents by life stage (count)



Source: KRI (2019b)

When we combine the breakdown of respondents according to their life stage and income class, there is no prominent pattern in terms of where they are clustered: income class across the different life stages is well distributed for both men and women (Figure 2.9).

Figure 2.9: Breakdown of respondents by income class, by life stage, by gender (count)



Source: KRI (2019b)

⁶⁹ The age range for Life Stage 1 is 20 – 47, Life Stage 2 is 27 – 50, Life Stage 3 is 30 – 59 and Life Stage 4 is 49 – 64.

2.1.2 Time use of respondents

How do individuals spend their time in a day? In the pilot survey, respondents were asked to note down their main activity (or primary activity) in 15-minute blocs. In addition, the survey also asked respondents to recall whether they were conducting any other activity simultaneously. Simultaneous activity (or secondary activity) can capture to what extent individuals multitask as they are carrying out their primary activity. Such information is crucial as we are interested in the extent individuals multitask to get more out of their day⁷⁰. This is especially relevant for care activities, because much of care work is done as a secondary activity⁷¹. By collecting information on secondary activities, we obtain a more holistic picture of unpaid care work.

Aggregating our respondents' time use, we can calculate a "typical" day for an average individual in our sample⁷². Figure 2.10, Figure 2.12 and Figure 2.14 display the average number of hours spent on primary and secondary activities for all respondents, male respondents and female respondents, respectively. We can also map which secondary activities were conducted while individuals were performing their primary activities. We see this in Figure 2.11, Figure 2.13 and Figure 2.15, where the inner ring represents the average time spent on primary activities in terms of percentages, while the outer ring represents secondary activities as a percentage of total time spent on those activities.

For primary activities, the bulk of the time spent for an average individual was for self-care and maintenance activities (9.1 hours or 37.7% of total time)—this included time for sleeping, personal hygiene and eating. This was followed by paid work at 28.3% (6.8 hours), unpaid care work at 12.2% (2.9 hours), and leisure and mass media activities at 11.4% (2.7 hours).

We find that the majority of primary activities were done without simultaneous activities. As seen in Figure 2.10, leisure and social activities comprised the largest component of simultaneous activities at 3.2 hours each. On average, respondents performed simultaneous activities mostly while carrying out paid work, unpaid care work and leisure (Figure 2.11). Around half of the time spent on unpaid care work occurred whilst doing something else (Figure 2.11). For example, a respondent was preparing food for the household (secondary unpaid care work) while talking to other family members (primary socialising activity).

Breaking down this analysis further by gender, we find that men spent slightly longer time on paid work than women—6.9 hours for men and 6.6 hours for women (Figure 2.12 and Figure 2.14). However, when it comes to unpaid care work, women spent a relatively bigger portion of their time on average—3.6 hours (15.2%) compared with men—2.2 hours (9.3%). In other words, women spent 63.6% more time on average for unpaid care work compared with men. Thus, women participated almost equally in paid work but spent a bigger proportion of their time on unpaid care work compared with men.

⁷⁰ Drago and Stewart (2010)

⁷¹ Ibid.

⁷² 57% of the respondents noted that their time diary is representative of their usual work day.

This phenomenon is commonly referred to in the literature as the “double burden” or the “second shift”⁷³. It refers to how working women have to bear housework responsibilities after having worked the first shift at the workplace. These numbers depict a representation of the respondents’ typical weekday; we can expect the double burden of women to magnify when looking at a longer-term horizon.

As for secondary activities, women multitasked more than men (9.0 hours in total versus 8.4 hours). The most striking observation is that women dedicated more than double the time compared with men for unpaid care work as a secondary activity (1.3 hours versus 0.6 hours)⁷⁴. Men also spent more time on socialising activities whilst performing primary activities. Hence, for this micro sample, we find evidence of gender inequality in time use, particularly pertaining to paid work and unpaid care work.

Figure 2.10: Average time spent on various activities for all respondents (hours)

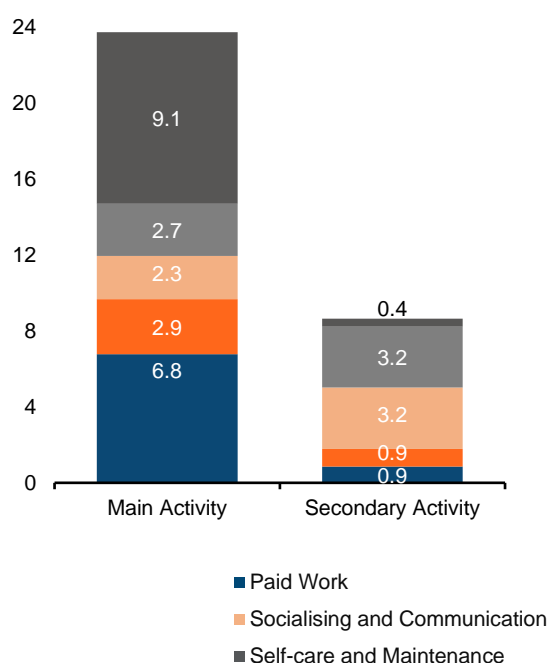
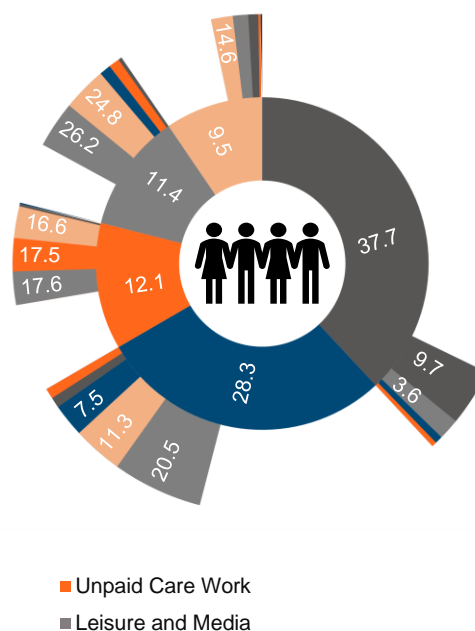


Figure 2.11: Average time spent on various activities (%)



Note: Activities that took up less than 1% of total time were excluded from the chart. These were Learning and Unpaid Volunteer work activities.

Source: KRI (2019b)

⁷³ Hochschild and Machung (2012)

⁷⁴ More detail on care work as a secondary activity are discussed in Section 2.1.3.

Figure 2.12: Average time spent on various activities for male respondents (hours)

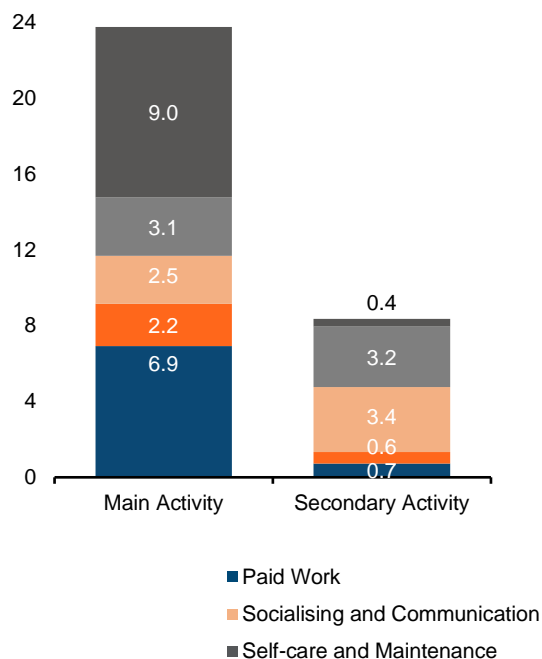
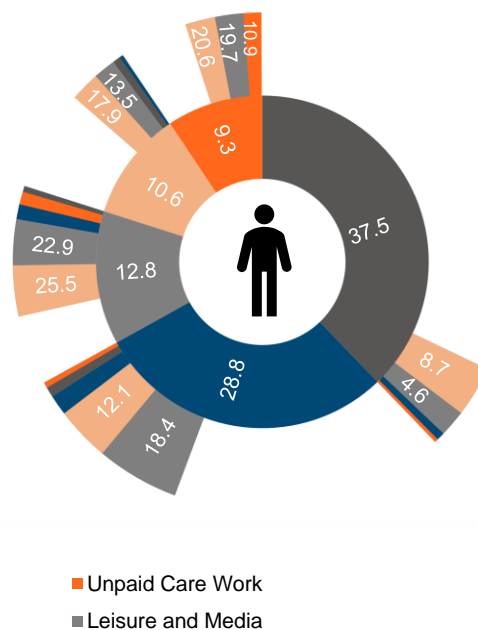


Figure 2.13: Average time spent on various activities for male respondents (%)



Note: Activities that took up less than 1% of total time were excluded from the chart. These were Learning and Unpaid Volunteer work activities.
Source: KRI (2019b)

Figure 2.14: Average time spent on various activities for female respondents (hours)

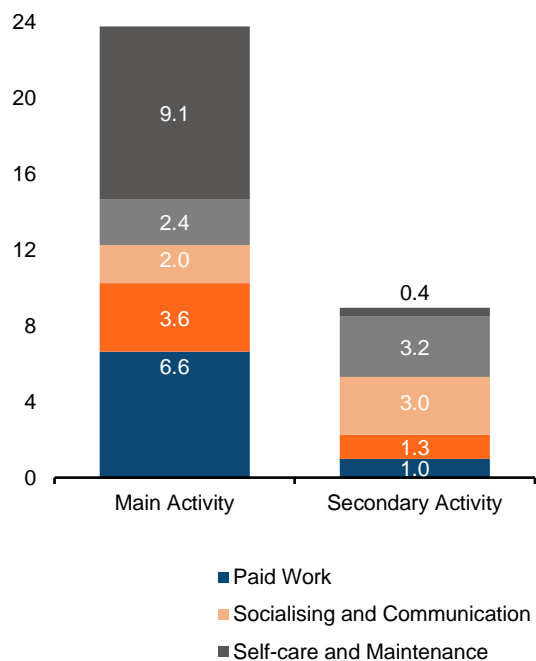
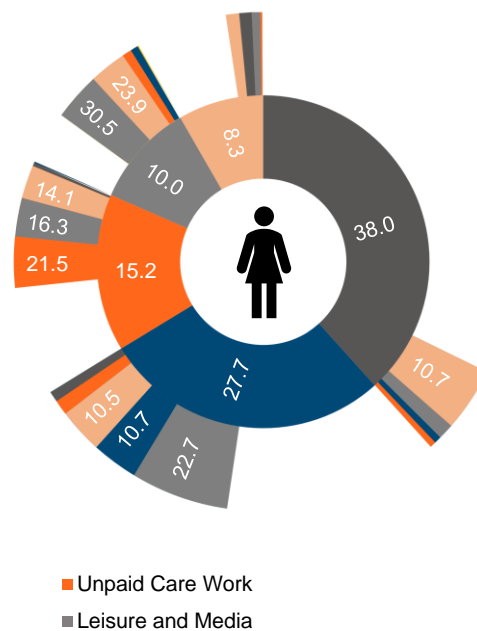


Figure 2.15: Average time spent on various activities for female respondents (%)



Note: Activities that took up less than 1% of total time were excluded from the chart. These were Learning and Unpaid Volunteer work activities.
Source: KRI (2019b)

Box 2.1: Voices from the respondents on roles of working women at home

Many of the working women we interviewed described their second shifts of unpaid care work. Their daily routines included food preparation and kitchen clean up, with house cleaning and laundry being done in varying intervals. Working mothers reported childcare responsibilities in addition to domestic responsibilities.

Bila saya balik [kerja] tu saya akan seorang-seorang jaga anak, kemas rumah, uruskan anak, tanya sekolah, apa semua tu. Kalau boleh, husband saya tu tukar dari kerja shift tu kerja office hours...supaya kita boleh sama-sama buat kerja rumah bersama-sama supaya saya takde lah seorang-seorang.

Authors' translation:

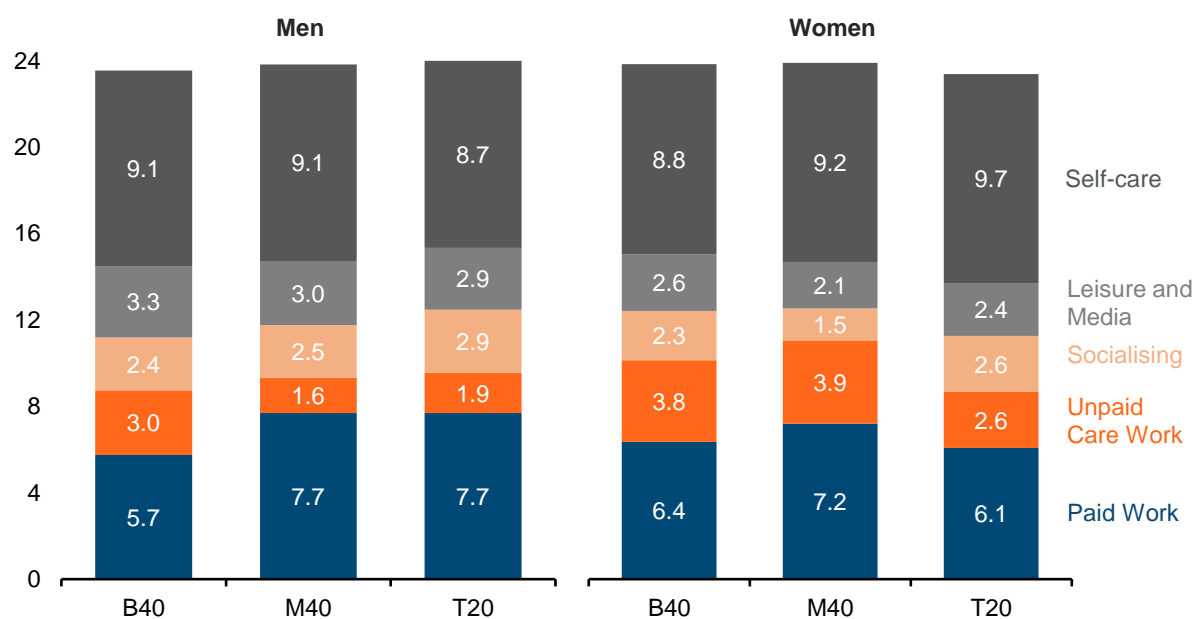
When I come home [from work] I take care of the kids, clean the house and ask my kids about their progress in school, all that stuff, by myself. If we could, my husband would change his work from shifts to office hours, so that we could do the housework together and I wouldn't be the only one doing it.

—Respondent, aged 34, married mother of two

Aside from gender differences in time use, disparities between income classes can also be observed. As illustrated in Figure 2.16, men in the B40 spent the lowest number of hours per day on paid work at 5.7, compared with men in the M40 and the T20 at 7.7 hours each. However, when it comes to unpaid care work, men in the B40 spent the largest proportion of time at 3.0 hours, nearly double compared with men in the M40 and the T20 (1.6 hours and 1.9 hours, respectively). This suggests that individuals in the B40 may have found it economical to manage unpaid care work on their own, whilst individuals in higher income classes may have been able to afford to outsource these services.

When it came to women, we found that across all categories of income class, women spent less time in paid work than men (except for women in the B40) but dedicated more time to unpaid care work. Among women, we see that women in the T20 spent the least proportion of time on paid work and unpaid care work (6.1 hours on paid work, 2.6 hours on unpaid care work), whereas women in the M40 spent the largest proportion of time on these two activities (7.2 hours on paid work, 3.9 hours on unpaid care work). This is evidence of the double burden to a greater extent for women in the M40. Or, it could suggest that the Baumol effect on direct care work translates into a particularly strong squeezing of the middle class: the middle class may find it too expensive to procure care services from the market but not economical enough to be fully undertaken as household production, thus the burden falls disproportionately on women. This phenomenon is discussed in greater detail in Section 2.3.

Figure 2.16: Average time spent on various activities, by income class and gender (hours)



Note: Activities that took up less than 1% of total time were excluded in the chart. These were Learning and Unpaid Volunteer work activities.

Source: KRI (2019b)

Earlier, we argued that individuals bear different levels of housework and family responsibilities at different stages of life, which could affect their labour supply decisions. What does the survey data say about this? From Figure 2.17, individuals in Life Stage 2 spent the most number of hours on paid work as well as unpaid care (8.4 hours on paid work, 4.2 hours on unpaid care work). Those in Life Stage 3 also spent a significant proportion of their time on unpaid care work i.e. 4.0 hours, which is only 0.3 hours less than those in Life Stage 2. This is a huge contrast to those in Life Stage 1 (7.4 hours on paid work, 1.6 hours on unpaid care) and Life Stage 4 (5.1 hours on paid work, 2.7 hours on unpaid care). Consequently, this means that individuals in Life Stage 2 had less time for all other activities such as leisure, socialising as well as self-care compared with others. On the other hand, socialising and leisure activities seem to be similar in terms of duration for individuals in Life Stage 1, Life Stage 3 and Life Stage 4.

Therefore, there are clear differences in time use patterns when we demarcate our sample by life cycle. Moreover, when we group individuals into conventional life-cycle stages, i.e. break down the sample into age groups of 20 – 30 years old, 31 – 40 years old, 41 – 50 years old and 51 years old and above (Figure 2.18)⁷⁵, the differences in average time spent on the same activities are not strikingly huge when compared with life-cycle stages demarcated using our definition. Other patterns seen in Figure 2.17 also persist in Figure 2.18—signifying that our life-cycle demarcation is a good proxy for the conventional demarcation by age group, at least for this sample of 125 respondents. However, the conventional life-cycle breakdown does understate the average time spent on unpaid care work by individuals in Life Stage 2 and Life Stage 3 (3.7 hours versus 4.3 hours for Life Stage 2, and 3.2 hours versus 4.0 hours for Life Stage 3).

⁷⁵ In this report, we assume that this demarcation follows the life-cycle stages demarcation for comparability purposes.

When disaggregating the life-cycle effects further by gender, we see that in Figure 2.19, women in Life Stage 2 and Life Stage 3 spent 5.2 and 5.0 hours, respectively, on unpaid care work on average—which is about 21% of total time in a day. This is more than 150% compared with women in Life Stage 1 and 85% more than women in Life Stage 4. Similarly, for men in Life Stage 2 and Life Stage 3, time spent on unpaid care work is highest compared to other groups. For both genders, the double burden was prominent for those in Life Stage 2, although the extent was far greater for women. As a result, parents with young children in this sample could have been severely time-squeezed and constrained for other activities, which affects their overall well-being.

Figure 2.17: Average time spent on selected activities, by life stage (hours)

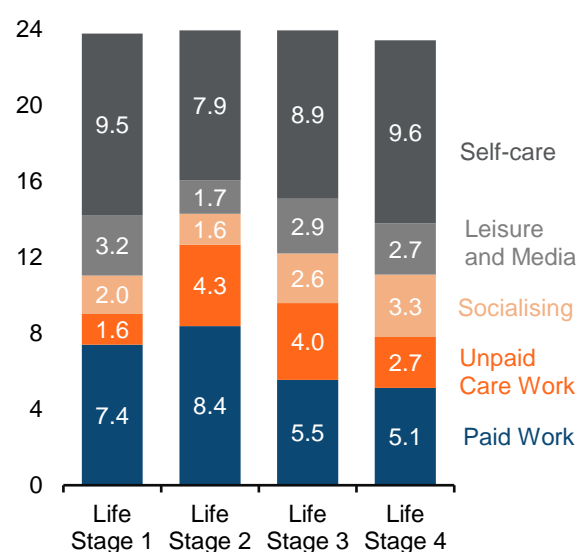
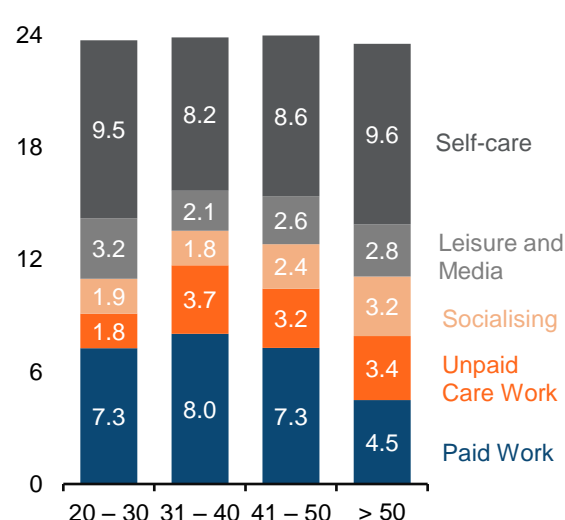
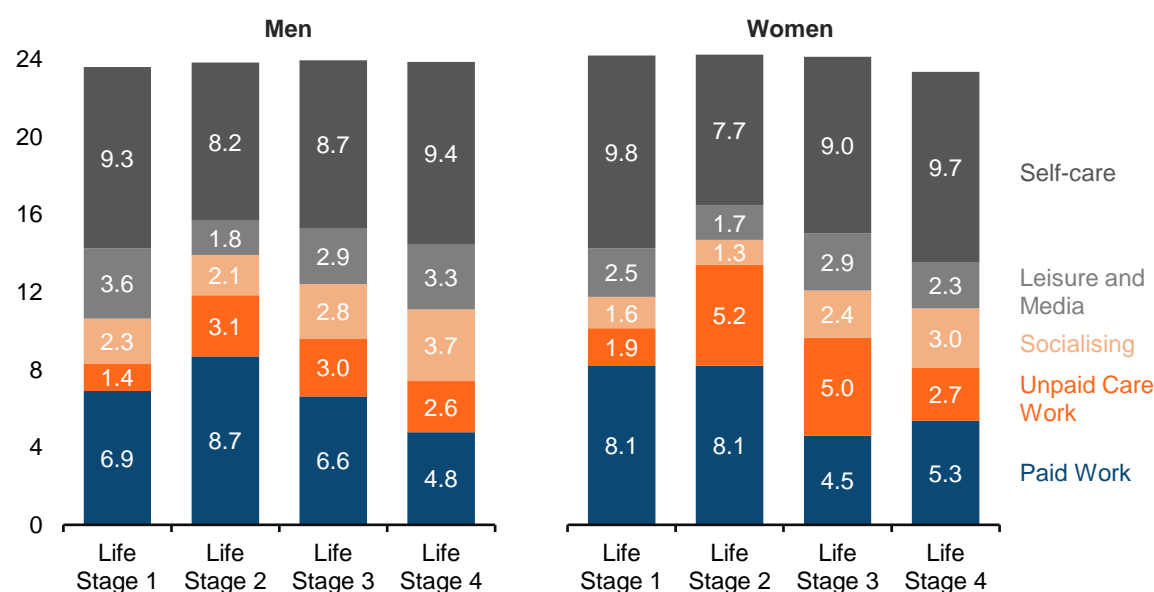


Figure 2.18: Average time spent on selected activities, by age group (hours)



Note: Activities that took up less than 1% of total time were excluded from the chart. These were Learning and Unpaid Volunteer work activities.
Source: KRI (2019b)

Figure 2.19: Average time spent on selected activities, by life stage and gender (hours)



Note: Activities that took up less than 1% of total time were excluded from the chart. These were Learning and Unpaid Volunteer work activities.
Source: KRI (2019b)

2.1.3 Realities of unpaid care work

We have highlighted that women in our survey spent more time on unpaid care work, a finding that is in line with other studies⁷⁶. However, the relative experiences between men and women in unpaid care work may be more nuanced. Most studies that compare men and women's contribution to unpaid care work typically report total time spent performing care, citing a trend towards fathers caring more for children now than in the past⁷⁷. However, such an approach overlooks other aspects of unpaid care work, many of which are important in assessing the responsibility gap and its nuances between men and women.

Unpaid care work as a secondary activity

We find that women in our sample spent more than twice the time that men spent on unpaid care work as a secondary activity (1.3 hours versus 0.6 hours). This finding is important because it gives a full account of not only the time individuals commit to care, but also the level of responsibility and burden in total. First, providing care as a secondary activity limits the carer's options about what else they can do or where they can go e.g. opportunities to engage in market work, even though care work does not always require active intervention and attention. Second, performing secondary activities may reflect an individual's level of time-squeeze and this could well be the case for unpaid care work. Third, care activities performed simultaneously can be more burdensome, even for tasks that are typically considered to be pleasant, such as entertaining a child while grocery shopping.

Table 2.1 shows the time men and women in our sample spent on unpaid care work (which includes both direct care work and domestic work) as primary and secondary activities. Across all life stages, most care work was done without secondary activity, but the variation of time spent as secondary activity between the life stages is large. Women performed on average more unpaid care work as a secondary activity compared with men, at 1.3 hours compared with men's 0.6 hours. However, both men and women in Life Stage 2 spent at least twice that time on care work (1.4 hours for men, 2.6 hours for women). For individuals in Life Stage 3, men spent 83.3% more time on unpaid care than the average man while women spent the same amount of time as the average woman. The most striking finding is that women in Life Stage 2 spent nearly eight hours of their day on unpaid care work activities, which is about double the number of hours of men in any life stage category.

Women across all income classes performed more unpaid care work as a secondary activity than men and consequently more unpaid care work in total. Among women, those in the T20 reported the highest amount of time in unpaid care work as a secondary activity at 1.6 hours, followed by women in the B40 and the M40. However, totalling primary and secondary activities, women in the T20 performed the least amount of unpaid care work at 4.3 hours, while women in the B40 performed the most at 5.2 hours, and women in the M40 were in between.

⁷⁶ Berardo et al. (1987), Fenstermaker Berk (1985), Blair (1998), Blair and Johnson (1992), Blair and Lichter (1991), Ferree (1991), Hochschild and Machung (2012) and Ross (1987)

⁷⁷ Bianchi (2000), Bryant and Zick (1996), Yeung et al. (2001), Coltrane (2000), Coltrane (1997) and Robinson and Godbey (2010)

Table 2.1: Average time spent on unpaid care work, by life stage and gender (hours)

	Men	Women	B40		M40		T20	
			Men	Women	Men	Women	Men	Women
Primary care	2.2	3.6	3.0	3.8	1.6	3.9	1.9	2.6
Secondary care	0.6	1.3	0.7	1.4	0.7	1.0	0.3	1.6
TOTAL	2.8	4.9	3.7	5.2	2.4	4.8	2.1	4.2

	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Primary care	1.4	1.9	3.1	5.2	3.0	5.0	2.6	2.7
Secondary care	0.1	0.2	1.4	2.6	1.1	1.3	0.3	1.4
TOTAL	1.5	2.1	4.5	7.8	4.1	6.3	3.0	4.1

Note: Unpaid care work includes direct care work and domestic work for household and family. Average is calculated based on the entire sample, including those who did and not engage in the activity.

Source: KRI (2019b)

Task allocation in unpaid care work

The experiences of unpaid care work vary greatly according to how different types of care tasks are allocated between men and women. It is generally accepted that some tasks such as playing with one's child are deemed more pleasant than other tasks such as tending to a wailing child. In addition, some tasks such as reading to a child do not have to be done on schedule but at the parents' discretion⁷⁸. Tasks that must be done at certain fixed times, such as feeding and bathing, are more constraining on parental time than tasks that need not be done at fixed times⁷⁹.

Studies show that certain aspects of care that are deemed more pleasant and can be done at the parents' discretion make up the bulk of men's involvement in unpaid care work⁸⁰. This suggests that the increase in men's involvement in unpaid care work may not do much to relieve the care burden of women because the more demanding aspects of care are still left to them.

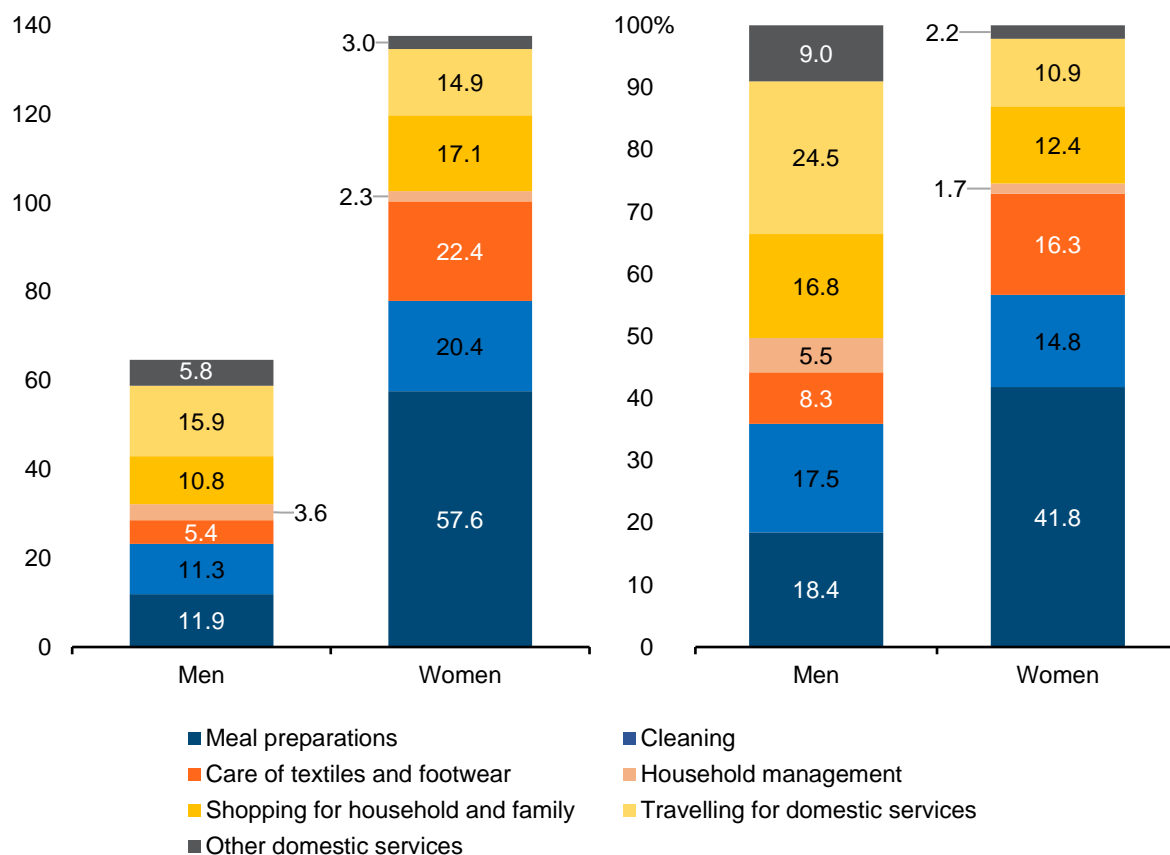
There is evidence that this is also true for our pilot sample. Figure 2.20 shows how men and women in our sample distributed their time in unpaid domestic work. While it is clear that women did more domestic work, a larger portion of women's time was dedicated to activities that were less time-flexible and more frequent such as meal preparations and care of clothes. While cleaning and shopping for households constituted a smaller percentage of total time in domestic work for women than men, they were still larger in terms of absolute time spent.

⁷⁸ Baxter (2002)

⁷⁹ Sullivan (1997)

⁸⁰ Craig (2006), Lamb (1981), Starrels (1994). Several studies classify domestic work as being either "low-control" or "high-control" with low-control tasks being defined as those traditionally "female" jobs that must be done on a daily basis at specific times such as cooking and cleaning, while high-control tasks are traditionally "male" jobs such as making repairs and maintaining cars. Sources: Barnett and Rivers (1996), Barnett and Shen (1997), DeMaris and Longmore (1996).

Figure 2.20: Average distribution of time in domestic work as a primary activity by gender (minutes and %)



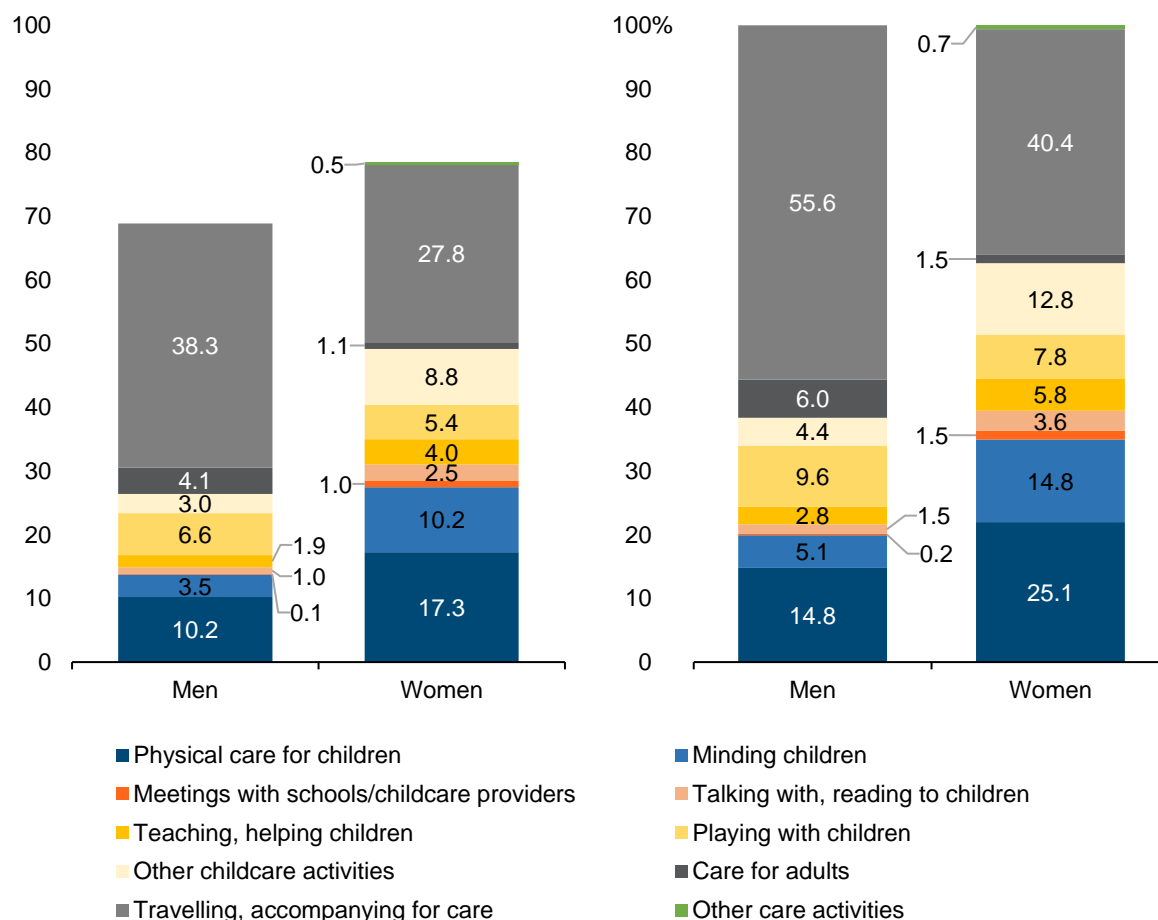
Note: Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

In contrast, men in our sample spent more time than women on more time-flexible and less frequent tasks. These include travelling for domestic services e.g. driving to the supermarket, and other domestic services e.g. maintenance work and pet care. These are activities that are arguably more time-flexible. Men also performed more household management tasks e.g. paying household bills and organising duties, though the difference seen here is not large in absolute terms (1.3 minutes). This may reflect men's dominance in making household decisions, which according to studies pertains to especially those related to career choices and resource allocation, while women also make decisions but with regard to day-to-day details of family life and household upkeep e.g. cleaning⁸¹.

For direct care work, the most notable contribution by men was travelling and accompanying for care, such as sending a child to school or accompanying a parent to a clinic, at 38.3 minutes per day or 55.6% of men's total time in direct care work (Figure 2.21). This is more than women in both absolute time spent as well as a percentage of total time spent in direct care work—women recorded 27.8 minutes or 40.4% of their total time in direct care work. Men also spent more time playing with children than women, at 6.6 minutes per day or 9.6% of men's total time in direct care work versus women's 5.4 minutes or 7.8% of women's total time in direct care work.

⁸¹ Scanzoni (1982), Steil and Weltman (1991)

Figure 2.21: Average distribution of time in direct care work as a primary activity by gender (minutes and %)

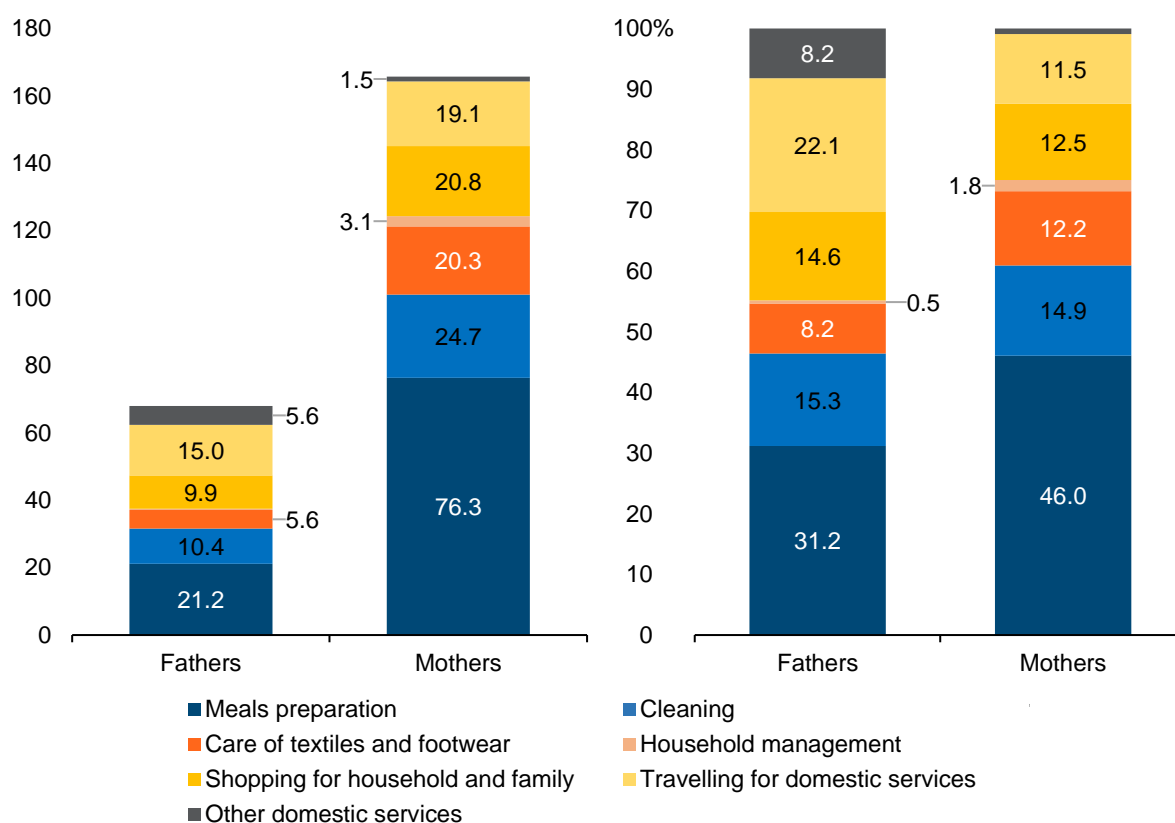


Note: "Other childcare activities" include activities that are performed strictly for the child such as preparing milk. Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

As with the case of domestic work, women spent more time in direct care work that is considered less time-flexible and more onerous. This includes physical care for children i.e. feeding and bathing, as well as minding children i.e. passive care. Physical care for children amounted to 17.3 minutes per day for women or 25.1% of women's total time in direct care work versus 10.2 minutes for men or 14.8% of men's total time in direct care work. As for time spent on minding children, women spent 10.2 minutes or 14.8% of their total time in direct care work, both more than men's 3.5 minutes or 5.1% of men's total direct care time. It is also worth noting that time spent on physical care for adults, which includes elderly care, accounted for a small amount of our respondents' time allocation. However, this may only be specific to our sample.

Focusing on time spent on domestic work by parents, the total average time spent is higher than the average man and woman (Figure 2.22)⁸². While Figure 2.20 shows that the total average time spent on domestic work is 137.6 minutes for women generally, Figure 2.22 shows that for mothers alone it is much higher at 165.8 minutes. In comparison, the difference among men is much smaller: men on average spent in total 64.7 minutes while fathers spent marginally more at 68.0 minutes. Nevertheless, the distribution of the different tasks in domestic work—from less onerous to the more pleasant ones—between fathers and mothers remains largely similar compared to the average man and woman as shown in Figure 2.20.

Figure 2.22: Average distribution of time in domestic work as a primary activity by mothers and fathers (minutes and %)



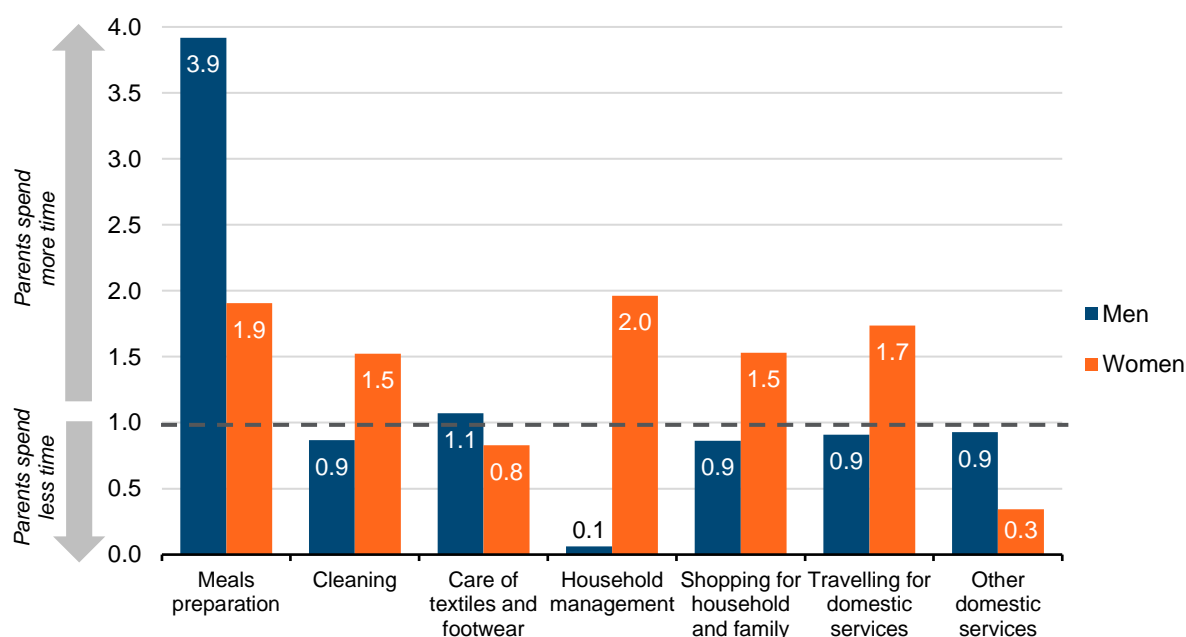
Note: Average is calculated based on the entire sample of mothers and fathers, including those who did and not engage in the activity.
Source: KRI (2019b)

When we compare the difference between parents and non-parents, we find that mothers dedicated more time to most of the tasks in domestic work (Figure 2.23). The highest multiple is for household management where mothers spent twice the average amount of time than women who are not mothers, although this is largely due to a low-base effect where the average time spent in household management was relatively small. This is followed by meal preparations where mothers spent 1.9 times more time than non-mothers. Travelling for domestic work, shopping and cleaning followed at 1.7, 1.5 and 1.5 times, respectively. Meanwhile, less time was spent by mothers than non-mothers on care of textiles and footwear (0.8 times) as well as other domestic services (0.3 times).

⁸² We define parents as those with children under 20 years old living in the household i.e. those in Life Stage 2 and Life Stage 3. This amounts to 30 mothers and 26 fathers.

On the other hand, fathers displayed a marginal difference compared with non-fathers in time spent on the different tasks in domestic work. An exception is time spent on meal preparations, where fathers dedicated 3.9 times more time than non-fathers. Furthermore, the time fathers spent on household management was noticeably lower than non-fathers at 0.1 times. However, across most other tasks in domestic work, fathers spent a marginally smaller amount of time than non-fathers (0.9 times). Time spent on care of textiles and footwear by fathers was higher (1.1 times) but this difference is similarly small.

Figure 2.23: Ratio of average time spent on domestic work tasks as a primary activity by parents to non-parents, by gender



Note: Average is calculated based on the entire sample of mothers and fathers, and non-fathers and non-mothers, including those who did and not engage in the activity.

Source: KRI (2019b)

Box 2.2: Voices from the respondents on task allocation among household members

According to the parents in our sample, about one in four fathers do no unpaid care work, but among fathers who help out at home, slightly more fathers help with domestic work than with childcare, which is a different finding from the quantitative study earlier⁸³. Both husbands and wives reported husbands helping with domestic chores when they are able or when it is convenient, while acknowledging that responsibility for day-to-day household tasks fall to the wives. As one wife working full-time put it, “kalau dia free, dia buat lah, cuma masak [saya] sepenuhnya lah” (“if he’s free, he’ll do it, but [I] cook [the meals] entirely”). In the rare instances that a man was managing the household, it was due to his wife being unwell or having a child with special needs.

Existing research shows that even when both spouses share the housework, wives are more likely to bear a heavier load than husbands, often without realising it⁸⁴. Women are usually responsible for the “upstairs” work which involves the bedrooms, the bathrooms, the living room, the dining room and the kitchen. Men are responsible for the “downstairs” work which involves the garden, the car and general maintenance. Upstairs work is more likely to require regular, if not daily, time and effort while downstairs work is more intermittent.

Even when respondents reported that both spouses participated in unpaid care work, two tasks showed signs of being gender-specific. First, in cases where both spouses work, childcare-related transport, e.g. driving to and from school or being dropped off at a childcare centre, tends to fall on the father. The pattern is less clear when mothers are not working—in some cases mothers provide childcare-related transport while in other cases fathers provide childcare-related transport. Second, regardless of employment and parental status, women are far more likely to be responsible for cooking.

Saya masak, sama saya atau bibik, suami tak. [Interviewer: Suami biasa buat apa?] Takde, tidur, makan saja.

Authors’ translation:

I cook, either me or the maid, not my husband [Interviewer: What does your husband usually do?] Nothing much, just sleeps and eats.

—Respondent, aged 36, married mother of four

When one husband was asked how he might adjust his schedule to help his wife with the housework, he offered to eat out whenever he could afford to do so to save his wife the trouble of cooking.

⁸³ Technically, the samples are different. For this finding, fathers are defined as male respondents with children aged less than 20 years old (with time diaries) or husbands of respondents (with no time diaries). As long as it is mentioned that the father helps out either with housework or childcare, it is considered unpaid care work.

⁸⁴ For example, Hochschild and Machung (2012)

Parents described teaching their children to help with domestic labour, often assigning them small domestic tasks such as washing dishes or folding clothes. Children, regardless of gender, contribute to household production and as they transition to adulthood, single young graduates sharing a house or an apartment use a schedule or rotation to manage household labour. This suggests that, within our sample, marriage may facilitate the disproportionate burden of unpaid care work falling to women.

My laundry, my son will help to hang the clothes. I [have] to teach him how to hang the clothes, put it outside, and then collect it back, and then force him to do his own clothes, to fold up. And then [when] the button come out, I give you needle. You do it.

—Respondent, aged 54, married mother of one

Buat giliran lah. Contoh macam kita bagi duty cuci pinggan kan. Hari ini anak sulung [lelaki], esok anak nombor dua [perempuan], esok lagi itu bagi yang bongsu [perempuan] pula, tukar-tukar macam tu lah. Satu lagi macam aktiviti iron baju kan? So kita dah latih lah dia orang untuk gosok baju. Kerja rumah biasa kita buat ramai-ramai lah, sekali dengan anak semua, macam bersihkan carpet, sapu sampah. [Interviewer: Husband juga lah, termasuk?] Ahh, husband tak. Saya dengan anak-anak lah.

Authors' translation:

[They] take turns. Take washing plates as an example: Today the eldest [son] does it, tomorrow the second [daughter] does it, the day after it will be given to the youngest [daughter]. [They] take turns like that. Another activity is ironing clothes right? So we taught them to iron clothes. Normally, we do the housework together, including all the children, like cleaning the carpet, sweeping rubbish. [Interviewer: Your husband, too?] Ahh, not my husband. Just me and the kids.

—Respondent, aged 39, married mother of three

Macam yang [anak] perempuan tu, bahagian dia gosok baju, [cuci] pinggan, masak-masak macam tu aje. Anak-anak semua sama tolong lah, yang lelaki pun sama juga, sama-sama menolong.

Authors' translation:

For example [the] daughter, her part is to iron the clothes, [wash] the dishes, that sort of thing, basically. All the kids help out, the boys too, everyone helps out.

—Respondent, aged 43, married mother of two

Social context of unpaid care work

Having full responsibility for a task is more demanding than giving occasional help⁸⁵. Men often help with tasks but managing unpaid care work is likely to be women's responsibility. Therefore, women have a disproportionate responsibility for the mental labour required to plan and manage unpaid care work⁸⁶. To investigate whether individuals are providing or obtaining help versus taking sole responsibility for unpaid care work, we calculate the proportion of time for unpaid care work carried out alone vis-à-vis with others. We assume that tasks undertaken with others are likely to be supplementary and can be a proxy for help provided or obtained⁸⁷. Conversely, unpaid care work done alone is a proxy for sole responsibility.

Table 2.2 shows that in our sample, most unpaid care work for men and women was performed in sole charge i.e. alone⁸⁸. However, women carried out a larger portion of unpaid care work alone compared with men, at 75.6% compared with 62.8%. Men carried out a larger portion of unpaid care work with their spouses or with others compared with women, at 37.2% compared with 24.4%. This is consistent across all income classes including in the B40 and the M40 where women demonstrated a slightly higher average time spent alone than men overall. The exception is for those in the T20, where men spent a larger portion of their total time doing unpaid care work alone compared with women, at 62.9% for men versus 58.9% for women, which is notably less than women in the other income classes. It is, however, important to note that in absolute minute terms, men in the T20 did perform less unpaid care work alone than women in the T20 by a difference of 17.2 minutes.

Table 2.2: Average time spent per weekday on unpaid care work as a primary activity by social context, by gender, household income class and life stage (%)

	Men	Women	B40		M40		T20	
			Men	Women	Men	Women	Men	Women
Sole charge	62.8%	75.3	59.6	77.7	68.5	78.5	62.9	56.4
With spouse	15.9	7.5	18.0	8.1	11.0	8.3	17.9	2.9
With other	21.3	17.2	22.4	14.2	20.5	13.2	19.2	40.7
	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Sole charge	61.6	84.1	63.3	72.6	62.3	66.8	65.7	91.9
With spouse	10.3	1.5	18.7	9.1	13.2	10.9	30.3	2.8
With other	28.1	14.4	18.0	18.3	24.5	22.3	4.1	5.4

Note: Time in sole charge is underestimated for travel related to caregiving as the care recipient is included in this type of activity, unlike other caregiving activities. If travel related to caregiving is excluded, time in sole charge is 81.1% for women and 71.3% for men, while time with spouse is 7.2% for women and 14.8% for men. Others include children in these episodes of travelling for caregiving as well as anyone else other than the self and the spouse. Average is calculated based on the entire sample, including those who did and not engage in the activity.

Source: KRI (2019b)

⁸⁵ Craig (2006)

⁸⁶ Sanchez and Thomson (1997), Coltrane (2000)

⁸⁷ Craig (2006), Sullivan (1997)

⁸⁸ Care recipients are excluded in our classification of the social context of activities. For example, childcare is classified as being done alone if no other person other than the child is present.

In terms of life stages, women throughout all stages spent on average a larger portion of their time in unpaid care work alone than men. Among women, those in Life Stage 2 and Life Stage 3 demonstrated a lower portion of time spent doing unpaid care work alone (72.6% and 66.8%, respectively) than women in Life Stage 1 and Life Stage 4 (84.1% and 91.9%, respectively). This suggests that men stepped in to share some of the care burden during the childbearing and child-rearing stages of Life Stage 2 and Life Stage 3. It may also be because women are more likely to be married in these stages than they are in Life Stage 1, giving a higher probability that they are joined by a spouse. Meanwhile, men's time spent in doing unpaid care work alone was roughly constant at slightly above 60% despite the supposed peak in care responsibility in Life Stage 2 and Life Stage 3. This suggests that while men may have stepped in to assist in unpaid care work during these life stages, most of their participation was in the form of providing assistance rather than taking full responsibility.

The above findings have three main implications. First, women are taking the major responsibility for care work and that men are playing more of a supporting role. Second, it means that men's time is not substituting for women's time and women are thus not able to use this time for other activities, such as paid work. Third, the father-child relationship may be weaker if it is always women who mediate it⁸⁹.

Box 2.3: Voices from the respondents on receiving external help with care

Where financial circumstances allow it, households used paid services to meet their care needs, including depending heavily on live-in domestic helpers.

[Bila saya kerja] memang saya lepas tangan, masak makan anak semua orang gaji buat...memang saya 100% kat dia lah. Pakaian apa semua, kelengkapan baju anak sekolah memang semua kat dia. Selepas saya berhenti kerja memang saya buat semua lah. Masa saya berhenti kerja tu saya tak ambil pembantu, saya nak buat semua kan, [tapi] saya tak sempat...lepas tu saya panggil orang datang hari-hari. Datang hari-hari saya fikir, macam membazir. Saya bayar lebih mahal daripada stay-in kan so saya ambil stay in.

Authors' translation:

[When I worked], I let go [of housework] completely, everything from cooking to handling the kids was all done by the domestic worker...I really depended on her 100%. Clothes, the children's uniforms, all were done by her. After I stopped working, I was the one to do all the housework. When I stopped working, I didn't hire a domestic helper, I wanted to do it all, [but] I couldn't get everything done in time...after that I called for daily housekeeping services. When they come every day, I thought it was a waste of money. I actually paid more [for daily housekeeping] than live-in [domestic helpers] so I decided to go for live-in [domestic helpers].

—Respondent, aged 44, married mother of three

⁸⁹ Craig (2006)

Generally, a paid cleaning service is a popular option for housecleaning needs, where respondents frequently turned to cleaners who came to the house once every week or every two weeks. Paid domestic labour is more exclusive to those who can afford it: Figure 2.24 shows the number of respondents that used live-in domestic workers and cleaner services, while Figure 2.25 shows the breakdown of those using those services by income class. Only 6.4% of respondents used domestic workers, while a bigger proportion (14.4%) used cleaners. As live-in domestic workers are more costly, it is not surprising that T20 households made up the biggest consumers of this service (62.5% of total), whilst M40 individuals made up two thirds of those using cleaning services.

Figure 2.24: Breakdown of respondents using external services, (count)

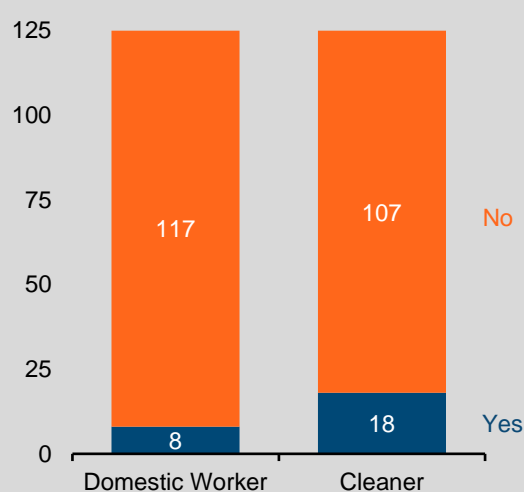
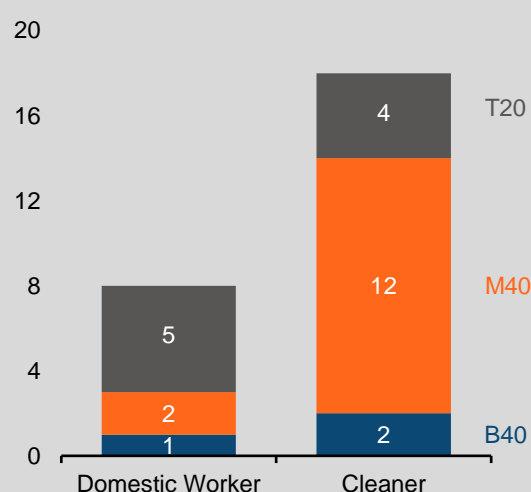


Figure 2.25: Breakdown of respondents using external services, by income class, (count)



Source: KRI (2019b)

With respect to childcare, respondents indicated a certain level of distrust of informal childcare providers. They preferred to seek support from extended family, usually parents and in-laws who live nearby, or from formal childcare service providers.

Bila you kerja full-time katalah sampai rumah pukul 7, you penat dah nak tengok anak, tak sempat nak tengok education dia. So kita delegate kat orang lah, mungkin hantar tuisyen.

Authors' translation:

When you work full-time, say you reach home at 7, you're tired and you still have to take care of the kids, there's not enough time to look into their education. So we delegate [this task] to external parties, perhaps send the children for tuition lessons.

—Respondent, aged 43, married mother of two

When I was working with [a trading company] my first and second child, I sent them to the daycare centre. [The company] has a daycare centre. But my maid is still around to prepare dishes. The problem is...we tak percaya sangat dengan maid jaga [anak] kan, we don't want to leave solely to the maid to take care of my children so I send them to the daycare centre. So, the maid is at home.

Authors' translation:

When I was working with [a trading company] my first and second child, I sent them to the daycare centre. [The company] has a daycare centre. But my maid is still around to prepare dishes. The problem is...we don't really trust the maid to take care of the kids, we don't want to leave solely to the maid to take care of my children so I send them to the daycare centre. So, the maid is at home.

—Respondent, aged 54, married mother of five

Respondents who were themselves grandparents described how they helped care for their grandchildren, especially in cases where both parents were working full-time. Typically, grandparents picked up children from school or childcare centres and watched over them until their parents could pick them up after work. Respondents who were parents described how they relied on their parents and in-laws for help with unpaid care work, mostly with childcare but also in reducing the burden of food preparation, part of domestic labour, that the respondents had to undertake after a full day of work.

Not much of housework at that time [because] we were in a condo. Like dinner, I will go to my mother-in-law's house, and then my mother's house. So, 1, 3, 5, mother-in-law, 2, 4, 6 at my mum's house. That time they are still cooking, and I stayed nearby both of them. After work, go there straight, to the parents' house, eat, then come back lah.

—Respondent, aged 54, married mother of one

Tujuan saya hantar anak tu jauh [untuk taska] supaya bila nanti, sebab saya kadang-kadang meeting lambat, jadi saya tak sempat untuk pick-up budak-budak tu, that's why saya hantar ke [tempat] yang jauh sejam tu, supaya nenek dia orang boleh ambil. Taska dengan pengasuh tu, memang dekat dengan rumah mertua.

Authors' translation:

The purpose of sending the children further [for daycare] is so that, because I have to attend late meetings occasionally, I can't pick up the kids in time, that's why I send them to a place that is an hour away, so that their grandmother can pick them up. The daycare and the childminders there are really near my mother-in-law's house.

—Respondent, aged 34, married mother of two

Dulu masa anak saya yang first, atuk nenek yang jaga. Hari-hari atuk hantar, ambil anak pergi sekolah. [Tapi sekarang] tak larat lah.

Authors' translation:

With my first child, the grandparents took care of him. Every day, the grandfather would take him to school and pick him up from school. [But now] the grandfather is not able to do so.

—Respondent, aged 36, married mother of four

Nonetheless, most parents expressed relief when they no longer needed to burden their ageing parents or to pay for external childcare services because their children were of school-going age and had become more independent.

Travelling for unpaid care work vis-à-vis employment

Across regions, women's paid work trips are found to be shorter than men's, alluding to a preference by women to work closer to home⁹⁰. This gap is even larger for parents, with mothers having shorter commutes than fathers⁹¹. Various explanations for this gender gap have been proffered.

One explanation is the household responsibility hypothesis which states that women shoulder more housework and childcare than men⁹². A more specific reasoning explains that women make more family support trips than men and are more likely to combine non-work trips with work trips, especially when children are present⁹³. Another study suggests that long commutes are burdensome for women with young children, where mobility becomes limited when travelling with them⁹⁴.

We explore this gender gap for our respondents. We calculate the percentage of men and women who report having performed travel related to direct care work⁹⁵, domestic work and paid work (Table 2.3). Travel for paid work was the travel activity that was performed by the highest percentage of both men and women, consistent across all life stages and income classes. The exception is in Life Stage 3—among men, 73.3% reported performing travel for unpaid care work compared with 66.7% for paid work. Among women, 58.8% of women reported travel for unpaid care work compared with 35.3% for paid work.

⁹⁰ Fanning Madden (1981), Gordon et al. (1989), Hjorthol (2000), Lee and McDonald (2003), Crane (2007), Roberts et al. (2011), Silveira Neto et al. (2015)

⁹¹ Fanning Madden (1981), McLafferty (1997), Hjorthol (2000)

⁹² Fanning Madden (1981), Johnston-Anumonwo (1992), McLafferty (1997), Turner and Niemeier (1997)

⁹³ Hanson and Hanson (1981), Hanson and Johnston (1985), McGuckin and Murakami (1999), Hjorthol (2000), Boarnet and Hsu (2015)

⁹⁴ Rouwendal (1999)

⁹⁵ Specifically care for family or household members, be they children, adults or old-aged persons.

Nonetheless, between men and women, more men reported travelling for paid work, with an aggregate figure of 76.2% of men versus 62.9% of women. Furthermore, more men reported having travelled for both direct care work and domestic work compared with women, and this is consistent across many of the household income classes and life stages. Exceptions are among those in M40, T20 and Life Stage 3, where proportionately more women than men reported having travelled for domestic work. Among the M40, 52.9% of the women reported having travelled for domestic work compared with 40% of the men, while in the T20, 45.5% of women versus 38.5% of men. Similarly, among those in Life Stage 3, 52.9% of women reported having travelled for domestic work versus 40% of men in Life Stage 3.

Table 2.3: Percentage of men and women who travel by purpose, household income class and life stage

	Men		B40		M40		T20	
	Men	Women	Men	Women	Men	Women	Men	Women
Direct care work	49.2%	37.1	40.0	26.9	56.0	52.0	53.8	27.3
Domestic work	38.1	35.5	44.0	19.2	32.0	48.0	38.5	45.5
Paid work	76.2	62.9	64.0	50.0	84.0	76.0	84.6	63.6
	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Direct care work	36.7	15.0	72.7	64.3	73.3	62.5	14.3	9.1
Domestic work	30.0	25.0	45.5	21.4	40.0	56.3	57.1	45.5
Paid work	76.7	80.0	100.0	78.6	66.7	37.5	57.1	54.5

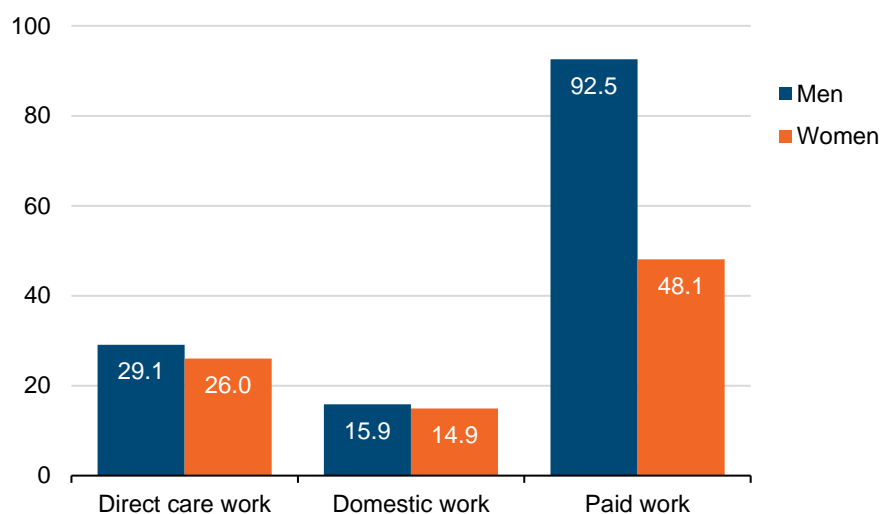
Note: Participation rates account for individuals who report having travelled for any of the above purposes during anytime of the sampled diary day. Travel for paid work includes commuting and other forms of travel related to paid work, such as going to a meeting, or transporting goods or passengers for pay.

Source: KRI (2019b)

In terms of average time spent, travel for paid work is the highest for both men and women (Figure 2.26). However, men spent considerably more time on travel for paid work at about 92.5 minutes compared with 48.1 minutes for women.

Meanwhile, for travel related to direct care work and domestic work, men on average spent more time than women but only by a small margin. While this is interesting when considering our previous finding that women on average spent a considerable amount of time more than men on overall unpaid care work, it reflects the gendered division of care tasks that we argued earlier.

Figure 2.26: Average time spent on travel by gender (minutes)

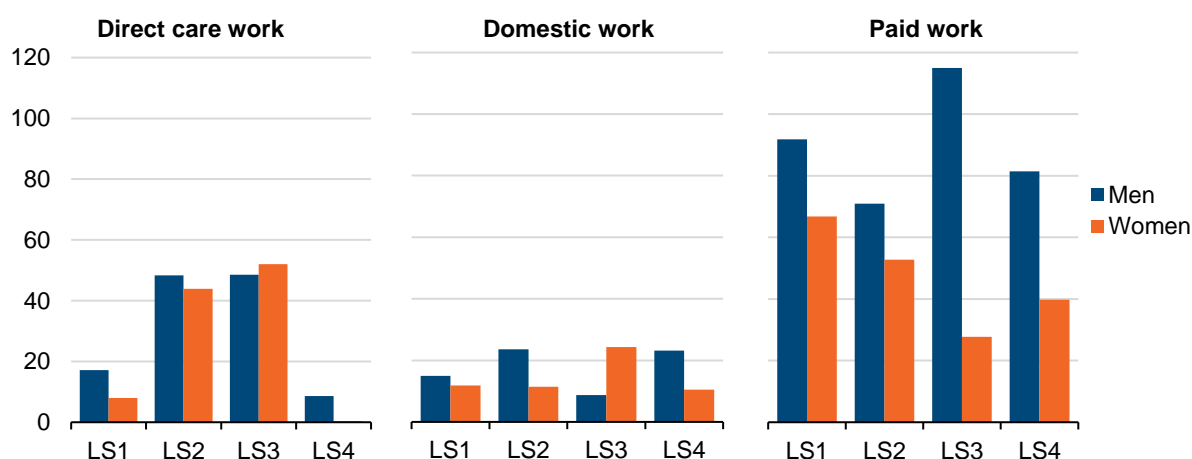


Note: Average is calculated based on the entire sample, including those who did and not engage in the activity .
Source: KRI (2019b)

In terms of life cycle, there is only a minor difference between men and women in the average time spent on travel related to direct care work and domestic work—this is reflected throughout the four life stages (Figure 2.27). Both men and women in Life Stage 2 and Life Stage 3 spent considerably more time on travel related to direct care work than in the other life stages. This is understandable as these are the life stages in which individuals have children.

As for travel related to domestic work, no clear pattern is demonstrated across the life stages for both men and women. In terms of travel for paid work, men generally spent more time than women and this aggregate pattern is reflected across all life stages. For men, there appears to be a dual peak as displayed by those in Life Stage 1 and Life Stage 3. In comparison, women in subsequent life stages from Life Stage 1 to Life Stage 3 demonstrated gradually less time spent in travel for paid work, while those in Life Stage 4 display a reversal.

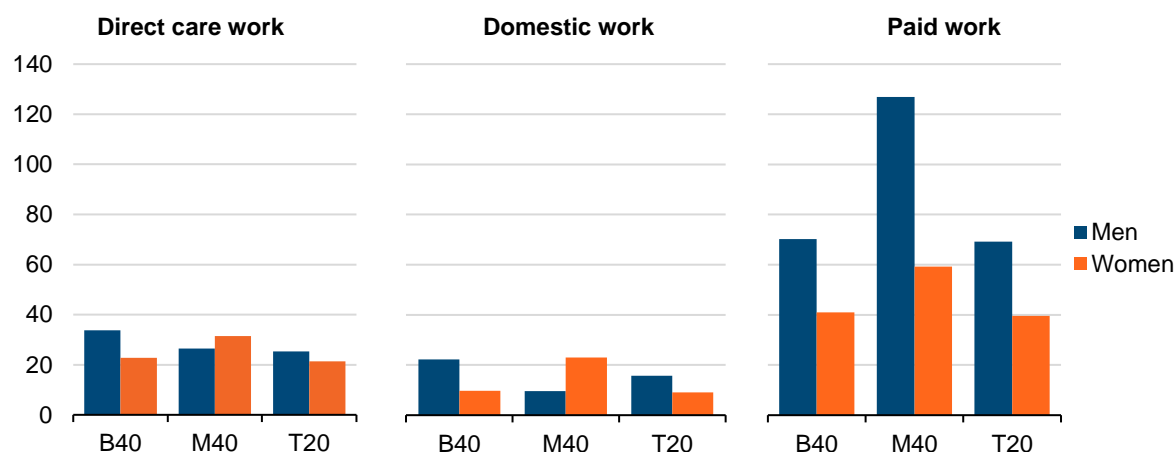
Figure 2.27: Average time spent on travel by gender and life stage (minutes)



Note: LS = Life Stage. Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

Similarly, in terms of income class, the difference between men and women is starkest for travel for paid work, especially for individuals in the M40 (Figure 2.28). For travel related to direct care work and domestic work, the difference between men and women is less stark. Nonetheless, it is worth noting that travel related to direct care work is generally longer than travel related to domestic work. This is likely because direct care work involves more “regular” travel such as sending children to school versus domestic work that has longer intervals e.g. going to the supermarket.

Figure 2.28: Average time spent on travel by gender and household income class (minutes)



Note: Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

It is also intriguing to note that while men spent more time than women on paid work (Figure 2.12 and Figure 2.14), excluding travel time from the calculation reverses this pattern. By excluding travel for paid work, women worked 5.8 hours per day compared with men’s 5.4 hours (Table 2.4).

Women in our sample spent more time working from home at 48 minutes per day compared with men at 30 minutes. However, women also spent more time working at a location that is considered a usual workplace (e.g. company office) at 4.9 hours compared with men at 3.8 hours. On the contrary, men spent more time than women in non-usual places for work e.g. commercial/service areas, eating/drinking locales and public areas, at 48 minutes per day compared with women at 6 minutes.

In terms of life cycle, women in our sample worked more at home in Life Stage 2 and Life Stage 3. Women spent 1.1 hours working at home in Life Stage 2 and 1.2 hours in Life Stage 3 compared with 0.2 hours in Life Stage 1 and 1.0 hours in Life Stage 4. Women’s time spent at the workplace in Life Stage 2 (5.8 hours) and Life Stage 3 (2.6 hours) were also lower than Life Stage 1 (6.8 hours). However, it is worth noting that the total time spent working that excludes travel for paid work is higher for women in Life Stage 2 than women in Life Stage 1, at 7.2 hours versus 7.0 hours, despite both groups of women averaging 8.1 hours on paid work if travel is included. These findings allude to a sense of constrained mobility and a preference by women to either work closer to home (or even at home) during childbearing and early parenting stages of life.

Table 2.4: Average time spent on paid work by location, by gender, household income class and life stage, excluding travel time (hours)

			B40		M40		T20	
	Men	Women	Men	Women	Men	Women	Men	Women
Home	0.5	0.8	0.5	1.3	0.7	0.4	0.2	0.4
Workplace	3.8	4.9	2.6	4.1	4.0	5.6	5.7	5.0
Other	1.1	0.2	1.5	0.2	0.9	0.2	0.6	0.0
TOTAL	5.4	5.8	4.6	5.7	5.6	6.2	6.5	5.4

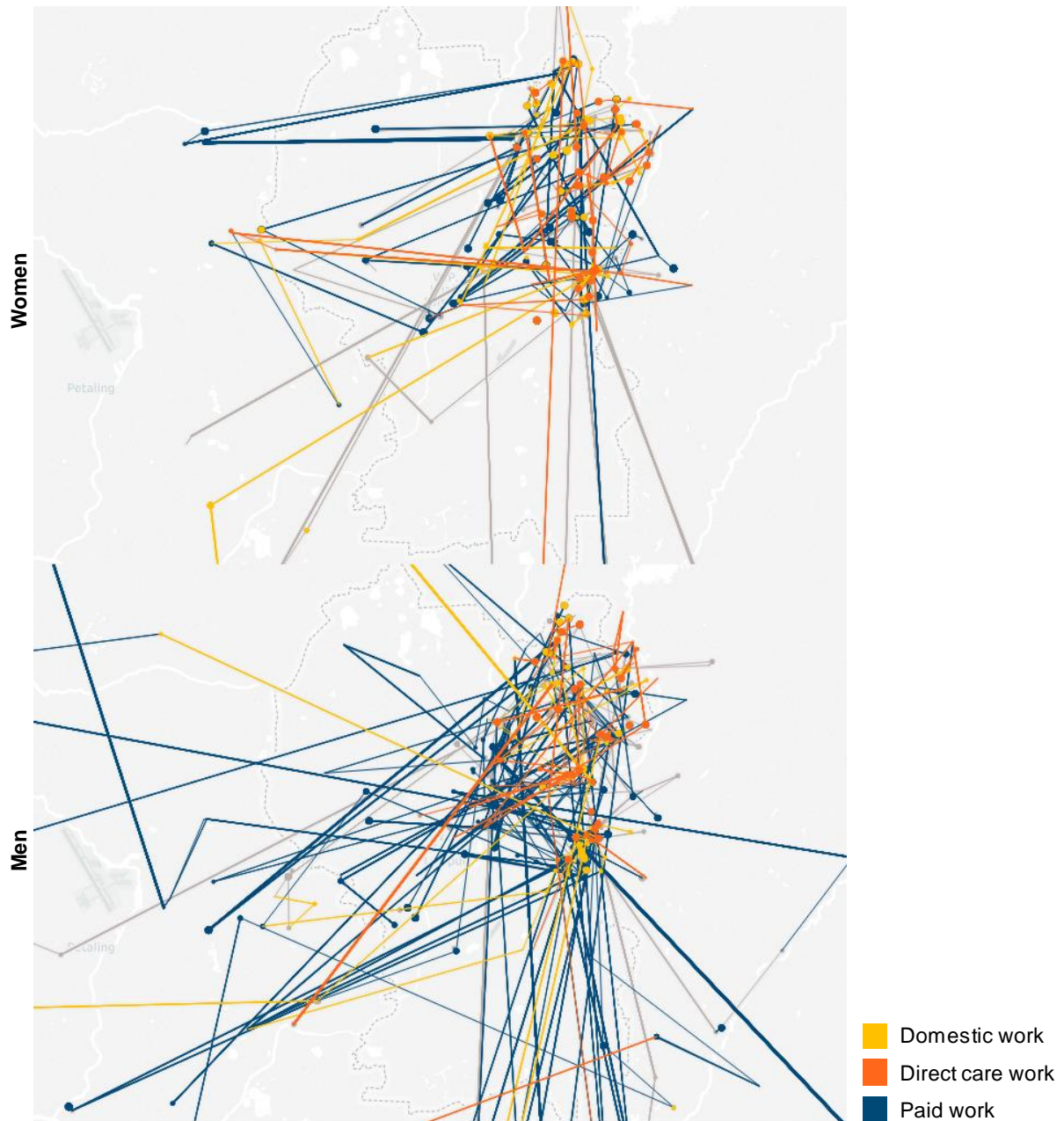
	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Home	0.4	0.2	1.1	1.1	0.5	1.2	0.0	1.0
Workplace	3.7	6.8	4.8	5.8	3.9	2.6	2.4	3.7
Other	1.3	0.0	1.5	0.4	0.3	0.3	1.0	0.0
TOTAL	5.4	7.0	7.5	7.2	4.7	4.0	3.4	4.7

Note: The times shown exclude time taken to travel to these locations. "Workplace" refers to a location that is considered by the respondents as a usual place of work that is not the home. Average is calculated based on the entire sample, including those who did and not engage in the activity.

Source: KRI (2019b)

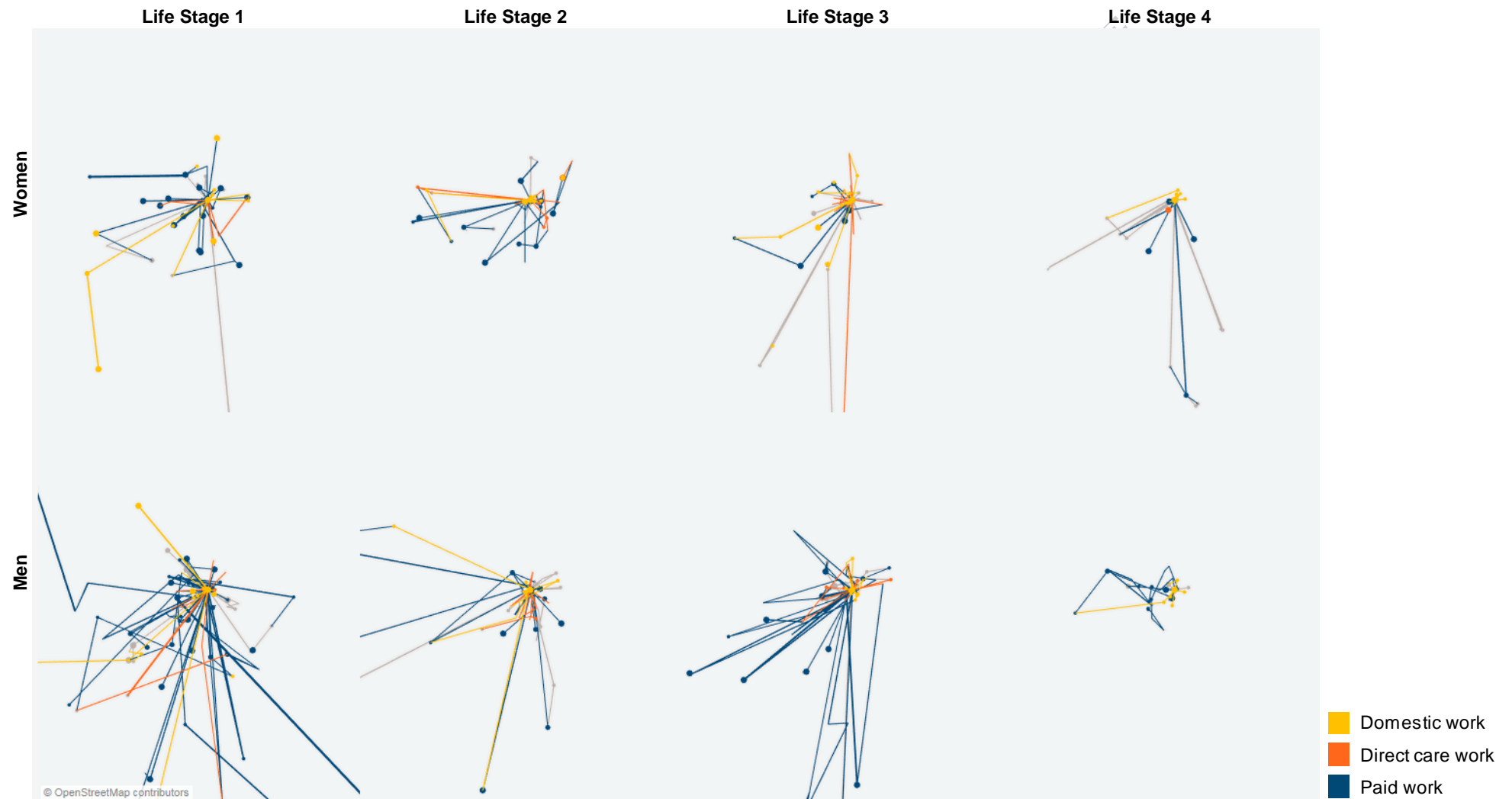
Figure 2.29 provides a visualisation of the movement of men and women throughout the day with the colours representing the activities. The visualisation shows that men frequented not only more places than women throughout the day (denser lines) but also travelled to places that are further away (longer lines), with a high number of travel for paid work. The pattern between men and women is also consistent across the life stages, whereby men travelled more and further than women in each life stage, except for Life Stage 4 (Figure 2.30).

Figure 2.29: Travel patterns throughout the day by gender



Note: For an interactive exploration of these maps, visit the KRI Visualisations page at www.KRIInstitute.org
Source: KRI (2019b)

Figure 2.30: Travel patterns throughout the day by gender and life stage



Note: The home of respondents is set as the centre of the map for ease of comparability between respondents. Comparisons between life stages should be made with caution given that there is an unequal number of individuals sampled in each of the life stages, with Life Stage 4 having the fewest.

Source: KRI (2019b)

The movements displayed can be quantified by the distance travelled (Table 2.5). It reaffirms that men in our sample travelled further distances on average, not only for paid work but also for direct care work and domestic work. This is consistent across all life stages and income classes, except for individuals in Life Stage 3 and the M40, where women on average travelled further than men for both direct care work and domestic work.

Table 2.5: Average distance travelled per weekday by travel purpose, by gender, household income class and life stage (km)

	Men	Women	B40		M40		T20	
			Men	Women	Men	Women	Men	Women
Direct care work	4.5km	3.7	4.9	2.0	4.4	5.8	4.0	3.0
Domestic work	3.9	2.5	5.3	1.4	2.0	4.1	5.0	1.1
Paid work	32.6	7.4	19.1	5.7	54.5	9.8	16.6	6.1
	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Direct care work	4.0	1.5	5.4	5.4	7.0	7.7	0.1	0.0
Domestic work	4.2	2.8	7.2	1.8	1.2	3.2	3.6	1.6
Paid work	44.0	9.7	21.5	9.6	28.9	3.8	9.5	5.9

Note: Distance shown is the mean Euclidean distance i.e. based on the straight line between any two points rather than road distance. Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

Lastly, we look at the number of trips a day made by men and women (Table 2.6). We find that men on average made more trips for paid work at four trips a day, compared with three trips by women. For trips for unpaid care, men and women on average both performed three trips a day. In terms of income class, men performed more trips than women in all income classes for paid work. Men across all income classes also performed on average more trips for unpaid care than women, except for those in the M40, where women made three trips versus men's two trips a day.

Table 2.6: Average number of trips made a day, by gender, household income class and life stage

	Men	Women	B40		M40		T20	
			Men	Women	Men	Women	Men	Women
Paid work	4	3	4	3	5	3	3	2
Unpaid care	3	3	4	2	2	3	3	2
	Life Stage 1		Life Stage 2		Life Stage 3		Life Stage 4	
	Men	Women	Men	Women	Men	Women	Men	Women
Paid work	4	4	3	3	4	2	4	2
Unpaid care	2	1	5	3	4	5	2	1

Note: Number of trips is based on the number of locations visited by a respondent. Average is calculated based on the entire sample, including those who did and not engage in the activity.
Source: KRI (2019b)

By life stages, women in Life Stage 1 performed the highest number of employment-related trips than women in other life stages, followed by women in Life Stage 2 and then equally in Life Stage 3 and Life Stage 4. Notably, the reverse is true for trips for care. Women in Life Stage 1 and Life Stage 4 made the fewest trips for care, while women in Life Stage 3 made the greatest number of trips at five trips a day, followed by those in Life Stage 2.

In comparison, men in Life Stage 2 and Life Stage 3 likewise made a higher number of trips for care than men in other life stages, with those in Life Stage 2 performing five trips, more than women's three trips. Men in Life Stage 1 and Life Stage 4 also made more trips for care than their female counterparts, both at two trips versus both group of women's one trip a day. Men's trips for paid work are roughly constant at an average of four across the life stages, with only those in the earlier childbearing stage of Life Stage 2 performing fewer trips at three a day.

Overall, our findings support the claim that women have shorter commute times with a preference to work closer to home. This is further substantiated by the finding that women's average distance from workplace to home is 3.8km versus men's 14.7km⁹⁶. A higher portion of women reported their homes as their official work address at 16.1% versus 11.1% of men.

Furthermore, women's limited travel in relation to men may be indicative of women's generally constrained mobility. This is characterised by women's higher reliance on public transportation and walking but less as drivers of motor vehicles⁹⁷. In our sample, while roughly half of both men and women's travel time was spent as a car driver, a higher portion of women's travel time was spent as a car passenger at 25.2% (for men, 6.5%). Men drove motorbikes more at 31.0% of their travel time compared with women at 0.3%. On the other hand, women spent more time travelling by bus and train at 7.7% compared with men at 2.2%.

Lastly, we find no evidence in our sample that women travel more than men for care, be it by time, distance or number of trips. However, given the finding that travel metrics for women aren't far less than men, it indicates that women allocate a higher portion of their total travel involvement to unpaid care work, despite their suggested limited mobility.

Box 2.4: Voices from respondents on the importance of quality time

The majority of respondents indicated that they were satisfied with their current time allocation for paid and unpaid work⁹⁸. However, when prompted for more detail, one in three respondents who initially expressed satisfaction admitted that there were things in their routine that they would change if they could have greater control over their time i.e. if they had greater time sovereignty. The most frequently mentioned preferences were flexible paid working hours and the freedom to work from home.

Satisficing is commonly understood as a decision-making strategy in which a minimally acceptable outcome is preferred to a utility-maximising outcome, usually because the minimally acceptable outcome requires less cost and effort⁹⁹.

In the context of time allocation, satisficing refers to the way respondents express satisfaction with a time allocation that ensures that basic needs and responsibilities are met, even if it is not their ideal. Some respondents who expressed satisfaction with their time allocation also described their schedules as being fixed due to various circumstances, and difficult to change.

⁹⁶ This estimation excludes people with no fixed working places such as taxi drivers, as well as those who did not work in the sampled day.

⁹⁷ Manning (1978), Hanson and Hanson (1981), Guiliano (1979), Gurin (1981), Hanson and Johnston (1985)

⁹⁸ 92 out of 125 respondents indicated this.

⁹⁹ See, for example, Simon (1956) and Tarter and Hoy (1998).

It is possible that respondents were not so much satisfied with their time allocation as they were satisfied with their time allocation.

[Peruntukan masa] tak boleh nak ubah. Selagi wife [dan] anak-anak saya bekerja, saya saja yang fully house husband. Tak boleh ubah. Kecuali ada orang volunteer. [ketawa]

Authors' translation:

[Time allocation] cannot be changed. As long as [my] wife [and] my children work, I am the one that is a full-time house husband. This cannot be changed, unless someone volunteers [to take over my role]. [laughs]

—Respondent, aged 54, married father of three

Kerja tu memang tetap masa. Tak boleh ubah sebab kerja tu memang sudah tetap. Isteri, dia housewife, dia boleh buat kerja [rumah] semua.

Authors' translation:

The timing of work is fixed. There is no way to change it as the work is fixed. [My] wife, she is the housewife, she can do all the housework.

—Respondent, aged 57, married father of two

The two examples above illustrate two husbands' very different roles in the household, with both men claiming to be satisfied with their respective time allocations because their situations were "fixed". Other respondents who reported being satisfied with their time allocations hinted that they actually had other preferences with respect to their time but recognised that circumstances were out of their control and that changing those circumstances was beyond their means.

[Kalau nak ubah peruntukan masa, nak] awalkan waktu balik [dari kerja], boleh ambil anak, tapi masalah dia tak akan boleh lah.

Authors' translation:

[If I could change my time allocation, I would] leave earlier [from work], so I could pick up the kids, but the problem is that that's not possible.

—Respondent, aged 40, married mother of two

Nak kurangkan sibuk itu macam impossible lah. Sebab macam kita bergantung dengan patient, patient mesti sentiasa ramai. Takde patient satu dua orang datang kan, dapat treatment, macam mustahil lah.

Authors' translation:

Becoming less busy feels like an impossible thing. This is because it depends on the [number of] patients, there are always so many. It's not like there are just one or two patients coming for treatment, that's impossible.

—Respondent, aged 39, married mother of three

Nak bekerja dari rumah lah. [Tapi] mana [bos] bagi kerja, tak boleh bagi kerja dari rumah sebab kita kena menghadap komputer, orang buat kewangan sekarang kena menghadap komputer. Kecuali sistem tu boleh buat kat rumah.

Authors' translation:

[I] want to work from home. [But] how [the boss] delegates work, it can't be done from home because we have to be in front of a computer, nowadays people in the finance [industry] have to be in front of a computer. Unless the system can be used at home.

—Respondent, aged 59, married mother of one

Instead of being resentful that their time sovereignty was limited, they tried to be content with what they had. A civil servant noted that she had very little time to herself, being kept busy by both paid and unpaid work, but said that things were much better now that she had a five-day work week compared to when she had to work on Saturdays as well. Instead of viewing leisure time as a right, she viewed it as a privilege and counted herself fortunate to have it.

A common problem faced by respondents was the large amount of time spent traveling due to large distances between home, work and childcare providers being exacerbated by traffic jams and poor public transportation. Working parents, in particular, struggled to find conveniently located childcare providers and rued how long it took them to get home to their families after work. As such, they appreciated company policies that allow flexible paid working hours.

Dulu office lagi jauh, habis banyak masa perjalanan.

Authors' translation:

Previously [the] office was even further away, travel took a lot of time.

—Respondent, aged 40, married mother of two

Dulu pengasuh dekat dengan tempat kerja, sekarang pengasuh dekat dengan rumah. Jadi masa itu ada lebih sikit untuk rehat.

Authors' translation:

Previously the childminder was closer to the workplace, now the childminder is nearer home. Hence, there is a little more time to rest.

—Respondent, aged 34, married mother of three

Full-time ni rasa terasing, sebab masa saya kerja full-time saya tak sempat hantar anak saya even saya tak sempat ambil pun. Walaupun kita kata 9 – 5 [tapi] normally saya akan hanya sampai rumah dalam pukul 7, [traffic] jam apa semua. Pada saya tu banyak benda yang tertinggal lah sebab saya tak dapat tengok anak saya sebenarnya.

Authors' translation:

[I feel] isolated in this full-time [job], because when I work full-time I don't have enough time to send my children or even pick [them] up. Even though we say [work is from] 9 – 5 [but] normally I will only get home at 7, [because of traffic] jam and all that. To me I missed many things because I am not able to spend time with my children.

—Respondent, aged 43, married father of two

Saya dapat kerja di [tempat] jauh, so banyak buang masa travel semua-semua lah. Lepas tu penat. Lepas tu...kerja [di tempat lain]. Itu tak jauh tapi [traffic] jam, lepas tu balik lambat. Sekarang tukar [majikan], ada balik cepat. Sebab dia allow work from home.

Authors' translation:

I got a job in a place that is far away, so I waste a lot of time travelling and all that. After that [I felt] tired. Then...[I] worked somewhere else. That place was not far away but there were traffic jams, so I got home late. Now, I have changed [employers] and I am able to return [home] earlier [than before]. Because the new employer allows [me to] work from home.

—Respondent, aged 49, married mother of one

Respondents who indicated a desire for more leisure time, that is, time not spent on paid or unpaid work or on personal care, described mostly productive, self-improving activities that they wanted to undertake. They expressed interest in exercising and outdoor activities, in attending spiritual and religious retreats, and in starting their own businesses. Several respondents mentioned wanting to cut down on screen time, whether it was time spent on social media or time spent playing games online.

Although the interview questions focused only on respondents' time use and care mix, the data suggest the existence of competing cultural characteristics that warrant further investigation. Malaysians, based on our sample, seem to have personal ambitions of self-improvement that are tempered by stoicism about their lot in life. This tension between a desire for personal growth on one hand and a sense of disempowerment on the other has implications for policymakers thinking about social mobility and the eradication of poverty.

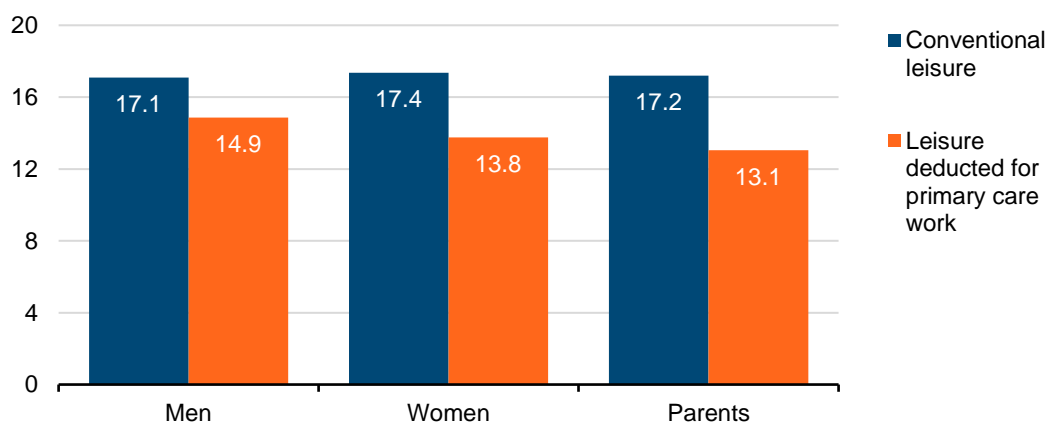
2.2 Unpaid Care Work and Labour Market Outcomes

2.2.1 Labour supply theory

Each individual, at some point in their life, chooses whether to participate in paid employment or engage in unpaid work at home. If market work is chosen, they also must choose how many paid work hours to dedicate to meet their budget constraints to buy other consumption goods. Conventionally, this can be denoted as: if total time T can be split into market work hours (h) and leisure (L), then $T = h + L$: the more time one spends working, the less one will have for leisure. However, h in this case simply means market work, which does not account for unpaid care work. Therefore, the number of leisure hours available for an individual is realistically: $L = T - h - c$, where c denotes unpaid care work.

Figure 2.31 illustrates the differences in leisure hours according to the two different methods of calculating leisure hours using survey data. The simple calculation of leisure hours tells us that women in our sample had 17.4 hours, while men had 17.1 hours. However, once unpaid care work is taken into consideration, women's available leisure hours decline by 20.7% to 13.8 hours, while men's available leisure hours decline by 12.9% to 14.9 hours. Compared to parents¹⁰⁰, while there is little change in "conventional" leisure hours on average, counting for unpaid care work diminishes their leisure time by 23.8% to 13.1 hours, the lowest number of available leisure hours among the three categories.

Figure 2.31: Average leisure hours, by gender (hours)



Source: KRI (2019b)

¹⁰⁰ Parents are defined as individuals with children under the age of 20 present in the household, resulting in 30 mothers and 26 fathers in the sample.

In conventional economics, hours worked is a function of the wage rates and other variables, as follows¹⁰¹:

$$h_i = \beta wage_i + \sigma NonLabourIncome_i + \theta Controls_i$$

The sign on the β would vary depending on which effect is stronger: substitution and income effects. Substitution effect simply means, as *wage* increases, individuals substitute away leisure hours for more market hours to attain a certain level of wage (and consequently, consumption). At some point the income effect dominates, whereby any increases in wage leads to a lower supply of work hours, since they demand more leisure hours (if leisure is a normal good).

Before any regression analyses, it is imperative to look at variables that are commonly associated with labour market outcomes, laid out in Table 2.7. As mentioned earlier, the majority of men and women in our sample were working full-time. Furthermore, both men and women in our sample were on average highly educated and high-skilled. In fact, compared to the national average of about 30% in high-skilled jobs and 60% in mid-skilled jobs¹⁰², the sample actually consisted of the converse: about 60 – 70% high-skilled workers and 30 – 40% mid-skilled workers.

Table 2.7: List of labour supply variables, by gender (count)

Variable	Men	Women
Employment status		
• Full-time	52	44
• Part-time	5	4
• Others	6	14
Occupation skill level		
• High-skilled	37	35
• Mid-skilled	21	16
• Low-skilled	1	0
Education level		
• Primary	1	4
• Secondary	20	11
• Tertiary	42	47
Marital status		
• Married	38	37
• Never married	23	19
• Divorced/Separated	2	6

Note: Occupation skill level is classified according to the Malaysia Standard Classification of Occupation (MASCO) 2013 by MOHR (2013), where High-skilled workers are defined as Managers, Professionals, Technicians and Associate Professionals; Mid-skilled workers include Clerical Support Workers, Service and Sales Workers, Skilled Agricultural, Forestry, Livestock and Fishery Workers, Craft and Related Trade Workers, Plant and Machine Operators and Assemblers; and Low-skilled workers are those with elementary occupations.

Source: KRI (2019b)

¹⁰¹ Borjas and Van Ours (2010)

¹⁰² DOS (2019)

2.2.2 Labour supply equation

In this report, we amend the labour supply equation as we are interested in the effect of unpaid care hours on certain labour market outcomes. Therefore, the equation of interest is as follows:

$$\begin{aligned}
 \text{LabourMarketOutcomes}_i &= \alpha + \beta_1 \text{UnpaidCareHours}_i + \beta_2 \text{UnpaidCareHours}_i * \text{Female}_i + \beta_3 \text{Female}_i \\
 &+ \gamma' \text{ControlVariables}'_i + \varepsilon_i
 \end{aligned}$$

for i = 1, 2, ..., 125

where

- (i) *Labour Market Outcomes_i* of interest include market hours worked and personal income;
- (ii) *Unpaid Care Hours_i* is the sum of time spent on unpaid care for children, old person, disabled and chronically ill household members, as well as domestic work such as cleaning, cooking, shopping for households etc. (as primary as well as secondary activity);
- (iii) *Female_i* represents gender binary variable, where men take the value of 0 and women, 1;
- (iv) *Control Variables'_i* is the vector of independent variables which include a range of demographic and occupational factors, such as respondent's age, education level, whether they are working full-time, and their occupation skill level; and
- (v) ε_i is the error term.

This labour-supply equation is estimated through the Ordinary Least Squares (OLS) method across 125 individuals. We are also interested in what is commonly called the “motherhood penalty”. This term was coined by sociologists to describe the finding that on average, women with children earn lower wages compared with women without children, where this difference could range from 5 to 10% for the case of the US¹⁰³. Human capital theory suggests that when mothers take time out of employment during child-rearing, and if wages are dependent on experience, then this loss of employment will affect later wages¹⁰⁴. Furthermore, since the traditional division of labour implies that housework and childcare are typically borne by married women, women tend to seek less demanding jobs in the market, manifesting in women taking up jobs that are of lower skill compared with men¹⁰⁵. If this pattern occurs on a national scale, we may see evidence of occupational segregation between genders.

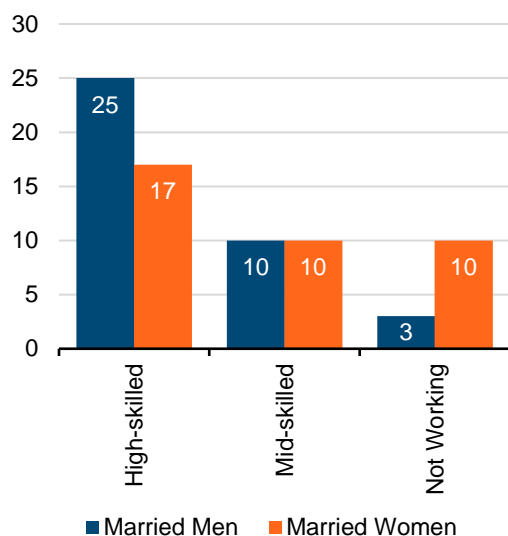
We see this in Figure 2.32 below. For married individuals in this sample, more men were employed in high-skilled jobs than women. There were also disproportionately more women than men who are not working. This suggests that occupational segregation for married individuals is evident in our sample, as we do not observe this among non-married individuals (Figure 2.33). In fact, the count of non-married women in our sample outweigh non-married men in high-skilled jobs.

¹⁰³ Gough and Noonan (2013)

¹⁰⁴ Ibid.

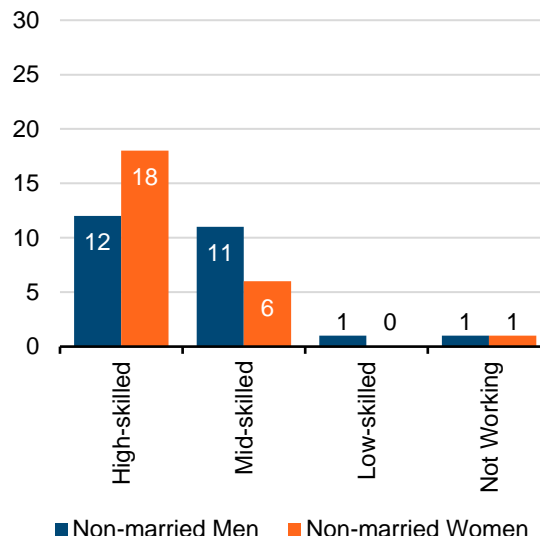
¹⁰⁵ Becker (1985)

Figure 2.32: Occupation level of married individuals (count)



Source: KRI (2019b)

Figure 2.33: Occupation level of non-married individuals (count)



Source: KRI (2019b)

Box 2.5: Voices from the respondents on deciding between work and family

As noted in the 5th Malaysian Population and Family Survey, many working mothers who had to choose between family and career chose family¹⁰⁶. None of them reported returning to a full-time position in the workforce, although several mentioned part-time jobs or entrepreneurial efforts running online businesses. We see evidence of this in some of our survey responses.

Dulu saya bekerja saya memang sibuk bekerja, saya balik lewat, bawa balik kerja, kerja bawa balik kat rumah. [Saya berhenti kerja] sebab suami selalu outstation nanti anak macam terabai lah, sebab nampak pelajaran dia orang pun merosot. Sebab saya sibuk hari Sabtu Ahad pun saya kerja, sebab weekday tak sempat buat jadi hari Sabtu Ahad saya sambung, kadangkala saya terpaksa bawa balik kerja kat rumah.

Authors' translation:

Last time when I was working, I was really busy, I came home late, and brought work back home. [I stopped working] because [my] husband is always outstation, and it was like the kids were being neglected, because I saw their studies deteriorating. I was busy working on Saturdays and Sundays because I could not finish my work on weekdays so I continued on the weekends, sometimes I had to bring work back home.

—Respondent, aged 44, married mother of three

¹⁰⁶ LPPKN (2016)

I stopped work because [I became] pregnant. When I got pregnant, I think, forty years old, I decide[d] to stop work. [Now, my son is 14, but I don't want to go back to work full-time.] No point, money is nothing. Health is important.

—Respondent, aged 54, married mother of one

I stopped working with my second child. I resigned. Then the children [are] with me, with the maid. I'm focusing on my children. I had problems with maids before this, they ran, you know, before this. So my husband said, just resign, and take care [of the household]

—Respondent, aged 54, married mother of five

[Saya berhenti kerja] sebab [kena jaga] anak lelaki saya...[ibu saya, yang dulu tolong jaga anak] mak tak betapa sihat juga. Sebab tu lah berhenti [kerja]. Sebab kalau ikut hendak jaga tiga orang [anak] itu pun tak larat juga kan?

Authors' translation:

[I stopped working] because [I have to take care] of my son... [my mother used to help to take care of the kids but] my mother is not very healthy herself. That's why I stopped [working]. Because even if my mother wanted to care for three kids, she wouldn't be able to, you know?

—Respondent, aged 41, married mother of three

Isteri berhenti [kerja] disebabkan oleh sebenarnya anak sakit. Faktor anak sakit, kena jaga di hospital.

Authors' translation:

Actually, [my] wife stopped [working] because our child was ill. The factor was an ill child, who needed care in the hospital.

—Respondent, aged 48, married father of two

Interviewers did not ask women about their decision-making process when they exited the workforce, specifically if they considered the option of their husbands stopping paid work, which speaks to cultural assumptions on the parts of both interviewers and respondents regarding which parent would have to give up their job.

In rare circumstances, men took the lead with unpaid care work. One father described how, while his wife worked, he had been a househusband for over 15 years, caring for a child with special needs and an ageing mother. In another interview, a father described giving up his full-time job for a part-time job so that he could spend more time with his children, specifically to focus on their education. Unprompted, he highlighted the financial sacrifice he, and other parents who leave the workforce or reduce their paid working hours, had to make.

Sejak [tukar part-time dua bulan lalu] memang anak saya tak pergi tuisyen, memang saya mengajar sendiri...sekarang ni saya ada more time untuk dedicate myself untuk education anak. That one saya suka...Anak pun happy, eh, bapa ada...Tapi, tapi, saya let go monetary lah. Kan, bila you jadi full-time, you gain more [money]. Tapi saya let go of that monetary punya satisfaction untuk dapat benda lain.

Authors' translation:

Since [switching to part-time two months ago], my children no longer go for tuition lessons, [instead] I teach them myself...now I have more time to dedicate myself for my children's education. I really like this...My children are also happy seeing that their father is around...However, I let go of the monetary aspect. Well, when you work full-time, you gain more [money]. But I let go of monetary satisfaction to gain other things.

—Respondent, aged 43, married father of two

On the whole, parents—mostly mothers—who reported stopping paid work to care for their children indicated their satisfaction with their decision. However, as discussed elsewhere¹⁰⁷, it is unclear whether this satisfaction with exiting the workforce is in line with an individual's actual preferences or is the result of cognitive dissonance due to normative gender role values.

2.2.3 Regression results

The results from our regression analysis can be separated into two: the first equation involves market hours worked as the dependent variable and the second involves income, which are presented in Table 2.8.

What are the effects of spending an hour of unpaid care work a day on market hours? Findings from our study suggest that unpaid care work has a crowding out effect on market hours, as can be seen in Table 2.8. Specifically, for men, an additional hour of unpaid care work is associated with 0.31 fewer market hours on average. However, for women, the effect is 0.14 hours worse than men, as shown by the coefficient of the interaction term “Unpaid Care Work x Female”, resulting in a total effect of 0.45 hours reduction of market hours on average. Thus, this illustrates that for our sample, the magnitude of the negative effect of unpaid care work on market hours is symmetric for both men and women.

A possible reason for this finding is that the day chosen for conducting the survey happened to be an off day for a few employed individuals, where there were five cases of this for employed men in the data, compared to two cases for employed women. Thus, they would have reported zero for market work hours for the chosen day, albeit doing some unpaid care work, which may overestimate the effect of unpaid care work for men in the sample.

¹⁰⁷ KRI (2019a)

Table 2.8: Regression result for hours worked and income as dependent variables

Variables	Market Hours	Log of Income
Working Full-time	5.40 (1.16)	0.94 (0.20)
Age	-0.00 (0.03)	0.01 (0.00)
Unpaid Care Work	-0.31 (0.15)	-0.05 (0.03)
Unpaid Care Work x Female	-0.14 (0.19)	0.02 (0.03)
Female	1.75 (0.96)	-0.35 (0.17)
Secondary Education	2.65 (1.74)	0.62 (0.30)
Tertiary Education	4.37 (1.78)	0.77 (0.31)
No Skill Level	-4.17 (3.71)	0.77 (0.64)
High-skilled Job	-1.78 (3.73)	1.18 (0.65)
Mid-skilled Job	-0.03 (3.68)	0.89 (0.64)
M40 Income Class		0.66 (0.14)
T20 Income Class		1.06 (0.17)
Mother	2.04 (1.02)	0.55 (0.18)
Father	0.95 (1.00)	0.40 (0.18)
Constant	1.31 (3.92)	4.72 (0.68)
Observations	125	125
R-squared	0.59	0.70

Note: Standard errors in parentheses. The reference group for “Working Full-time” is those not working full-time or at all, which include part-time workers, housewives, students and the unemployed. “Secondary Education” and “Tertiary Education” are dummy variables for an individual’s highest educational attainment. “No Skill Level”, “High-skilled” and “Mid-skilled” jobs are dummy variables with low-skilled jobs as the reference group. “Mother” and “Father” dummy variables are for women and men with children under the age of 20 present in the household, resulting in 30 mothers and 26 fathers in the sample.

The second specification tells us that including the conventional human capital and occupational variables produce expected effects: working full-time is associated with higher income, higher educated individuals earn more on average, and high-skilled workers, compared with low-skilled workers, are expected to have higher income. As for our variable of interest—unpaid care work hours—an additional hour of this is associated with lower income, *ceteris paribus*.

Interestingly, the negative effect on income is slightly less for women than men, although the difference is quite small, as can be seen by the 0.02 positive coefficient of “Unpaid Care Work x Female”. However, being a woman is associated with lower income if unpaid care is not taken into account, even after controlling for age, education and skill level. This suggests that women in this sample face wage discrimination, which is in line with the literature for the case of Malaysia¹⁰⁸.

Interestingly, including a “Mother” variable, which captures mothers with children under the age of 20 living in the household, yields positive relationships with the dependent variables. For market hours, after controlling for human capital and occupational variables, mothers are found to supply more compared with non-mothers. On the other hand, for income, after controlling for identical variables, mothers are found to be associated with higher income compared with non-mothers. Thus, this suggests that mothers in this sample do not experience a wage penalty, as may have been expected. Instead, in our sample, mothers face a *time* penalty. This may be due to the fact that mothers are obligated to work longer hours to obtain more income for the household. Therefore, they may earn more, however, they have less time on their hands¹⁰⁹.

Fathers on the other hand are associated with higher wages, but not longer market hours. Similar findings have been found in the literature for fathers’ wage premium, where this effect has been partly attributed to selection of more productive men in marriages; fathers increase their productivity at the work place because household responsibilities are reduced due to the presence of a wife; and married men tend to make employment choices in favour of higher wages¹¹⁰.

The regression results have great implications on what we observe nationally. As mentioned previously in Section 1.2.2, the LFS 2018 report highlighted that 60.2% of women in Malaysia cited housework and family responsibilities as the reason for not joining the labour force¹¹¹. Our results confirm statistically that unpaid care work is indeed associated with less time in paid work as well as lower income, which could explain why women are discouraged to enter the labour force¹¹².

¹⁰⁸ For example, Rahmah Ismail et al. (2017) and Fernandez (2009). Note: discrimination here does not necessarily imply sexism by employers. Instead, it is the unexplained portion of gender wage gap models after having controlled for age, occupational skills, education, etc.

¹⁰⁹ Moreover, it may be more imperative to use a “wage gap” approach to analyse this relationship further as was similarly done in Oesch et al. (2017). However, due to data limitations we are not able to proceed with this approach.

¹¹⁰ Becker and Dechter (2004) and Lundberg and Rose (2000)

¹¹¹ DOS (2019)

¹¹² It is worth mentioning that establishing a statistically significant relationship is not applicable in this regression model as we are not making inferences about the population. The important aim of this exercise is to assess the direction and magnitude of the coefficients for our respondents. This report also does not make any causal claims among variables.

2.3 Household Production, Poverty and Inequality

Section 1.2.3 explains that unpaid care work is an important component of household production. It has impact on how poverty and inequality measures are calculated. In this section, we test this out empirically using our pilot TUS dataset. First, we calculate total household production for this “micro” economy with specific interest in domestic and care services. We disaggregate this further by gender, income and life cycle to study how the outputs of household production are distributed. Second, we measure and value time deficits of our respondents to construct time poverty and adjusted income poverty. These new poverty measures incorporate unpaid care work in their calculations. Using these, we assess changes in poverty rates and profiles compared with using a conventional poverty line. Third, we calculate time inequality and impute monetary value to unpaid care work to compute extended income. Extended income is then used to construct adjusted income inequality. This enables us to gauge the extent unpaid care work has acted as a buffer to mitigate the effects of market inequality.

2.3.1 Unpaid care work as part of household production

Household production, like other production processes, uses a combination of labour, capital, and intermediate goods and services to produce outputs. The outputs are housing, nutrition, clothing, care, volunteer work and transport¹¹³. When a distinction is necessary, we use domestic work to refer to the sum of housing, nutrition and clothing whereas direct care work refer to care¹¹⁴. Otherwise, we use care work to refer to both domestic work and direct care work.

Given its non-market nature, there are two approaches to calculate household production i.e. the output approach and input approach. The output approach values household production by referencing market prices of equivalent goods and services¹¹⁵. For example, fixing minor electrical work at home will reference the market price of hiring an electrician to do the job.

However, this approach usually suffers from scarcity of detailed data—for a home-cooked meal, we need to know if the appropriate market price reference is a hawker centre or a Michelin-star meal¹¹⁶. Moreover, market prices include the component on profit which is not received by households¹¹⁷.

¹¹³ Examples of housing: cleaning and maintaining of dwelling; nutrition: food preparations; clothing: laundry; care: reading to a child; volunteer work: community work; and transport: bringing a child to school in a car.

¹¹⁴ The definitions of domestic work and direct care work used for household production are slightly different from the ones used earlier. Following Baigorri (2003), some of the activities in unpaid domestic services i.e. household management, pet care and shopping for own households are counted as contributions to direct care. Vehicle maintenance and repairs is taken out from domestic work to be put into transport. Similarly, all transport activities related to unpaid domestic services and unpaid caregiving services are taken out and put into transport. See Appendix D for detailed methodology.

¹¹⁵ UNECE (2017)

¹¹⁶ Soinne (2016)

¹¹⁷ Ibid.

The input approach, on the other hand, values household production by summing up input costs used for production i.e. labour, capital and intermediate consumption¹¹⁸. Time use data forms the basis for the valuation of labour, therefore we proceed to use the input approach in this report. In terms of valuing labour time, we employ the replacement cost method¹¹⁹ and calculate household production using the four options below (Table 2.9). Our detailed methodology is presented in Appendix D.

Table 2.9: Valuation options for household production

	Primary	Primary + Secondary
Generalist Wage	Option 1	Option 3
Specialist Wage	Option 2	Option 4

Source: KRI's adaptation of UNECE (2017)

For the generalist wage, we use the median wage reported in the Salaries and Wages Survey Report (SWR) in 2017¹²⁰. This is consistent with the idea that the generalist wage uses one wage rate to represent the “general worker”. For the specialist wage, we match the two-digit ICATUS categories with the Malaysian Standard Industrial Classification (MSIC) 2008¹²¹. This is then used to determine salaries and wages by industry. In terms of extracting time spent on household production, we include two options i.e. only primary activities as well as primary and secondary activities.

Table 2.10 presents the results of household production for our sample in the form of a household satellite account. The sum of labour value and fixed capital gives the gross value added. Adding intermediate consumption to gross value added gives the total output¹²². The largest component in household production is intermediate consumption followed by labour value and fixed capital. Given the four options used, intermediate consumption contributes on average 70.0% of household production. Labour value contributes 29.4% and fixed capital 0.6%.

¹¹⁸ UNECE (2017)

¹¹⁹ Replacement cost method values inputs by taking the wage rates of similar workers in the market. The other option is the opportunity cost method which values inputs by taking the wage rate of the person doing household production as foregone opportunity from earning market income. The latter is widely rejected because it gives different value to the same activity as per Baigorri (2003).

¹²⁰ The other data source on salaries and wages is the National Employment Returns (NER). We prefer the SWR because the enumeration uses a household approach whereas the NER uses an establishment approach. The enumeration for our pilot TUS used a household approach. In addition, the SWR tends to give a lower wage rate compared with the NER because the latter excludes the public sector. We argue that it is better to err on the side of underestimation in the construction of household production.

¹²¹ One of our limitations is that the SWR only publishes wage data by industry at the section level of MSIC 2008. The sections are denoted by alphabetical numbers and have not been subdivided by digits. The most detailed items in MSIC 2008 are available at five-digit level but wage data are not publicly available at this level.

¹²² The complete calculation of total output adjusts for taxes and subsidies on own-account production. We have omitted this because of data limitations. Nevertheless, this will not affect our results by much because household production is generally not subject to tax and subsidies given its non-market nature. Even when they do, taxes and subsidies will likely offset each other's effects, resulting in a small net impact on total output.

Table 2.10: Household satellite account for KRI's pilot time use study

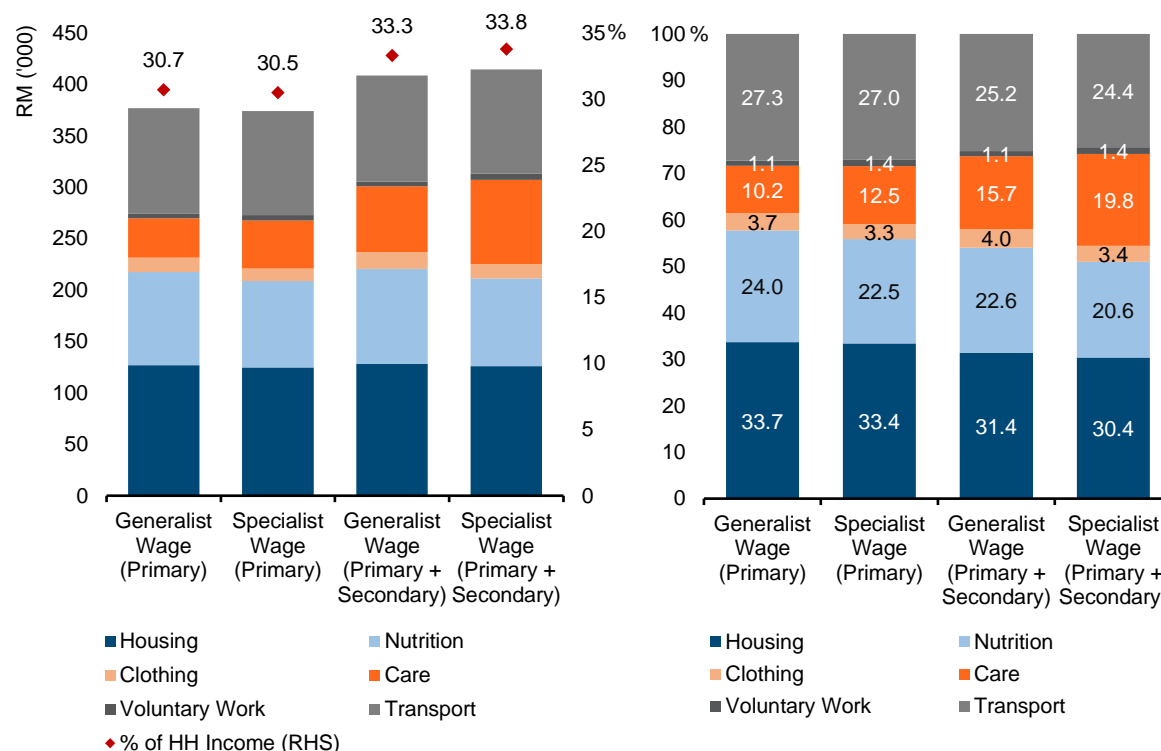
		Housing (RM)	Nutrition (RM)	Clothing (RM)	Care (RM)	Voluntary Work (RM)	Transport (RM)
Value of Labour Inputs	Generalist Wage (Primary)	11,462.7 (11.5%)	22,846.2 (22.9%)	10,208.0 (10.2%)	26,122.2 (26.2%)	3,757.5 (3.8%)	25,364.2 (25.4%)
	Specialist Wage (Primary)	9,442.5 (9.7%)	16,247.6 (16.8%)	8,420.9 (8.7%)	34,281.5 (35.4%)	5,026.3 (5.2%)	23,485.4 (24.2%)
	Generalist Wage (Primary + Secondary)	12,818.9 (9.8%)	24,725.6 (18.8%)	12,509.2 (9.5%)	51,694.0 (39.3%)	4,185.0 (3.2%)	25,521.7 (19.4%)
	Specialist (Primary + Secondary)	10,581.3 (7.7%)	17,578.6 (12.8%)	10,314.4 (7.5%)	69,573.4 (50.7%)	5,620.0 (4.1%)	23,631.2 (17.2%)
Consumption of Fixed Capital		382.95 (16.7%)	382.95 (16.7%)	382.95 (16.7%)	382.95 (16.7%)	382.95 (16.7%)	382.95 (16.7%)
Gross Value Added	Generalist Wage (Primary)	11,845.7 (11.6%)	23,229.2 (22.8%)	10,591.0 (10.4%)	26,505.2 (26.0%)	4,140.5 (4.1%)	25,747.2 (25.2%)
	Specialist Wage (Primary)	9,825.4 (9.9%)	16,630.5 (16.8%)	8,803.8 (8.9%)	34,664.4 (34.9%)	5,409.2 (5.5%)	23,868.3 (24.1%)
	Generalist Wage (Primary + Secondary)	13,201.9 (9.9%)	25,108.5 (18.8%)	12,892.2 (9.6%)	52,077.0 (38.9%)	4,568.0 (3.4%)	25,904.7 (19.4%)
	Specialist (Primary + Secondary)	10,964.3 (7.9%)	17,961.6 (12.9%)	10,697.3 (7.7%)	69,956.3 (50.1%)	6,003.0 (4.3%)	24,014.2 (17.2%)
Intermediate Consumption		114,954.2 (41.8%)	67,322.5 (24.5%)	3,389.2 (1.2%)	11,959.3 (4.4%)	0.0 (0.0%)	77,084.6 (28.1%)
Total Output	Generalist Wage (Primary)	126,799.8 (33.7%)	90,551.7 (24.0%)	13,980.2 (3.7%)	38,464.5 (10.2%)	4,140.5 (1.1%)	102,831.7 (27.3%)
	Specialist Wage (Primary)	124,779.6 (33.4%)	83,953.0 (22.5%)	12,193.0 (3.3%)	46,623.7 (12.5%)	5,409.2 (1.4%)	100,952.9 (27.0%)
	Generalist Wage (Primary + Secondary)	128,156.0 (31.4%)	92,431.0 (22.6%)	16,281.4 (4.0%)	64,036.3 (15.7%)	4,567.9 (1.1%)	102,989.2 (25.2%)
	Specialist (Primary + Secondary)	125,918.4 (30.4%)	85,284.1 (20.6%)	14,086.6 (3.4%)	81,915.6 (19.8%)	6,002.9 (1.4%)	101,098.7 (24.4%)

Source: KRI (2019b)

We unpack the results further (Figure 2.34). Using only primary activities, both generalist and specialist wage options show that total household production is slightly above RM370k. This is about RM2,960 monthly per capita for our sample. It is slightly higher using the generalist wage at 30.7% household income compared with the specialist wage at 30.5%. When secondary activities are added, it increases to about RM408k (33.3%) using the generalist wage and RM414k (33.8%) using the specialist wage. This is about RM3,268 monthly per capita using the generalist wage or RM3,314 monthly per capita using the specialist wage. It is likely that total household production is underestimated here because the data only includes time use for one member in a household.

Housing is the biggest output of household production, followed by nutrition and transport. This is mainly driven by intermediate consumption. However, if we take only labour value, the biggest output is care (Figure 2.35). It reflects the labour-intensive nature of direct care work which cannot be substituted with labour-saving technology, affirming the Baumol effect discussed in Section 1.1. In addition, care is the only output that increases significantly when secondary activities are added, highlighting why unpaid care work tends to be invisible.

Figure 2.34: Total household production, by output



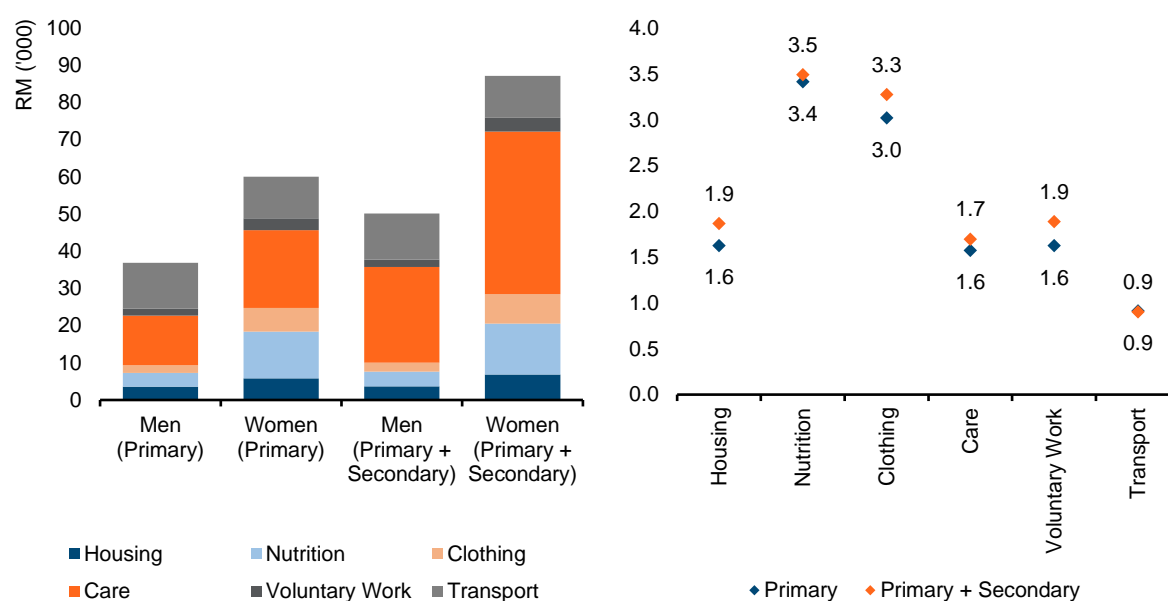
Source: KRI (2019b)

To disaggregate household production by gender, income and life cycle, we look at the value of labour time. We have to exclude fixed capital and intermediate consumption because they are calculated using the HIES where breakdown by gender, income and life cycle is not available. However, the value of labour time still provides a good approximation of how the burden of unpaid care work is distributed¹²³.

¹²³ Fixed capital and intermediate consumption are meant to aid unpaid care work, so their effects are already implicit in the amount of labour time utilised for these activities.

Figure 2.35 shows that the labour value of women in household production is higher than men. In total, women's labour value is 1.6 times that of men for primary activities and 1.7 times when secondary activities are included. Generally, the gender gap is largest for nutrition (3.4 times) followed by clothing (3.0 times). Care has the same gender gap as housing and voluntary work at 1.6 times. This highlights the importance of incorporating more indirect forms of care i.e. domestic work when assessing gender inequality at home. Furthermore, for all outputs¹²⁴, their respective gender gap increases when secondary activities are included. It accentuates the "double invisibility" of women's care work i.e. it takes place at home, excluded from market-based measurements, and carried out as simultaneous activities, often times also excluded from the TUS.

Figure 2.35: Specialist wage valuation of labour time, by output and gender, and gender gap, by time concept and output

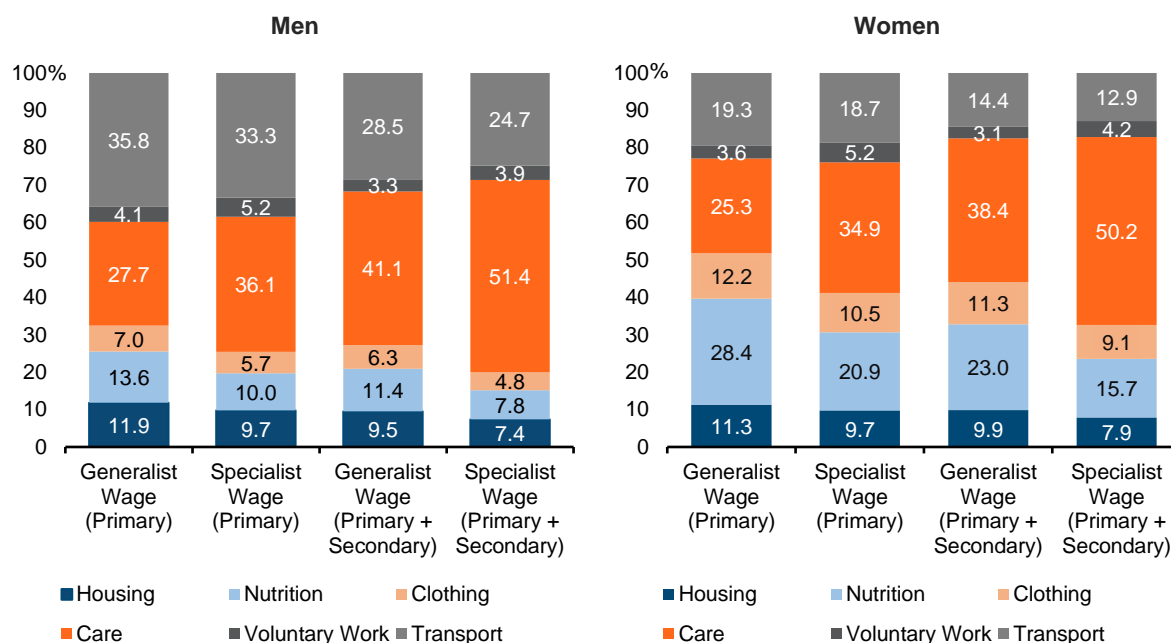


Source: KRI (2019b)

Although women's labour value in household production is higher than men, particularly so for domestic work, men actually allocate a significant amount of their labour time for direct care work. Figure 2.36 shows that for primary activities, men allocate most of their time for transport (35.8%) if we use the generalist wage and care (36.1%) if we use the specialist wage. When secondary activities are included, care becomes the most important output using both generalist and specialist wage. Hence, men's percentage time allocation for direct care work is comparable with women. However, men allocate significantly less time for domestic work and more time for transport compared with women.

¹²⁴ In the survey design, transport or travel activities are always categorised as primary activities and hence, the value of secondary activities for transport is always zero.

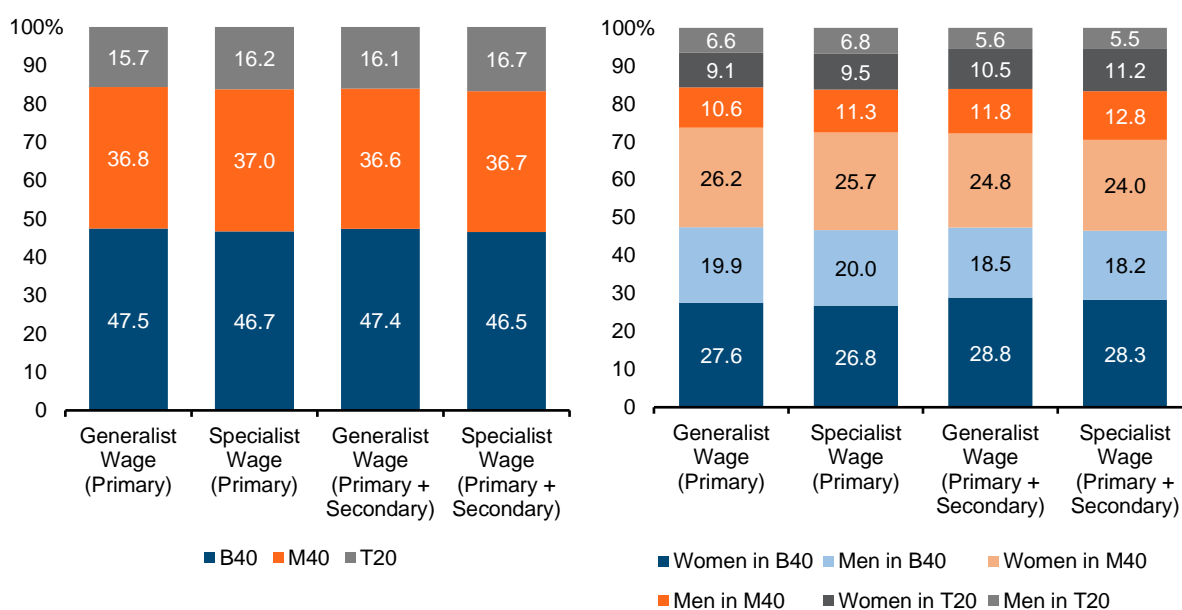
Figure 2.36: Percentage allocation of labour value, by output and gender



Source: KRI (2019b)

Figure 2.37 disaggregates labour value in household production by income. By definition, households in the B40 make up 40% of the sample, households in the M40 make up another 40% of the sample and households in the T20 make up the remaining 20%. If labour value in household production is equally distributed across income class, then each income class' labour value should be proportional to its size. However, individuals in the B40 in this sample undertake proportionally more household production compared to its size. On the other hand, individuals in the M40 and the T20 undertake proportionally less household production.

Figure 2.37: Labour value in household production, by income and gender

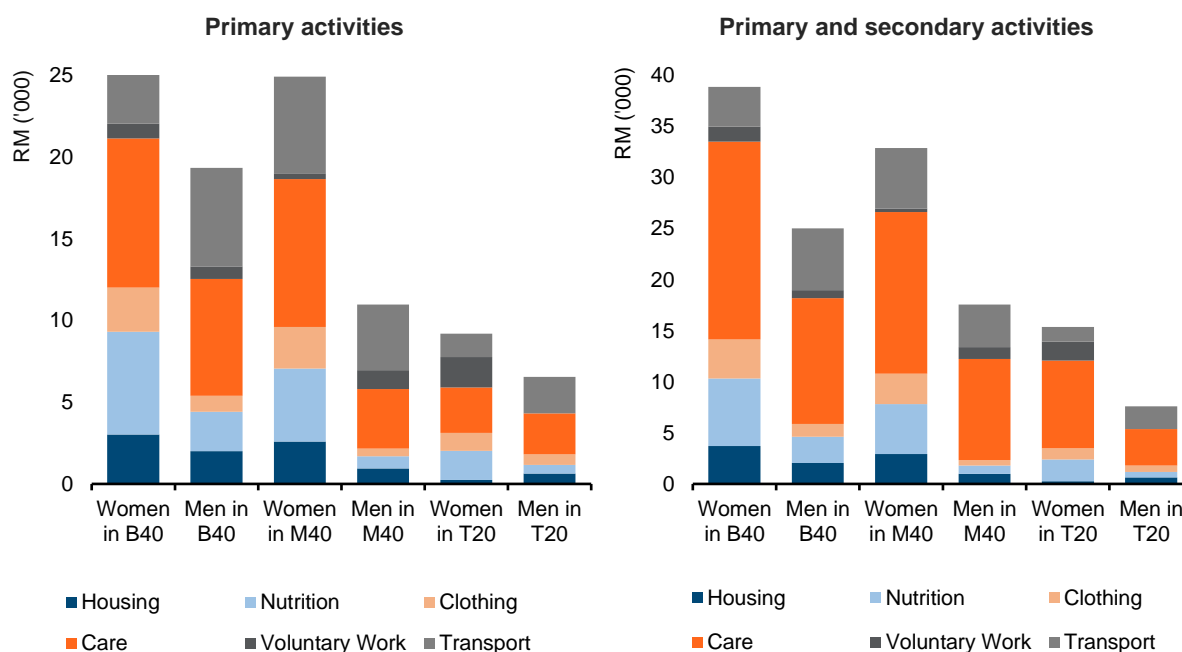


Source: KRI (2019b)

However, analysing income alone masks a crucial gender difference. When we combine both income and gender, women across income class actually undertake proportionally more household production compared to the size of their subgroups¹²⁵ i.e. between 26.8% and 27.6% for women in the B40, between 25.7% and 26.2% for women in the M40, and between 9.1% and 9.5% for women in the T20. Conversely, men across income class do proportionally less i.e. between 19.9% and 20.0% for men in the B40, between 10.6% and 11.3% for men in the M40, and 6.6% and 6.8% for men in the T20. The same pattern persists when secondary activities are included.

Figure 2.38 shows that the largest gender gap¹²⁶ by income class is for individuals in the M40 when only primary activities are counted and individuals in the T20 when secondary activities are included. Gender gap is the lowest for individuals in the B40 for both primary activities as well as primary and secondary activities. This is consistent with the point raised in Section 1.2.3 about the role of household production as an important substitute for market production. At lower income level, households may find it more economical to undertake household production instead of procuring goods and services from the market. As income goes up, the opportunity cost for undertaking household production increases. Households would substitute goods and services once produced at home with market purchases. Nonetheless, it is men's household production that is reduced while women's household production remains the same. It means that women are inclined to bear the burden at home in how households negotiate the balance between household production and market production when income increases.

Figure 2.38: Specialist wage valuation of labour time, by output, income and gender



Source: KRI (2019b)

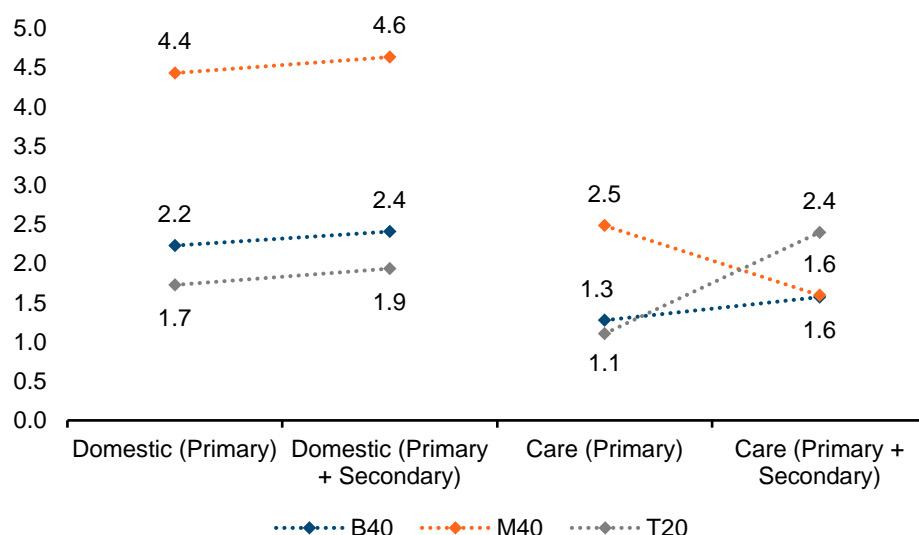
¹²⁵ Based on our sample design, there should be 20% women in the B40, 20% women in the M40 and 10% women in the T20. The proportion is the same for men.

¹²⁶ This can be calculated as the difference between men's labour value and women's labour value as a percentage of women's labour value, or a simple ratio of women's labour value to men's labour value. Both calculations show the same results.

On unpaid care work specifically, both domestic work and direct care work constitute the largest components of labour value in household production for all subgroups. Figure 2.39 reiterates the importance of secondary activities in explaining gender gap in unpaid care work. Across income class, the gender gap—defined as the ratio of women's labour value in unpaid care work to men—increases for domestic work when secondary activities are included. For direct care work, the gender gap increases for individuals in the B40 and the T20 when secondary activities are included but decreases for individuals in the M40.

This suggests that the Baumol effect in direct care work may have a particularly strong effect on the middle class i.e. individuals in the M40. While individuals in the T20 can afford to pay for care services in the market and individuals in the B40 tend to undertake unpaid care work on their own, individuals in the M40 may find it too expensive to procure from the market but at the same time not economical to be fully undertaken as household production. Hence, men in the M40 are compelled to take up more unpaid care work as secondary activities to support women in the M40 who are already carrying out a large amount of household production.

Figure 2.39: Gender gap in unpaid care work, by time concept and income

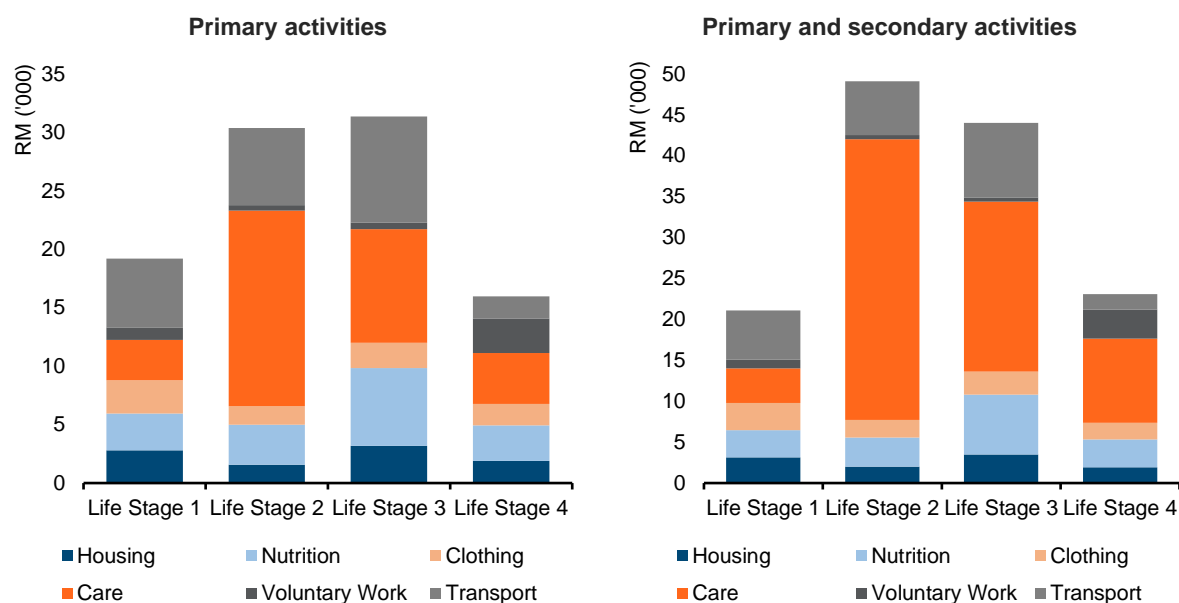


Source: KRI (2019b)

The breakdown by gender and income provides insights into how household production, particularly unpaid care work, is distributed based on the characteristics of caregivers in the households. Nonetheless, it is equally important to understand the distribution of household production based on the characteristics of care recipients as well. This can be done by demarcating households by life cycle to mark significant changes in care demand in the life course of a family. As in Section 2.1, we demarcate our respondents into four life stages, mainly defined by the presence and age of a child in the households.

In line with expectation, Figure 2.40¹²⁷ shows that household production is highest in Life Stage 2 and Life Stage 3¹²⁸. In Life Stage 2, care is significantly larger than all the other outputs at 55.1% of total labour value and expands to 69.9% when secondary activities are included. In Life Stage 3, care is also the largest output at 31.0% of total labour value, slightly more than transport at 29.0%. It increases to 47.2% when secondary activities are included. Interestingly, domestic work in Life Stage 2 is lowest compared with the other life stages. This is due to the smaller amount of labour time spent on housing at this stage. Domestic work picks up again in Life Stage 3.

Figure 2.40: Specialist wage valuation of labour time, by output and life stage



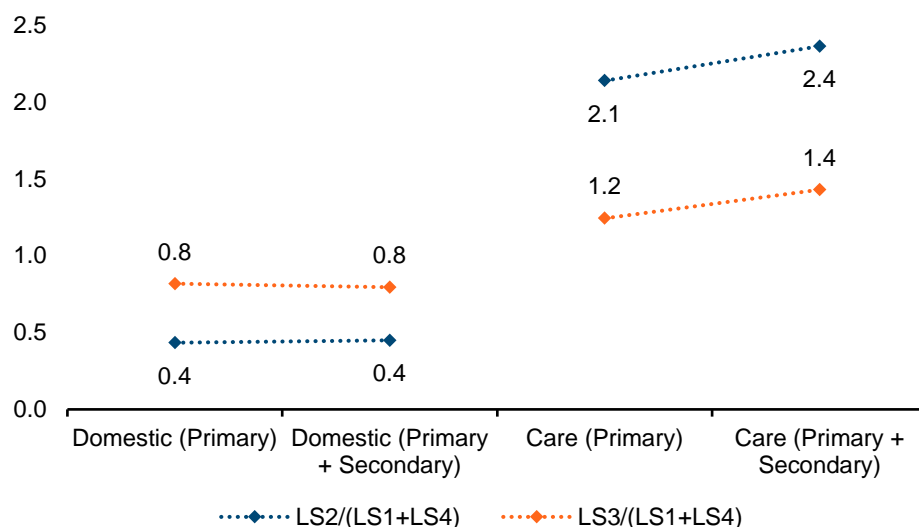
Source: KRI (2019b)

Figure 2.41 shows domestic work and direct care work for Life Stage 2 and Life Stage 3 each as a ratio to the combined domestic work and direct care work for Life Stage 1 and Life Stage 4. For domestic work, Life Stage 2 and Life Stage 3 have ratios less than one. It means that having a dependent child at home does not result in more domestic work being undertaken compared with life stages without a dependent child. Adding secondary activities increases the ratio for Life Stage 2 but doesn't change for Life Stage 3. For direct care work, both Life Stage 2 and Life Stage 3 have ratios greater than one. Hence, having a dependent child at home results in more direct care work being undertaken compared with life stages without a dependent child. When secondary activities are added, the ratios for both Life Stage 2 and Life Stage 3 increase. This highlights the importance of life-cycle effects induced by direct care work as well as the significance of secondary activities in intensifying them.

¹²⁷ There are 50 respondents in Life Stage 1, 25 respondents in Life Stage 2, 31 respondents in Life Stage 3 and 19 respondents in Life Stage 4. Analysing household production by life cycle on a per capita basis will see a lower number for Life Stage 1 and a higher number for Life Stage 4 but will not change the result that household production is more prominent during parenting years (Life Stage 2 and Life Stage 3) on a per capita basis.

¹²⁸ In Life Stage 2, the youngest child in the household is below the age of 7. In Life Stage 3, the youngest child is from the age of 7 to 20.

Figure 2.41: Life-stage gap in unpaid care work, by time concept



Source: KRI (2019b)

2.3.2 Poverty and unpaid care work

Everyone has a total of 1,440 minutes or 24 hours a day. To incorporate unpaid care work into poverty measurements, we first derive T_m or the time available after deducting necessary time. Necessary time is defined as the time required for personal maintenance such as sleeping and eating. We take necessary time as the average time spent on activities associated with reflecting, resting, relaxing (Activity 85 in ICATUS), and self-care and maintenance (Activity 9 in ICATUS). For our sample, this is an average of 594.1 minutes or 9.9 hours a day¹²⁹. We deduct this with 1,440 minutes to derive T_m , giving us 845.9 minutes or 14.1 hours a day.

Next, we derive T_1 or the minimum time required for unpaid care work. Consistent with literature, we take the average time spent on unpaid domestic services (Activity 3 in ICATUS) and unpaid caregiving services (Activity 4 in ICATUS) for respondents who put their employment status as “housewife”¹³⁰. This gives us 480.2 minutes or 8.0 hours a day. Deducting T_1 with T_m gives us T_a or the time available for paid work and leisure. This is 365.7 minutes or 6.1 hours a day.

We then deduct T_a with the actual time spent on employment and related activities (Activity 1 in ICATUS). If the number is negative, this means that the person has a time deficit and is classified as “time poor” in our report.

To further incorporate time poverty into income poverty, we impute a monetary value to the time deficits by valuing them with minimum wage i.e. RM1,100 per month. This puts the monetary value of average time poverty at RM491.6. Income poverty is defined using relative poverty of 60% below the median income in our sample¹³¹. Median income is RM3,500 and 60% below the median is RM2,100. We add RM491.6 to the relative poverty line of RM2,100 to get the new poverty line.

¹²⁹ This is close to other estimates in the literature i.e. 10.2 hours per day according to Vickery (1977) and 10.5 hours per day according to Harvey et al. (2002).

¹³⁰ Harvey and Mukhopadhyay (2007). There are no “househusbands” in our sample.

¹³¹ OECD (2008)

The new poverty line has now factored in unpaid care work in its overall calculations. Table 2.11 presents the incidence and rate of time poverty and income poverty before and after incorporating unpaid care work.

Table 2.11: Time and income poverty incidence/rate before and after adjusting for unpaid care work

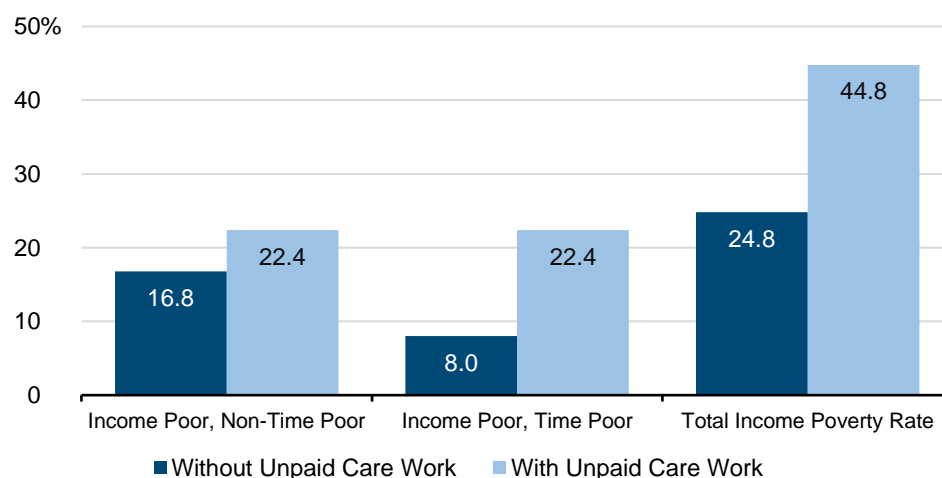
Before incorporating unpaid care work			
	Non-Time Poor	Time Poor	TOTAL
Non-Income Poor	22 (17.6%)	72 (57.6%)	94 (75.2%)
Income Poor	21 (16.8%)	10 (8.0%)	31 (24.8%)
TOTAL	43 (34.4%)	82 (65.6%)	125 (100.0%)
After incorporating unpaid care work			
	Non-Time Poor	Time Poor	TOTAL
Adjusted Non-Income Poor	15 (12.0%)	54 (43.2%)	69 (55.2%)
Adjusted Income Poor	28 (22.4%)	28 (22.4%)	56 (44.8%)
TOTAL	43 (34.4%)	82 (65.6%)	125 (100.0%)

Source: KRI (2019b)

Time poverty in our sample is quite high at 65.6%. This is plausible because we calculate time deficit at the individual level. It is likely that households distribute the burden of unpaid care work among themselves—individuals who work longer hours in formal jobs may have their unpaid care work assumed by someone else. While we should be careful in interpreting time poverty here as reflecting actual time-strains caused by unpaid care work, it still gives us an idea of how employment and unpaid care hours affect time availability at the individual level and the implications for households.

Figure 2.42 shows the change in income poverty before and after incorporating unpaid care work. Income poverty in our sample is at 24.8% before incorporating unpaid care work. This increases almost two-fold to 44.8% after incorporating unpaid care work. The poverty rate of those who are both income poor and time poor increased almost three-fold from 8.0% to 22.4% while those who are income poor but non-time poor increased from 16.8% to 22.4%. This shows that unpaid care work has a very discernible effect on poverty count in our sample.

Figure 2.42: Income poverty rate before and after adjusting for unpaid care work

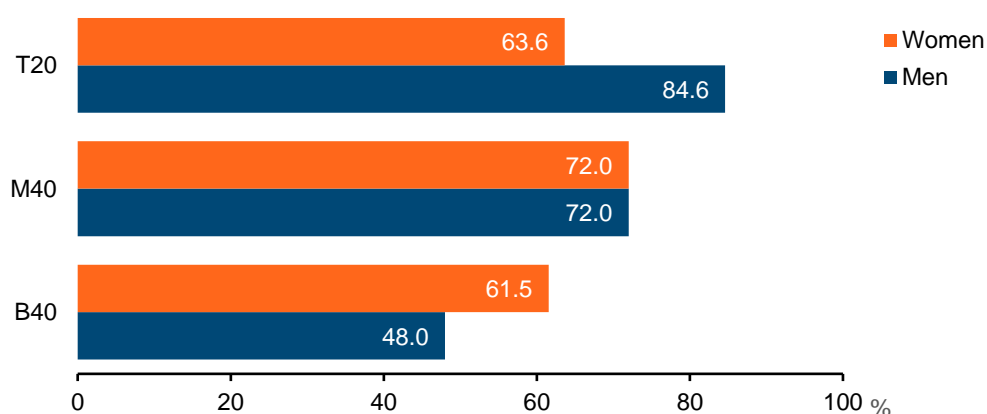


Source: KRI (2019b)

When we breakdown time poverty by gender and income (Figure 2.43), the highest poverty rate is for men in the T20. This is 21.0 percentage points above the poverty rate for women in the T20. This is due to the relatively longer paid working hours of men in the T20, and should be interpreted with the caveats highlighted earlier as care work could be taken up by other members in the household. Conversely, women in the B40 has a time poverty rate higher than men in the B40. There is no difference in the time poverty rate between men and women in the M40. The poverty rate for individuals in the M40 is relatively high at 72.0%.

Our results again highlight the earlier point about the impact of unpaid care work on individuals in the middle class who have to work long hours and undertake household production at the same time—here translated as time poverty. Individuals in the T20 may be able to procure unpaid care services from the market despite longer paid working hours and individuals in the B40 work shorter hours perhaps to avail time for household production. It is individuals in the M40, both men and women, who have to endure deprivations in time to balance between earning market income and undertaking unpaid care work as household production.

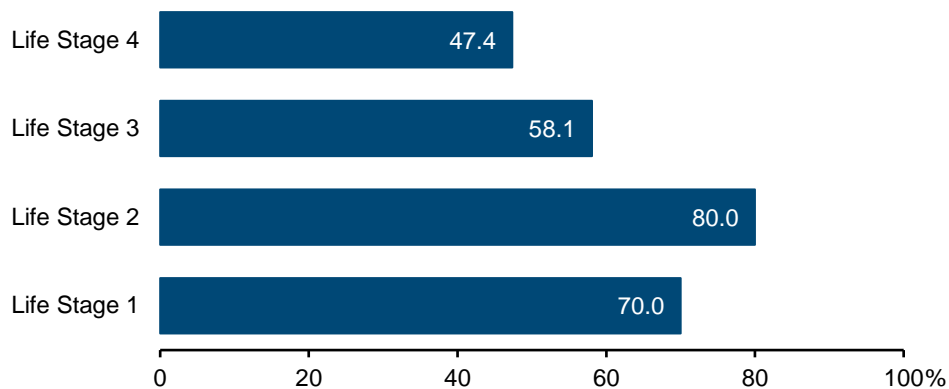
Figure 2.43: Time poverty rate, by gender and income



Source: KRI (2019b)

Figure 2.44 shows time poverty disaggregated by life stage. It shows that the highest poverty rate is in Life Stage 2 at 80.0% followed by Life Stage 1 (70.0%), Life Stage 3 (58.1%) and Life Stage 4 (47.4%). As time poverty rate is a function of hours spent on paid employment, our results by life stage show a perplexing pattern compared with the life-cycle pattern demonstrated using LFS data in Section 1.2.2. Time poverty culminates in Life Stage 2, coinciding with gender gaps in participation and hours worked that tend to peak in the age range that is likely to overlap with Life Stage 2. It suggests that as gender gaps in participation and hours worked widen, time poverty is also at its most extensive.

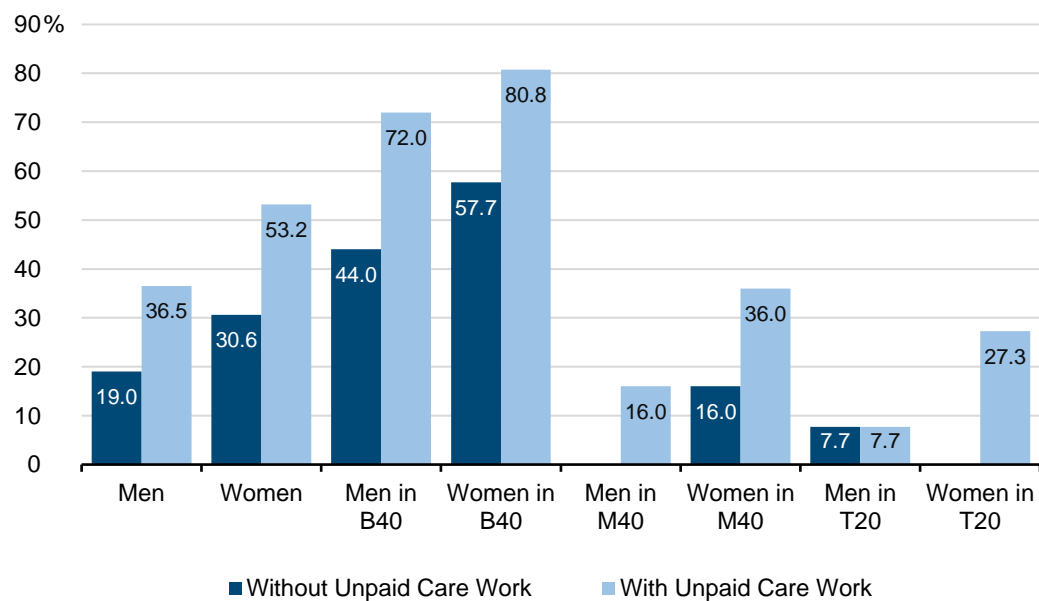
Figure 2.44: Time poverty rate, by life stage



Source: KRI (2019b)

In terms of income poverty, women in our sample have a higher income poverty rate than men with a 11.6 percentage point difference (Figure 2.45). The gender difference in poverty rate widens to 17.0 percentage points when income poverty is adjusted for unpaid care work. When we further breakdown by income, gender difference for individuals in the B40 narrows from 13.7 percentage points to 8.0 percentage points but increases for individuals in the M40 (16.0 percentage points to 20.0 percentage points) and the T20 (-7.7 percentage points to 19.6 percentage points). It is interesting to note that before income poverty is adjusted, there are no men in the M40 and women in the T20 who are counted as poor. This subsequently increases to 16.0% for men in the M40 and 27.3% for women in the T20 when income poverty is adjusted for unpaid care work. Generally, women have a higher poverty rate than men across income class except for the T20. For individuals in the T20, men have a higher poverty rate than women before adjustment, but the situation reverses when unpaid care work is included in the new poverty line.

Figure 2.45: Income poverty rate, by gender and income



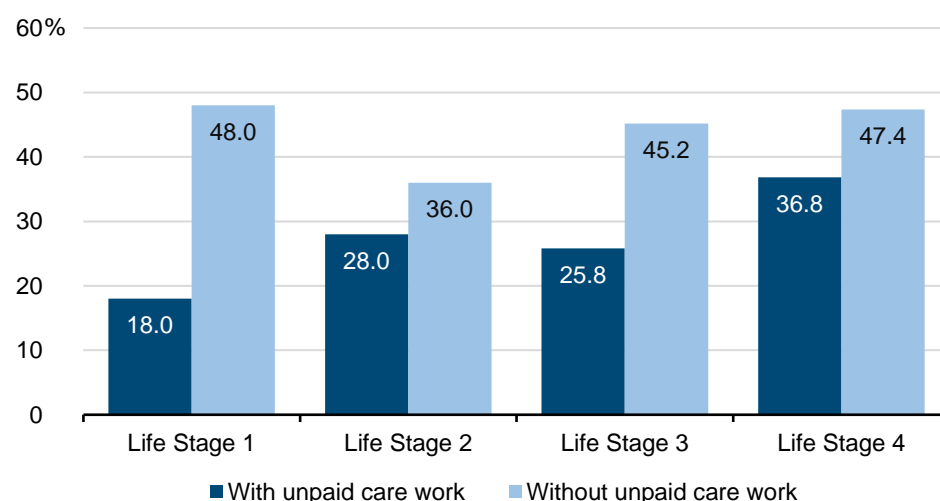
Source: KRI (2019b)

As for breakdown by life stage, Figure 2.46 shows that income poverty without incorporating unpaid care work is highest in Life Stage 4 at 36.8% followed by Life Stage 2 (28.0%), Life Stage 3 (25.8%) and Life Stage 1 (18.0%). However, once unpaid care work is factored in, Life Stage 1 moves to the top with income poverty rate at 48.0%. This is because life stage is correlated with age group—Life Stage 1 is generally the youngest while Life Stage 4 is the oldest. Individuals in Life Stage 1 tend to have incomes revolving around the median. On the other hand, individuals in Life Stage 4 have incomes closer to the two tails of the income distribution i.e. either very high incomes (experienced people who are still working) or very low incomes (retired people who are not reliant on income). Therefore, Life Stage 1 is more sensitive to a change in median income compared with Life Stage 4.

It is also interesting to highlight that Life Stage 2 has the lowest income poverty rate after adjustment. This is in stark contrast with time poverty where Life Stage 2 is the highest. It means that individuals in Life Stage 2 continues to work and earn incomes that are above the new poverty line despite having young children at home. However, they may have to compensate for this by shouldering the double burden as reflected in their high time poverty rate (Figure 2.44).

In contrast, Life Stage 3 has a higher adjusted income poverty rate, but a lower time poverty rate compared with Life Stage 2. This may be due to the reduction of direct care hours when children grow older and that some of the domestic work can now be substituted from the market. Hence, individuals in Life Stage 3 gives more premium to time over income relative to individuals in Life Stage 2.

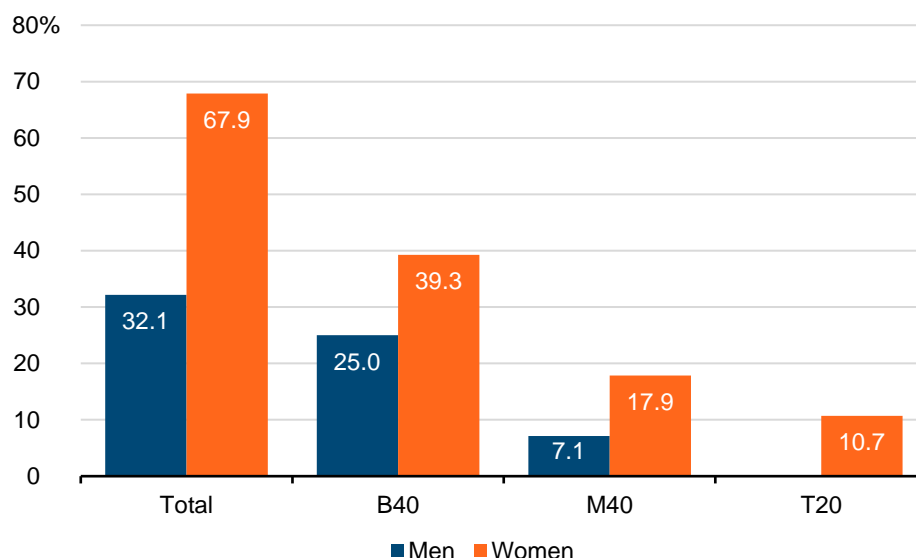
Figure 2.46: Income poverty rate, by life stage



Source: KRI (2019b)

When we combine time and income poverty to look at joint deprivations (Figure 2.47), there is a clear gender hierarchy shown. Of all the individuals who are deprived in both time and income, there are 67.9% women and 32.1% men. Across income class, there are more women who are jointly deprived compared with men. There are no men in the T20 who are poor in both time and income simultaneously. The overall pattern suggests that women in our sample bear the brunt of being simultaneously deprived in time and income dimensions.

Figure 2.47: Combined time and income poverty rate, by gender and income



Source: KRI (2019b)

Figure 2.48 disaggregates combined time and income poverty by life stage. As expected, Life Stage 1 has the highest combined poverty rate at 53.6%. This is followed by Life Stage 2 (21.4%), Life Stage 3 (17.9%) and Life Stage 4 (7.1%). However, this should be interpreted cautiously. Individuals in Life Stage 1 have lower incomes because they are generally younger. They also tend to work longer hours resulting in a higher time poverty rate.

When this is put into a household context, individuals in Life Stage 1 do reside in higher-income households i.e. 52.0% in the M40 and 18.0% in the T20¹³². In addition, their time poverty is usually mitigated by their unpaid care work being done by other members in the household. It can also be argued that individuals in Life Stage 1, especially those in single-member or smaller households, have a lower minimum time required for unpaid care work¹³³.

On the contrary, individuals in Life Stage 2 and Life Stage 3 have larger household size on average. Hence, although they earn more income, their income per capita could be lower. Moreover, household members of respondents in Life Stage 2 and Life Stage 3 are likely to be net care recipients. This suggests that individuals in these two life stages have higher minimum time required for unpaid care work.

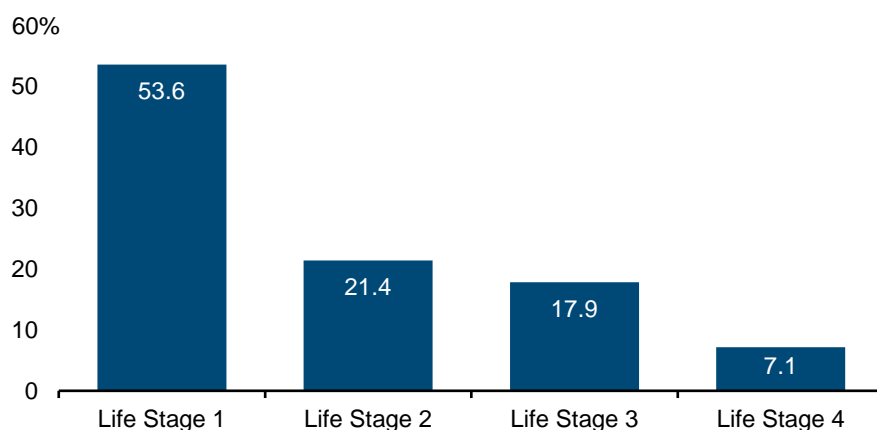
In other words, putting Life Stage 2 and Life Stage 3 in a household context will result in fewer positive effects on time and income poverty than Life Stage 1. The net effect is that the combined time and income poverty rate for Life Stage 1 is overestimated while for Life Stage 2 and Life Stage 3 is underestimated.

¹³² In our sample, this is higher than the M40 and the T20 in other life stages i.e. in Life Stage 2, 40.0% in the M40 and 12.0% in the T20; in Life Stage 3, 35.5% in the M40 and 16.1% in the T20; and in Life Stage 4, 15.8% in the M40 and 36.8% in the T20.

¹³³ We use an average for the minimum required time for unpaid care work but there can be variations around the average depending on life stage.

Notwithstanding the caveats above, it is still possible for the combined time and income poverty rate to decline by life stage. However, the important point here is that when individuals move to Life Stage 2 and Life Stage 3, where unpaid care hours normally peak, the trade-offs between time poverty and income poverty become more intense as shown earlier. Individuals choose one at the expense of the other with far-reaching consequences on well-being—but also with the indirect consequence of reducing the joint impact of time and income poverty.

Figure 2.48: Combined time and income poverty rate, by life stage



Source: KRI (2019b)

2.3.3 Inequality and unpaid care work

Similar as the analysis on poverty where we construct time poverty and adjusted income poverty to account for unpaid care work, we construct time inequality and adjusted income inequality in this section to situate unpaid care work.

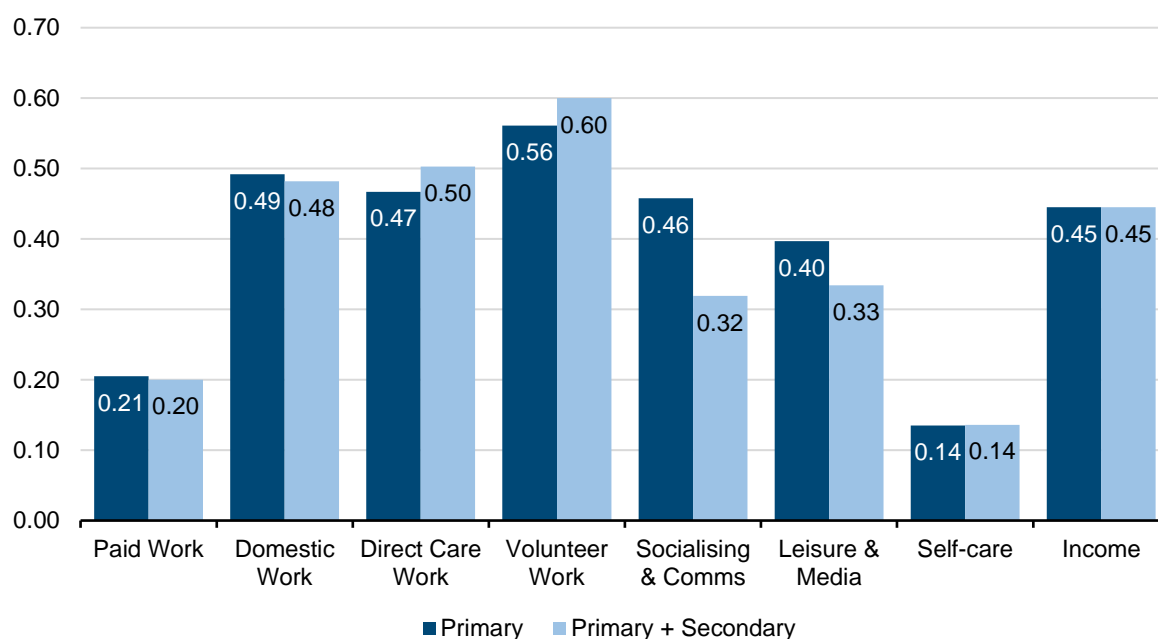
For time inequality, we analyse the activities of our respondents using the Gini coefficient with a focus on unpaid care work (Activity 3 and Activity 4 in ICATUS). The Gini coefficient is a widely used inequality measure normally applied to income inequality analysis. It ranges from 0 i.e. perfect equality to 1 i.e. perfect inequality. The value of the Gini coefficient can be interpreted as the average gap, benchmarked to the average living standard, between two individuals chosen at random¹³⁴.

We use the Gini coefficient to analyse time distribution of activities instead of income. When an activity has a high Gini coefficient i.e. closer to the value of 1, it means that there is a big variation in the time spent on this activity. If it has a low Gini coefficient i.e. closer to the value of 0, it means that people generally spend similar amount of time on this activity. If paid employment has an average of 400 minutes spent a day, a Gini coefficient of 0.2 means that two individuals chosen at random would have an average gap of 160 minutes between them. The Gini coefficient is appropriate to be used to construct time inequality because it includes zero values in its tabulations. For example, a respondent may not spend any time on unpaid care work but that should be included in how we measure the distribution of unpaid care work.

¹³⁴ Bourguignon (2017)

Figure 2.49 presents the results of time inequality for our sample¹³⁵. This is calculated for both primary activities as well as primary and secondary activities. We include a measure of income distribution in our sample for comparison purposes—the Gini coefficient for income is 0.45. For context, Malaysia's Gini coefficient for household income was 0.399 in 2016 and Kuala Lumpur was 0.378¹³⁶.

Figure 2.49: Time inequality, by activity



Source: KRI (2019b)

In our sample, unpaid care work has a time distribution that is more unequal compared with income distribution. For domestic work, this is at 0.492 for primary activities and decreases to 0.482 when secondary activities are included. For direct care work, this is at 0.467 for primary activities and increases to 0.503 when secondary activities are included. Other than unpaid volunteer work, direct care work is the only activity where the Gini coefficient increases when secondary activities are tabulated. It emphasises the pertinence of secondary activities in understanding the distribution and concentration of unpaid care burden.

Unpaid volunteer work has the highest Gini coefficient—0.561 for primary activities, and 0.600 for primary and secondary activities. This is due to the large number of people in the sample who do not undertake any form of unpaid volunteer work at all¹³⁷. Self-care has the lowest Gini coefficient (0.135 and 0.136) which is understandable since people generally spend similar amount of time eating and sleeping.

¹³⁵ The Gini coefficient could not be generated for Activity 2 i.e. production of goods for own final use and Activity 6 i.e. learning because there are too many zero values.

¹³⁶ DOS (2016)

¹³⁷ There are 112 zero values for primary activities and 111 zero values for primary and secondary. Our sample size is 125.

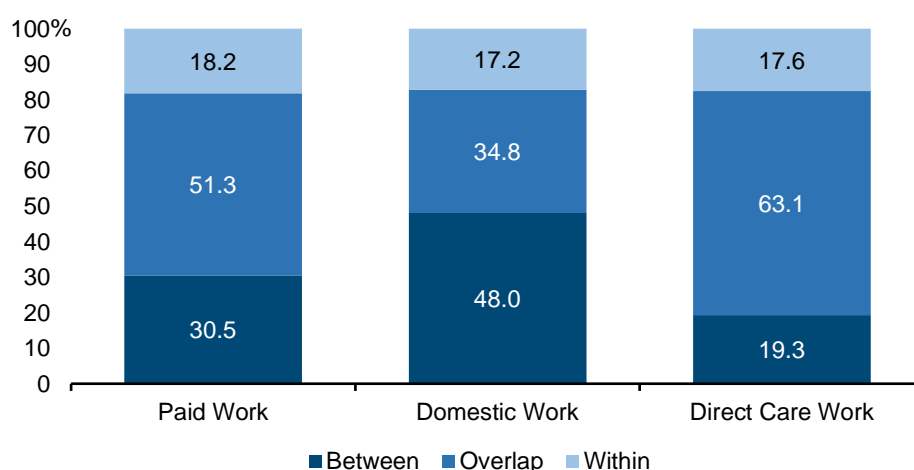
Paid employment has the second lowest Gini coefficient—0.205 for primary activities, and 0.200 for primary and secondary activities. It shows that our respondents work relatively similar hours in paid jobs, but this does not necessarily translate into similar returns as evidenced by the higher Gini coefficient for income. This is expected because income is also a function of skills, qualifications and experience.

Socialising and communication, and culture, leisure, mass-media and sports have the largest decrease in the Gini coefficient when secondary activities are included¹³⁸. The former decreases from 0.458 to 0.319 while the latter from 0.397 to 0.334. This is likely due to the usage of social media which is always captured as something done simultaneous with other activities¹³⁹.

We further decompose the Gini coefficient for paid employment, domestic work and direct care work. This helps us to study between-group and within-group effects on overall time inequality. However, one of the weaknesses of the Gini coefficient is that it cannot be decomposed neatly into between-group and within-group effects. It has an “overlap” component that can be understood as the intersection of time range between the various subgroups¹⁴⁰. Nonetheless, we can still compare the relative strength of between-group and within-group inequality while acknowledging the overlap component as the unexplained residual portion.

Figure 2.50 shows the decomposition by gender and income to give us a total of six subgroups¹⁴¹. Our results show that between-group inequality has a bigger contribution to overall inequality compared with within-group inequality. For domestic work, between-group inequality contributes 48.0% and within-group inequality contributes 17.2%. For direct care work, between-group inequality is lower at 19.3% but still marginally higher than within-group inequality at 17.6%. Paid employment has a between-group inequality at 30.5% and within-group inequality at 18.2%.

Figure 2.50: Decomposition by gender and income



Source: KRI (2019b)

¹³⁸ If a person is messaging via WhatsApp or Facebook, the activity is classified as 711: Talking, conversing, chatting. If a person is simply browsing through their phone for no specific reason, for example “checking” Facebook or Instagram without messaging anyone, this is coded as 849: Other activities related to mass media use.

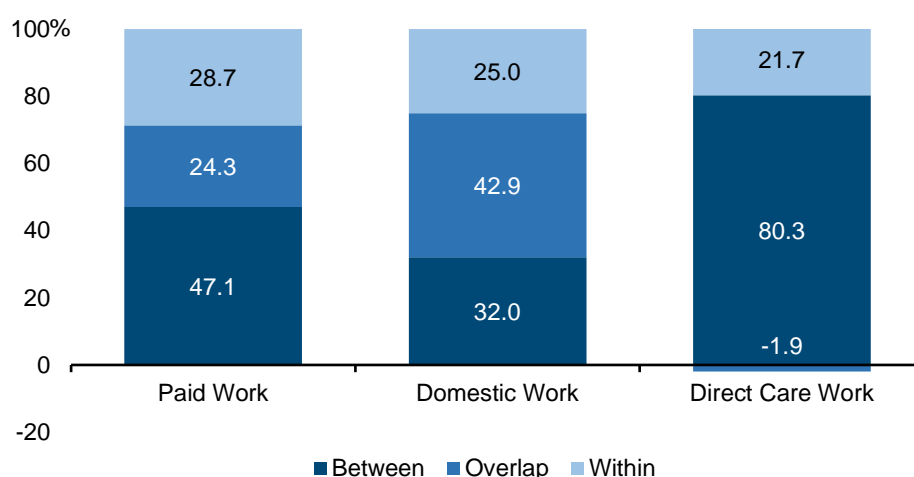
¹³⁹ This can be an interesting area of research on social capital using TUS but is not a focus of this report.

¹⁴⁰ Lambert and Aronson (1993)

¹⁴¹ Women in the B40, men in the B40, women in the M40, men in the M40, women in the T20 and men in the T20.

Figure 2.51 shows the decomposition by life stage. The results are especially telling for direct care work. Between-group inequality contributes a substantial 80.3% to overall inequality while within-group inequality contributes 21.7%. The overlap component has a negative value at -1.9%. For domestic work, between-group inequality at 32.0% is also higher than within-group inequality at 25.0%. Similarly, for paid employment, between-group inequality contributes 47.1% to overall inequality while within-group inequality contributes 28.7%. This can be explained by the correlation between life stage and age group where younger people tend to work longer hours.

Figure 2.51: Decomposition by life stage



Source: KRI (2019b)

In sum, our analysis on time inequality provides micro evidence from our TUS dataset that unpaid care work is generally an activity that is more unequally distributed compared with other activities. Demarcating our sample by gender and income as well as life stage provides logical groupings that reasonably explain the statistical dispersion in unpaid care hours. We argue—and to some extent have demonstrated in Section 2.3—that time inequality, specifically inequality in unpaid care work, has negative repercussions on labour market outcomes and potentially income inequality.

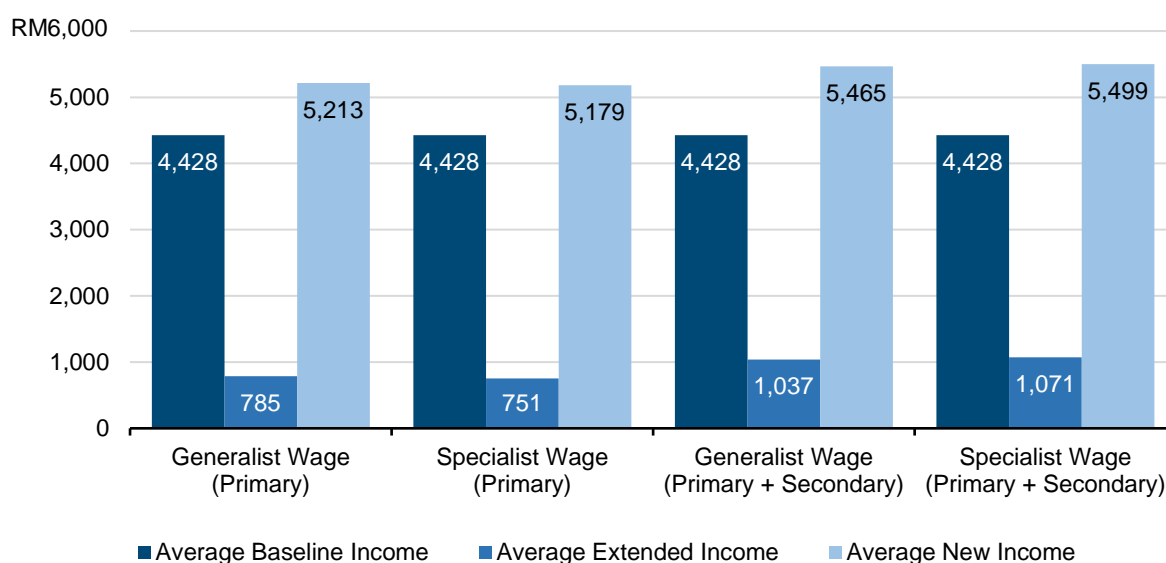
However, if unpaid care work is valued and its monetary value added to income, it has the positive effect of lowering income inequality¹⁴². This is based on the substitutability between household production and market production highlighted in Section 1.2.3. To do this, we value unpaid care work using the same options and method that we used for household production i.e. replacement cost method using both generalist and specialist wage. It is also valued for both primary, and primary and secondary activities. Valuation is carried out for unpaid domestic services (Activity 3 in ICATUS) and unpaid caregiving services (Activity 4 in ICATUS)¹⁴³. The monetary value of unpaid care work is called extended income. Extended income is added to each individual's income to derive a new income. New income is used to calculate income inequality that is adjusted for unpaid care work.

¹⁴² While adding extended income gives a better approximation of welfare, it should be emphasised that it does not have to be the objective of policy to promote the underlying own-account production given the insecurities and vulnerabilities surrounding unpaid care work and household production more generally.

¹⁴³ Unlike household production outputs, transport activities related to unpaid care work are included here.

Our valuation of unpaid care hours is shown in Figure 2.52. When it is calculated only for primary activities, we get an average extended income of RM785 per month using the generalist wage and RM751 using the specialist wage. When we include secondary activities, we get a higher average extended income of RM1,037 using the generalist wage and RM1,071 using the specialist wage. Referencing the average income in our sample of RM4,428 as baseline income, adding the average extended income gives a new income that ranges from RM5,179 (primary activities using the specialist wage) to RM5,499 (primary and secondary activities using the specialist wage). This is an increase of between 17.0% and 24.2%.

Figure 2.52: Average baseline income, extended income and new income

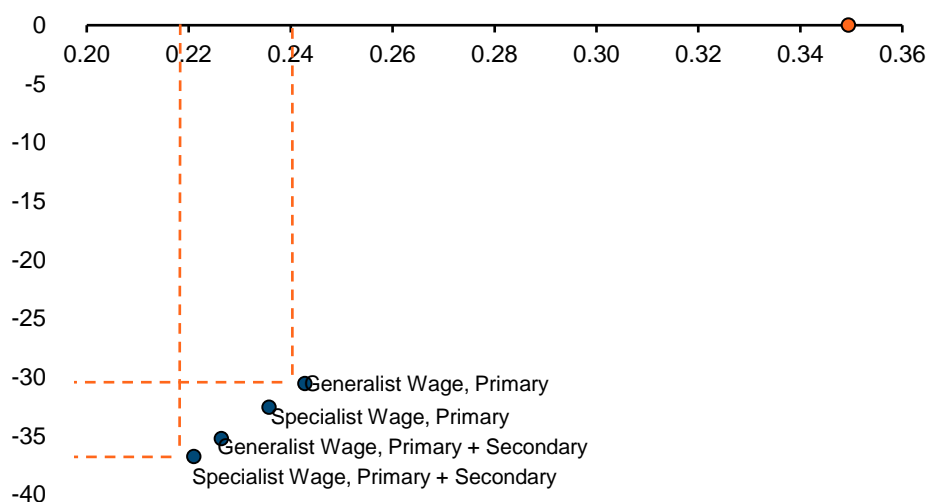


Source: KRI (2019b)

With the new income, we calculate an adjusted income inequality using the Theil index. It also ranges from 0 i.e. perfect equality to 1 i.e. perfect inequality. The main reason we use the Theil index instead of the Gini coefficient is because it can be decomposed neatly into between-group and within-group inequality. The Theil index is not used for time inequality earlier because it excludes zero values from its calculations. However, there are no zero values for income. Hence, the Theil index is suitable in this case.

Figure 2.53 illustrates the change in the Theil index after unpaid care work is accounted for. Before incorporating unpaid care work, the Theil index is at 0.349. After incorporating unpaid care work via extended income, the Theil index decreases by 32.5% to 0.236 using the generalist wage and by 30.5% to 0.243 using the specialist wage. When secondary activities are added, the Theil index decreases even more, by 36.8% to 0.221 using the generalist wage and by 35.2% to 0.226 using the specialist wage.

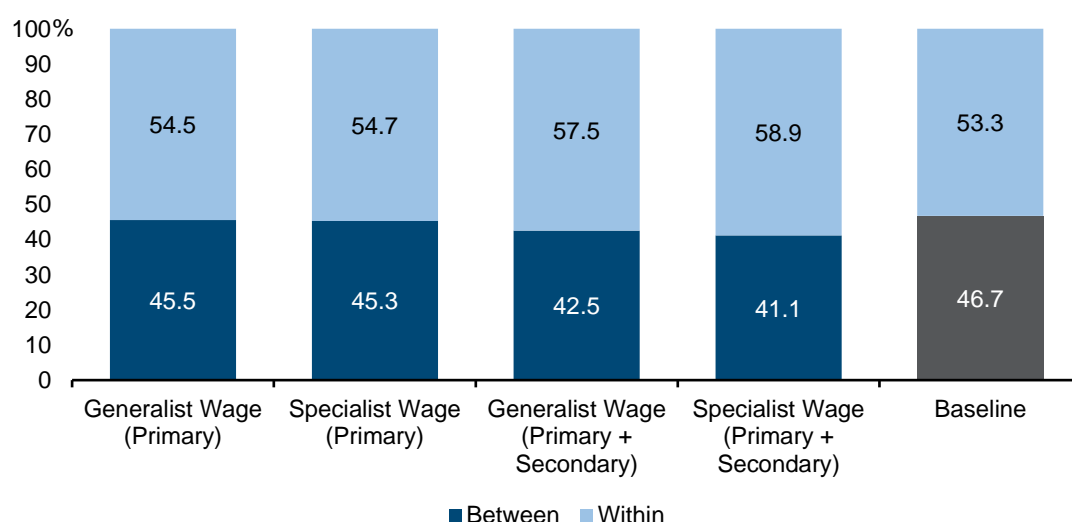
Figure 2.53: Income inequality before and after incorporating unpaid care work



Source: KRI (2019b)

Unlike time inequality, when adjusted income inequality is decomposed by gender and income, the results show that within-group inequality contributes more to overall inequality compared with between-group inequality (Figure 2.54). Nonetheless, between-group inequality is still quite sizeable ranging between 41.1% and 45.5% depending on which valuation option is used. For within-group inequality, across the four valuation options used, men in the T20 and women in the B40 occupy the higher end of the spectrum. On the other hand, women in the T20 and women in the M40 occupy the lower end of the spectrum. In the baseline scenario, between-group inequality contributes 46.7% and within-group inequality contributes 53.3% to overall inequality. After income inequality is adjusted for unpaid care work, between-group inequality drops slightly to between 41.1% and 45.5%. This demonstrates that adding extended income reduces the income gap between these subgroups.

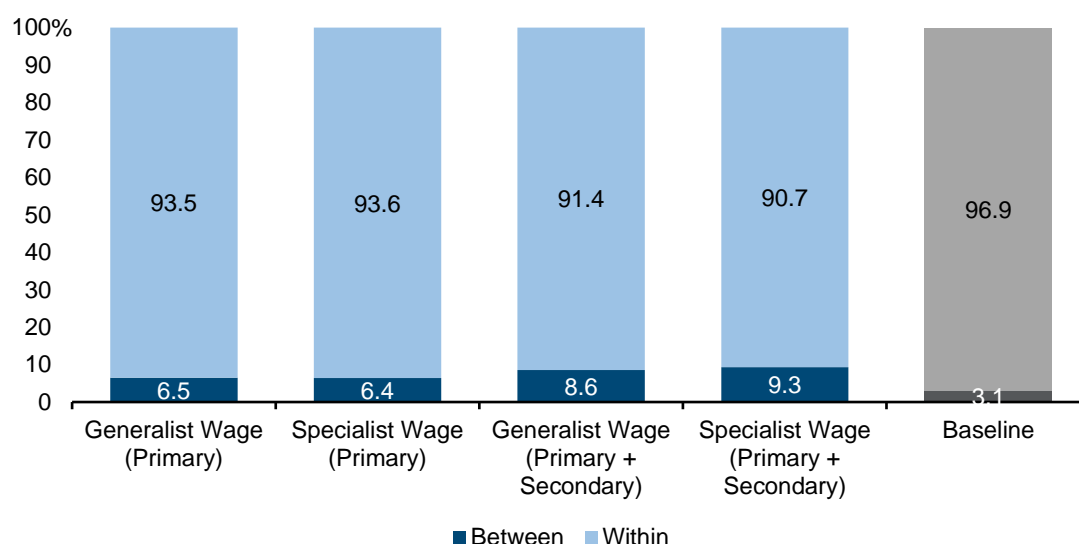
Figure 2.54: Decomposition by gender and income



Source: KRI (2019b)

When the decomposition is done by life stage, the results show that adjusted income inequality is overwhelmingly explained by within-group inequality (Figure 2.55). Nonetheless, it is important to note that in the baseline scenario, between-group inequality is even lower at 3.1%. It increases two-fold when only primary activities are counted (6.4% to 6.5%) and almost three-fold when secondary activities are added (8.6% to 9.3%). This suggests that adding extended income has a disequalising effect on subgroups demarcated by life stage.

Figure 2.55: Decomposition by life stage



Source: KRI (2019b)

By adding extended income to adjust for income inequality, our analysis provides micro evidence in line with literature that the valuation and incorporation of unpaid care work reduces income inequality. Our case study affirms the role of unpaid care work, as part of household production, in mitigating the full effects of market inequality.

This raises two pivotal points. First, with increasing push for more women to join the labour force coupled with increasing formalisation of care services, will wages from entering the labour force be adequate to compensate for care services that now need to be procured from the market? This is an empirical question that has policy implications and will be deliberated further in Section 3.

Second, although income inequality is lower after accounting for unpaid care work, it is also possible that in terms of trend, adjusted income inequality has not been reducing as much as unadjusted income inequality. This is because women's participation in the labour force has been growing over time, thus reducing the time spent on unpaid care work. While the lack of time series TUS prevents us from being conclusive about this, we argue that it is reasonable to assume that the trend reduction in market inequality is overestimated because of the exclusion of unpaid care work.

2.4 Key Takeaways from KRI's Pilot Time Use Study

Our pilot TUS has provided some in-depth insights into the patterns of unpaid care work to supplement analysis using nationally representative datasets. Although our findings cannot be generalised, they give more texture to larger patterns and trends observed in LFS and affirm claims and findings made in extant literature. They also demonstrate the importance of time use data and how the TUS methodology can be used to research interactions between market and non-market activities.

Our respondents' time use patterns confirm the existence of a double burden for women. Women in our sample are shouldering more unpaid care work than men despite working almost equal—albeit marginally fewer—hours than men in paid employment. This is also supported by our time inequality analysis where unpaid care work has a time distribution that is more unequal than paid work hours and income distribution.

In fact, if we remove employment-related travel from paid working hours, women actually work more than men. This suggests that the double burden is even more acute when travel hours are excluded. Women commute less and drive less but use more public transportation than men. This is consistent with literature that attributes women's constrained mobility to unpaid care work and their tendency to combine work and non-work trips.

The double burden is also exacerbated when secondary activities are included. This has been a recurrent theme that emerges throughout our analysis. It emphasises the nature of invisibility in women's unpaid care work i.e. care work is often carried out as simultaneous activities. Moreover, when secondary activities are included, the time distribution of unpaid care work becomes more unequal.

Our analysis also points to the importance of distinguishing between direct care work and domestic work in understanding gender inequality. Men allocate a significant amount of their time to direct care work—though still less than women in absolute hours—but spend a lot less time on domestic work. Women are not only doing more domestic work, they are dedicating more time to less pleasant tasks that are generally more inflexible, mundane and frequent.

At the same time, women tend to carry out these tasks alone. On the other hand, men carry out more unpaid care work with their spouses or others. The social context of unpaid care work in our sample indicates that women bear the mental labour to plan and manage unpaid care work while men play a more supporting role in executing these tasks.

Similar to our analysis of the LFS in 1.2.2, our pilot TUS establishes the importance of life-cycle stages in further elucidating these gender gaps. We demarcate life-cycle stages by the presence and age of a child instead of age group. We show that in life stages where a child is present—especially a younger child—unpaid care work, particularly direct care work, is more pronounced. The double burden for women is also more intense in these life stages. Secondary activities further intensify unpaid care work in these life stages.

What do all these disparities in unpaid care work mean for labour market outcomes? Our econometric analysis shows that there is an inverse relationship between unpaid care work and market hours. There is also an inverse relationship between unpaid care work and income.

This means that an additional hour of unpaid care work is associated with fewer hours of market work and less income. Our regression results show that unpaid care work has relatively similar effects on labour market outcomes for both men and women.

Interestingly, our regression results also show that there is no income penalty for mothers in our sample. Instead, mothers in our sample face a time penalty. It suggests that mothers may be earning more but have less time on their hands. This is corroborated by our analysis of time poverty which shows that unpaid care hours for women are the highest in Life Stage 2. The trade-offs between time poverty and income poverty become more intense in Life Stage 2 and Life Stage 3 where unpaid care work peaks.

Our econometric analysis provides empirical evidence that non-market activities play a pivotal role in shaping market outcomes. In addition, it gives a glimpse of how this trade-off between income and time is negotiated. This trade-off mirrors the substitution between market production and household production. When we analyse how households negotiate the household production-market production continuum, we find that lower-income households undertake more household production instead of procuring goods and services from the market. Conversely, higher-income households substitute goods and services produced at home with market purchases because the opportunity cost of household production increases.

However, for direct care work in particular, we find that the brunt of time deprivation falls on the middle class in balancing earning market income and undertaking direct care work as household production. This may occur because individuals in the M40 may find it too costly to procure direct care from the market but not economical enough to fully undertake direct care work as household production. The non-substitutability of direct care work means that the alternatives are either too expensive or not available i.e. the Baumol effect. This results in a large gender gap in direct care work for individuals in the M40 with women bearing disproportionately more of the burden. However, men in this income class compensate by taking up unpaid care work as secondary activities.

Finally, we find evidence that household production assumes an important role as a buffer against income inequality. This is premised on recognising and valuing household production in our calculations of income inequality. It raises the question of whether additional income from entering the labour force is adequate to compensate for care services that need to be procured from the market, and what alternatives for care services are available when the household production buffer diminishes as more women enter the labour force.

SECTION

03

CARE POLICIES	93
3.1 Framing Care Policies: Theory and Practice	93
3.1.1 Theory and ideals of care	93
3.1.2 Evolution of care policies in Malaysia	95
3.1.3 Malaysia's care policies in action	97
3.2 Care Policy Outcomes in Malaysia: The Case of Childcare	101
3.2.1 The landscape of childcare in Malaysia	101
3.2.2 Formal childcare: options and challenges	102
3.2.3 Informal childcare: options and challenges	113
3.3 Policy Aspirations and Options	116
3.3.1 Care as a productive economic sector	116
3.3.2 Gender equality at both market and domestic spheres	117
3.3.3 Childminding standards: ensuring quality without undue burden	120

“When I come home [from work] I take care of the kids, clean the house and ask my kids about their progress in school—all that stuff, by myself. If we could, my husband would change his work from shifts to office hours, so that we could do the housework together and I wouldn’t be the only one doing it.”

Interviewed respondent from KRI TUS
Married mother of two

SECTION 3

CARE POLICIES

3.1 Framing Care Policies: Theory and Practice

3.1.1 Theory and ideals of care

Theoretically, there are three primary institutions that are responsible for providing care services, namely state, market and families/households¹⁴⁴. These institutions operate across the formal-informal spectrum, as described in Section 1. Between them, these three institutions manage and distribute care work (both paid and unpaid) to varying degrees, as determined by the specific structure of the country's economy, regulatory landscape, social norms and dominant values¹⁴⁶.

These three institutions are interdependent; because care is a necessity, if one institution is unable to provide care, one or both of the other two in principle must be responsible for providing care instead¹⁴⁷. For example, if the state does not provide childcare services, families must either provide the required care themselves, or acquire it through the market. Similarly, a decrease in the provision of familial care must be compensated for by an increase in care services offered by the state or the market. How a society configures its predominant form of care arrangement between these institutions can be broadly conceptualised into three models of care provision, briefly explained in this section.

The first model, known as the “male breadwinner model”, describes the normative family work-care ideal of a male breadwinner and a female homemaker. This model assumes a traditional gendered division of work where the primary responsibility of men is to earn, while the women's is to care¹⁴⁸. In this model, as families (typically, the women of the family) provide their own care work, there is theoretically no need to purchase care services from the market. The state only plays a limited role, offering care services to the more neglected segments of the population such as orphans, PWDs and the elderly. It may be worth noting that in reality, the male breadwinner ideal is rarely fully realised, as women in the society tend to be at least partially involved in the labour market. Nonetheless, for many societies, the male breadwinner model has historically been the main care regime, embodied by societal gender roles and labour-related policies¹⁴⁹.

¹⁴⁴ Orloff (1993). Note: Razavi's “care diamond” also includes the community/not-for-profit sector as an institution that also delivers care; however, this section focuses on the family, state and market as the predominant institutions responsible for care services. Source: Razavi (2007).

¹⁴⁶ Baird et al. (2017)

¹⁴⁷ Ibid.

¹⁴⁸ Lewis (2002)

¹⁴⁹ Fraser (1994)

In recent decades, the male breadwinner model has declined in favour of a dual-earner model. This may be partly attributed to the rising cost of living such that many families can no longer support themselves on a single wage, and partly driven by the global move for greater gender equality and female empowerment¹⁵⁰. Nancy Fraser proposed the term “universal breadwinner model” (also referred to as the adult-worker model), in which women and men are both engaged in full-time paid work, with equal employment opportunities for both genders. As both adults in the conventional family are engaged in full-time market work, care work is then theoretically redistributed to the state and/or the market¹⁵¹.

However, the universal breadwinner model as a normative ideal has several flaws. The model considers gender equality strictly in the labour market, while neglecting the persistence of gender imbalances in the division of unpaid work¹⁵². Care work is framed as an obstacle to achieving the overarching aim of full participation in employment. The model often approaches the earner-carer issue not in terms of increasing men’s contribution to unpaid care work but instead to reduce that of women’s, to free up their time to allow them to participate in the labour market¹⁵³. Although care work is supposed to be outsourced to the state or the market, there is always a portion of time and a number of care activities that can only be provided by the family¹⁵⁴. Without addressing cultural norms where care work is still perceived to be chiefly women’s responsibility, the universal breadwinner model can lead to the unintended consequence of creating a double burden for women, who are expected to juggle the responsibilities of being both a full-time worker and a caregiver.

Additionally, studies in predominantly European countries have indicated that the universal breadwinner model is a poor representation of reality. Despite increased rates of women’s participation in the workforce, women are more likely to work shorter hours than men, with an increasing tendency to work part-time¹⁵⁵. Thus, instead of shifting to a completely dual-earner family structure, some countries instead adopt policies that effectively amount to a one-and-a-half earner model¹⁵⁶.

Another care ideal that some Western European countries have adopted as an alternative to the male breadwinner model is characterised by Fraser as the “caregiver parity model”. Unlike the universal breadwinner model, in the caregiver parity model, care work largely remains the responsibility of the family, with women still perceived as being the primary caregivers. However, care work is compensated through greater state support through allowances and benefits. According to Fraser, the forms of support required to implement this model include generous allowances provided by the state to compensate women for care activities, in addition to workplace reform programmes such as guaranteed opportunities for part-time work, flexible paid working hours and sufficient parental leave¹⁵⁷.

¹⁵⁰ Ibid.

¹⁵¹ Esping-Anderson (1999), Fraser (1994)

¹⁵² Fraser (1994)

¹⁵³ Cicia and Bleijenbergh (2014)

¹⁵⁴ Kremer (2007)

¹⁵⁵ Razavi (2007)

¹⁵⁶ Lewis (2002)

¹⁵⁷ Fraser (1994)

Thus, while the universal breadwinner model and the caregiver parity model both represent improvements to the male breadwinner/female caregiver arrangement, neither model sufficiently addresses gender equality and equal status for care work compared to paid work. As Fraser wrote:

*Although both are good at preventing women's poverty and exploitation, both are only fair at redressing inequality of respect: Universal breadwinner holds women to the same standard as men while constructing arrangements that prevent them from meeting it fully; caregiver parity, in contrast, sets up a double standard to accommodate gender difference while institutionalising policies that fail to assure equivalent respect for feminine activities and life patterns... Neither model, however, promotes women's full participation on a par with men in politics and civil society. And **neither values female-associated practices enough to ask men to do them, too; neither asks men to change** [emphasis added]¹⁵⁸.*

In this sub-section, we considered the merits and weaknesses of three normative ideals for care arrangements, namely the male breadwinner model, the universal breadwinner model and the caregiver parity model. In the following sub-section, we review Malaysia's care policies over time and assess the evolution of the country's policies through the lens of these theoretical models.

3.1.2 Evolution of care policies in Malaysia

As noted earlier, the state is one of the three main providers of care; in addition to this role, the state also plays a crucial role in shaping the dominant care regime for the country, by prescribing the design, funding and structure of care policies. In the case of Malaysia, more recent state policies appear to promote a gradual shift in the approach to care provision from the traditional male breadwinner ideal to the universal breadwinner family, as reflected in the evolution of the country's care policies over the past few decades.

Although women in Malaysia have always been active economic participants to some degree, the dominant form of work-care arrangement in Malaysia has traditionally been that of a male breadwinner, female homemaker. Kaur and Metcalfe contend that this gendered division of labour in Malaysia is an artefact of colonial rule by the British, whose own society was characterised by the male breadwinner regime in the past¹⁵⁹.

¹⁵⁸ Ibid.

¹⁵⁹ Kaur and Metcalfe (1999)

The male breadwinner family structure and its associated gender divisions and roles have been incorporated in the country's development policies, as can be observed in the five-year Malaysia Plans (MPs). For example, while the 4th MP (1981 – 1985) made note of rising female participation in the labour force as an important contributor to the overall growth of the economy, it did not outline specific programmes or policy directions to encourage this¹⁶⁰. Indeed, care policies in the 4th MP were limited to establishing new centres to provide treatment, aftercare, supervision and vocational training facilities for PWDs, in addition to establishing one additional old persons' home¹⁶¹. The 5th MP (1986 – 1990) similarly appeared to maintain the traditional gendered division of labour. In the section for women and development, the 5th MP noted the importance of women's role in family development¹⁶².

Conversely, Malaysia's subsequent development policies signal a transition to a universal breadwinner model, with greater emphasis on employment measures for men and women. For example, from the 6th MP (1991 – 1995) onwards, the government began taking a proactive stance on women's engagement in paid work, including promoting state and market care options to facilitate women entering the workforce.

Indeed, the 6th MP was the first of the five-year plans to specifically focus on women's development, recognising women as an important economic resource. It identified "the dual and often, competing responsibilities of family and career restrict[ing] the mobility and increased participation of women in the labour market¹⁶³." In recognising this, the 6th MP introduced measures such as tax exemptions for workplaces which establish childcare centres at the premises or in the nearby area, with the main objective of increasing women's labour force participation¹⁶⁴.

The greater focus on care policies in relation to alleviating the dual responsibilities faced by women may have been furthered by the introduction of the National Policy for Women (NPW), formulated in 1989. The NPW outlines the broad policy goals of gender equality as a central objective in line with the principle of non-discrimination enshrined in the Federal Constitution¹⁶⁵. This was followed by the establishment of the Ministry of Women, Family and Development (MWFD) in 1991, which subsequently became known as KPWKM in 2001.

¹⁶⁰ Prior to the 4th MP, the government had set up the National Advisory Council on Integration of Women in Development (NACIWID) in 1976, which was intended to be the "national machinery for channelling issues pertaining to women". Source: PMO (1981).

¹⁶¹ Ibid.

¹⁶² PMO (1986)

¹⁶³ PMO (1991)

¹⁶⁴ Ibid.

¹⁶⁵ Choong et al. (2018). Note: Article 8(2) of the Federal Constitution was amended in 2001 to include the prohibition of discrimination based on gender. This amendment may have been influenced by Malaysia's commitment to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), which Malaysia ratified in 1995. Source: WAO (2019).

Successive five-year plans continued to build on care issues, if only as a tool to encourage women's employment. The 7th MP (1996 – 2000) introduced flexible working arrangements through amendments to the Employment Act 1955¹⁶⁶. Yet, at the same time, the 7th MP reinforced that care of the elderly should remain the responsibility of the family, outlining government initiatives such as tax exemptions for healthcare spending for children taking care of their elderly parents. The 8th MP (2001 – 2005) worked towards eliminating gender discrimination and sexual harassment in the workplace, continuing the focus on women and employment.

The 9th MP (2006 – 2010) built upon the goal of female empowerment in the labour market, including setting out a plan to develop a national target for 30% women in decision-making positions, with care options explicitly considered as part of this strategy. This is exemplified in the statement "Measures will also be undertaken to increase provision of childcare facilities and promote flexible working arrangements to facilitate the greater participation of women in the labour force¹⁶⁷." In tandem with this, the 9th MP set aside RM20m for the *Pusat Anak Permata Negara* (PERMATA)¹⁶⁸ programme approved by the Malaysian Cabinet in 2006. The PERMATA programme heavily subsidises childcare centres aimed at catering to the needs of working parents in the low-income category who are otherwise unable to afford childcare from the market. The period of the 9th MP also saw the introduction of the National Child Policy 2009, which focuses on the objectives of quality, accessibility and affordability of childcare.

The 10th MP (2011 – 2015) continued the strong emphasis on women's labour force participation, setting a target of 55% participation by 2015¹⁶⁹. The 11th MP (2016 – 2020), the most recent plan at the time of this report's publication, continues to focus on promoting women's role in the country's development, with a target to achieve 59% women's participation in the labour force by 2020¹⁷⁰. The 11th MP included initiatives such as flexWorkLife, a work from home programme, and the Career Comeback grant, a programme to promote women re-entering the workforce¹⁷¹.

3.1.3 Malaysia's care policies in action

Policy documents such as those discussed above may reflect a country's aspirations, but, ultimately, where the nation's expenditure is focused may be more indicative of the reality of the country's priorities. In 2017, the country's total expenditure on subsidies and social assistance stood at RM27b, the bulk of which was spent on Bantuan Rakyat 1Malaysia (BR1M) disbursement (RM6.3b, or 27.3% of expenditure on subsidies and social assistance), intended to provide targeted assistance to help with cost of living. Although 2018 saw an increase in expenditure on subsidies and social assistance to RM27.5b, this was mainly due to higher fuel subsidies, which increased from RM3.1b in 2017 to RM7.5b in 2018¹⁷².

¹⁶⁶ PMO (1996)

¹⁶⁷ EPU (2006)

¹⁶⁸ According to media reports, on 15 April 2019, it was announced that Cabinet has agreed to rename the PERMATA programme to "Genius". Source: Bernama (2019).

¹⁶⁹ In 2017, women's labour force participation stood at 54.7%. The targeted 55% participation rate was met in 2018, when it reached 55.2%. Source: DOS (2019).

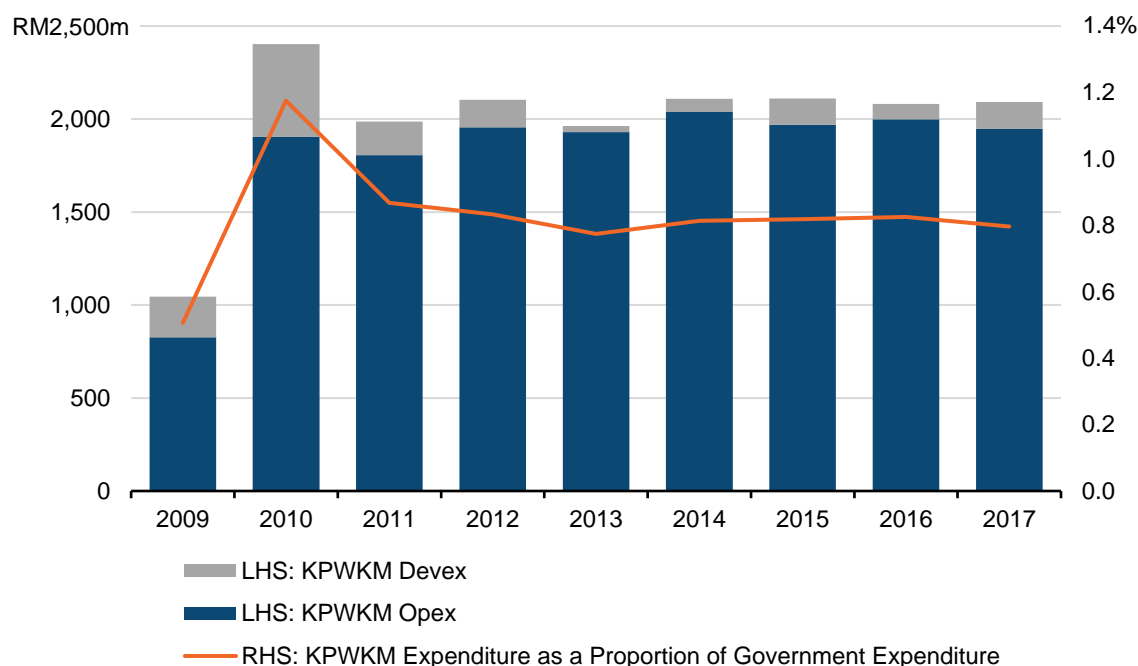
¹⁷⁰ EPU (2015)

¹⁷¹ MEA (2018)

¹⁷² MOF (2019)

Meanwhile, the total expenditure made by KPWKM (the ministry largely responsible for the country's welfare programmes) was only RM2.1b in 2017 or approximately 0.8% of the total federal government expenditure (Figure 3.1). The Department of Social Welfare (*Jabatan Kebajikan Masyarakat*, JKM), a department under KPWKM, takes up a significant portion of the Ministry's budget (72.2% in 2017).

Figure 3.1: Expenditure by KPWKM as a proportion of federal government expenditure, 2009 – 2017



Source: MOF (Various years)

There are three key populations which receive welfare aid from JKM, namely PWDs, eligible members of the elderly and children from low-income households (Figure 3.2). The elderly as a group are the biggest benefactors of welfare aid, receiving RM481.3m (or RM3,575 per recipient on average) in 2017, which is somewhat less than the amount allocated to this group in 2016 (RM497.6m or RM3,731 per recipient). The amount allocated to children's assistance is less in comparison, at RM223.2m or RM3,039 per recipient in 2017 (in 2016, RM246.0m or RM3,261 per recipient).

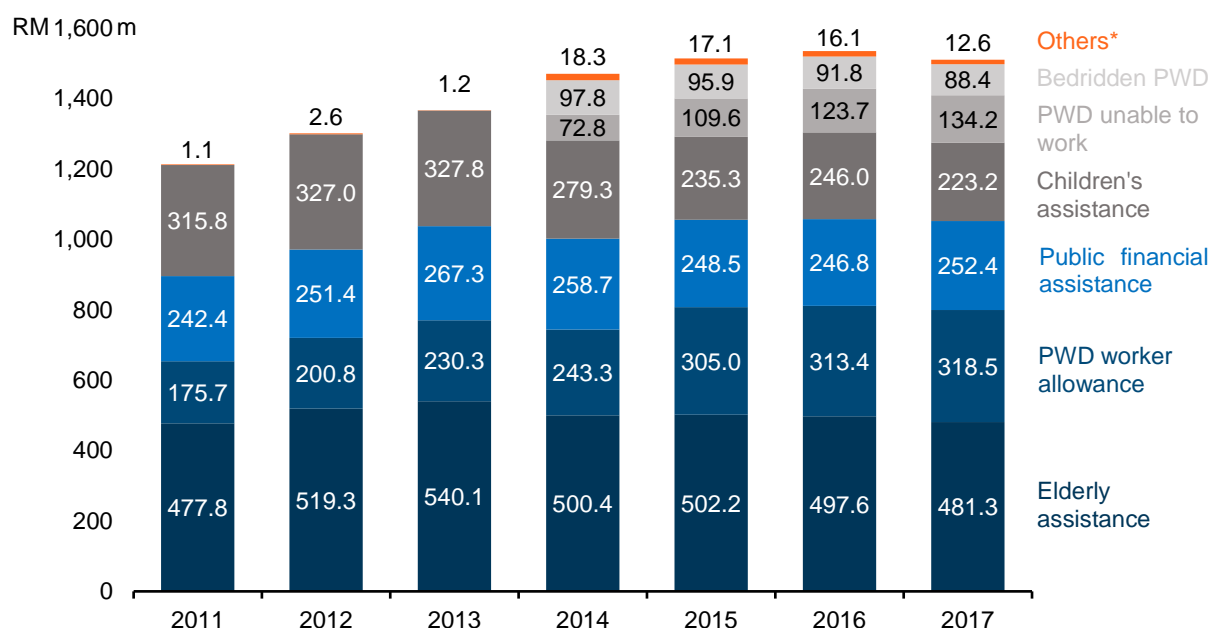
Most recently, the 2019 Budget tabled by the Minister of Finance allocates RM10m for the establishment of an additional 50 childcare centres in government buildings¹⁷³. This is in line with the target set out in the 11th MP Mid-Term Review (MTR) that all government agencies will be required to provide childcare facilities from January 2019 onwards¹⁷⁴. This was made to “ease the burden of working mothers,” with the aim of encouraging women to participate in the workforce¹⁷⁵, in keeping with the universal breadwinner ideal.

¹⁷³ MOF (2018)

¹⁷⁴ MEA (2018)

¹⁷⁵ MOF (2018)

Figure 3.2: Malaysia's welfare spending by type of assistance, 2011 – 2017



Note: *Others include foster child assistance, launching grants, disaster relief funds, apprentice allowance and artificial/assistive devices.

Source: DOS (Various years-c)

The government has utilised a broad range of instruments to achieve the different policy objectives related to care discussed previously. Table 3.1 classifies the different instruments for care provision. In Malaysia, monetary benefits and the direct public provision of services or benefits in kind are targeted towards welfare, where care provision is delivered to low-income households based on a predefined set of eligibility criteria. Thus, this set of care provision reaches only a small segment of the population. Employment-related measures and other incentives/measures are aimed at meeting the care needs of the broader population by promoting and regulating the market provision of care services¹⁷⁶.

From Section 3.1.2, Malaysia's policy documents indicate a shift in care policies from a male breadwinner model to a universal breadwinner ideal. On a broader level, in a universal breadwinner ideal, care work is de-familialised and redistributed to either the state or the market. In the case of Malaysia, government expenditure as well as policy instruments as outlined above show a general preference for market provision for care needs, while the state focuses on welfare aspects of care.

¹⁷⁶ Choong et al. (2018)

Table 3.1: Instruments of care provision in Malaysia

Universe of Care Provision	Instruments of Care Provision in Malaysia
Monetary benefits	Cash assistance i.e. children's assistance, elderly assistance, foster children assistance
Direct public provision of services or benefits in kind	Public provision of formal care services such as Children's Home, Tunas Bakti School, Probation Hostel, Taska 1Malaysia, Taska PERMATA KEMAS for children, and Rumah Seri Kenangan, Rumah Ehsan, and Desa Bina Diri for the elderly.
Employment-related measures	<p>Legislative measures i.e. amendment of the Employment Act to provide for flexible paid working hours and empower the Minister of Human Resource to make rules on statutory benefits to be paid to part-time workers proportionate to that of full-time employees.</p> <p>Promotion of flexible paid working hours, work-from-home options e.g. the flexWorkLife programme, employment re-entry opportunities e.g. the Career Comeback programme and one-year tax break for eligible women returning to work, and other family-friendly working arrangements.</p>
Incentives/measures toward provision in the market or through care migration	<p>Fiscal measures i.e. tax deduction for the private sector to establish childcare centres at work.</p> <p>Encourage private sector to conduct corporate social responsibility programmes to sponsor the establishment of care centres in partnership with NGOs.</p> <p>Regulatory measures e.g. the Child Care Centre (Institution Based) Regulations 2012 to set the minimum care provider-to-child ratio, or the incorporation of accessibility standards for the establishment of childcare centres into town planning guidelines.</p> <p>Conducting training or development training modules for care providers and assessing the quality of care centres through star rating system.</p> <p>Allow the direct hiring of foreign domestic workers.</p> <p>Implementation of programmes like "Home Help" to mobilise volunteers to care for the elderly and disabled, or "Housekeeper" to encourage low-income Malaysian women to enter domestic work.</p>

Source: EPU (2015), EPU (2010), EPU (2000), MOF (2017), JKM (n.d.)

The effectiveness of Malaysia's work-care model is reviewed in the next section, focusing on childcare. In the country's national policies and programmes on childcare, early childhood care and education (ECCE) is broadly categorised into two groups, namely the 0 – 4 year olds and the 4 – 6 year olds. In our analysis, we focus on the former and not the latter.

Other than childcare, we acknowledge that the care of other groups such as the elderly and the disabled are crucial topics for public policy discussions. For this report, we choose childcare as a case study because the provision of childcare services has increasingly become a forefront issue to promote maternal employment to support the country's plans for economic growth. As we have found in a previous report, raising women's employment levels by 30% could raise Malaysia's GDP by around 7% to 12%¹⁷⁷. Additionally, the emergence of discussions on childcare as a form of social investment for the development of a country's future human capital has added to the salience of childcare as a national issue¹⁷⁸.

¹⁷⁷ KRI (2018)

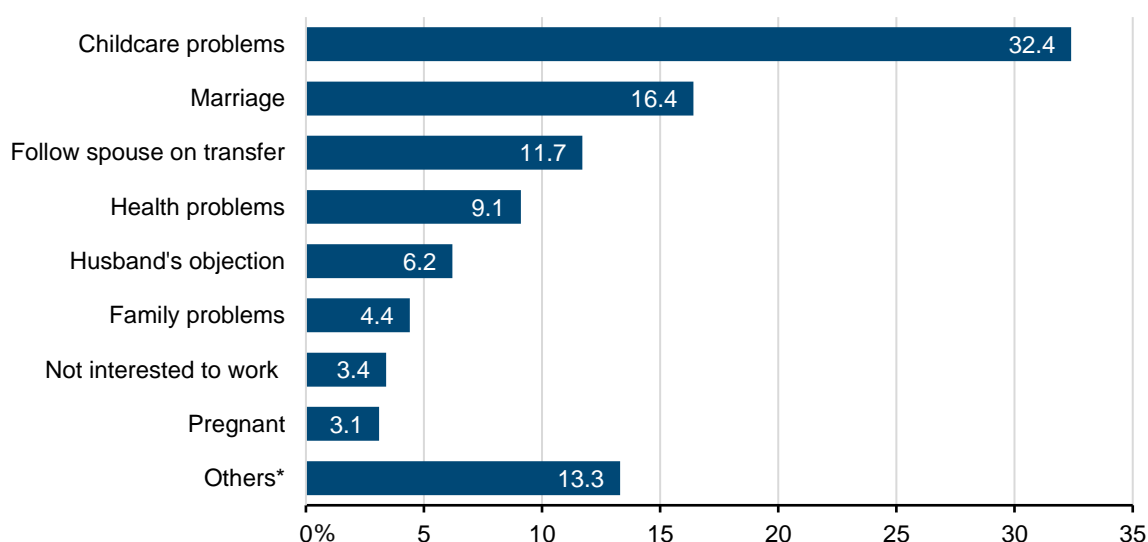
¹⁷⁸ Jenson (2009)

3.2 Care Policy Outcomes in Malaysia: The Case of Childcare

3.2.1 The landscape of childcare in Malaysia

Despite the care policies introduced by the government, childcare remains a significant challenge for many Malaysian families. It often prevents parents, particularly mothers, from participating in the labour force. In 2018, 2.9 million or 60.2% of women stayed out of the labour force due to housework/family responsibilities, compared with 81,000 or 3.6% of men¹⁷⁹. Several studies conducted around Malaysia also suggest that childcare issues are a major contributor for women opting out of the labour force¹⁸⁰. This is in line with findings from the 2014 Malaysian Population and Family Survey (MPFS-5), stating that 32.4% of married women between the ages of 15 and 59 who left the workforce cited childcare problems specifically as the main reason for quitting¹⁸¹, as can be seen in Figure 3.3.

Figure 3.3: Main reasons for married women leaving the workforce, 2014



Note: Other reasons include further education, do not need to work as income is sufficient, workplace closed down, transport problems and termination of contract.

Source: LPPKN (2016)

In broad terms, there are two sectors that provide childcare services in Malaysia: the formal and the informal. The latter can be further broken down into paid and unpaid. The following subsections discuss the options for childcare services within the formal and informal sectors as well as the challenges facing these sectors. We assess both formal and informal childcare using the criteria of sufficiency, affordability, quality and accessibility.

¹⁷⁹ DOS (2019)

¹⁸⁰ Norehan Abdullah et al. (2012), Suhaida Mohd Amin and Mohd Faizal bin P. Rameli (2014)

¹⁸¹ LPPKN (2016)

3.2.2 Formal childcare: options and challenges

In Malaysia, the legal instrument for regulating formal childcare centres is the Child Care Centre Act 1984 (Act 308)¹⁸². The Child Care Centre Act 1984 (Amendment 2007) outlines the implementation of child parenting and education policies by providing for the registration, control and inspection of childcare centres (in Malay, a *Taman Asuhan Kanak-Kanak*, or TASKA¹⁸³), and other relevant matters.

According to the Act, a childcare centre is defined as any premise which receives four or more children aged 4 years old and under from more than one household, to be looked after for reward¹⁸⁴. The Act governs four types of childcare centres, as explained below:

- i. **Home-based** childcare centres which receive fewer than 10 children.
- ii. **Workplace-based** childcare centres located at a workplace which receive 10 or more children.
- iii. **Community-based** childcare centres which receive 10 or more children in a particular area and receive aid from the Federal Government or a State Government.
- iv. **Institution-based** childcare centres other than those categorised under (i), (ii) and (iii), which receive 10 or more children.

A fifth type of childcare centre is those established or run by the federal or any state government. These childcare centres are exempted from the provisions of the Child Care Centre Act.

According to the National Child Data Centre (NCDC), there were 4,887 registered childcare centres in Malaysia as at 28 January 2019¹⁸⁵. Of these, the majority (3,199 or 65.5% of all childcare centres) were institution-based, as illustrated in Figure 3.4.

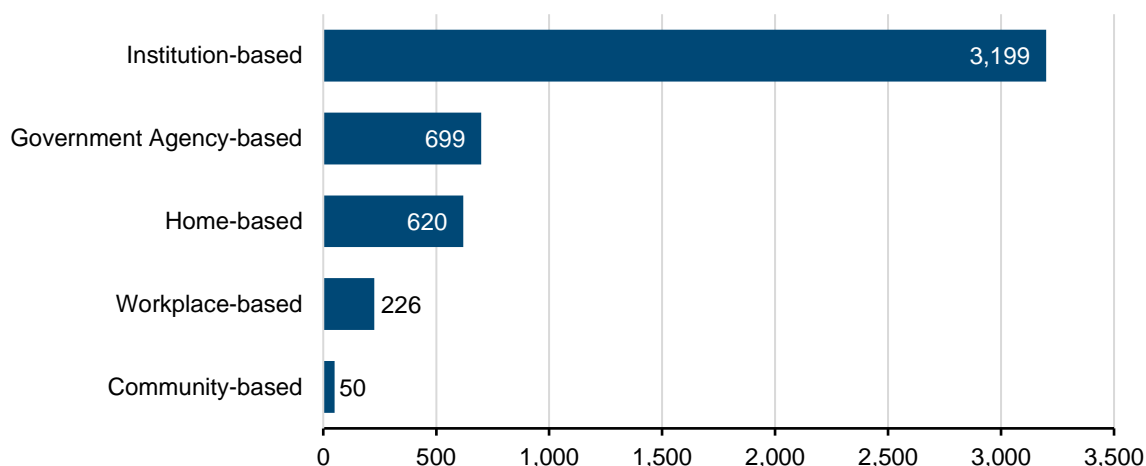
¹⁸² *Akta Taman Asuhan Kanak-Kanak 1984*

¹⁸³ Note that this is different from *Taman Didikan Kanak-Kanak* (TADIKAN) and *Taman Bimbingan Kanak-Kanak* (TABIKAN), which provide early childhood education and care services for children between the ages of 4 and 6 years old. Source: Zaida Mustafa et al. (2017).

¹⁸⁴ GOM (1984)

¹⁸⁵ NCDC (n.d.)

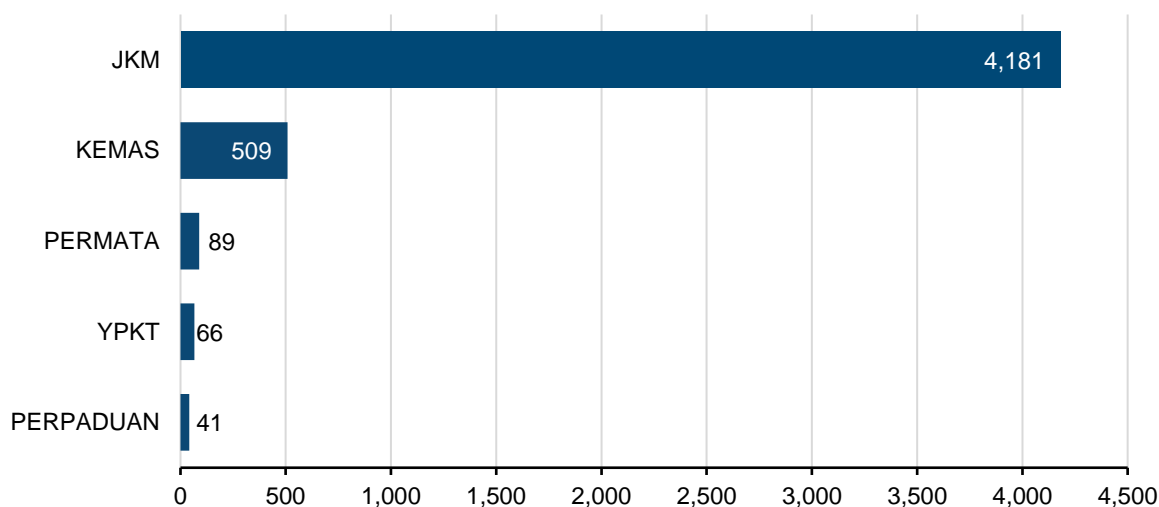
Figure 3.4: Number of childcare centres in Malaysia, by type¹⁸⁶



Source: NCDC (n.d.)

The Child Care Centre Act stipulates that every childcare centre must be registered with JKM, the caretaker of the Act. As at 28 January 2019, there were 4,181 childcare centres under the purview of JKM (Figure 3.5)¹⁸⁷. As childcare centres established or run by government agencies are exempt from the Child Care Centre Act, they are not subject to JKM's regulations.

Figure 3.5: Number of childcare centres in Malaysia, by overseeing government agency



Source: NCDC (n.d.)

The government-based childcare centres are typically established to provide childcare services to vulnerable sections of the population. The Community Development Department (*Jabatan Kemajuan Masyarakat*, KEMAS), under the Ministry of Rural Development, has set up approximately 500 childcare centres for children in suburban and rural areas with families of very low income.

¹⁸⁶ The number of childcare centres in this chart do not add up to 4,887 due to discrepancies in reporting.

¹⁸⁷ NCDC (n.d.)

There were 89 PERMATA childcare centres, primarily located in Sabah (15%), Perak (12%) and Melaka (11%). As noted earlier, these are heavily subsidised to cater to the needs of working parents in the low-income category who are otherwise unable to afford childcare from the market. In Terengganu, there were approximately 66 childcare centres under the state's Family Development Foundation (*Yayasan Pembangunan Keluarga Terengganu*, YPKT), a statutory body established by the state government¹⁸⁸. There were also approximately 41 childcare centres under the Department of National Unity and Integration (*Jabatan Perpaduan Negara dan Integrasi Nasional*, PERPADUAN). These provide childcare services for children from low-income households in urban and rural areas¹⁸⁹.

Sufficiency

In 2018, there were 2.6 million children aged 4 and under in Malaysia¹⁹⁰. Meanwhile, as noted earlier, there were 4,887 registered childcare centres in the country. However, in 2017, only 31,712 number of children (or approximately 1.2%) were enrolled in a JKM-registered childcare centre, which is a drop from 2016, when 77,115 children were enrolled (2.9%)¹⁹¹. Given the current number of registered childcare centres, each one of them would have to take in an average of 531 children if they were to accommodate all children aged 4 and under in the country.

In reality, the maximum number of children that can be enrolled in a TASKA is determined by the square footage of the premises. Based on this, the maximum capacity of all current registered childcare centres in Malaysia is 135,975 children, or approximately 5.2% of children aged 4 and under¹⁹². This may seem like a small amount, but considering that only 1.2% of children are currently enrolled in JKM-registered childcare centres, there are a lot of vacancies in existing childcare centres. As can be seen in Table 3.2, overall, 75.6% of active childcare centres in Malaysia are not reaching their maximum allowed capacity. Across the country, the undercapacity rate range from 54.2% in Perlis to 86.4% in Kelantan¹⁹³.

¹⁸⁸ YPKT (2016)

¹⁸⁹ PERPADUAN (2016)

¹⁹⁰ DOS (n.d.-b)

¹⁹¹ DOS (2018c)

¹⁹² DOS (n.d.-b) and NCDRC (2019)

¹⁹³ NCDRC (2019)

Table 3.2: Undercapacity in existing childcare centres across Malaysia

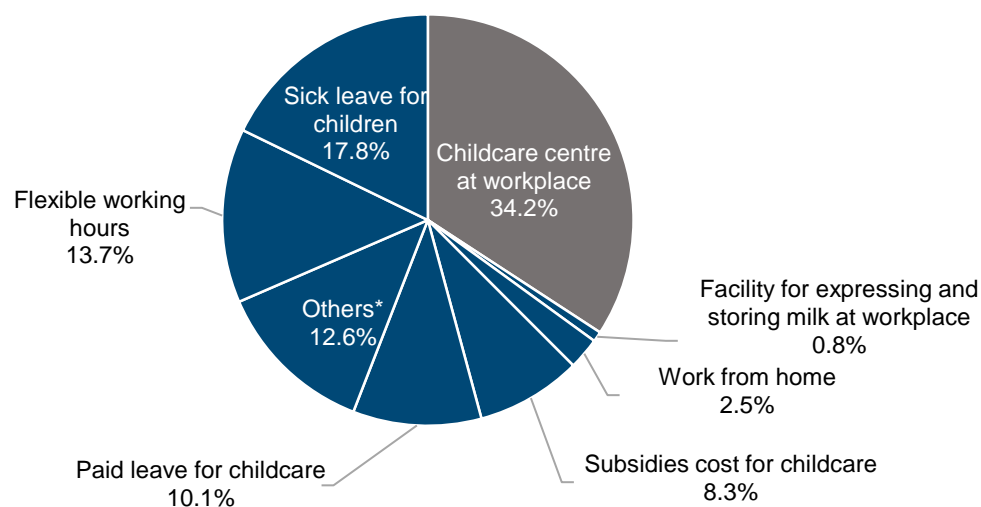
State	Active childcare centres	Childcare centres with undercapacity	% undercapacity
Johor	305	253	83.0
Kedah	223	181	81.2
Kelantan	191	165	86.4
Melaka	148	108	73.0
Negeri Sembilan	223	140	62.8
Pahang	214	166	77.6
Perak	314	216	68.8
Perlis	48	26	54.2
Pulau Pinang	153	124	81.0
Sabah	309	229	74.1
Sarawak	248	171	69.0
Selangor	1,279	970	75.8
Terengganu	268	213	79.5
WP Kuala Lumpur	281	211	75.1
WP Labuan	23	17	73.9
WP Putrajaya	111	88	79.3
MALAYSIA	4,338	3,278	75.6

Note: Undercapacity is defined as childcare centres which take in (enrol) fewer children than the maximum approved by the Malaysian authorities. Data retrieved on 1 March 2019.

Source: NCDRC (2019)

Thus, when women cite childcare issues as an obstacle to participating in the workforce, it appears that it is not a case of insufficient number of childcare centres. As such, the challenge of childcare may not be solved simply by building more childcare centres, but rather, building the *appropriate* types of childcare centres that meet the needs of families¹⁹⁴. For example, when asked about the types of support working women (both in the public and private sector) would like from their employers, the MPFS-5 found that 34.2% of women surveyed cited a need for childcare centres at their workplaces (Figure 3.6).

¹⁹⁴ As there are regulations governing the ratio of teachers to students, the number of teachers may also affect the number of children that childcare centres can enroll. The ratio is explained further in the *Quality* sub-section of this report.

Figure 3.6: Support required by working women from employers, 2014

Note: Others* include educational assistance, medical needs and children's needs.
Source: LPPKN (2016)

As was shown in Figure 3.4 earlier, only 226 (or approximately 4.6%) childcare centres in the country are workplace-based. Despite the government policies outlined earlier providing incentives to employers, the number of childcare facilities at workplaces remains low. This is supported in a 2016 study by Noraini and Nor Diana, who noted, “few employers (government agencies included) provide childcare facilities and fewer still are willing to retain positions for women who take leave in excess of their entitlement, let alone ensuring their seniority.”¹⁹⁵ However, the recently announced plans to make childcare facilities in government buildings a requirement is a positive step towards alleviating the childcare challenges faced by families.

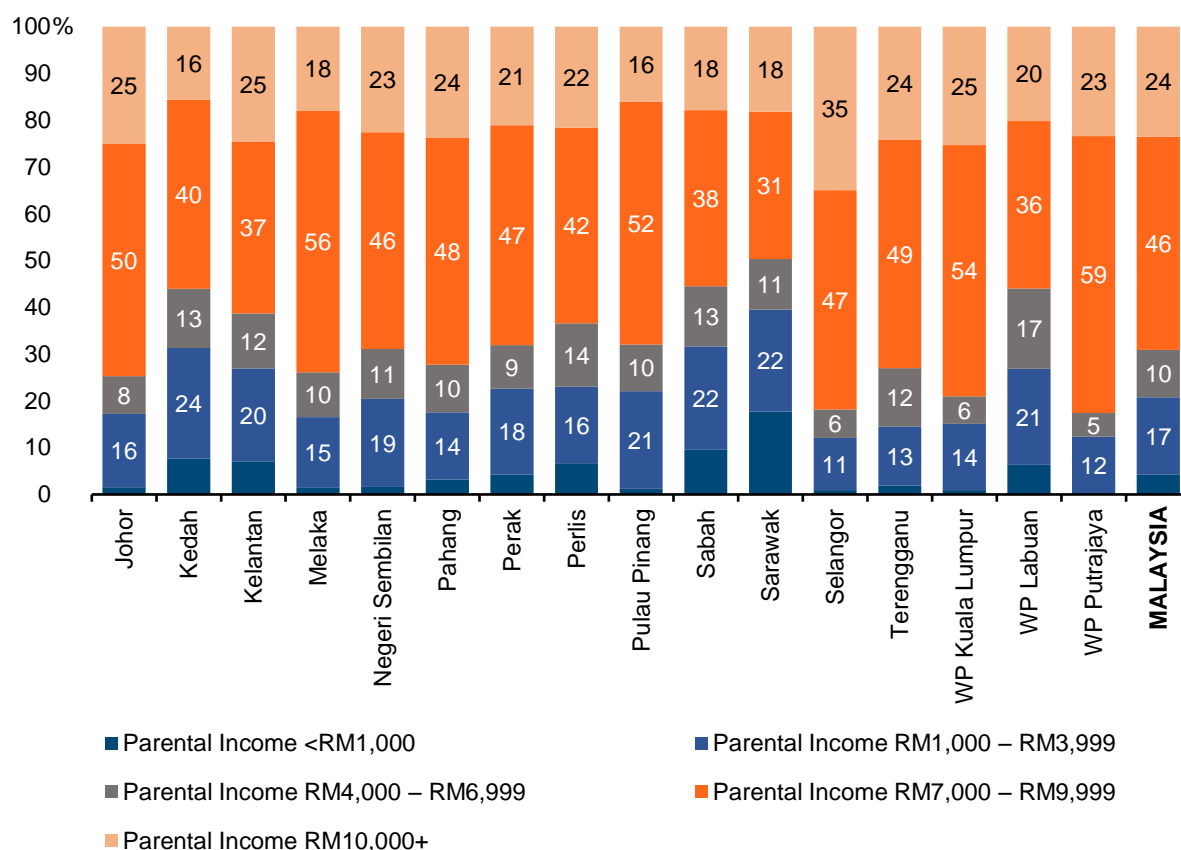
Affordability

To what extent is affordability of childcare centres a barrier for families? Based on NCDC data, it would appear that higher parental income (in this case, those earning RM7,000 and above) does correlate with more use of childcare centres. As can be seen in Figure 3.7, 70% of children in childcare centres have parental incomes of RM7,000 or above. As a comparison, the national median household income in 2016 was RM5,228¹⁹⁶.

¹⁹⁵ Noraini M. Noor and Nor Diana Mohd Mahudin (2016)

¹⁹⁶ DOS (2017a)

Figure 3.7: Percentage of children in childcare centres according to parental income, by state



Source: NCDC (n.d.)

To assess the cost of childcare to these parents, we analysed the average TASKA fees across states, according to age group. Based on the average reported fees shown in Table 3.3, across all categories (with the exception of fees for those aged 12 months and under in Melaka¹⁹⁷), it appears that TASKA fees per child are quite low, even relative to the average household income of the respective states. Other than in Melaka, average TASKA fees for the different states do not exceed 8.0% of the respective states' average household income. Some literature has suggested that total childcare costs should not exceed 10% of household income¹⁹⁸. By this standard, the average TASKA fees across Malaysia would appear to be affordable.

¹⁹⁷ This anomaly may be due to data entry error.

¹⁹⁸ Gould and Cooke (2015) and Mattingly et al. (2016)

Table 3.3: Average childcare fees charged across states, by age group (months)

State	Average Fees Charged (RM)			
	1 – 12 months	13 – 24 months	25 – 36 months	37 – 48 months
Johor	435	194	96	126
Kedah	324	199	107	82
Kelantan	279	228	144	185
Melaka	1,843	476	258	171
Negeri Sembilan	413	108	93	103
Pahang	352	211	119	149
Perak	321	180	122	115
Perlis	348	162	108	109
Pulau Pinang	348	201	108	120
Sabah	408	417	101	81
Sarawak		111	63	68
Selangor	430	389	288	252
Terengganu	268	196	132	120
WP Kuala Lumpur	934	435	224	151
WP Labuan	215	154	65	77
WP Putrajaya	432	331	180	191

State	Average Fees as a Proportion of Average Household Income			
	1 – 12 months	13 – 24 months	25 – 36 months	37 – 48 months
Johor	6.3%	2.8%	1.4%	1.8%
Kedah	6.5%	4.0%	2.2%	1.6%
Kelantan	6.6%	5.4%	3.4%	4.4%
Melaka	26.9%	7.0%	3.8%	2.5%
Negeri Sembilan	7.0%	1.8%	1.6%	1.7%
Pahang	7.0%	4.2%	2.4%	3.0%
Perak	6.3%	3.6%	2.4%	2.3%
Perlis	7.0%	3.2%	2.2%	2.2%
Pulau Pinang	5.1%	3.0%	1.6%	1.8%
Sabah	7.6%	7.8%	1.9%	1.5%
Sarawak		2.1%	1.2%	1.3%
Selangor	4.5%	4.1%	3.0%	2.7%
Terengganu	4.6%	3.4%	2.3%	2.1%
WP Kuala Lumpur	8.0%	3.7%	1.9%	1.3%
WP Labuan	2.6%	1.9%	0.8%	0.9%
WP Putrajaya	3.7%	2.9%	1.6%	1.7%

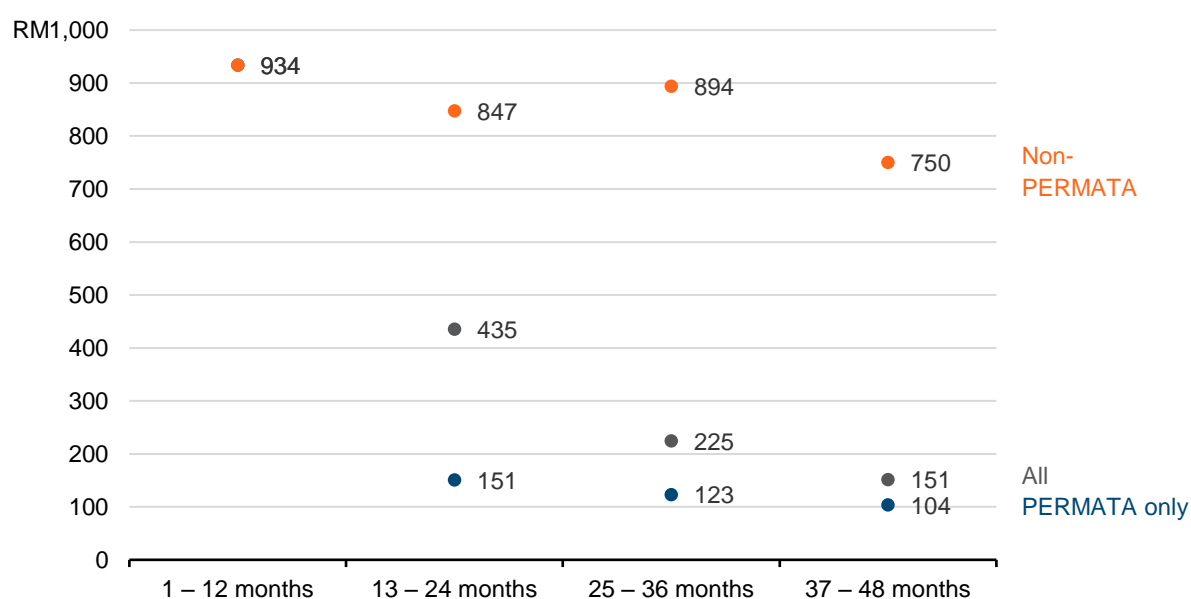
Min.  Max.

Note: Calculations made based on available data as reported to NCDC and may not be representative. No data available for Sarawak (1 – 12 months). Data retrieved on 1 March 2019.

Source: DOS (2017a), NCDRC (2019) and authors' calculations

However, further analysis indicates that these figures may be misleading, as they include fees for public childcare centres which are highly subsidised, thus skewing the average figures. To assess the extent to which this may be true, we segregated the average fees into fees for all TASKAs, fees for TASKAs other than PERMATA ones, and fees for only PERMATA TASKAs in Kuala Lumpur (Figure 3.8). From this exercise, it can be seen that removing PERMATA TASKAs substantially increases the average fees (for example, for children between 37 and 48 months old, the average fees without PERMATA TASKAs are RM750 compared with RM151 if PERMATA TASKAs are included). Considering that only five of the 315 (1.6%) TASKAs in Kuala Lumpur are PERMATA TASKAs¹⁹⁹, it may be assumed that the majority of families in Kuala Lumpur are paying the higher fees rather than the subsidised fees.

Figure 3.8: Average fees charged by TASKAs in Kuala Lumpur adjusted for PERMATA TASKAs, by age group



Note: Calculations made based on available data as reported to NCDC. For this datapoint, an estimated 9.5% of childcare centres in KL reported data to NCDC, representing 29 TASKAs in the city, of which 16 are PERMATA TASKAs. Data retrieved on 1 March 2019.
Source: NCDC (2019) and authors' calculations

To put this into perspective, we compared the average childcare fees for children aged 4 and under (RM871) relative to average household income for Kuala Lumpur (RM11,692). If we consider a household size of four based on the national average household size—assumed to be two parents and two children—then we can estimate the affordability of using formal childcare services for a family in Kuala Lumpur. Using these figures, we find that an average household in Kuala Lumpur spends 14.9% of their income on childcare fees alone, which is well beyond the affordability threshold of 10% on total childcare costs discussed earlier²⁰⁰.

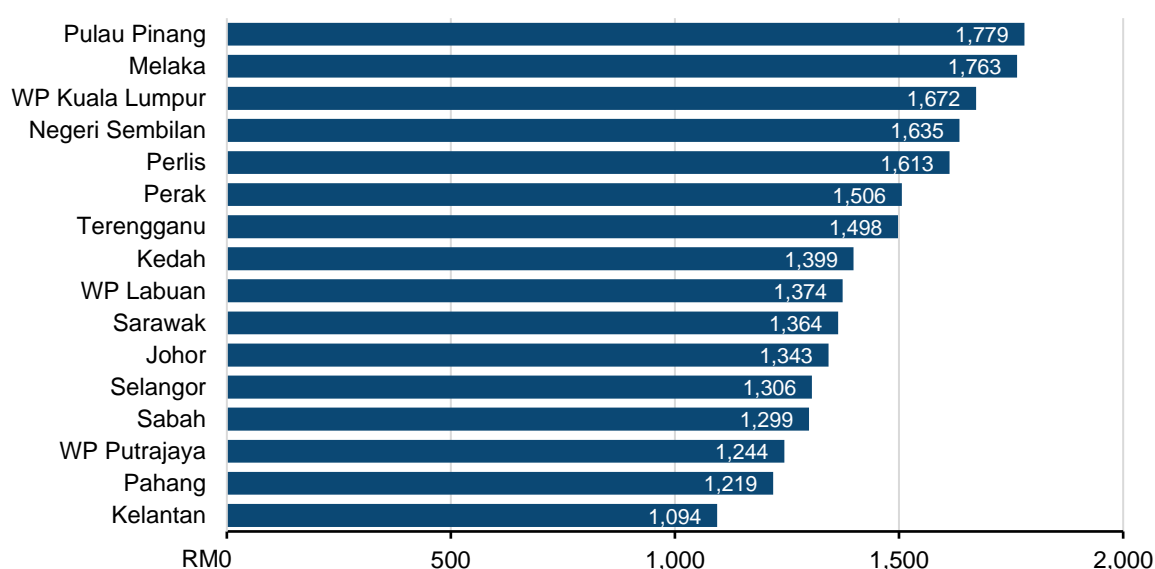
¹⁹⁹ NCDC (n.d.)

²⁰⁰ The average TASKA fee for KL is calculated using data from NCDC. We excluded PERMATA TASKA fees as these were highly subsidised and thus does not reflect the true cost of childcare in KL. An expenditure guide released by EPF (2019a) suggested that married couples with two children in Klang Valley should spare 17.4% of their monthly expenditure for childcare expenses, reiterating our argument that this goes beyond the ideal 10% threshold.

While the current childcare costs may already be unaffordable for many families, they are likely to increase further. In late 2018, the Association of Registered Childcare Providers Malaysia (ARCPM) announced that there will likely be a hike in TASKA fees of between 10% and 30% in 2019. According to the President of the ARCPM, the hike is unavoidable to keep up with the rise in minimum wage, set at RM1,100 from 1 January 2019, and to cover costs such as childcare providers' qualifications, rental and utilities²⁰¹. In recent years, ARCPM has stated to the media that the minimum wage regulations are unaffordable for childcare centres as they are already struggling to be profitable, or break even²⁰².

Indeed, remuneration costs for childcare teachers are often claimed to be a key reason for the high cost of childcare²⁰³. Yet, based on NCDRC data, the average teacher's salary as at 1 March 2019 ranged from RM1,094 to RM1,779 (Figure 3.9). Since the range of average salaries around the country is around or above the current minimum wage, the impact of minimum wage on the rising cost of childcare may be overstated.

Figure 3.9: Average childcare teacher salary by state



Note: Data retrieved on 1 March 2019.

Source: NCDRC (2019)

As it is, the salaries of childcare teachers are not especially high. Even considering the upper bound of the range of an average TASKA teacher's salary (RM1,779), this is still below the country's average monthly salary of RM2,880 in 2017 (median RM2,160)²⁰⁴. To illustrate this further, at RM1,763, the average TASKA teacher's monthly salary for Kuala Lumpur is lower than the EPF-estimated monthly budget for an unmarried public transportation user in the Klang Valley (RM1,870)²⁰⁵. Thus, there are many challenges underlying the affordability of formal childcare centres: parents are stretched thin, teachers are paid poorly and childcare centres are struggling to make a profit.

²⁰¹ Fatimah Zainal (2018)

²⁰² Chin (2016)

²⁰³ Workman and Jessen-Howard (2018)

²⁰⁴ DOS (2019)

²⁰⁵ EPF (2019a)

Quality

Although the cost of sending children to formal childcare centres may be high, in exchange, parents are theoretically assured that their children are receiving care of at least minimally acceptable quality. The Child Care Centre Act outlines some minimum standards and regulations that registered private providers have to meet when providing care services. Broadly, these minimum standards cover:

- Caring, monitoring and educating children at TASKAs;
- Ensuring safety at TASKAs;
- Providing adequate and appropriate provision of food, nutrition, rest and recreation for the children; and
- Ensuring that the health and well-being of children in TASKAs are satisfactory.

The Act stipulates that all childcare centres must be “adequately staffed, both as regards the number and qualifications or experience of the persons employed²⁰⁶”. In this sub-section we assess the extent to which childcare centres comply with these requirements as an indicator of the quality of formal childcare in the country.

As a measure of adequacy of staff in childcare centres, the government has set out the minimum care provider-to-child ratio as outlined in the Child Care Centre (Institution Based) Regulations 2012. For children below the age of 1, the provider-to-child ratio is 1:3, for children between 1 and 3, the ratio is 1:5 and for those between 3 and 4, the ratio is 1:10²⁰⁷. Having a higher care provider-to-child ratio is associated with a higher quality of care. Quality improves with increasing numbers of teachers as that not only enhances teachers’ ability to monitor the children, but also results in better relationships and working conditions between staff²⁰⁸.

²⁰⁶ GOM (1984)

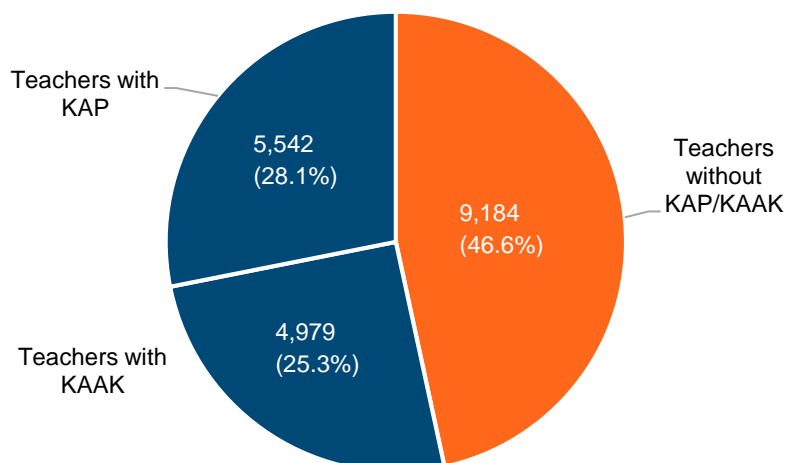
²⁰⁷ GOM (2012a)

²⁰⁸ Zaida Mustafa et al. (2017)

With regard to qualifications, under the Child Care Centre Act, all managers, supervisors and caregivers employed in a childcare centre are required to complete an approved childcare training course. The Kursus Asas Asuhan Kanak-Kanak (KAAK) introduced in 1988, was replaced by the Kursus Asuhan dan Didikan Kanak-Kanak PERMATA (KAP) effective 1 January 2013²⁰⁹. During the course, candidates receive training in caring for children, monitoring childhood development and managing childcare centres, amongst other topics. Yet, as Figure 3.10 shows, almost half of childcare teachers do not have either of these qualifications.

One reason that might dissuade childcare teachers from obtaining the KAP qualification is the cost and time required to complete the course. The fee for the KAP programme is set at RM800 and takes 29 days of full-time training. Alternatively, the programme can be taken during weekends for a duration of four months. KAP candidates can purchase the programme module book for an additional RM100²¹⁰. This, coupled with low childcare teacher's wages, do not make paid childcare work an attractive form of employment, which may make it more challenging to attract talented, high quality teachers.

Figure 3.10: Childcare teachers with and without KAP/KAAK qualifications



Source: NCDC (n.d.)

Currently, there is likely to be a vicious cycle in the childcare market: without appropriate status awarded to childcare providers (for example, through good salary and social recognition), fewer people would be willing to invest in acquiring the necessary qualifications. This causes a limited supply of qualified childcare providers, which, in turn, provides a challenge for the childcare market to provide quality childcare at a profitable level²¹¹.

Based on the information outlined above, our assessment is that in terms of quality, there are legal provisions to ensure that a certain set of minimum acceptable standards are met by formal institutional childcare centres. However, as demonstrated in the case of teachers' qualifications, the key challenge remains the effective implementation of these provisions.

²⁰⁹ JKM (2018)

²¹⁰ Ibid.

²¹¹ Chiam (2008)

Accessibility

Another factor that might explain the low take-up rate of formal childcare centres is geographical accessibility. In the Guidelines for the Establishment of TADIKa and TASKA by the Federal Department of Town and Country Planning, it is recommended that there be one TASKA per 200 households²¹². However, there is limited information available to assess the extent to which this recommendation has been implemented.

As such, we consider the accessibility to childcare centres for the population included in our survey discussed in Section 2. For the 125 respondents included in our survey, the average distance to the nearest TASKA from the respondents' homes is 0.4km, and maximum 1.0km²¹³. This suggests that direct accessibility may not necessarily be a barrier to using formal childcare. Yet, of the 10 respondents who reported using childcare services, none of them enrol their children at the nearest TASKA. Instead, the average distance between their chosen childcare provider and their home is 2.7km, and the average distance between their chosen childcare provider and their workplace is 10.2km.

The reason for these families choosing to send their children to childcare facilities that are farther from their homes and from their workplaces is largely not known. One respondent in our survey provides some insight, noting that she sends her children to a TASKA an hour away from her own home as it is close to her in-laws', so that they can fetch her children whenever she is required to stay at work late.

While this is by no means intended to be representative of the state of accessibility of childcare centres in the country, it highlights the need to have more information on the subject, as well as on sufficiency, affordability and quality as prerequisites to expanding the formal childcare sector in Malaysia. This would allow for improved planning such that new childcare centres will appropriately address the care needs of families.

3.2.3 Informal childcare: options and challenges

Given the small formal care sector (1.2%), this suggests, at least residually, that the vast majority of households (98.8%) resort to informal forms of childcare, including relatives, babysitters and unregistered childcare centres. As has been noted in a previous paper published by KRI, data on childcare arrangements are scarce and not regularly updated²¹⁴. Nonetheless, findings from the MPFS-5 support our estimation that most families indeed do rely on informal forms of childcare (Table 3.4).

²¹² KPKT (2012)

²¹³ This was determined based on a straight-line distance.

²¹⁴ Choong et al. (2018)

Table 3.4: Childcare arrangements for children aged below 6 years old among working women, 2014

Childcare arrangements	Percentage
Grandparents	26.8%
Babysitter	24.0
Mother	16.9
Childcare centre	14.4
Relatives living elsewhere	5.6
Relatives living in the same household	3.9
Father	3.7
Older siblings	2.3
Domestic helper	1.5
Other arrangements	0.9

Note: Other arrangements include nurseries, kindergartens and no carer.

Source: LPPKN (2016)

It may be useful to disentangle informal childcare providers into two types: the first is childcare by relatives, and the second is childcare by childminders such as babysitters and unregistered childcare centres. These childcare providers can be broadly considered informal in that they are not registered; however, the two categories can be distinguished by the generalisation that the first may not be paid (at least, not in cash), while the latter tend to receive payment in exchange for the childcare provided²¹⁵.

Grandparents make up a significant proportion of informal care by relatives. While it is generally assumed that members of the elderly population are recipients of care, in reality, they can be and often are providers of care. As Table 3.4 shows, in 2014, 26.8% of working women reported relying on grandparents as their childcare providers, almost twice the percentage of those who use childcare centres²¹⁶.

One explanation for the high use of grandparental care is sufficiency, or availability. In 2010, the Malaysian population aged 65 and above was 1.4 million. By comparison, in 2018, there were 2.1 million individuals aged 65 and above²¹⁷. With increasing life expectancy and improving health, the elderly population is set to grow, and it is likely that the supply of grandparental care will also increase²¹⁸. It is worth noting that since women have higher life expectancies than men (77.6 years and 72.7 years in 2017, respectively), there are likely to be more grandmothers than grandfathers available to perform care duties²¹⁹.

²¹⁵ As noted in Table 1.1, domestic workers are in the paid informal market. In this section, we do not examine domestic workers as providers of childcare. One reason for this is that not all domestic workers are childcare providers, and those who do carry out childcare activities may not be *just* childcare providers. Another reason is that domestic workers constitute only a small proportion of care providers in the country (a maximum of 2% of total households in the country hire foreign domestic workers by our estimates).

²¹⁶ LPPKN (2016)

²¹⁷ DOS (n.d.-b)

²¹⁸ Rahimah Abdul Aziz (2007)

²¹⁹ DOS (2018a)

Furthermore, not only is the childcare provided at a low (and often non-existent) cost, another key advantage of grandparental care is that it may be easily accessible, particularly in terms of convenience and flexibility. Childcare centres operate within limited hours which do not necessarily align with parents' paid working hours, particularly for those working non-traditional hours and facing inflexible work policies. Grandparents and other relatives, on the other hand, may be more willing to provide care at all hours.

However, relying on grandparents as primary caregivers for children may come at the expense of the grandparents themselves. The grandparents may also be in need of care, but may feel obliged to put their grandchildren first, regardless of the cost to their own well-being²²⁰. As such, it is important to ensure that providing care for one generation does not unintentionally result in harm to another.

Affordability is also a key advantage of informal childcare by childminders such as babysitters and unregistered childcare centres. As discussed in the previous section, the cost of formal childcare may be too high for many families, particularly those with many children. As a result, families may turn to unregistered childcare providers which provide a cheaper option than formal childcare centres. However, unregistered childcare providers are able to charge lower fees as they do not necessarily adhere to the minimum standards of care outlined in the Child Care Centre Act 1984²²¹. As such, these informal childcare settings are more likely to face risks such as low provider-to-child ratio, untrained, underpaid and overworked childcare providers, and health and safety hazards.

The lack of regulations and monitoring has led to some concerns regarding the quality of childcare being delivered by informal providers, particularly following widespread media coverage of specific cases of child abuse by unregistered providers²²². While official statistics on the prevalence of child abuse in informal care facilities versus formal care facilities are not publicly available, according to statistics by the Ministry of Home Affairs, there were 456 total cases of child abuse in 2018, with 72.1% of them involving children aged 7 and under²²³. The ARCPM has attributed cases of child abuse to unlicensed childcare centres and inexperienced childminders²²⁴.

There are considerable gaps in the literature on understanding how parents choose formal or informal childcare arrangements, both at the global level and even more so in Malaysia. While affordability is often speculated to be the deciding factor, drawing from studies in the United Kingdom (UK), it has been found that the use of informal childcare is common among families of all socio-demographic groups. Although an income gradient can be observed, the effect is less visible than might be expected²²⁵. This suggests that families may not always choose informal childcare due to its low cost. Rather, other factors such as convenience and quality may be equally, if not more, important for parents considering childcare options.

²²⁰ Rahimah Abdul Aziz (2007)

²²¹ Baird et al. (2017)

²²² Astro Awani (2018)

²²³ MOHA (2019). An important caveat here is that these numbers do not distinguish between abuse by family members or by unregistered childcare providers.

²²⁴ Aliza Shah (2018)

²²⁵ Bryson et al. (2012)

However, for Malaysia, anecdotal evidence notwithstanding, it is not explicitly known why more parents choose informal childcare arrangements over formal childcare centres, despite the former's association with lower quality. What little data is available about the use of different types of childcare do not convey whether parents rely more on informal childcare because they prefer them, or because formal childcare is not available or affordable. Greater understanding of the reasons behind these decisions would be useful so that policies can be tailored to meet the childcare needs and preferences of Malaysian families.

3.3 Policy Aspirations and Options

3.3.1 Care as a productive economic sector

True to the universal breadwinner model, Malaysia is striving to provide more options for state and market provision of care services as a means of allowing more women to participate in the labour force and subsequently contribute to the country's economy. However, instead of viewing care simply as a step along the way, care can be re-framed as a source of economic growth in its own right, not only in promoting women's employment but also creating employment opportunities in the sector itself.

Malaysia's policies and social expenditure indicate a preference for achieving the universal breadwinner ideal through market provision for care. While there is some debate regarding whether complete outsourcing of care to the market can have undesirable effects on inequality²²⁶, there is still some room to expand the formal childcare sector in the country as it is currently underutilised.

As noted earlier, the childcare sector faces a structural dilemma: sending children to regulated centres is far too costly for parents, but charging low fees is too unprofitable for providers. Thus, this report proposes that, in addition to providing supply-side incentives as described in Section 3.1, the government bridge this structural problem by incentivising the *demand* side, i.e. by supplementing the necessary amount to eligible parents through a conditional care allowance programme. Such a programme encourages parents to send their children to quality-assured childcare centres and induces non-working mothers to participate in the labour force. The success of such a programme would be dependent on there being sufficient registered childcare centres that meet the requirements of families (such as proximity to the workplace).

²²⁶ See, for example, Ciccio and Bleijenbergh (2014)

To assess the potential contribution of this programme to the nation's economic growth, women's LFPR and employment in childcare centres, we carried out our own simulation to project the one-year impact and five-year impact of providing a monthly childcare allowance of RM100 to households that send their children to registered childcare centres. Based on conservative calculations, the potential economic impacts are positive and significant: the programme could boost women's LFPR from 54.4% to 56.0%, stimulate real GDP growth by 0.4% and increase employment in childcare centres by 3,270 jobs within one year of implementation. Within five years, women's LFPR increases to 62.5%, real GDP growth jumps from 4.8% to 5.2%, and there is a further increase of 16,300 jobs for teachers and childminders due to higher demand for childcare services. For greater detail regarding our estimates, please refer to the technical notes in Appendix F.

Our forecasts are conservative as we did not include multiplier effects accruing from these activities. These indirect multiplier effects could come from increasing employment in the childcare sector, which can subsequently increase demand for inputs from other sectors to cater for the additional childcare services (such as food and transport)²²⁷. As noted by Esping-Anderson, "if the state provides cheap daycare, both families and the market will change: there will be fewer housewives, more labour force participation, and a new demand multiplier caused by double-earner households' greater propensity to purchase services."²²⁸

There may be some hesitance to increase public spending on children, given other economic challenges that may also need to be prioritised. However, as indicated in our simulation, greater spending on care, particularly childcare, is an investment that could generate significant economic impact. Similar findings have been observed in other countries, as described in Section 1.1, all of which serve to illustrate the economic potential of the care sector.

3.3.2 Gender equality in both market and domestic spheres

Another concern with the universal breadwinner model is that it focuses only on gender equality in the market sphere. Yet, without addressing the challenges of inequality in the domestic sphere, women will bear the double burden of having to be income earners as well as homemakers²²⁹. Indeed, our survey findings discussed in Section 2 support this phenomenon, whereby women work a "second shift" carrying out unpaid care work at home after working almost equal hours to men in paid employment.

While gender equality in all areas cannot be achieved without changes in social norms and behaviours, public policy can have significant influence on leading social change. In the case of societal norms regarding gender roles, as put forward by Razavi, social policies can either expand the capabilities and choices of both women and men, or confine women to traditional roles associated with femininity and motherhood²³⁰.

²²⁷ Antonopoulos et al. (2011)

²²⁸ Esping-Anderson (1999)

²²⁹ Fraser (1994)

²³⁰ Razavi (2007)

Referring to care work specifically, Lewis wrote that, “Given that it is women who tend to work part-time, policies that recognize care work are crucial. Where these are absent, policies based on the new set of adult-worker assumptions are as likely to fail to meet women’s real needs as did the old male breadwinner model.”²³¹ Thus, in our efforts to empower women and realise the universal breadwinner ideal in Malaysia, it is important that policies are crafted such that they do not fail to meet the needs of the country’s women.

The current policy direction discussed in Section 3.1.2 shows a visible move to ensuring that women are able to participate in the workforce as much as men. However, there are limited measures introduced to encourage men to take up care work as much as women. While well-intended, directing work-care policies at only women reinforces the assumption that care issues are women’s issues, not to be shared with the family. Shifting the focus of state and employer policies to parents, regardless of gender, would at the very least encourage a more equal sharing of household, childcare and eldercare responsibilities. Historically, women are entering the labour market at a faster rate than men are participating in the domestic realm. Without equal or better progress in the latter, it is unlikely that our society can continue improving women’s labour force participation in the future.

In countries with strong welfare policies, particularly European countries, statutory parental leave policies are expanding rapidly, with a growing trend of extending paternity leave to support early childhood care. Our case studies on family benefits in the Netherlands, Finland and Singapore exemplify the importance of designing parental leave in tandem with child benefits and care allowances to support life-cycle transitions of families with children. Refer to Appendix G for more details.

In the case of Malaysia, paid parental leave is gradually being expanded, although different statutory benefits exist for those working in the public sector versus those in the private sector. The Employment Act 1955 is the main legislative instrument regulating work conditions, including setting minimum standards for wages, paid working hours and paid leave. With regard to maternity benefits, the Act ensures maternity protection and entitlements for all female employees. The government has been considering extending paid maternity leave from the current 60 consecutive days minimum to 90 days for the private sector, as was reiterated in the 11th MP’s MTR²³².

²³¹ Lewis (2002)

²³² MEA (2018)

Meanwhile, fathers are accorded fewer parental benefits than mothers. Those employed in the public sector are entitled to seven days of paid paternity leave, following the 2012 amendment to the Act which increased the duration from three days²³³. Those in the private sector are currently not statutorily entitled to any amount of minimum paid paternity leave. The Ministry of Human Resources (MOHR), the central agency for all labour market matters, recently announced its proposal to amend the Employment Act to introduce three days of paid paternity leave for the private sector. While this is a welcome move, there has been some opposition, notably by the Malaysian Employers Federation (MEF), who have noted concerns regarding the cost of introducing paternity leave, which, following existing practices, would be borne by the employers²³⁴.

To mitigate the concerns of employers in introducing paternity leave, one potential option that could be considered is a transition from employer liability to social insurance as the source of funds for paternity leave. For example, the Malaysian Social Security Organisation (SOCSO) runs the employment insurance system (EIS), which currently disburses cash allowances to out-of-work contributors while they are seeking re-employment. Paternity leave could be added to the existing benefits package of the EIS, whereby new fathers are given a cash allowance (perhaps amounting to a certain pre-determined percentage of their last drawn salary) during the paternity leave period. This would shift the financial liability of paternity leave from employers to the social insurance scheme, while new fathers would continue to receive at least part of their pay²³⁵, which could make it more acceptable to employers and employees alike.

As noted in Section 3.1.1 and elaborated on in this section, while the universal breadwinner model that Malaysia is emulating is more gender-inclusive than the male breadwinner model, the universal breadwinner model, together with the caregiver parity model, is still susceptible to unintended consequences which may worsen some aspects of gender inequality. To this end, Fraser proposed an alternative ideal to the universal breadwinner and caregiver parity models, known as the universal caregiver model. This model, as characterised by Fraser, is one where the gendered division of labour is completely abolished, whereby women and men are no longer limited to their prescribed roles of being restricted to the unpaid domestic sphere and the paid market sphere, respectively²³⁶. What remains is a society which values paid and unpaid work equally, with unpaid care work distributed across men, women, families, the state and the market.

While Fraser's universal caregiver model may be out of reach considering Malaysia's current realities, there are options for policies that can be introduced to gradually move the country towards a more gender-inclusive society²³⁷. These measures include a more egalitarian approach to parental leave, complemented with an adequate childcare allowance. These may be feasible options that would promote greater gender equality and at the same time further the country's objectives for economic growth through labour market activation.

²³³ GOM (2012b)

²³⁴ Boo (2019)

²³⁵ We note that for men to take up paternity/parental leave, this portion of their pay needs to be attractive enough, otherwise the incentive to take leave would be negligible.

²³⁶ Fraser (1994)

²³⁷ These efforts would also need to go in tandem with gender-sensitisation education, starting in schools.

3.3.3 Childminding standards: Ensuring quality without undue burden

The high prevalence of informal childcare use clearly reflects the extent to which Malaysian families have come to depend on this form of childcare arrangement, whether it be by relatives or by childminders such as non-family babysitters or unregistered childcare centres. However, the concerns regarding the quality of childcare being provided in the informal setting must still be addressed. This is particularly necessary given the importance of high-quality early education and care to enhance children's well-being and readiness to learn, especially for children from lower income households, who may be more likely to receive care by informal and untrained childcare providers²³⁸. While there is certainly room for improvement for the formal childcare providers in Malaysia, there is a strong case to be made for introducing a degree of regulation to the existing unregistered childcare providers in the country, to ensure that children being cared for in these facilities receive a minimum standard of care and protection.

At the same time, any regulations introduced in the informal care sector must not be too burdensome that care providers cannot afford to comply with them. As noted in Section 3.2.2, formal childcare centres in the country are required to comply with various laws and regulations. These include adhering to minimum wage regulations, acquiring licensing to operate, complying with fire safety regulations, and ensuring that teachers complete the mandated basic childcare training course. While these regulations are undoubtedly beneficial for the children placed in the care of these facilities, adhering to the regulations can come at a significant financial cost to formal childcare providers, in addition to being time-consuming and potentially troublesome.

If the cost of compliance becomes too high, informal childcare providers would no longer be able to provide their services, leaving families without the option they had come to rely on. As such, policies regulating care in informal settings must assure the quality of care provided without unnecessarily burdening the informal childcare providers such that they can no longer provide their care services.

In the past, the government has introduced measures to facilitate the formalisation of childcare services in Malaysia. For example, in the 2007 Amendment of the Child Care Centre Act, the validity period for a childcare centre's license was extended from 12 months to 60 months to alleviate the burden of re-registering. However, the estimated number of unregistered childcare centres remains high, despite the reduced requirement.

²³⁸ Nelson (2003)

The challenge of carrying out this balancing act is not unique to Malaysia; another country which has also faced the conundrum of ensuring the availability of quality, accessible and affordable childcare without imposing undue burden is the UK. In addition to various forms of institution-based childcare arrangements to cater for different parental needs²³⁹, the UK also legally requires all individuals who provide childminding services to register with a regulatory body known as the Office for Standards in Education, Children's Services and Skills (Ofsted). These individuals are referred to as childminders, who deliver childcare services in their own homes (instead of the children's, for example), in exchange for payment²⁴⁰. Ofsted has the authority to approve childminder registration applications and to inspect and regulate services that care for children and young people as well as services that provide education and skills for learners of all ages.

The estimated cost for registering in England²⁴¹ is GBP500 (approximately RM2,600), which includes fees for a pre-registration training course, a credit check, a first aid course and insurance²⁴². While this may be a hefty amount, until recently, newly registered childminders were entitled to a grant of between GBP300 and GBP1,000 from the country's Department for Education²⁴³.

Childminders in the UK are then required to provide childcare which meets the National Childminding Standards (Table 3.5), which safeguard the children under the care of the registered childminders. Registered childminders are regularly inspected by Ofsted, and those found in violation of these standards, in addition to those found to be providing childminding services without registering, can be legally prosecuted by Ofsted²⁴⁴.

²³⁹ For example: full day provides day care for children under 8 for a continuous period of four hours or more; sessional day care facilities offer part time care and provide opportunities for children to engage in activities with their peer group such as playgroups; creches provide occasional care while parents are engaged in particular activities such as shopping or attending work meetings; out of school care facilities provide day care either before school, after school or during school holidays.

²⁴⁰ It may be worth noting that relatives providing care services are not required to register.

²⁴¹ Individuals wishing to register as childminders in Scotland, Wales or Northern Ireland have to undergo slightly different processes with varying costs. Source: Childminding UK (n.d.).

²⁴² Ibid.

²⁴³ The grant is disbursed through the Childcare Business Grant scheme, which was stopped on 31 May 2019. Source: DOE (n.d.)

²⁴⁴ Childminding UK (n.d.)

Table 3.5: The UK's 14 Standards for Childminding

No.	Subject	Brief description
1	Suitable Person	Adults providing day care, looking after children or having unsupervised access to them are suitable to do so.
2	Organisation	The registered person meets required adult:child ratios, ensures that training and qualifications requirements are met and organises space and resources to meet the children's needs effectively.
3	Care, Learning and Play	The registered person meets children's individual needs and promotes their welfare. They plan and provide activities and play opportunities to develop children's emotional, physical, social and intellectual capabilities.
4	Physical Environment	The premises are safe, secure and suitable for their purpose. They provide adequate space in an appropriate location, are welcoming to children and offer access to the necessary facilities for a range of activities which promote their development.
5	Equipment	Furniture, equipment and toys are provided which are appropriate for their purpose and help to create an accessible and stimulating environment. They are of suitable design and condition, well maintained and conform safety standards.
6	Safety	The registered person takes positive steps to promote safety within the setting and on outings and ensures proper precautions are taken to prevent accidents.
7	Health	The registered person promotes the good health of children and takes positive steps to prevent the spread of infection and appropriate measures when they are ill.
8	Food and Drink	Children are provided with regular drinks and food in adequate quantities for their needs. Food and drink are properly prepared, nutritious and complies with dietary and religious requirements.
9	Equal Opportunities	The registered person and staff actively promote equality of opportunity and anti-discriminatory practices for all children.
10	Special Needs	The registered person is aware that some children may have special needs and is proactive in ensuring that appropriate action can be taken when such a child is identified or admitted to the provision. Steps are taken to promote the welfare and development of the child within the setting in partnership with the parents and other relevant parties.
11	Behaviour	Adults caring for children in the provision are able to manage a wide range of children's behavior in a way which promotes their welfare and development.
12	Working in Partnership with Parents and Carer	The registered person and staff work in partnership with parents to meet the needs of the children, both individually and as a group. Information is shared.
13	Child Protection	The registered person complies with local child protection procedures approved by the Area Child Protection Committee and ensures that all adults working and looking after children in the provision are able to put the procedures into practice.
14	Documentation	Records, policies and procedures which are required for the efficient and safe management of the provision, and to promote the welfare, care and learning of children are maintained. Records about individual children are shared with the children's parents.

Source: DfES UK (2003)

The standards that childminders in the UK are expected to meet are extensive. While implementing similar standards in Malaysia all at once may not be feasible in the near future, the gradual introduction of standards to the informal care sector is worth exploring. This does not necessarily have to result in the full formalisation of the informal care sector; instead of being a dichotomous path, there can be a spectrum of formality and informality, which can be adjusted to suit the country's context. Informal care providers would not have to bear the cost of total regulatory compliance that fully formalised care providers are subject to, thus reducing their burden. Additionally, there is a case to be made for placing greater emphasis on the benefits of formalisation, which can be in the form of access to financial incentives, legal services and advisory services. Combined, these approaches can encourage formalisation.

As the country's fiscal space may be limited, designing programmes to encourage informal childcare providers to register may need to be fiscally neutral. This may be done by reviewing existing initiatives that may be ineffective and redirecting their funding. An example of such initiative is the i-Suri scheme, which was conceived to recognise and reward unpaid care work and intended to provide financial security for housewives. It is a voluntary contribution scheme, whereby the husband contributes a minimum of RM5 per month to the wife's savings fund via the Employees Provident Fund (EPF), with the government contributing RM40 per month to the wife's account²⁴⁵. The scheme targets to eventually get husbands to set aside 2% of their EPF contributions for their wives. The i-Suri scheme in its current form has received a lukewarm response, and has been subject to some criticism for reinforcing the women's financial dependence on their husbands.

The RM45m allocated to the i-Suri scheme in the 2019 Budget²⁴⁶ may perhaps be better spent by redirecting it to a programme to strengthen the country's informal childcare sector. Such a programme could encourage informal childcare providers to undergo approved training and subsequently register with JKM, in exchange for financial compensation. By doing so, the government can ensure that care provided in informal settings meets a certain minimum acceptable standard, which can be monitored to ensure compliance. The informal care providers would also benefit from having their work recognised and compensated. Altogether, these measures can lead to a universal breadwinner model that is beneficial for the entire population.

²⁴⁵ EPF (2019b)

²⁴⁶ MOF (2018)

APPENDICES & REFERENCES

APPENDICES

Appendix A: Care Dependency Ratios	125
Appendix B: Extending Small-Scale TUS	127
Appendix C: TUS Sampling Design	132
Appendix D: Calculating Household Production	136
Appendix E: Qualitative Research Method	138
Appendix F: Economic Impact of Care Allowance	139
Appendix G: Family Benefits	141
REFERENCES	146

CARE DEPENDENCY RATIOS

The care dependency ratio is the ratio of total care units to total caregiving population. We take caregiving population as those aged 20 to 64. While we acknowledge that other age groups do have the capacity to provide care, we assume that, on average, they would receive more care than they would give i.e. they are net care recipients.

As for care units, an example of how they are calculated is in Table A.1. Following Moñtano and Rico (2007), the highest weights are assigned to the oldest and youngest groups, and the weights progressively decline towards the middle age groups to reflect the variation in care needs.

Table A.1: Calculations of total care units, 2010

Age groups	Population ('000)	Weights	Care Units ('000)
0 – 4	2,508.6	2.0	5,017.2
5 – 9	2,659.5	1.7	4,521.2
10 – 14	2,654.0	1.5	3,981.0
15 – 19	2,837.4	1.2	3,404.9
20 – 24	2,912.0	1.0	2,912.0
25 – 29	2,789.6	1.0	2,789.6
30 – 34	2,181.7	1.0	2,181.7
35 – 39	1,954.8	1.0	1,954.8
40 – 44	1,791.5	1.0	1,791.5
45 – 49	1,614.3	1.0	1,614.3
50 – 54	1,370.8	1.0	1,370.8
55 – 59	1,066.0	1.0	1,066.0
60 – 64	823.5	1.0	823.5
65 – 69	538.0	1.2	645.6
70 – 74	409.3	1.2	491.2
75 – 79	233.4	1.7	396.8
80+	244.4	2.0	488.8
Total Care Units			35,450.8

Source: DOS (n.d.-b)

Given the above, the two ratios constructed are shown in Table A.2 with comparisons of their assumptions and advantages/disadvantages.

Table A.2: Calculations of total care units, 2010

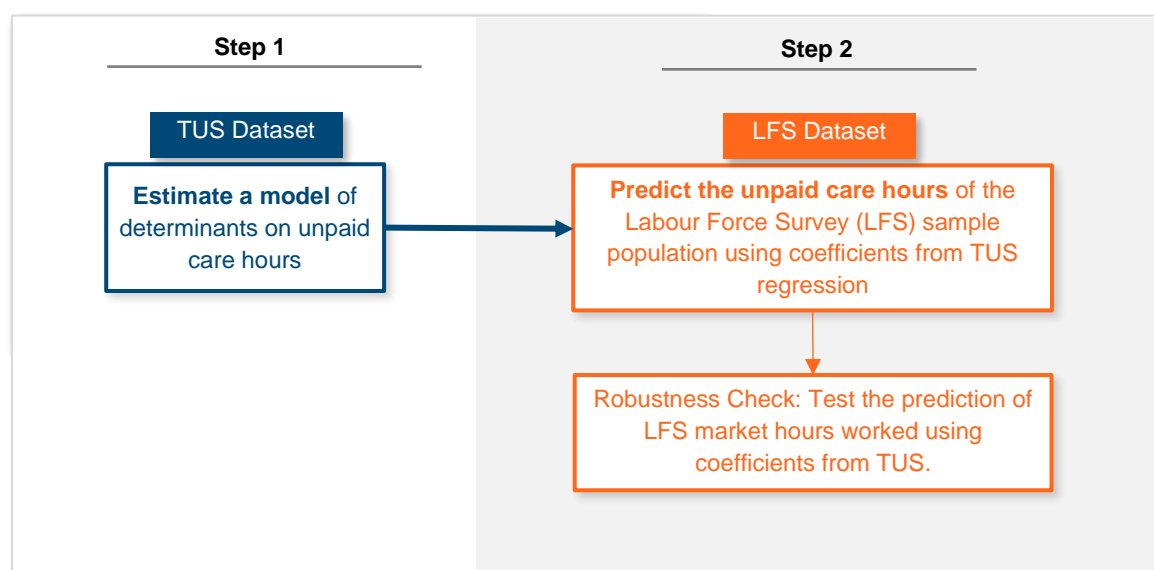
	CDR0	CDR1
Calculation	$\frac{\text{Total Care Units}}{\text{Total Caregiving Population}}$	$\frac{\text{Total Care Units}}{\text{Total Caregiving Population Outside the Labour Force}}$
Assumption	Society's care burden falls on the total caregiving population, capturing those in the formal and informal markets as well as the non-market.	Society's care burden falls on the caregiving population outside the labour force, predominantly those in the informal market and non-market.
Advantage/Disadvantage	<p>Advantage: Includes the care burden of those who are in the labour force who have to provide care after office hours.</p> <p>Disadvantage: Underestimates the burden of office-hour care provision especially if it falls heavily on those in the informal market and non-market.</p>	<p>Advantage: Focuses on the care burden of those who have to provide office-hour care; especially relevant when the formal care sector is small.</p> <p>Disadvantage: Excludes the care burden of those who are in the labour force who have to provide care after office hours.</p>

EXTENDING SMALL-SCALE TUS

The benefits of time use statistics from a small-scale TUS could be expanded further by extending the results to larger, nationally representative datasets. The primary motivation for doing this is because findings from the small-scale TUS face the limitation of being based upon a significantly smaller sample size compared with official national datasets and is not representative to make national-level inferences. On the other hand, although national datasets come with the benefit of being large scale and nationally representative, they do not provide non-market information. Hence, by exploiting the complementarity of both types of datasets, we establish the missing link between market and non-market spheres.

Drawing from Leete and Schor (1994), we propose a two-step procedure to achieve the above objective. We first estimate using regression the degree to which a range of relevant variables affect individuals' time spent on unpaid care work. Then, we apply the regression coefficients to a larger dataset e.g. LFS to predict the unpaid care hours of each individual. With these imputed hours, we are therefore able to perform our analyses of interest, including life-cycle profiles and regression analysis, on a broader national dataset.

Figure B.1: The 2-step procedure and the robustness check



B.1 The Two-Step Procedure

Step 1: Estimating a model of determinants on unpaid care hours

The first step involves estimating a model of the determinants of time spent on unpaid care work using TUS data. By adopting an OLS regression²⁴⁷, we estimate the model using a range of demographic, economic and social factors, all of which can be derived from the profile questionnaire. The regression specification is as follows:

$$\begin{aligned} \text{Unpaid Care Hours}_i &= \alpha + \beta'_1 \text{Household Factors}'_i + \beta'_2 \text{Demographic Factors}'_i \\ &+ \beta'_3 \text{Economic Factors}'_i + \varepsilon_i \end{aligned}$$

where

Unpaid Care Hours_i is defined as above, which includes time spent on unpaid care and domestic work;

Household Factors_i includes a range of variables that affect the level of housework and care demand within a household, such as number of household members, number of children aged below 20 and number of old household members aged above 64;

Demographic Factors_i includes demographic variables relating to the social division of labour, such as gender, marital status, education level, ethnic group and status as head of household;

Economic Factors_i relates to the division of resources between the market and home, which includes variable such as hours spent on market work and personal wages and salaries; and

ε_i is the error term.

It is important to note that the independent variables chosen in this model should also be available in the larger dataset, so that all coefficients obtained in the regression could be applied for prediction purpose in the next step.

²⁴⁷ OLS regression in this case is likely to yield reverse causality, simultaneity and omitted variable bias issues. To address these problems, Leete and Schor (1994) suggested the use of a 2SLS procedure, by taking wage, for example, as exogenous.

Step 2: Predicting the unpaid care hours for a larger, national dataset

From Step 1, we obtain a function of unpaid care hours like below:

$$\begin{aligned} \text{Unpaid Care Hours}_i &= \hat{\alpha} + \hat{\beta}'_1 \text{Household Factors}'_i + \hat{\beta}'_2 \text{Demographic Factors}'_i \\ &+ \hat{\beta}'_3 \text{Economic Factors}'_i \end{aligned}$$

where $\hat{\alpha}$, $\hat{\beta}'_1$, $\hat{\beta}'_2$ and $\hat{\beta}'_3$ represent the constant and coefficient estimates from the previous regression. In this step, this function is applied to a larger, national dataset to predict the unpaid care hours spent by each individual in the dataset.

There are three datasets—each with its own advantages and limitations—that can be used for this purpose, i.e. HIES, Census and LFS. The HIES and Census report a wide range of detailed household information such as household income and household consumption expenditure as well as some employment information of each household member which are useful for life-cycle analysis in the context of care. The Census has the added advantage of a full national population and household coverage compared with other surveys. However, the Census is only conducted once every decade with the latest Census completed in 2010. The LFS and HIES, on the other hand, are more regularly enumerated. The LFS, although lacking in the record of household information, contains a richer set of individuals' employment information compared with the HIES. More importantly, information on market hours worked is exclusively available in the LFS.

Essentially, this step involves imputing values to the “hours spent on unpaid care work” variable in a larger dataset. We use the LFS to illustrate this (Table B.1). With the newly imputed unpaid care hours in the LFS, we are able to conduct similar analyses as the ones proposed for small-scale TUS but using a larger, nationally representative survey.

Table B.1: Imputing “unpaid care hours” for the Labour Force Survey dataset

Individual	Gender	Education level	Ethnic group	No. of household members	No. of children	Market hours worked	Unpaid care hours
Ind. #1
Ind. #2
Ind. #3
Ind. #4
Ind. #5
Ind. #6
Ind. #7
Ind. #8

B.2 Robustness Measure: Testing the prediction of market hours worked

To assess if the coefficient estimates based on the small-scale TUS dataset provides a good prediction for unpaid care hours in the LFS, we repeat the same procedure previously described with “market hours worked” as the predicted variable. Since the LFS reports the actual market hours worked for all individuals, we compare the imputed hours with the actual hours to gauge the accuracy of our prediction function (Table B.2).

In this exercise, the model of estimation is similar to the model in Step 1, only with the dependent variable changed:

$$\text{Market Hours Worked}_i = \alpha + \beta'_1 \text{Household Factors}'_i + \beta'_2 \text{Demographic Factors}'_i + \beta'_3 \text{Economic Factors}'_i + \varepsilon_i$$

Table B.2: Imputing “market hours worked” and comparing it with the “actual market hours worked”

Individual	Gender	Education level	Ethnic group	No. of household members	No. of children	Actual market hours worked	Imputed market hours worked
Ind. #1
Ind. #2
Ind. #3
Ind. #4
Ind. #5
Ind. #6
Ind. #7
Ind. #8

By imputing unpaid care hours to the LFS at the individual level, this enables us to examine the care hypothesis at a more granular level using a national-level dataset. The methodology proposed here serves as a cost-effective measure in the interim between not having a TUS at present and having a regular, nationally representative TUS in the foreseeable future. In the interim, the analysis and findings also provide a stronger impetus and basis for policy formulation at the national level.

B.3 Discussion

A few issues are worth highlighting in adopting this methodology. The first is ensuring the comparability of variables between the TUS and LFS in terms of their frequency i.e. daily, weekly, monthly or annually. The three variables of particular concern here are salaries and wages, market hours worked and unpaid care hours. In the LFS, while salaries and wages are reported in monthly term, respondents are asked several questions about their market hours worked, including their “hours worked in the reference week”, “daily hours worked last month” and “number of days worked last month”. Unpaid care hours from the TUS, on the other hand, are clearly reported in daily terms.

For simplicity, the frequency of all three variables can be standardised to monthly term. Monthly hours worked can be computed by multiplying “daily hours worked last month” by “number of days worked last month”. As for the estimation of monthly unpaid care hours, it would be preferable to consider the difference between the number of hours devoted on weekdays and weekends. However, because our small-scale survey does not provide any proxy or indication of weekend unpaid care hours, at this stage the best measure is to simply multiply daily hours by 30 days to obtain the monthly estimate. This could be a potential area for improvement in a larger-scale survey in the future.

Another area of concern is the representativeness of our small-scale TUS. As explained in the earlier section, due to the sampling design of the survey, the sample is not representative of the Malaysian population. Therefore, the analyses cannot be generalised to the national population. As such, the applicability of the TUS coefficient estimates on the national LFS dataset could be a point of contention, which warrants further statistical investigation to assess the accuracy and stability of its prediction function.

In light of the above, variables collected in the TUS can be refined to better align with those in the LFS to allow for more accurate and meaningful comparison of both datasets; and random sampling method can be adopted to produce a representative sample, perhaps at a city level—for example for Kuala Lumpur—at this stage. The regression results based on this dataset can then be compared with the Kuala Lumpur statistics in the LFS to leverage on the latter’s larger sample size. With this, we can reap the benefit of having more levels of data disaggregation compared with a small-scale sample.

APPENDIX C

TUS SAMPLING DESIGN

The sample is stratified by two dimensions. First, since the primary objective is to investigate gender differences, we stratify the sample by gender to achieve a 1:1 male:female ratio. This is to ensure a balanced population for meaningful gender comparison. Second, recognising the fact that individuals of different income class would behave differently, the sample is further stratified by household income to arrive at a 1:2:2 upper:middle:lower income range distribution. Given the small sample size, we limit the stratification to only these two dimensions, and allow the distribution by other dimensions such as ethnic group and age to be random. Overall, the estimated sample should follow the distribution shown in Table C.1.

Table C.1: Composition of the TUS sample

Household income class/Gender ²⁴⁸	Male	Female
Top 20% households (T20)	10%	10
Middle 40% households (M40)	20	20
Bottom 40% households (B40)	20	20
TOTAL	50	50

The completion of the survey process lasted up to six weeks. Table C.2 presents the details on date of appointment, interview, the area considered, number of people approached as well as number of successful interviews. As can be seen, the total number of people approached for appointment was 1,010. Of these, 261 individuals set appointments for interview. When it came to the actual interview days, a total of 125 individuals showed up, which was higher than the target of 100 respondents.

Table C.2: Weekly interview schedule for the pilot time use survey

Week	Date of appointment	Date of interview	Estimated approached for appointment	Total successful appointment	Successful interviewed
1	1 – 3 Sep	5 – 6 Sep	210	59	28
2	8 – 9 Sep	12 – 13 Sep	300	51	18
3	15 – 16 Sep	19 – 21 Sep	120	47	22
4	22 – 23 Sep	26 – 28 Sep	140	43	12
5	29 – 30 Sep	3 – 5 Oct	150	40	30
6	6 – 8 Oct	10 – 12 Oct	90	21	15
TOTAL			1,010	261	125 (Target: 100)

²⁴⁸ Households are classified into three income classes, i.e. T20, M40 and B40 based on their household incomes. The income thresholds for these three groups follow the state-specific demarcation. In this case, our survey was conducted within the Kuala Lumpur state in Malaysia, hence the thresholds are as follows: T20: >RM15,161 per month; M40: >RM7,641 per month; B40: <RM7,641 per month.

C.1 Survey Framework

This survey was rolled out as an independent survey, which means that the survey scope and coverage, questionnaires, sample design and selection, field operational procedures and data processing systems are configured for the purpose of this study only (UNDESA 2005). Respondents were required to recall their time use over the course of 24 hours on a regular weekday. Data collection was conducted by face-to-face recall interview to mitigate any potential illiteracy concern²⁴⁹ and to minimise non-response cases, which are common with left-behind diary.

C.2 Survey Instruments

Three survey instruments are used in the study—time use diary, structured interview questionnaire, and profile questionnaire. Each instrument is designed to draw out specific information pertaining to unpaid care work. When used jointly, they are meant to provide a comprehensive contextual understanding of the time use pattern of respondents.

C.2.1 Time Use Diary

The time use diary for this survey is designed to capture all activities carried out by respondents throughout the 24-hour period and also some crucial contextual information about each activity. Particularly, three aspects of the contextual information were asked.

First, respondents were asked if they were engaged in more than one activity at the same time throughout the 24 hours, and what the simultaneous activities were. This is especially important in the context of care because many non-market tasks are often performed as a secondary activity²⁵⁰. Hence, restricting respondents to report only a single primary activity will lead to an underestimation of time demand on non-market tasks such as housework and childcare²⁵¹.

Second, respondents' travel information, including mode of travel and location were also recorded wherever applicable. These are useful information to compare the difference in travel pattern and demand between men and women in performing their work and household duties²⁵², as well as study the accessibility of care infrastructures for different individuals.

²⁴⁹ Given that the survey covers population of diverse income class, there is a considerable likelihood that some respondents may either be illiterate or do not understand the language used in the instruments i.e. English and Malay. For example, Chinese-educated senior citizens may not be familiar with both English and Malay languages. Face-to-face interview with retrospective time diary would mitigate this illiteracy problem.

²⁵⁰ UNDESA (2005)

²⁵¹ Ibid.

²⁵² See, for example, Kwan (1999) for a comparison of the space-time patterns of non-employment activities between men and women, using travel diary data from Columbus, Ohio.

Third, respondents were also required to provide information about who they performed each activity with. The social context of activities provides an indication of the social support that the respondents received when carrying out different activities. In particular, pertaining to care-related activities, it provides an indication of the extent unpaid care responsibilities are shared within households and the assistance received from other households. This is useful information in studying the intra-household bargaining process between men and women as well as the different social networks available to men and women in sharing the care burden.

Figure C.1: Time use diary with contextual information

Time	What were you doing? (Activity 1)	What else were you doing at the same time? (Activity 2)	Where were you and/or how were you travelling?		Who did you do this activity (or these activities) with?	
			Transport	Location	Activity 1	Activity 2
4.00am						
4.15						
4.30	Activity 2 is important in capturing the full extent of unpaid care demand – non-market tasks, e.g. look after kids, are often done simultaneously with other main activities		Travel information captures the accessibility of care services/infrastructure		The social context of care captures any sharing of care responsibilities	
4.45						
5.00am						
5.15						
5.30						
5.45						
6.00am						
6.15						
6.30						
6.45						

C.2.2 Structured Interview Questionnaire

The structured interview aims to elicit open-ended, qualitative responses about time allocation to supplement the quantitative time use statistics from the diary. The questions asked span three domains, namely regularity of the day reported, optionality of activities conducted and transition in care management experienced.

The questionnaire first probes the respondent about regularity of the day reported by asking questions such as “Do you think the last 24 hours as recorded in your time diary is representative of your usual weekday? If no, how is it different?” These questions attempt to identify activities in the diary, especially care and work-related ones, that were not done as part of respondents’ usual routine.

On optionality, respondents were asked to comment on whether they feel that they have a choice in determining the nature and length of their activities. More specifically, we are interested to know if the respondents' current division of time between market and non-market work was done by choice or determined by circumstances. In the LFS, the statistics only present the number of people who do not seek work or are underemployed for family responsibilities, but do not shed light on the proportion of people who do so willingly. This missing information is crucial in informing the degree of agency men and women have in deciding their labour market participation. To fill the gap, we asked respondents *"In general, are you satisfied with the amount of time you spend in your job(s) and care work/housework currently? If not, how would you want to change?"*

Lastly, respondents were asked to explain whether and why care management mechanisms in their families have changed. The narrative of how each family copes with changing circumstances and care demand is helpful in deepening understanding on the nuances behind the intra-household bargaining process among family members. We asked respondents to *"Look back at how your family/household manages care and housework. How and why has the way your family/household manages care and housework changed?"*

C.2.3 Profile Questionnaire

The profile questionnaire is created to record respondents' personal, household and employment details. These include respondents' age, education level, status in employment, personal and household's monthly income and so on.

CALCULATING HOUSEHOLD PRODUCTION

We use the formula in Table D.1 to calculate household production using the input approach. However, we omit taxes and subsidies due to data limitations. Nevertheless, this will not affect our results by much because household production is generally not subject to tax and subsidies given its non-market nature. Even when they do, taxes and subsidies will likely offset each other's effects, resulting in a small net impact on total output.

Table D.1: Formula for household production using input approach

$$\begin{array}{r}
 \text{value of labour} \\
 \text{(time valued at suitable wage)} \\
 \\
 +\text{other taxes on production} \\
 -\text{other subsidies on production} \\
 \\
 +\text{consumption of capital} \\
 \hline
 =\text{gross value added} \\
 +\text{intermediate consumption} \\
 \hline
 =\text{value of total output (sum of costs)}
 \end{array}$$

Source: UNECE (2017)

To calculate the value of labour, we first allocate relevant TUS categories by main output. We follow Baigorri (2003) in determining the outputs of household production i.e. housing, nutrition, clothing, care, volunteer work and transport. A TUS category that contributes to an output is marked with an "X". For example, household management (ICATUS 35) contributes to housing, nutrition, clothing and care, hence, all four outputs are marked with X. However, Baigorri (2003) still uses the old ICATUS following UNDESA (2005) as TUS categories. We use the updated ICATUS 2016²⁵³ at the two-digit level as our TUS categories and adapt this to match the household production outputs.

After that, the time spent on each output is tabulated and valued using the replacement cost method. For the generalist wage, we use the median wage reported in SWR 2017. For the specialist wage, each TUS category is matched with the closest industry category in MSIC 2008 at the section level to determine the industry-level median wage rate. Valuation is done for both primary activities as well as primary and secondary activities.

Table D.2 shows our TUS categories by industrial classification and main output. Summing up the value of each output i.e. cells marked with X, gives the total labour value for that particular output.

²⁵³ UNSD (2017)

Table D.2: TUS categories by industrial classification and main output

ICATUS	MISC	Housing	Nutrition	Clothing	Care	Volunteer Work	Transport*
21	A		X				
25	H						X
31	I		X				
32	S	X					
33**	S	X					
34	S			X			
35	N	X	X	X	X		
36	S		X		X		
37	S	X	X	X	X		
38	H						X
39	S	X	X	X			
41	Q				X		
42	Q				X		
43	Q				X		
44	H						X
49	S				X		
51	Q					X	
52	Q					X	
53	Q					X	
54	H						X
59	S					X	
333	H						X

Note1: *For transport, we exclude public transportation (e.g. bus, train, ferry) and taxis/private e-hailing from household production. Only private forms of transportation i.e. car, motorbike, bicycle and walking are included in the calculations.

Note2: **Excludes 333

For household capital and intermediate consumption, we use the Report on Household Expenditure Survey (HES) 2016. We use the mean monthly household consumption expenditure by subgroups of expenditure at the Kuala Lumpur-level. The HES 2016 is available at the four-digit level. Following Annex 4.1 in UNECE (2017), we then allocate each expenditure item to intermediate consumption, final consumption and household capital. We follow Annex 4.1 as close as possible but where there are non-matched items, we use our own judgment.

For intermediate consumption, we further allocate each item to the outputs of household production. We refer to Annex 4.2 in UNECE (2017) as guidance and where there are non-matched items, we again use our own judgment. For household capital, we refer to Annex 4.3 in UNECE (2017) especially in the determination of asset life length. We then use the Perpetual Inventory Method to calculate the mean monthly household consumption of fixed capital²⁵⁴. Household capital is allocated equally across the outputs of household production.

With labour value, intermediate consumption and household capital tabulated by output, we use the formula in Table D.1 to construct the household satellite account for our TUS sample as presented in Table 2.9. This is calculated for the four options of generalist wage/primary activities, generalist wage/primary + secondary activities, specialist wage/primary activities and specialist wage/primary + secondary activities.

²⁵⁴ Meinen et al. (1998) especially Annex 2.

QUALITATIVE RESEARCH METHOD

As part of the pilot time use study, interviewers also conducted structured interviews with respondents using open-ended questions. Seven questions were constructed to obtain further details on three aspects of respondents' time use: respondents' satisfaction with their existing routines as described in their time diaries, how respondents' households distributed their unpaid care work, and how unpaid care work had evolved for respondents. Although the use of semi-structured interviews might have yielded richer detail and complexity, the research team chose to use structured interviews in this pilot study for two reasons. First, the priority of the study was to record time diaries and we did not want to take more of the respondent's time than necessary. Second, we wanted to keep questions and prompts reasonably consistent and comparable across the team of interviewers.

Of the 125 interviews, 116 (93%) were audio recorded with the respondent's informed consent. Immediately after the interviews, interviewers wrote down their interview notes. A data manager subsequently crosschecked and verified these notes with audio recordings (where available). Two data coders then independently reviewed the interview notes and performed open coding (see Strauss and Corbin 1998 for further details) on the qualitative data looking for keywords relating to gender, unpaid care work and time use. These keywords were then categorised into four themes: the gendered distribution of unpaid care work, extra-household support for unpaid care work, effects of the life cycle on unpaid care work management and preferences for time sovereignty.

The qualitative analysis was conducted prior to the time use analysis in order to minimise the priming influence of the quantitative findings on qualitative interpretations of the data. As detailed in the report above, the qualitative interview findings corroborate and deepen the quantitative time use findings.

ECONOMIC IMPACT OF CARE ALLOWANCE

As mentioned earlier in Section 3.2.2, childcare centres are under-utilised partly as they may not be affordable to parents. However, if childcare providers charge prices that are too low, this becomes unprofitable to them. One way to solve this structural discrepancy is for the government to intervene and supplement parents the necessary amount to close this gap.

Therefore, this report presents a simulation based on this scenario, coupled with a condition that both parents must participate in paid work to qualify. In doing so, not only would the government help parents with the seemingly unaffordable costs of childcare centres, the programme would also catalyse non-working mothers who were unable to work due to care responsibilities to seek employment in the labour market. The report proposes a monthly RM100 cash pay-out for parents who satisfy the following criteria²⁵⁵:

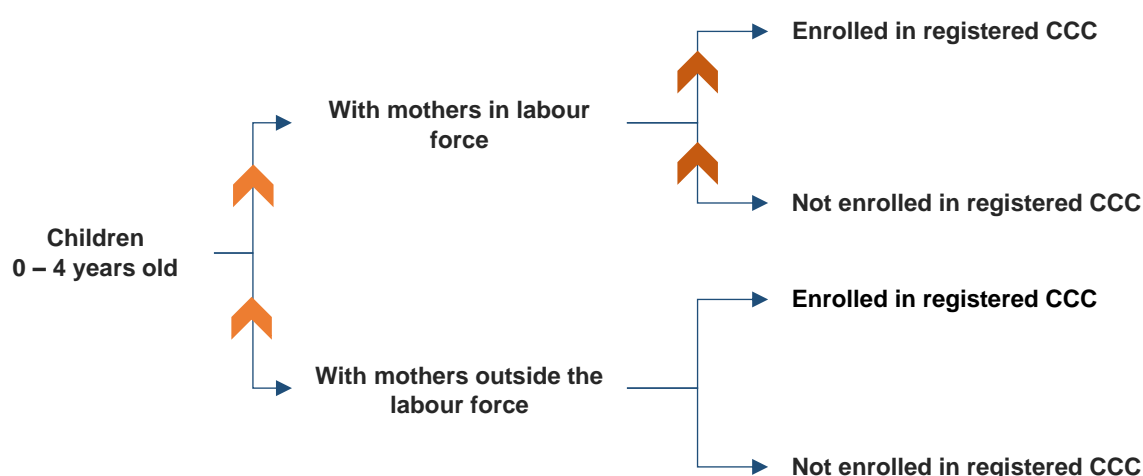
1. Have children aged 0 – 4; and
2. Enrol their children to a registered childcare centre (CCC).

The report used 2018 data²⁵⁶ to run the simulation, based on several assumptions:

- All single and dual family households have one child on average aged 0 – 4
- Women who have children aged 0 – 4 are between 20 and 39 years old
- All single parents (mothers and fathers) work

This programme is targeted at non-working mothers who either send their children to an unregistered childcare centre or take care of them at home. The care allowance is expected to alleviate the care burden of these women and induce them to partake in paid work. Figure F.1 illustrates the possible channels of impact induced by this programme.

Figure F.1: Channels of impact from the proposed care allowance



²⁵⁵ The supplement amount would depend on state's affordability threshold. This figure is a nationally-representative amount.

²⁵⁶ Wherever possible. Otherwise, most recent available data was used.

Based on conservative assumptions²⁵⁷, our simulation results show that introducing this programme would yield beneficial outcomes: the programme could boost women's LFPR from 54.4% to 56.0%, stimulate GDP by 0.4% and increase employment in CCCs by 3,270 within one year of implementation, as displayed in Table F.1. This calculation does not include potential multiplier and spill-over effects to society arising from the increase in women's participation in the labour force, increase in productivity for businesses and better household budgetary position from this subsidy²⁵⁸.

A five-year forecast projects an even greater effect on the variables mentioned above. Without the programme, women's LFPR would increase to 59.4% by 2023, but this is boosted to 62.5% with the programme. Due to this larger number of women (including mothers) entering the workforce, there is a larger demand for CCCs, which could increase employment in these centres by around 16,300 jobs for teachers and childminders. Subsequently, real GDP could jump from 4.8% to 5.2% with the programme. Again, these forecasts are conservative as we did not include multiplier effects accruing from these activities.

Therefore, we find that introducing this programme, although involves government spending, would have significant positive impact on women, GDP and even greater socio-economic benefits to the society as whole.

Table F.1: Simulation estimates for one-year and five-year impact of the care allowance programme

Variable	Current	1-year impact	5-year impact
Women's LFPR (%)	54.4%	56.0% (55.4%)	62.5% (59.4%)
Employment in CCC	~12,900	~21,900 (~18,600)	~57,500 (~41,200)
Real GDP (RM m)	RM1,229,799.0	RM1,292,924.6 (RM1,287,108.0)	RM1,586,809.3 (RM1,554,380.0)
Real GDP growth (%)	-	5.1% (4.7%)	5.2% (4.8%)

Note: Numbers in parenthesis represent the effect without the care allowance programme.
Source: Authors' calculations, based on several assumptions

²⁵⁷ Here, we assume a 10% take up rate of non-working mothers who now enter the labour force due to the programme.

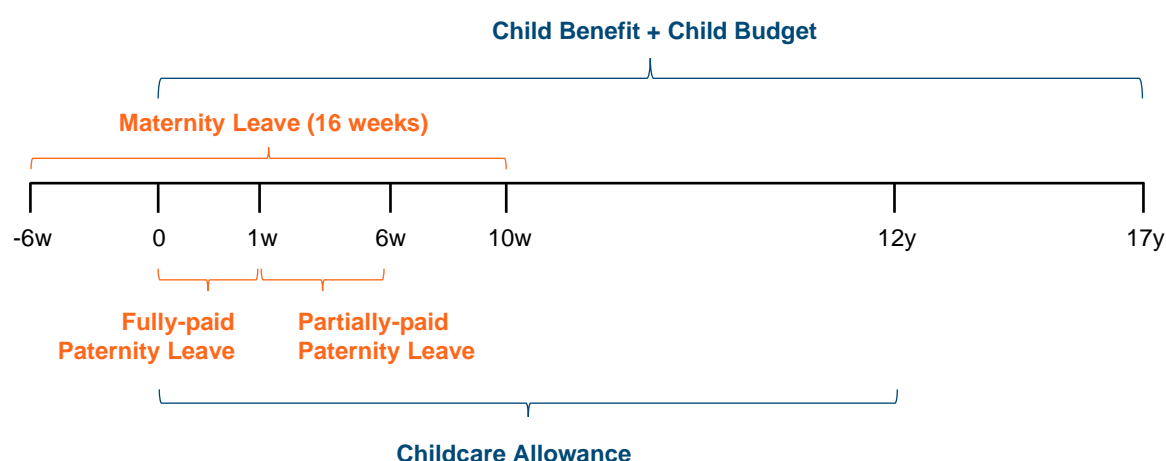
²⁵⁸ Fairholm (2017). Note: in the report *Structure of the Malaysian Economy: An Input-Output Approach* by KRI (2018b), the multiplier effect for the Other Private Services sector (which includes subsectors such as the repair of computers, repair of household goods, etc. as well as the childcare subsector) was found to be RM892.4m, which is the 9th largest multiplier value across 124 sectors.

APPENDIX G

FAMILY BENEFITS

Family benefits in the Netherlands include child benefits and parental leave (Figure G.1) that are designed comprehensively to support life-cycle transitions of a family with children. In general, there are three types of child benefits i.e. Child Benefit (*kinderbijslag*), Child Budget (*kindgebonden budget*) and Childcare Allowance (*kinderopvangtoeslag*). These benefits are paid on a regular basis by the Dutch Government via the Sociale Verzekeringsbank (SVB), also known as the Dutch Social Insurance Bank.

Figure G.1 The Netherlands' family benefits (simplified)



Source: Belastingdienst (2019) and SVB (n.d.)

The Child Benefit is provided automatically to a parent of a child born in the Netherlands as long as the child is younger than 18 years old. A child born outside the Netherlands is also eligible to receive the Child Benefit, but the provision is not automatic. In addition, the requirement for the Child Benefit is that the child needs to be a legal, permanent resident of the Netherlands. Parents who live and work in the Netherlands are entitled to this benefit. It is not necessary for the parents to be Dutch citizens, but they must be paying taxes and social benefits²⁶⁰.

However, the Child Benefit can also be claimed if the parents and child are living in another country provided that they have a social security agreement with the country and are insured for the Dutch child benefit scheme. The amount given to each family differs as it depends on factors such as the child's age (amount increases with age), number of children and whether the child (16 or 17 years old) earns an income with a job or traineeship²⁶¹.

²⁶⁰ Expatax BV. (2017)

²⁶¹ The child is only allowed to earn a maximum amount of EUR1296 per quarter, but this amount changes every October. Source: SVB (n.d.)

The Child Budget is an additional monthly contribution from the government for low-income families. It aims to cover costs such as the child's clothing and school expenses. The budget for this benefit is granted by the SVB and paid by the Belastingdienst, a government organisation that deals with all Dutch taxation issues. Its requirements include having at least one child under 18 years old, receiving Child Benefit from SVB, having a valid residence permit and the parents having a combined income and capital not exceeding the established thresholds. The amount received depends on family composition and increases with number of children²⁶². Parents usually do not need to apply for the Child Budget; it is granted automatically if they are entitled to it²⁶³.

The Childcare Allowance is for children aged 12 and below who attend a registered day care facility. To be eligible, both parents or guardians must be currently working (permanently or temporarily), studying a certified course or pursuing Dutch language certification, contributing to childcare costs and have a valid residence permit, and the child must be living with his or her parents. The payment of benefits starts from the quarter after the quarter in which the child was born e.g. if the child was born on 10 April (2nd quarter), the first payment will be made in the 3rd quarter²⁶⁴. The amount received ultimately depends on the level of income, childcare expenses and type of childcare.

Maternity leave in the Netherlands starts six weeks before the child is due and lasts until 10 weeks after the child is born, hence a total of 16 weeks. During this period, the mother is entitled to 100% of her wages²⁶⁵. The wages are paid by the Social Security Agency (UWV) and includes the self-employed and unemployed. Recently, a bill was passed in parliament where the partner of the mother is entitled to a week of paid leave effective 1 January 2019—compared to only two days before the introduction of this bill. Starting from 1 July 2020, the partner is eligible to receive an additional five weeks of leave and claim up to 70% of their wages²⁶⁶, also paid by UWV²⁶⁷. Although there are overlaps in the time period for parental leave and Childcare Allowance, the requirement that parents need to be working to be eligible for the latter means that the childcare allowance only kicks in when parents are no longer receiving parental leave benefits.

Similar to the Netherlands, Finland also has child benefits and parental leave schemes that are designed in coordination with each other (Figure G.2). In Finland, the Child Benefit and Childcare Allowance is paid by Kela, the Finnish Social Insurance Institution²⁶⁸. The Child Benefit can be claimed at the same time as any maternity, paternity or parental allowance. The payment of the Child Benefit starts one month after the child is born and continues uninterrupted until the child turns 17 years old, the child moves abroad permanently, or if the child begins to receive disability pensions under the National Pensions Act. The amount of benefit increases with the number of children²⁶⁹.

²⁶² Belastingdienst (n.d.)

²⁶³ SVB (2018)

²⁶⁴ Belastingdienst (2019)

²⁶⁵ The mother is granted with a maximum of EUR214.28 per day during maternity leave. Source: UWV (n.d.)

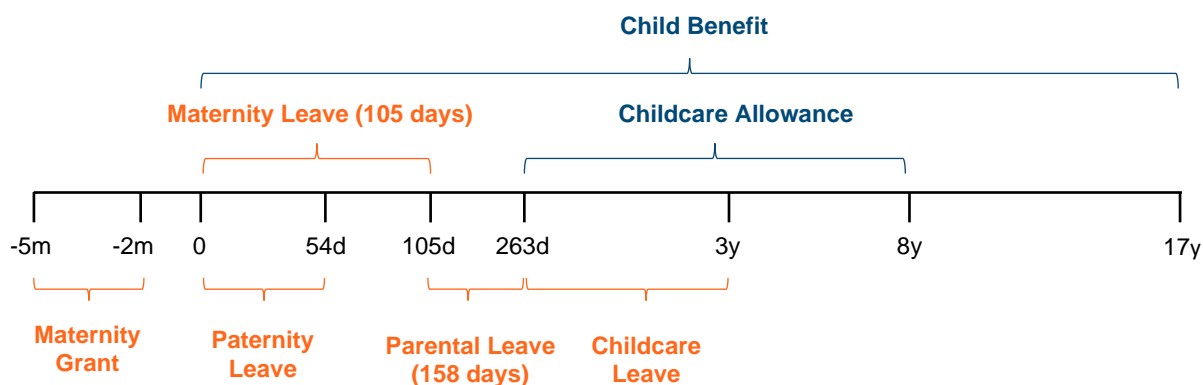
²⁶⁶ Leeuwen (2019)

²⁶⁷ Business.gov.nl (n.d.)

²⁶⁸ Most of the sources are from Kela.

²⁶⁹ It is a form of incentive by the Finnish Government to increase the population.

Figure G.2 Finland family benefits (simplified)



Source: Kela (2019a), Kela (2019b), Kela (2017a), Kela (2017b), Kela (2017c) and Kela (2017d)

The Childcare Allowance is granted after the completion of parental leave and comprises home childcare, flexible childcare, partial childcare and private daycare. The home childcare allowance is given when a child under 3 years old is looked after at home by the father, mother, grandparents or a private daycare provider²⁷⁰.

Flexible childcare allowance is paid to a parent who works no more than 30 hours per week on average or no more than 80% of normal full-time hours, whichever criteria is fulfilled. The amount of allowance granted for flexible childcare allowance depends on the number of hours the parents work. The higher the number of paid working hours per week, the lower the amount of benefit received. Kela's requirements state that the child must also be under 3 years old to be eligible for flexible childcare allowance and it cannot be paid to a parent who is on paternity, maternity or parental allowance²⁷¹. Besides that, it cannot be paid to a parent who receives a home childcare allowance mainly because the parent primarily looks after the child herself/himself.

Partial childcare allowance is also given to parents who work no more than 30 hours a week while looking after the child. The main difference between partial childcare and flexible childcare is that the former is eligible for children who are in the 1st or 2nd grade²⁷² while the latter is granted to children under 3 years old²⁷³. Kela can pay partial childcare allowance even if the child is in preschool at 6 years old²⁷⁴. Parents who are on other forms of childcare allowance or receive parental allowance are not eligible for partial childcare allowance²⁷⁵.

²⁷⁰ Kela (2017a). Home care allowance cannot be received simultaneously with paternity, maternity or parental allowance for the same child. It is allowed if it is received for other child(ren) of the same parent.

²⁷¹ Kela (2019a)

²⁷² In Finland, children in Grades 1 and 2 are 7 and 8 years old, respectively.

²⁷³ Info Finland (2018)

²⁷⁴ Pre-primary education in Finland (for 6 year olds) was made compulsory since August 2015. Source: OPH (n.d.). But many parents already enrolled their children in pre-primary education when it was optional. There is also an Early Childhood and Care program catered for children aged 3 to 5 that is not mandatory but the enrolment rate was almost 80% in 2016. Source: EDUFI (2018).

²⁷⁵ Kela (2017c)

The private daycare allowance is granted to a child under school age and looked after by registered private daycare centres²⁷⁶. Private day care allowance is not available if the child is in municipal (local) daycare. It also cannot be granted to the same child for which paternity allowance is paid to the father. However, private day care allowance can be paid to the family's other children during the father's period of paternity allowance²⁷⁷.

Once a pregnancy has lasted for five months, parents have the right to a maternity grant before the child is born. It is paid by Kela through the General Fund for Social Security and has the option of cash or in-kind in the form of a maternity package with childcare products²⁷⁸. This grant must be claimed no later than two months before the expected due date.

After the child is born, Kela provides daily parental allowance which safeguards the family's income and allows the parents to spend more time with the child. Maternity leave starts before the child is born. Mothers can take maternity leave five to eight weeks before the expected due date. Maternity allowance is paid to mothers from Kela for a period of 105 days starting from the first day of leave.

A father can obtain paternity leave for a maximum of 54 working days. Of this allowance, fathers can spend one to 18 weekdays or three weeks at home with mothers during the same period. However, fathers have the option to use these 54 days after the maternity and parental allowance period. Fathers can also take the leave all at once or break it up into shorter periods²⁷⁹ but the leave must be taken before the child turns 2 years old. During this period, paternity allowance is paid to the father²⁸⁰.

After the completion of paternity and maternity leave, either the mother or father can take parental leave that lasts for 158 days. Parental allowance is paid to the parent who is at home caring for the child. Both parents cannot be on leave at the same time. All allowances are paid by Kela through the National Health Insurance Fund. After the parental allowance period, the father or mother is eligible for unpaid childcare leave until the child is 3 years old. This is when the Childcare Allowance kicks in and replaces the parental allowance.

Unlike the Netherlands and Finland, Singapore does not have a universal child benefit (Figure G.3). Singapore's family benefits for children consist of Infant Care and Childcare Subsidy, which is an initiative by the Singaporean government to reduce the financial burden of parents by defraying some of the costs of childcare as well as maternity and paternity leaves. The two components of Childcare Subsidy are known as the Basic Subsidy and Additional Subsidy²⁸¹.

²⁷⁶ Kela (2017d)

²⁷⁷ Maternity allowance (only 105 days) would have been finished by the time the child goes to daycare. Paternity allowance can be separated into different periods and can be used after maternity and parental allowance period, hence the condition imposed.

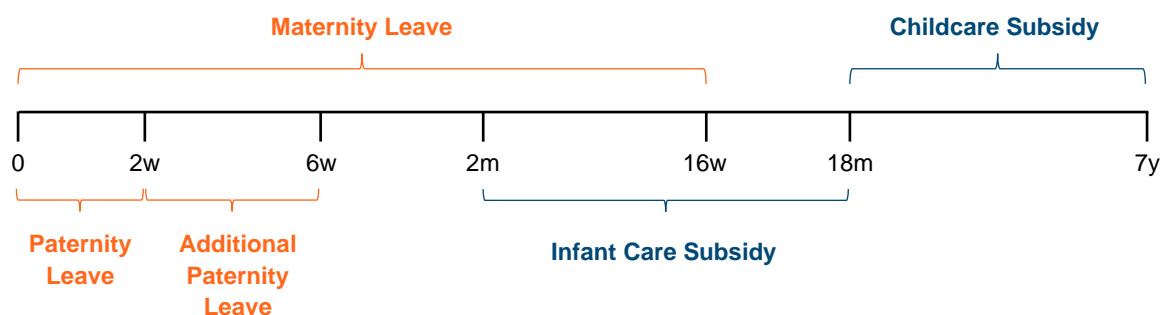
²⁷⁸ Kela (2019b)

²⁷⁹ Kela (2017b)

²⁸⁰ If the employer pays the parent their salary during the paternity period, the paternity allowance will be paid to the employer.

²⁸¹ MSF (2016)

Figure G.3 Singapore Family Benefits (simplified)



Source: MOM (2019b) and MSF (2016)

To qualify for the Infant Care Subsidy, the infant must be a Singaporean citizen aged 2 – 18 months old. Meanwhile, for Childcare Subsidy, the child must be a Singaporean citizen aged above 18 months to below 7 years old. As for the two components of the childcare subsidy, to be eligible for the Basic Subsidy, children must be enrolled in childcare centres licensed by the Early Childhood Development Agency of Singapore²⁸². As for the Additional Subsidy, families must be earning below a certain monthly household income threshold, the child must be enrolled in a licensed childcare centre and the mother must be working for 56 hours or more per month.

For Singaporean mothers, they are entitled to 12 – 16 weeks of maternity leave depending on whether they fall under the Employment Act (12 weeks) or the government-paid maternity leave scheme (16 weeks). For mothers eligible for the 16-week paid leave and it is their first and second birth, their monthly salary will be paid by the employer for the first eight weeks and the remaining eight weeks reimbursed by the government²⁸³. For mothers with their third and subsequent births, their salary of 16 weeks will be fully reimbursed by the government. Meanwhile, mothers under the 12-week paid leave may have an additional four weeks of leave at the discretion of their employers.

In terms of paternity leave, starting from 1 January 2017, eligible working fathers, including those who are self-employed, are entitled to two weeks of paid paternity leave fully funded by the government²⁸⁴. However, the requirement for employees is that they had served their current employer for a continuous period of at least three months before their child's birth. It is the same for the self-employed, where they must be engaged in their work for a continuous period of at least three months before the birth of their child and have a loss of income during the paternity leave period.

An interesting option for Singapore's parental leave is that since 1 July 2017, working fathers can apply to share up to four weeks of his wife's 16 weeks of government-paid maternity leave provided that the spouse is agreeable to share part of her maternity leave benefits²⁸⁵. This means that in total, fathers may be entitled to six weeks of paid leave while mothers have up to 12 weeks of leave.

²⁸² Ibid.

²⁸³ MOM (2019a)

²⁸⁴ MOM (2019b). Note: this government-paid paternity leave is capped at SGD2,500 per week.

²⁸⁵ MOM (2018)

REFERENCES

- Aliza Shah. 2018. *Kids at risk at crowded childcare centres*. New Straits Times. <https://www.nst.com.my/news/exclusive/2018/10/425749/exclusive-kids-risk-crowded-childcare-centres>.
- Antonopoulos, Rania, Kijong Kim, Thomas Masterson, and Ajit Zacharias. 2011. *Investing in Care: A Strategy for Effective and Equitable Job Creation*. Levy Economics Institute of Bard College. http://www.levyinstitute.org/pubs/wp_610.pdf.
- Anxo, Dominique, Letizia Mencarini, Ariane Pailhé, Anne Solaz, Maria Letizia Tanturri, and Lennart Flood. 2011. *Gender differences in time use over the life course in France, Italy, Sweden, and the US*. *Feminist Economics* 17 (3):159-195.
- Apps, Patricia, and Ray Rees. 2005. *Time Use and Child Costs Over the Life Cycle, The Economics of Time Use*. Bingley: Emerald Group Publishing Limited.
- Aslaksen, Julie, and Charlotte Koren. 2010. *Unpaid household work and the distribution of extended income: The Norwegian experience*. 65-80 doi: <https://doi.org/10.1080/13545709610001707766>. <https://www.tandfonline.com/doi/abs/10.1080/13545709610001707766>.
- Astro Awani. 2018. *Bayi 'diculik' dijumpai mati dalam peti sejuk pengasuh*. Astro Awani. <http://www.astroawani.com/berita-malaysia/bayi-diculik-dijumpai-mati-dalam-peti-sejuk-pengasuh-179572>.
- Baigorri, Antonio. 2003. *Household Production and Consumption: Proposal for a Methodology of Household Satellite Accounts*. Luxembourg: Office for Official Publications of the European Communities.
- Baird, Marian, Michele Ford, and Elizabeth Hill. 2017. *Women, work and care in the Asia-Pacific*: Taylor & Francis.
- Bardasi, Elena, and Quentin Wodon. 2010. *Working long hours and having no choice: Time poverty in Guinea*. *Feminist Economics* 16 (3):45-78.
- Barnett, Rosalind C, and Caryl Rivers. 1996. *She works/he works: How two-income families are happier, healthier, and better-off*: Harper San Francisco.
- Barnett, Rosalind C, and Yu-Chu Shen. 1997. *Gender, high-and low-schedule-control housework tasks, and psychological distress: A study of dual-earner couples*. *Journal of Family Issues* 18 (4):403-428.
- Baumol, William J, and William G Bowen. 1993. *Performing arts-the economic dilemma: a study of problems common to theater, opera, music and dance*: Gregg Revivals.
- Baxter, Janeen. 2002. *Patterns of change and stability in the gender division of household labour in Australia, 1986-1997*. *Journal of Sociology* 38 (4):399-424. doi: 10.1177/144078302128756750.
- Becker, Gary S. 1985. *Human Capital, Effort, and the Sexual Division of Labor*. *Journal of Labor Economics* 3 (1):S33-S58.
- Becker, Tara Leigh, and Aimée R Dechter. 2004. *Why Do Married Men Earn More? An Evaluation of the Marriage Premium*.

REFERENCES

- Belastingdienst. 2019. "Childcare Allowance (kinderopvangtoeslag) ". <https://www.belastingdienst.nl/wps/wcm/connect/bldcontentnl/belastingdienst/prive/toeslagen/kinderopvangtoeslag/>.
- Belastingdienst. n.d. "Conditions for child-related budget." <https://www.belastingdienst.nl/wps/wcm/connect/bldcontentnl/belastingdienst/prive/toeslagen/kindgebonden-budget/voorwaarden/voorwaarden-kindgebonden-budget>.
- Berardo, Donna Hodgkins, Constance L Shehan, and Gerald R Leslie. 1987. *A residue of tradition: Jobs, careers, and spouses' time in housework*. Journal of Marriage and the Family:381-390.
- Bernama. 2019. *Maszlee on official duty overseas during vote on constitutional amendments*. Bernama.com. <http://www.bernama.com/en/news.php?id=1716733>.
- Bettio, Francesca, Annamaria Simonazzi, and Paola Villa. 2006. *Change in care regimes and female migration: the 'care drain' in the Mediterranean*. Journal of European Social Policy 16 (3):271-285.
- Bianchi, Suzanne M. 2000. *Maternal employment and time with children: Dramatic change or surprising continuity?* Demography 37 (4):401-414. doi: 10.1353/dem.2000.0001.
- Blair, Sampson Lee. 1998. *Work roles, domestic roles, and marital quality: Perceptions of fairness among dual-earner couples*. Social Justice Research 11 (3):313-335.
- Blair, Sampson Lee, and Michael P Johnson. 1992. *Wives' perceptions of the fairness of the division of household labor: The intersection of housework and ideology*. Journal of Marriage and the Family.
- Blair, Sampson Lee, and Daniel T Lichter. 1991. *Measuring the division of household labor: Gender segregation of housework among American couples*. Journal of Family Issues 12 (1):91-113.
- Boarnet, Marlon G., and Hsin-Ping Hsu. 2015. *The gender gap in non-work travel: The relative roles of income earning potential and land use*. Journal of Urban Economics 86:111-127. doi: 10.1016/j.jue.2015.01.005.
- Boo, Su-Lyn. 2019. *Employer refuses to fund paternity leave, claims would cost RM157m*. MalayMail. <https://www.malaymail.com/news/malaysia/2019/06/16/employer-refuses-to-fund-paternity-leave-claims-would-cost-rm157m/1762610>.
- Borjas, George J, and Jan C Van Ours. 2010. *Labor economics*: McGraw-Hill/Irwin Boston.
- Bourguignon, François. 2017. *The globalization of inequality*: Princeton University Press.
- Bryant, W. Keith, and Cathleen D. Zick. 1996. *Are we investing less in the next generation? Historical trends in time spent caring for children*. Journal of Family and Economic Issues 17 (3):365-392. doi: 10.1007/BF02265026.
- Bryson, Caroline, Mike Brewer, Like Sibieta, and Sarah Butt. 2012. *The role of informal childcare: A synthesis and critical review of the evidence*. London: Nuffield Foundation. https://www.nuffieldfoundation.org/sites/default/files/files/The_role_of_informal_childcare_FULL_REPORT.pdf.
- Budig, Michelle J, and Paula England. 2001. *The wage penalty for motherhood*. American sociological review 66 (2):204-225.

- Budlender, Debbie. 2007. *A critical review of selected time use surveys*: United Nations Research Institute for Social Development.
- Budlender, Debbie. 2008. *The statistical evidence on care and non-care work across six countries*: United Nations Research Institute for Social Development Geneva.
- Bundervoet, Tom. 2014. *What Explains Rwanda's Drop in Fertility between 2005 and 2010?*: World Bank
<http://documents.worldbank.org/curated/en/108461468304764989/pdf/WPS6741.pdf>.
- Business.gov.nl. n.d. "Partner/Paternity Leave ". <https://business.gov.nl/regulation/leave-schemes/>.
- CED. 2019. *Child Care in State Economies: 2019 Update*. Committee for Economic Development of The Conference Board.
<https://www.ced.org/assets/reports/childcareimpact/181104%20CCSE%20Report%20Jan30.pdf>.
- Charmes, Jacques. 2015. *Time Use Across the World: Findings of a World Compilation of Time Use Surveys*.
- Chiam, Heng Keng. 2008. *Child Care in Malaysia: Then and Now*. International Journal of Child Care and Education Policy 2 (2):31-41. doi: 10.1007/2288-6729-2-2-31.
- Childminding UK. n.d. "Becoming a Childminder." Childminding UK. Accessed 15 February 2019.
<https://childmindinguk.com/becoming-a-childminder>.
- Chin, Christina. 2016. *Doing better for our kids*. The Star.
<https://www.thestar.com.my/news/nation/2016/09/11/doing-better-for-our-kids/>.
- Choong, Christopher, Tan Theng Theng, Rachel Gong, and Adam Manaf Mohamed Firouz. 2018. *Labour Market and the Shifting Landscape of Care in Malaysia: The Missing Link*. MSC11, Adya Hotel Langkawi.
- Christin, Angèle, Philippe Coulangeon, and Olivier Donnat. 2016. *Cultural participation, cohort effects, and higher education (1981-2012)*.29. <https://halshs.archives-ouvertes.fr/halshs-01400391/document>.
- Ciccia, Rossella, and Inge Bleijenbergh. 2014. *After the male breadwinner model? Childcare services and the division of labor in European countries*. Social Politics 21 (1):50-79.
- Coltrane, Scott. 1997. *Family man: Fatherhood, housework, and gender equity*: Oxford University Press.
- Coltrane, Scott. 2000. *Research on household labor: Modeling and measuring the social embeddedness of routine family work*. Journal of Marriage and Family 62 (4):1208-1233.
- Craig, Lyn. 2006. *Does Father Care Mean Fathers Share?: A Comparison of How Mothers and Fathers in Intact Families Spend Time with Children*. Gender & Society 20 (2):259-281. doi: 10.1177/0891243205285212.
- Crane, Randall. 2007. *Is There a Quiet Revolution in Women's Travel? Revisiting the Gender Gap in Commuting*. Journal of the American Planning Association 73 (3):298-316. doi: 10.1080/01944360708977979.

REFERENCES

- De Henau, Jerome, Susan Himmelweit, Łapniewska Zofia, and Diane Perrons. 2016. *Investing in the Care Economy*. UK Women's Budget Group https://www.ituc-csi.org/IMG/pdf/care_economy_en.pdf.
- DeMaris, Alfred, and Monica A Longmore. 1996. *Ideology, power, and equity: Testing competing explanations for the perception of fairness in household labor*. *Social Forces* 74 (3):1043-1071.
- DfES UK. 2003. *Childminding*. Department for Education and Skills UK. Nottingham: Department for Education and Skills UK. <https://webarchive.nationalarchives.gov.uk/20110713133413/https://www.education.gov.uk/publications/eorderingdownload/dfes-0649-2003.pdf>.
- DOE. n.d. "Childcare Business Grants Scheme." Department for Education. <https://www.childcarebusinessgrants.com/>.
- DOS. 2011. *Labour Force Survey Report, Malaysia, 2010*. Putrajaya: Department of Statistics Malaysia.
- DOS. 2016. *Informal Sector Work Force Survey Report, Malaysia, 2015*. Putrajaya: Department of Statistics Malaysia.
- DOS. 2017a. *Household Income and Basic Amenities Survey Report 2016*. Putrajaya: Department of Statistics Malaysia.
- DOS. 2017b. *Malaysia Economics Statistics - Time Series: Population* Department of Statistics, Malaysia https://www.dosm.gov.my/v1/uploads/files/3_Time%20Series/Malaysia_Time_Series_2016/22_Penduduk.pdf.
- DOS. 2018a. *Abridged Life Tables, 2016 - 2018*. Department of Statistics Malaysia.
- DOS. 2018b. *Salaries and Wages Survey Report, Malaysia, 2017*. Putrajaya: Department of Statistics Malaysia.
- DOS. 2018c. *Statistik Pemerkasaan Wanita dalam Domain Terpilih, Malaysia, 2018*. Putrajaya: Department of Statistics Malaysia
- DOS. 2019. *Labour Force Survey Report, Malaysia, 2018*. Putrajaya: Department of Statistics Malaysia.
- DOS. n.d.-a. *Malaysia Standard Industrial Classification 2008*. https://www.dosm.gov.my/v1/uploads/files/4_Portal%20Content/3_Methods%20%26%20Classifications/2_List%20of%20References/MSIC_2008.pdf.
- DOS. n.d.-b. *Population Quick Info*. Putrajaya: Department of Statistics Malaysia <http://pqj.stats.gov.my>.
- DOS. Various years-a. *Current Population Estimates, Malaysia*. Putrajaya: Department of Statistics, Malaysia.
- DOS. Various years-b. *Labour Force Survey Report, Malaysia*. Putrajaya: Department of Statistics Malaysia.

- DOS. Various years-c. *Social Statistical Bulletin, Malaysia*. Putrajaya: Department of Statistics Malaysia
- Drago, Robert, and Jay Stewart. 2010. *Time-use Surveys: Issues in Data Collection on Multitasking*. Monthly Labor Review. <https://www.bls.gov/opub/mlr/2010/08/art2full.pdf>.
- ECLAC. 2017. "Time distribution: a key element of the inequality analysis." In *Social Panorama of Latin America 2016*, 169-209. Santiago: United Nations Economic Commission for Latin America and the Caribbean.
- EDUFI. 2018. *Key statistics on education in Finland (OECD Education at a Glance 2018)*. Finnish National Agency for Education. https://www.oph.fi/download/195432_Key_statistics_on_education_in_Finland_OECD_Education_at_a_Glance_2018_.pdf.
- Elson, Diane. 2017. *Recognize, reduce, and redistribute unpaid care work: How to close the gender gap*. New labor forum.
- EPF. 2019a. *Belanjawanku - Expenditure Guide for Malaysian Individuals and Families Employees' Provident Fund*. http://www.kwsp.gov.my/documents/20126/131635/Panduan_Belanjawanku.pdf/76872674-983a-3860-19a3-c47d2d2d2ab6.
- EPF. 2019b. "i-Suri: Financial Security for Housewives." Employees Provident Fund. <http://www.kwsp.gov.my/member/contribution/insentif-suri>.
- EPU. 2000. *Eighth Malaysia Plan 2001-2005*. Putrajaya: Economic Planning Unit, Prime Minister's Department.
- EPU. 2006. *Ninth Malaysia Plan 2006 - 2010*. Putrajaya: Economic Planning Unit, Prime Minister's Department. https://www.pmo.gov.my/dokumenattached/RMK/RM9_E.pdf.
- EPU. 2010. *Tenth Malaysia Plan 2011-2015*. Putrajaya: Economic Planning Unit, Prime Minister's Department.
- EPU. 2015. *Eleventh Malaysia Plan, 2016 - 2020*. Putrajaya: Economic Planning Unit, Prime Minister's Department <http://www.epu.gov.my/sites/default/files/Chapter%204.pdf>.
- Esping-Anderson, Gosta. 1999. *Social Foundations of Post-Industrial Economies*. New York: Oxford University Press Inc.
- Expatax BV. 2017. "Child Subsidy ". <https://www.expatax.nl/kinderbijslag>.
- Fairholm, Robert 2017. *Socio-Economic Impact Analysis of the \$10aDay Child Care Plan for British Columbia*. Early Childhood Educators of BC: Centre for Spatial Economics.
- Fanning Madden, Janice. 1981. *Why Women Work Closer to Home*. Urban Studies 18 (2):181-194. doi: 10.1080/00420988120080341.
- Fatimah Zainal. 2018. *Childcare centres to hike fees in 2019*. The Star Online. <https://www.thestar.com.my/news/nation/2018/12/28/childcare-centres-to-hike-fees-in-2019-rates-to-rise-by-10-to-30-to-cover-costs/>.

REFERENCES

- Fenstermaker Berk, Sarah. 1985. *The gender factory: The apportionment of work in American households*. New York.
- Fernandez, Jacqueline Liza. 2009. *Intra-occupational gender earnings gaps in Malaysia*. Jurnal Kemanusiaan 7 (2).
- Ferree, Myra Marx. 1991. *The gender division of labor in two-earner marriages: Dimensions of variability and change*. Journal of Family Issues 12 (2):158-180.
- Folbre, Nancy. 2006. *Measuring care: Gender, empowerment, and the care economy*. Journal of human development 7 (2):183-199.
- Folbre, Nancy. 2011. *Inequality and Time Use in the Household*. The Oxford Handbook of Economic Inequality. doi: 10.1093/oxfordhb/9780199606061.013.0014. <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199606061.001.0001/oxfordhb-9780199606061-e-14>.
- Folbre, Nancy. 2015. *044: Nancy Folbre on Feminist Economics and the Care Economy*. In Economic Rockstar, Frank Conway. <http://www.economicrockstar.com/nancyfolbre/>.
- Fraser, Nancy. 1994. *After the family wage: Gender equity and the welfare state*. Political theory 22 (4):591-618.
- Ghosh, Jayati. 2016. *Time poverty and the poverty of economics*. METU Studies in Development 43 (1):1.
- Goldin, Claudia, and Joshua Mitchell. 2017. *The New Life Cycle of Women's Employment: Disappearing Humps, Sagging Middles, Expanding Tops*. Journal of Economic Perspectives 31:161-182. doi: doi=10.1257/jep.31.1.161.
- GOM. 1984. *Child Care Centre Act 1984*. In Act 308, Government of Malaysia. <http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/EN/Act%20308%20-%20Child%20Care%20Centre%20Act%201984.pdf>.
- GOM. 2012a. *Child Care Centre (Institution Based) Regulations 2012 under the Child Care Centre Act 1984 (Act 308) – Regulation 18 (Third Schedule)*. Government of Malaysia. <http://www.jkm.gov.my/jkm/uploads/files/peraturan-peraturan%20TASKA%20edit%2003082016.pdf>.
- GOM. 2012b. *Employment Act 1955 (Act 265)*. Government of Malaysia. <http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/EN/Act%20265%20-%20Employment%20Act%201955.pdf>.
- Gordon, Peter, Ajay Kumar, and Harry W. Richardson. 1989. *Gender Differences in Metropolitan Travel Behaviour*. Regional Studies 23 (6):499-510. doi: 10.1080/00343408912331345672.
- Gough, Margaret, and Mary Noonan. 2013. *A Review of the Motherhood Wage Penalty in the United States*. Sociology Compass 7 (4):328-342. doi: 10.1111/soc4.12031.
- Gould, Elise, and Tanyell Cooke. 2015. *High quality child care is out of reach for working families*. Washington DC: Economic Policy Institute.
- Guiliano, G. 1979. *Public transportation and the travel needs of women*. Traffic Q.; (United States) 33:4.

- Gurin, Douglas B. 1981. *Women's Future Travel, Driving, and Transit Use*. Psychology of Women Quarterly 6 (1):72-84. doi: 10.1111/j.1471-6402.1981.tb01061.x.
- Hanson, Susan, and Perry Hanson. 1981. *The impact of married women's employment on household travel patterns: A Swedish example*. Transportation 10 (2):165-183. doi: 10.1007/BF00165264.
- Hanson, Susan, and Ibipo Johnston. 1985. *Gender Differences in Work-Trip Length: Explanations and Implications*. Urban Geography 6 (3):193-219. doi: 10.2747/0272-3638.6.3.193.
- Harvey, Andrew S, AK Mukhopadhyay, and J Hunt. 2002. *Re-Estimating Poverty Rates for Canada: Accounting for Time Poverty*. The 27th General Conference of the International Association for Research in Income and Wealth, Djurhamn, Sweden.
- Harvey, Andrew S, and Arun K Mukhopadhyay. 2007. *When twenty-four hours is not enough: Time poverty of working parents*. Social Indicators Research 82 (1):57-77.
- Hjorthol, Randi Johanne. 2000. *Same city—different options: An analysis of the work trips of married couples in the metropolitan area of Oslo*. Journal of Transport Geography 8 (3):213-220. doi: 10.1016/S0966-6923(99)00040-X.
- Hochschild, Arlie, and Anne Machung. 2012. *The second shift: Working families and the revolution at home*. New York: Viking Penguin.
- ILMIA. 2015. "Key Indicator Labour Market ". Institute of Labour Market Information and Analysis. <https://www.ilmia.gov.my/index.php/en/dashboard-datamart/kilm/indicators/lfpr>.
- ILO. 1998. "Unit 1: A conceptual framework for gender analysis and planning." International Labour Organisation <https://www.ilo.org/public/english/region/asro/mdtmanila/training/unit1/groles.htm>.
- ILO. 2011. *Classification of activities of persons in relation to the System of National Accounts*. International Labour Organisation. http://www.oit.org/wcmsp5/groups/public/---dgreports/---stat/documents/projectdocumentation/wcms_173525.pdf.
- ILO. 2015. "Who are domestic workers? ." International Labour Organisation https://www.ilo.org/global/docs/WCMS_209773/lang-en/index.htm.
- ILO. 2018. *Care work and care jobs for the future of decent work*. Geneva: International Labour Organization.
- ILO & UNDP. 2018. *Time-use surveys and statistics in Asia and the Pacific: A review of challenges and future directions*. International Labour Organisation and United Nations Development Programme. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_630892.pdf.
- Info Finland. 2018. "Benefits for looking after a child at home." <https://www.infofinland.fi/en/living-in-finland/family/support-for-families/benefits-for-looking-after-a-child-at-home>.
- Jenson, Jane. 2009. *Lost in translation: The social investment perspective and gender equality*. Social Politics 16 (4):446-483.

REFERENCES

- JKM. 2018. "Kursus Asuhan PERMATA." Jabatan Kebajikan Masyarakat. Last Modified 10/01/2018.
<http://www.jkm.gov.my/jkm/index.php?r=portal/left&id=UUNhTjJCQnIIYjBrUHIBU0tuSFVCdz09>.
- JKM. n.d. "Portal Rasmi Jabatan Kebajikan Masyarakat." Department of Social Welfare.
- Johnston-Anumonwo, Ibipo. 1992. *The Influence of Household Type on Gender Differences in Work Trip Distance*. The Professional Geographer 44 (2):161-169. doi: 10.1111/j.0033-0124.1992.00161.x.
- Kaur, Amarjit, and Ian Metcalfe. 1999. *The shaping of Malaysia*: Springer.
- Kela. 2017a. "Child home care allowance." Kansaneläkelaitos. Last Modified 21 July 2017 Accessed 23 September 2019. <https://www.kela.fi/web/en/child-home-care-allowance>.
- Kela. 2017b. "Maternity, paternity and parental allowances." Kansaneläkelaitos. Last Modified 21 July 2017 Accessed 23 September 2019. <https://www.kela.fi/web/en/parental-allowances>.
- Kela. 2017c. "Partial care allowance." Kansaneläkelaitos. Last Modified 21 July 2017 Accessed 23 September 2019. <https://www.kela.fi/web/en/partial-care-allowance>.
- Kela. 2017d. "Private day care allowance." Kansaneläkelaitos. Last Modified 14 September 2017 Accessed 23 September 2019. <https://www.kela.fi/web/en/private-day-care-allowance>.
- Kela. 2019a. "Flexible care allowance." Kansaneläkelaitos. Last Modified 23 May 2019 Accessed 23 September 2019. <https://www.kela.fi/web/en/flexible-care-allowance>.
- Kela. 2019b. "Maternity grant." Kansaneläkelaitos. Last Modified 24 April 2019 Accessed 23 September 2019. <https://www.kela.fi/web/en/maternity-grant>.
- Kleven, Henrik, Camille Landais, and Jakob Egholt Søgaaard. 2018. *Children and Gender Inequality: Evidence from Denmark*. National Bureau of Economic Research.
- KPKT. 2012. *Garis Panduan Penubuhan TADIKa dan TASKA*. Jabatan Perancangan Bandar dan Desa Semenanjung Malaysia: Kementerian Perumahan dan Kerajaan Tempatan. <http://jkt.kpkt.gov.my/jkt/resources/PDF/Perkhidmatan/Pekeliling/2012/GARIS-PANDUAN-PENUBUHAN-TADIKa-DAN-TASKA.pdf>.
- Kremer, Monique. 2007. *How welfare states care: Culture, gender and parenting in Europe*: Amsterdam University Press.
- KRI. 2018a. *The State of Households 2018: Different Realities*. Kuala Lumpur: Khazanah Research Institute: License: Creative Commons Attribution CC BY 3.0.
- KRI. 2018b. *Structure of the Malaysian Economy: An Input-Output Analysis*. Khazanah Research Institute: Khazanah Research Institute.
- KRI. 2019a. *Gender Role Values: What Do Women Want?* http://www.krinstitute.org/assets/contentMS/img/template/editor/20190314_Discussion%20Paper_Gender%20Values.pdf.
- KRI. 2019b. *Time Use Survey. Published raw data*. Kuala Lumpur,: Khazanah Research Institute.

- Kwan, Mei-Po. 1999. *Gender, the home-work link, and space-time patterns of nonemployment activities*. *Economic geography* 75 (4):370–394.
- Lamb, Michael. 1981. *The Role of the Father in Child Development* / M. R. Lamb.
- Lambert, Peter J, and J Richard Aronson. 1993. *Inequality decomposition analysis and the Gini coefficient revisited*. *Quantitative Economics: Theory and Practice (Essays in Honour of Professor N. Bhattacharya)*. Calcutta: Allied Publishers (for the Indian Statistical Institute), 1998. This is also journal article 40 ahead:217-228.
- Lee, Bun Song, and John F. McDonald. 2003. *Determinants of Commuting Time and Distance for Seoul Residents: The Impact of Family Status on the Commuting of Women*. *Urban Studies* 40 (7):1283-1302. doi: 10.1080/0042098032000084604.
- Leete, Laura, and Juliet B. Schor. 1994. *Assessing the time-squeeze hypothesis: Hours worked in the United States, 1969–89*. *Industrial Relations: A Journal of Economy and Society* 33 (1):25-43.
- Leeuwen, Abuzer Van. 2019. "Paternity leave in the Netherlands will go up to 6 weeks (well, more or less)." <https://dutchreview.com/culture/living-in-the-netherlands/paternity-leave-netherlands-6-weeks-2018/>.
- Lewis, Jane. 2002. *Gender and Welfare State Change*. *European Societies* 4 (4):331-357. doi: 10.1080/1461669022000022324.
- LPPKN. 2016. *Report on Key Findings: Fifth Malaysian Population and Family Survey 2014*. Kuala Lumpur: National Population and Family Development Board.
- Lundberg, Shelly, and Elaina Rose. 2000. *Parenthood and the earnings of married men and women*.
- Manning, I. 1978. *The journey to work*.
- Mattingly, Marybeth J., Andrew P. Schaefer, and Jessica A. Carson. 2016. *Child care costs exceed 10 Percent of family income for one in four families*.
- Mazzucato, Mariana. 2018. *The value of everything: Making and taking in the global economy*: Hachette UK.
- McGuckin, Nancy, and Elaine Murakami. 1999. *Examining Trip-Chaining Behavior: Comparison of Travel by Men and Women*. *Transportation Research Record* 1693 (1):79-85. doi: 10.3141/1693-12.
- McLafferty, Sara. 1997. *Gender, Race, and the Determinants of Commuting: New York in 1990*. *Urban Geography* 18 (3):192-212. doi: 10.2747/0272-3638.18.3.192.
- MEA. 2018. *Mid-Term Review of the Eleventh Malaysia Plan*. Putrajaya: Ministry of Economic Affairs.
- Meinen, Gerhard, Piet Verbiest, and PP de Wolf. 1998. *Perpetual inventory method*. *Service lives, Discard patterns and Depreciation methods*. CBS Statistics Netherlands 55.
- MOF. 2017. 2018 Budget. Ministry of Finance <http://www.treasury.gov.my/pdf/budget/speech/bs18.pdf>.
- MOF. 2018. Budget 2019. Putrajaya: Ministry of Finance. <http://www.treasury.gov.my/pdf/budget/speech/bs19.pdf>.

REFERENCES

- MOF. 2019. *Fiscal Updates 2018*. Ministry of Finance. <http://www.treasury.gov.my/index.php/en/fiscal-economy/fiscal-updates.html>.
- MOF. Various years. "Estimated Federal Expenditure." Ministry of Finance. <http://www.treasury.gov.my/index.php/en/archives>.
- MOHA. 2019. *Statistik Kesalahan Penderaan Kanak-Kanak*. Government of Malaysia. http://www.data.gov.my/data/ms_MY/dataset/statistik-kesalahan-penderaan-kanak-kanak.
- MOHR. 2013. *Malaysia Standard Classification of Occupations (MASCO) 2013*. Ministry of Human Resources. Putrajaya.
- MOM. 2018. "Shared Parental Leave." Ministry of Manpower Singapore. <https://www.mom.gov.sg/employment-practices/leave/shared-parental-leave>.
- MOM. 2019a. "Maternity leave eligibility and entitlement." Ministry of Manpower Singapore. <https://www.mom.gov.sg/employment-practices/leave/maternity-leave/eligibility-and-entitlement>.
- MOM. 2019b. "Paternity Leave." Ministry of Manpower Singapore. Last Modified 2 August 2019. <https://www.mom.gov.sg/employment-practices/leave/paternity-leave>.
- Moñtano, Sonia, and María Nieves Rico. 2007. *Women's contribution to equality in Latin America and the Caribbean*.
- MSF. 2016. "Child Care/ Infant Care Subsidy ". Ministry of Social and Family Development Singapore. <https://www.msf.gov.sg/assistance/Pages/Child-Care-Infant-Care-Subsidy.aspx>.
- NCDC. n.d. *National Child Data Centre*. National Child Development Research Centre. <https://ncdc.ups.edu.my/>.
- NCDR. 2019. *Data requested from the National Child Development Research Centre on the National Child Data Centre*. National Child Development Research Centre.
- Nelson, Julie A. . 2003. *The childcare economic conundrum: Quality versus affordability*. Women, family, and work: Writings on the economics of gender:125-141.
- Nikolayenko, Olena. 2008. *Life Cycle, Generational and Period Effects on Protest Potential in Yeltsin's Russia*. Canadian Journal of Political Science/Revue canadienne de science politique 41 (2):437-460.
- Noraini M. Noor, and Nor Diana Mohd Mahudin. 2016. *Work, Family and Women's Well-Being in Malaysia*. Handbook on Well-Being of Working Women:717 – 734. doi: [10.1007/978-94-017-9897-6_40](https://doi.org/10.1007/978-94-017-9897-6_40).
- Norehan Abdullah, Rahmah Ismail, Zulridah Mohd Noor, and Fariza Ahmad. 2012. *Kebarangkalian bekerja wanita berkahwin di Malaysia*. Jurnal Ekonomi Malaysia 46 (1):107 - 117.
- OECD. 2003. "Glossary of Statistical Terms- Labour Market Dynamics ". Organisation for Economic Co-operation and Development. Last Modified March 6, 2003. <https://stats.oecd.org/glossary/detail.asp?ID=4821>.

- OECD. 2008. *Growing Unequal? Income Distribution and Poverty in OECD Countries*. Paris: Organization for Economic Co-operation and Development.
- Oesch, Daniel, Oliver Lipps, and Patrick McDonald. 2017. *The wage penalty for motherhood: Evidence from panel data and a survey experiment for Switzerland*. *Demographic Research* 37 (56):1793-1824. doi: 10.4054/DemRes.2017.37.56.
- OPH. n.d. *Early childhood education and care*. Finnish National Agency for Education. https://www.oph.fi/english/education_system/early_childhood_education.
- Orloff, Ann Shola. 1993. *Gender and the social rights of citizenship: The comparative analysis of gender relations and welfare states*. *American sociological review*:303-328.
- Perez, Caroline Criado. 2019. *Invisible Women: Exposing Data Bias in a World Designed for Men*: Random House.
- PERPADUAN. 2016. "TASKA PERMATA PERPADUAN." Jabatan Perpaduan Negara dan Integrasi Nasional. Accessed 28 May 2019. <https://www.perpaduan.gov.my/ms/komuniti/taska-permata-perpaduan>.
- PMO. 1981. *The Fourth Malaysia Plan (FMP)*. Prime Minister's Office. Putrajaya. <https://www.pmo.gov.my/dokumenattached/RMK/RM4.pdf>.
- PMO. 1986. *Rancangan Malaysia Ke Lima RML (1986-1990)*. Prime Minister's Office. Putrajaya. <https://www.pmo.gov.my/dokumenattached/RMK/RM5.pdf>.
- PMO. 1991. *Rancangan Malaysia Ke Enam (RM6) 1991-1995*. Prime Minister's Office. Putrajaya. <https://www.pmo.gov.my/dokumenattached/RMK/RM6.pdf>.
- PMO. 1996. *Rancangan Malaysia Ke Tujuh (RMT) 1996-2000*. Prime Minister's Office. Putrajaya. <https://www.pmo.gov.my/dokumenattached/RMK/RM7.pdf>.
- PWC. 2016. *Economic impacts of the imposed Child Care Subsidy: Final Report* PricewaterhouseCoopers Australia and Goodstart Early Learning <https://www.goodstart.org.au/getmedia/00cefcff-40a3-4663-a81c-599f2f084a2c/PwC-final-report.pdf.aspx>.
- Rahimah Abdul Aziz. 2007. *Grandparenting: Issues and Challenges*. Akademika. <http://ejournal.ukm.my/akademika/article/view/586/3985>.
- Rahmah Ismail, Maryam Farhadi, and Chung-Khain Wye. 2017. *Occupational Segregation and Gender Wage Differentials: Evidence from Malaysia*. *Asian Economic Journal* 31 (4):381-401.
- Razavi, Shahra. 2007. *The Political and Social Economy of Care in a Development Context: Conceptual Issues, Research Questions and Policy Options*. Geneva: United Nations Research Institute for Social Development.
- Reisch, Lucia A. 2001. *Time and wealth*. *Time & Society* 10 (2-3):367-385.
- Roberts, Jennifer, Robert Hodgson, and Paul Dolan. 2011. *"It's driving her mad": Gender differences in the effects of commuting on psychological health*. *Journal of Health Economics* 30 (5):1064-1076. doi: 10.1016/j.jhealeco.2011.07.006.

REFERENCES

- Robinson, John, and Geoffrey Godbey. 2010. *Time for life: The surprising ways Americans use their time*: Penn State Press.
- Ross, Catherine E. 1987. *The division of labor at home*. Social Forces 65 (3):816-833.
- Rouwendaal, Jan. 1999. *Spatial job search and commuting distances*. Regional Science and Urban Economics 29 (4):491-517. doi: 10.1016/S0166-0462(99)00002-2.
- Sanchez, Laura, and Elizabeth Thomson. 1997. *Becoming mothers and fathers: Parenthood, gender, and the division of labor*. Gender & Society 11 (6):747-772.
- Scanlon, John. 1982. *Sexual bargaining: Power politics in the American marriage*: University of Chicago Press.
- Shelton B.A. 2006. *Gender and Unpaid Work*. Handbook of the Sociology of Gender. doi: 10.1007/0-387-36218-5_17.
- Silveira Neto, Raul, Gisleia Duarte, and Antonio Páez. 2015. *Gender and commuting time in São Paulo Metropolitan Region*. Urban Studies 52 (2):298-313. doi: 10.1177/0042098014528392.
- Soinne, Katri. 2016. "Household Satellite Account." Statistics Division of the United Nations Department of Economic and Social Affairs. https://unstats.un.org/unsd/gender/Finland_Oct2016/Documents/Finland_s5_abstract.pdf.
- Starrels, Marjorie E. 1994. *Gender Differences in Parent-Child Relations*. Journal of Family Issues 15 (1):148-165. doi: 10.1177/019251394015001007.
- Steil, Janice M, and Karen Weltman. 1991. *Marital inequality: The importance of resources, personal attributes, and social norms on career valuing and the allocation of domestic responsibilities*. Sex Roles 24 (3-4):161-179.
- Stiglitz, Joseph, Amartya Sen, and Jean-Paul Fitoussi. 2009. *The measurement of economic performance and social progress revisited*. Reflections and overview. Commission on the Measurement of Economic Performance and Social Progress, Paris. <https://hal-sciencespo.archives-ouvertes.fr/hal-01069384/document>.
- Suh, Jooyeoun, and Nancy Folbre. 2017. *Time, Money, and Inequality*. Œconomia. History, Methodology, Philosophy (7-1):3-24.
- Suhaida Mohd Amin, and Mohd Faizal bin P. Rameli. 2014. *Fenomena Kekurangan Tenaga Kerja Wanita Berpendidikan dan Berkemahiran di Malaysia*. Persidangan Kebangsaan Ekonomi Malaysia ke-9, Kuala Terengganu, Terengganu.
- Sullivan, Oriol. 1997. *Time Waits for no (Wo)Man: An Investigation of the Gendered Experience of Domestic Time*. Sociology 31 (2):221-239. doi: 10.1177/0038038597031002003.
- SVB. 2018. "Child Benefit." Sociale Verzekeringsbank https://www.svb.nl/int/en/kinderbijslag/kinderbijslag_voor_kind/kindgebonden_budget/begin_en_eind/.
- SVB. n.d. "Child Benefits". Sociale Verzekeringsbank. https://www.svb.nl/int/nl/kinderbijslag/levensloop/hoeveel_bijverdienen/.

- Turner, Tracy, and Debbie Niemeier. 1997. *Travel to work and household responsibility: new evidence*. *Transportation* 24 (4):397-419. doi: 10.1023/A:1004945903696.
- UNDESA. 2004. *Handbook on the Collection of Fertility and Mortality Data*. United Nations Department of Economic and Social Affairs https://unstats.un.org/unsd/demographic/standmeth/handbooks/Handbook_Fertility_Mortality.pdf.
- UNDESA. 2005. *Guide to Producing Statistics on Time Use: Measuring Paid and Unpaid Work*: United Nations Publications. <https://books.google.com.my/books?id=Hh0toUpC4OwC>.
- UNDESA. 2015. *World Population Ageing 2015*. United Nations Department of Economic and Social Affairs https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf.
- UNDP. 2014. *Malaysia Human Development Report 2013: Redesigning an Inclusive Future*. Kuala Lumpur: United Nations Development Programme.
- UNDP. 2016. *Human Development Report 2016*. Malaysia United Nations Development Programme https://www.undp.org/content/dam/malaysia/docs/hdr/Malaysia_Country%20Explanatory%20Note_HDR2016.pdf.
- UNECE. 2013. *Guidelines for Harmonising Time Use Surveys*. United Nations Economic Commission For Europe https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/bur/2013/12-Add.1_TimeUseSurvey_Guidelines_UNECE.pdf.
- UNECE. 2017. *Guide on Valuing Unpaid Household Service Work*. New York and Geneva: United Nations Economic Commission for Europe. <https://www.unece.org/fileadmin/DAM/stats/publications/2018/ECECESSTAT20173.pdf>.
- UNESCO. 2017. "Social and Human Sciences - Poverty ". United Nations Educational, Scientific and Cultural Organization. <http://www.unesco.org/new/en/social-and-human-sciences/themes/international-migration/glossary/poverty/>.
- UNSD. 2017. *Corrigendum International Classification of Activities for Time Use Statistics 2016 (ICATUS 2016)*. <https://unstats.un.org/unsd/statcom/48th-session/documents/BG-3h-ICATUS-2016-13-February-2017-E.pdf>.
- UNSD. n.d. "The System of National Accounts (SNA)." United Nations Statistics Division. <https://unstats.un.org/unsd/nationalaccount/sna.asp>.
- UWV. n.d. "Maternity and maternity leave benefits ". Uitvoeringsinstituut Werknemersverzekeringen. <https://www.uwv.nl/particulieren/zwanger-adoptie-pleegzorg/zwanger-met-werkgever/ik-ben-zwanger-en-heb-een-werkgever/detail/zwangerschap-en-bevallingsverlof-en-uitkering/berekening-van-de-zwangerschaps--en-bevallingsuitkering/berekening-van-het-dagloon>.
- Vickery, Clair. 1977. *The time-poor: A new look at poverty*. *Journal of human Resources*:27-48.
- Voicu, Mălina, Bogdan Voicu, and Katarina Strapcova. 2009. *Housework and Gender Inequality in European Countries*. *European Sociological Review*:14. doi: 10.1093/esr/jcn054

REFERENCES

- WAO. 2019. *The Status of Women's Human Rights: 24 Years of CEDAW in Malaysia*. Women's Aid Organisation. <https://wao.org.my/wp-content/uploads/2019/01/The-Status-of-Womens-Human-Rights-24-Years-of-CEDAW-in-Malaysia.pdf>.
- Waring, Marilyn, and Gloria Steinem. 1988. *If women counted: A new feminist economics*. Harper & Row San Francisco.
- WHO. 2006. *Reproductive Health Indicators- Guidelines for their generation, interpretation and analysis for global monitoring* World Health Organisation https://apps.who.int/iris/bitstream/handle/10665/43185/924156315X_eng.pdf;jsessionid=BE2E196AF81BA4EAE5B9CAEA10E7552?sequence=1.
- Workman, Simon, and Steven Jessen-Howard. 2018. *Understanding the True Cost of Child Care for Infants and Toddlers*. Center for American Progress. <https://cdn.americanprogress.org/content/uploads/2018/11/14133754/TrueCostITChildCare-report.pdf>.
- World Bank. 2012. *World Development Report 2012: Gender Equality and Development*. In World Development Report: The World Bank.
- Yeung, W. Jean, John F. Sandberg, Pamela E. Davis-Kean, and Sandra L. Hofferth. 2001. *Children's Time With Fathers in Intact Families*. Journal of Marriage and Family 63 (1):136-154. doi: 10.1111/j.1741-3737.2001.00136.x.
- YPKT. 2016. "Introduction." Yayasan Pembangunan Keluarga Terengganu. Accessed 28 May 2019. <http://www.ypkt.gov.my/info-ypkt/pengenalan.html>.
- Zaida Mustafa, Muhamad Naim Kamari, Putri Zabariah Megat A Rahman, Johari Talib, Azrul Fazwan Kharuddin, Ku Faridah Ku Ibrahim, Nuzha Muhamad Taha, and Siti Farhana Md Yasin. 2017. *Laporan Akhir Kajian Perkhidmatan Taman Asuhan Kanak-Kanak (TASKA) di Malaysia*. UNITAR International University. <http://www.jkm.gov.my/jkm/uploads/files/penerbitan/FINAL%20%20REPORT%20%20TASKA%20OKT%202017%20JKM%20UNITAR.pdf>.