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Gender Inequalities in the Allocation of Time to Household Production in Nepal

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Gender Inequalities in the Allocation of Time to Household Production in Nepal

Thesis Submitted to Levy Economics Institute of Bard College

by Nischal Dhungel

Annandale-on-Hudson, New York, May 2022

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PLAGIARISM STATEMENT

I have written this project using my own words and ideas, except otherwise indicated. I have subsequently attributed each word, idea, figure, and table which is not my own to their respective authors. I am aware that paraphrasing is plagiarism unless the source is duly acknowledged. I understand that the incorporation of material from other works without acknowledgment will be treated as plagiarism. I have read and understand the Levy Economics Institute of Bard College statement on plagiarism and academic honesty as well as the relevant pages in the Student Handbook.

A handwritten signature in red ink, appearing to read 'Nischal Dhungel', with a long horizontal stroke extending to the right.

Nischal Dhungel, 25 May 2022

ABSTRACT:

The thesis examines factors that may explain gender (working age group, married men and women, 15-60 years) inequalities in the allocation of time to household production in Nepal. Gender disparities in the allocation of unpaid care and domestic labor (home production) are a major and prevalent element of inequalities between men and women. I presume that each spouse's time spent is influenced by personal and household factors. Furthermore, I argue that state can play substantial role in pursuing province level employment program (Karnali Province) in line with federal level employment program, namely Job Guarantee to uplift women's economic empowerment by establishing respectable jobs in the care industry and elsewhere.

Keywords: Household Production; Nepal; Domestic Work Time; Gender Inequality; Job Guarantee; Public Policy; Policy Design

JEL Classifications: E61, E24, J16, J18, J21, J22

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1. INTRODUCTION

Women's engagement in economic, political, and social life is hampered by the unequal distribution of unpaid care, which forces them into low-wage, insecure occupations (Antonopoulos 2008; Razavi 2007; Kabeer 2012). There is strong evidence that in third world countries, women devote a significant amount of time to domestic tasks, limiting their economic potential. Women spend at least two times as much time doing unpaid labor as compared to males in almost all countries in the world (Ferrant et al., 2014). Unpaid work impacts females' social and economic status. Even women who actively work for a living take on the majority of domestic production chores, raising their risk of sliding into time poverty (Zacharias et al. 2018). Men, on the other hand, are far less interested in household activities. They not only spend less hours of their time on domestic production, but they also complete fewer household duties (Zacharias et al. 2018). Women in Nepal shoulder the majority of domestic labor and conduct unpaid work that is not reflected in national accounting (Shrestha, 2008).

1.1. Historical Background on Unpaid Work

Unpaid work was officially recognized in Paragraph 68b of Report of the Fourth World Conference on Women: "examine the relationship of women's unremunerated work to the incidence of and their vulnerability to poverty" (UN 1996, p.25). Besides the United Nations, international institutions like the World Bank, International Monetary Fund (IMF), International Labor Organizations (ILO), Organization for Economic Cooperation and Development (OECD) also recognize the relationship of women's unpaid work and its impact on the social and economic status (Ferrant et al., 2014). The Fourth Conference called for national and international statistics bodies to assess unpaid labor and account for it in satellite accounts to the GDP. United Nation Sustainable Development Goals ratified under the fifth goal i.e., gender equality and empowerment to value and recognize unpaid work, aims to maintain a fair balance of responsibility for unpaid work between men and women. Sustainable Development Goals are a global agenda and the achievement of goal 5 is important to achieve other goals such as goal 8 to promote sustainable and inclusive economic growth, employment and decent work for all. Achievement of these goals will also help to achieve first goal i.e., end poverty in all forms (UN, 2016). According to UN Women 2015, unpaid work is vital to understand the relation between women's poverty and unequal opportunities and outcomes in the labor market. The framework of

Decent Work developed by the International Labor Organization (ILO) is important because the Decent Work Agenda (International Labor Conference, 2009) includes both paid and unpaid work in the home and community, and it places women's lived experiences at the center of its implementation.

Care-related indirect employment creation is equally important and there is huge scope to generate employment opportunity in informal sector. According to an ILO study (2019), in 45 countries¹, the number of employees in total care and care-related indirect employment is predicted to reach 358 million in 2030 if existing education, health, and social work trends are maintained. In 2015, there were 205 million jobs available. The study found that increasing investments in the care sector to reach SDG objectives by 2030 (high road scenario) could result in an increase of 117 million new jobs above and beyond those produced in the status quo scenario (ILO 2019). If investment in care service provision does not increase by at least 6% of global GDP by 2030, coverage shortages will grow, and care workers' working conditions will deteriorate. (ILO 2019) The development of care services necessitates the increase of a country's fiscal space. Investment in high-quality care services can be a strategic policy intervention to boost women's economic empowerment by establishing respectable jobs in the care industry and elsewhere.

1.2. Socio-economic Status of Nepal

Nepal is a landlocked country sandwiched between India and the People's Republic of China, the world's two most populous countries. In July 2021, Nepal's Gross Domestic Product (GDP) per capita stood at USD 1,191, up from USD 1,126 in July 2020 (MOF 2021). Nepal's nominal GDP in 2021 stood at USD 36.2 billion (MOF 2021). In 2019, 17.4% of Nepalis – slightly under five million people – were multidimensionally poor, with Multidimensional Poverty Index (MPI)² of

¹ The (ILO 2019) report titled “Care Work and Care Jobs for the Future of Decent Work” employs input–output analysis and covers 45 nations that have input–output tables available to estimate the employment-generation capacity (direct and indirect) of investing in the care economy. The countries are Argentina, Australia, Austria, Belgium, Brazil, Brunei, Bulgaria, Canada, China, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, India, Indonesia, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Mexico, Netherlands, Poland, Portugal, Peru, Philippines, Republic of Korea, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Tunisia, Turkey, United Kingdom, United States and Viet Nam.

² Nepal's MPI are the same as those of the global MPI. The three dimensions are: 1) health, including nutrition and child mortality, 2) education, including years of schooling and school attendance, and 3) living standard, which

0.074 (NPC 2020). Disparities persists between the urban and rural areas (NPC 2020). For example, 28% of rural people are poor in at least one of the MPI dimensions, compared to 12.3% in urban regions.

Nepal's unemployment rate stood at 11.4% in 2018 (CBS 2018). Females were disproportionately involved in unpaid housework (88% of females compared to 38.5% of males) (CBS 2018). This was true regardless of employment status. Except for construction and extensive repairs work, women were more active in all unpaid activities, such as fetching water, collecting firewood, cooking and cleaning. Most jobs (84.6%) were in informal employment, with a greater share of females in informal work than males (90.5% vs. 81.1%) (CBS 2018).

The thesis examines factors that may explain gender inequalities in the allocation of time to household production in Nepal. Gender disparities in the allocation of unpaid care and domestic labor (home production) are a major and prevalent element of inequalities between men and women. The main goal of this thesis is to provide a descriptive analysis of domestic work time in Nepal. Because the 2017/18 Nepal Labor Force Survey (NLFS) is the first survey in Nepal for which time use data is captured, the results should be intriguing. The literature review covers three main topics; the definition and concerns with unpaid care work; the definition and use of SNA versus non-SNA activities in policy-making; and the linkages between unpaid care work and the macroeconomy in theory and policy-making. After literature review, the following sections covers basic statistics on the time spent on domestic work by personal and household characteristics. After that, a regression analysis is performed to look at the factors influencing the time spent on household work. Finally, I argue that state can play substantial role in pursuing federal level employment program, namely Job Guarantee to uplift women's economic empowerment by establishing respectable jobs in the care industry and elsewhere.

includes cooking fuel, improved sanitation, improved drinking water, electricity, flooring and roofing, and assets ownership (NPC 2020).

2. LITERATURE REVIEW

This thesis draws on a wide range of literature, underlying the production boundary of System of National Accounts (SNA), includes unpaid work and Non-system of National Accounts (non-SNA), excludes unpaid care work. The literature demonstrates that there are several linkages between unpaid labor and conventional macroeconomics, necessitating the extension of conventional macroeconomics to include unpaid labor. The literature review highlights the unequal distribution of unpaid work across gender and how neoliberal policies have impacted unpaid labor work. The literature review also covers federal job guarantee policies stressing how state can ensure the delivery of professional care with regularity on the one hand. On the other hand, unpaid employees might be relieved of this burden's time stress. The literature review has been divided into three main sections; the definition and concerns with unpaid care work; the definition and use of SNA versus non-SNA activities in policy-making; and the linkages between unpaid care work and the macroeconomy in theory and policy-making.

The System of National Accounts (SNA) production boundary includes some unpaid work (such as housing repairs, fetching firewood and water), whereas it excludes other kinds of unpaid work (unpaid child care, unpaid elderly care, unpaid household chores such as cooking and cleaning). In other words, unpaid SNA work is visible in the national income accounts, whereas unpaid non-SNA work is invisible in the national statistical system. There are linkages between non-SNA unpaid work and the conventional macroeconomy, and it is crucial to expand the boundary of conventional macroeconomics to incorporate all unpaid care work.

2.1. Definitions and Concerns with Unpaid Care Work

"Care" can be defined as addressing dependent children and people's emotional and physical needs. According to Nancy Folbre, care is "the work that involves connecting to other people, to help people meet their needs" (Folbre 1995). It is an intrinsic development goal, essential for maintaining daily life and human reproduction. As part of the social contract, the state has a primary responsibility to ensure that everyone receives care. Households, governments, markets, and voluntary groups are the four entities that typically provide care. These "care diamond" institutions are required to organize care so that enough and high-quality care is accessible to

those who require it consistently; but, if any gaps exist, the government is obliged to fill the gaps (Budlender 2010). The term "unpaid care" refers to care offered to family members, relatives, and the community without pay. United Nations Research Institute for Social Development (UNRISD) split unpaid care into direct and indirect care (Budlender 2010). Direct care includes physical care and teaching children, among other things (minding children, accompanying them to places). Housekeeping is an example of indirect care (Budlender 2010). Household care is an essential aspect of care because it keeps families together and fosters human and societal values. According to empirical studies, the amount of time spent on unpaid labor does not decrease with economic advancement (Folbre and Yoon 2008). Unpaid care services are critical in reducing Amartya Sen's "un-freedoms", especially in nations lacking basic infrastructure and public services (Sen 1993). According to Sen, "The success of a society is to be measured principally by the substantive freedoms that its citizens enjoy." Freedom expansion is seen as both the key goal and the major means of growth (Sen, 1999, p.18). As a result, development needs might be defined as the need to eliminate un-freedoms from which society members may suffer (Sen, 1999).

Many economists stress that unpaid work employs family members' time and energy to generate things (such as meals, snacks) and services that improve household well-being. This endeavor helps the economy's overall performance at the macro level. Unpaid labor is a constructive use of human labor that helps develop human capital via raising and nurturing children. It also accounts for labor depreciation and allows workers to return to work the next day. As a result, unpaid labor plays a vital role. As previously stated, the SNA regards non-SNA labor to be "economic work." According to the 19th International Conference of Labour Statisticians (ICLS) Resolution on "Statistics on Work, Employment, and Labour Underutilization included unpaid non-SNA work (International Labour Organization 2013), "work" is defined as "any activity undertaken by individuals of any age and sex to generate goods and services for the benefit of others or one's use, save for non-delegable personal services." Both of the above approaches to unpaid labor (i.e., describing it as "care" and "work") recognize its significance for the economy since unpaid labor adds to the economy's total production and well-being.

There are numerous reasons why unpaid work is a major source of concern in the economy and why it is necessary to pay attention to it. There is a significant disparity in the allocation of unpaid labor between men and women (as well as between affluent and poor). In many nations, time-use studies are neither uniform, national, nor frequent, yet they clearly show a burden in terms of participation and the time spent on unpaid work. Unpaid work gets disproportionately distributed between men and women, with women bearing the brunt of the cost of participation and time spent on unpaid work (Hirway 2005, Antonopoulos 2009)³. Paid labor is also unequally divided, with males bearing a little heavier weight. Women have a much greater overall labor load (paid and unpaid) than males (Hirway 2010 and Antonopoulos 2009, Charmes 2005). As stated below, uneven allocation of labor is a source of worry not only for gender equity but also for the economy.

Another reason why researchers should pay attention to unpaid employment is that it has various inherent flaws in measurement and the distribution of unpaid labor. Unpaid labor seems mostly hidden since time-use data has yet to become a common aspect of national statistics systems in many countries, notably in the Global South⁴. Even when time-use data is accessible, unremunerated activity is still not considered vital enough to address economic regulations. Unpaid employment is also monotonous (i.e., done daily), tedious, and often drudgery.⁵ Unpaid workers have no opportunities for advancement or promotions. There are no benefits or retirement plans associated with this sort of job. Unpaid laborers have restricted access to the outside world and fewer life prospects. It means that a large portion of the overall labor force in a particular economy gets trapped in low-productivity, low-wage jobs. These are some of the reasons why researchers should pay attention to unpaid labor and correct the inherent flaws.

Unpaid work, also known as the Household Overhead Time (HOT), is defined as the minimal number of hours a household requires to maintain and manage itself (i.e., the minimum number of hours needed to turn raw resources into consumable commodities and to provide a clean and

³ Women spend 40–500% more time on non-SNA unpaid labor than males, according to time utilization data. Only around 3% of nations have integrated time usage surveys into their national data systems. (Hirway 2005, Antonopoulos 2009).

⁴ Approximately 40–60% of nations in the global south have performed at least one-time usage surveys.

⁵ Work that is tough and time-demanding falls under the drudgery category. Women in most underdeveloped nations in Africa, Asia, and Latin America, for example, spend a significant amount of time fetching water, collecting firewood, gathering feed and other free items, or doing small urban jobs.

healthy environment) (Harvey and Taylor 2000). The HOT is incredibly high in impoverished nations, notably in poor homes, where more time is required to prepare food, cook, clean, and so on, and bring water and fuelwood (due to a lack of basic infrastructure). As a result, there is very little time for relaxing, gaining human capital (education, skills) or engaging in gainful labor market activities (Blackden and Wodon 2006 and Hirway 2010). When a household's children are involved in this job, as is often the case in impoverished homes, the next generation will be forced to pay the high cost of high HOT.

What is crucial to remember is that women's domination in this field is not due to their free will or relative efficiency or inefficiency. Men and women's labor divisions are essentially societal constructs shaped by patriarchal customs and ideals (Ridgeway 2001). In reality, power dynamics between men and women and other chronic gender inequities are rooted in this highly uneven distribution (Ridgeway 2001). The drudgery of the task, combined with the time stress of unpaid employees, the technology and productivity of this work, the working conditions, are all outside the purview of legislation since this work falls outside the realm of economic policies (Hirway 2015). Thus, unpaid work that has a massive economic impact is rarely addressed consistently in government.

2.2. Definition and use of SNA versus non-SNA activities in Policy-making

A close examination of the literature on the SNA reveals that the SNA limit expanded to include various non-market activities throughout time (UN 1993, 2008). Even though both SNA and non-SNA operations are "economic activity," the dividing line is drawn at random as a "compromise." While unpaid production of products for the household's ultimate consumption falls within the production boundary, unpaid production of services for the household's final consumption does not fall within the production boundary. This distinction is motivated by the fact that the choice to sell or keep products can be made after the work is completed (UN 2008). Macroeconomic forces have a substantial impact on the extent and features of non-SNA work. Non-SNA work is defined as all domestic work (household work e.g., washing, cleaning and care work e.g., care of child, the elderly, the disabled, and the others that need care) that can be assigned to others outside of the production (Antonopoulos 2009). Unpaid labor is considerable and so cannot be removed from the whole economy, regardless of whether it overcomes national

accounts (Hirway 2015). The division is not clear because unpaid services come and go in the market depending on micro-and macro-level circumstances (Hirway 2015).

There are a number of reasons to doubt the appropriateness of the distinction between SNA and non-SNA activities. Non-SNA or non-monetary flows have strong ties to market flows (UN 2008). Goldschmidt-Clermont (1987 and 1989) argues that the production process occurs in both the market and non-market realms. Crop cultivation – harvesting – processing – storage – processing – cooking – consuming is an example of a food production chain. Except for the last stage, all operations involve production and value addition. Therefore, they should all be included in the SNA. Meanwhile, human capital creation begins at home with the nurturing of a kid (by providing for his or her health and education, among other things) and continues in schools. On the other hand, once a youngster has attended school, human capital formation gets acknowledged. This demarcation line is referred to as a "patriarchal line" by Goldschmidt-Clermont, and it is unjustifiable on any basis (Goldschmidt-Clermont 1987 and 1989).

Non-SNA employment is a type of time tax on women throughout their lives, as the preceding section demonstrates. This time tax tends to restrict the time available for paid labor, leisure, and women's education and health. As Antonopoulos describes, this contributes to women's social and economic isolation from the market and the mainstream economy. In the economy, women get effectively segregated (Antonopoulos 2009). Many feminist economists consider this form of women's and social and economic exclusion from the market and mainstream economy a violation of a woman's fundamental human rights. The unequal allocation of paid and unpaid labor between men and women infringes on women's rights to equality, non-discrimination, education, health care, and their right to work. It also infringes on their entitlement to social security as unpaid employees and their right to participate in scientific development (Hirway 2015). This unequal distribution violates women's fundamental social, cultural, economic, and political rights, especially for those women from impoverished homes (UN 2013).

Official poverty assessments have overlooked the relationships between unpaid employment and living conditions. This oversight would be imperceptible if the time required for such output were always available. However, this is not always the case. Frequently, household upkeep takes a long time, and families lack the financial means or state-provided assistance to satisfy their

care demands. Official poverty statistics do not capture the actual amount of hardship. Alternative measurements exist such as for the Levy Institute Measure of Time and Income/Consumption Poverty (LIMTIP/LIMTCP) (Zacharias 2017). Levy Economics Institute scholars' studies with respect to LIMTIP in Africa (Zacharias et al. 2018), South Korea (Zacharias, Masterson, Kim, 2018), and Latin America (Antonopoulos et al. 2012) demonstrate that a substantially more significant portion of the population lives below the poverty line (i.e., these segments are worse off than officially estimated). Remedies based on the official measure of poverty will underestimate the scale and scope of need. Policies should address alleviating inequities in paid and unpaid work (as they relate to labor markets and employment). This sort of research, which effectively uses time usage surveys, needs to be more widely recognized and adopted by statistics authorities.

2.3. Linkages between Unpaid Care Work and the Macroeconomy: Theory and Policy

Mainstream economic theories failed to recognize unpaid work. Classical economic theories do not count unpaid domestic services in the production process because for these theories, production takes place only in the market. Unpaid domestic services within household are based on the consumption of income earned. Unpaid work within households falls outside the domain of neo-classical economic theories because unpaid work is non-market work. As per heterodox economist, unpaid work is not free, it has a cost. Unpaid work is also not unlimited as there are limits on capacity or how much unpaid work can be done. Therefore, unpaid work is an economic good. In the neoclassical framework, prices do not exist for some goods and services consumed in the market and this is an empirical fact (Stiglitz et al., 2009). It matters more to neo-classical economist than to other economist, because they are mostly interested in price determination and its consequences. For example, under the neo-classical framework, prices can be placed on paid work to teachers, staff, and academic infrastructure in the education sector. However, there are no prices when parents help their children with schoolwork or volunteer tutors who assist students with academic difficulties (Stiglitz et al. 2009). In the health sector, prices are set for doctors or nurses, medical supplies, medical infrastructure, and software. Market prices for time spent on work (caring for sick and elderly family members) for pay exist in many countries including Nepal whereas the market prices for time spend on work (caring for

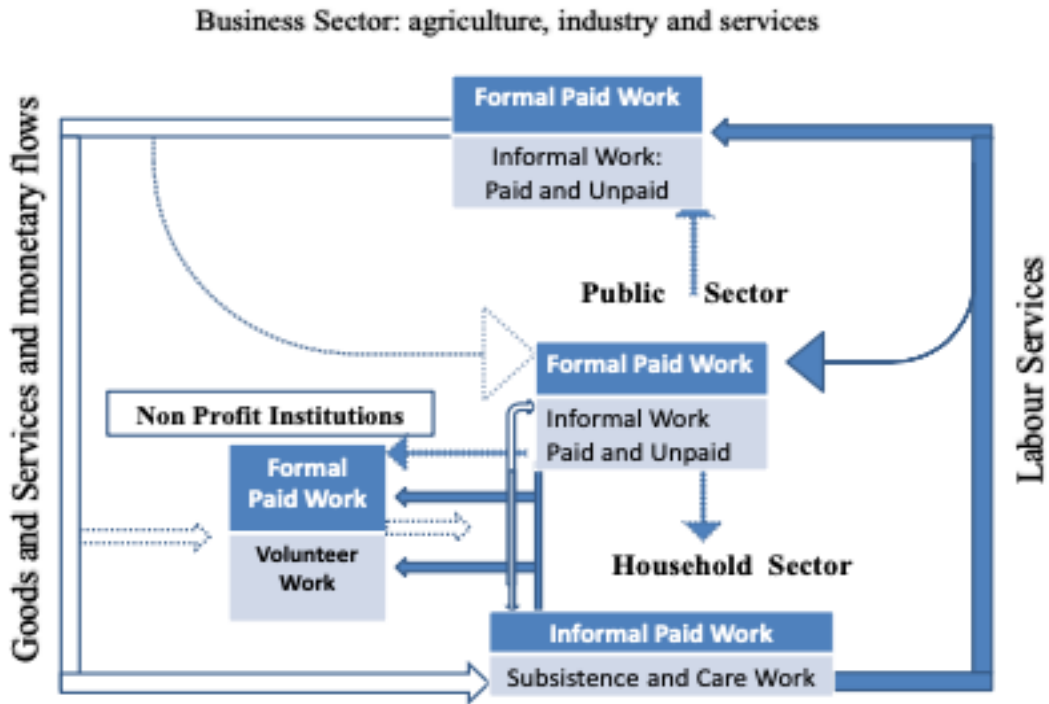
sick and elderly family member) without pay does not exist. Moreover, there are no prices for community services, unpaid internships, and volunteer work.

Simon Kuznets, the father of national income accounts, compiled national income accounts for the first time (for the United States) and did not include unpaid work under the purview of national income (Hirway 2015). The present-generation of economists (mainly feminist and heterodox) who approach macroeconomics realistically and logically criticize mainstream economists because they do not recognize unpaid care work and exclude it in the national accounting framework (Hirway 2015). Domestic unpaid work is not only about consumption, but it is also about production by household members, and it is termed “housewives’ production” and is consequently not a part of the economy (Hirway 2015). Moreover, unpaid work is not free (cost) and not unlimited (limits on capacity to work). Providing this solid argument, the present-generation economist considers unpaid care work an economic good. Bhutan’s Gross National Happiness (GNH) challenges Gross Domestic Product (GDP) metrics and includes the time use and percent of an individual’s day spent doing labor activities, non-labor activities, and leisure on its framework (Nguyen 2021).

Household is one of the main sectors of the macroeconomy (Elson 2008). Figure 1 below shows that the household is the fundamental building block structurally interlinked with other two sectors; the public sector and the market (Elson 2008). In the chart, the household sector includes formal labor, informal labor, and unpaid labor in the economy. These laborers usually work in the public and business sectors (Elson 2008). The household sector also includes formal labor as part of paid work and volunteer work in nonprofit institutions.

Similarly, the private and public sectors supply goods and services to individuals and nonprofit organizations. The private sector also supplies the government with goods and services. Finally, the government serves the private sector, households, and nonprofit organizations. The links between the three macroeconomic core sectors are depicted quite clearly in this chart. The chart suggests that how individuals split their time between paid (SNA) and unpaid (non-SNA) work should be utilized to assess the impact of macro policies on both those who perform paid and unpaid work (Antonopoulos 2009).

Figure 1 Interlink Among Formal, Informal and Household Sector



Source: Diane Elson (2008). Graph from Page 10. Chart 1, Hirway (2015)

The non-SNA sector's link with the rest of the economy reveals that the latter subsidizes the macroeconomy (Antonopoulos and Hirway 2010). Households (unpaid labor) supply several services that the government would otherwise need to provide (Antonopoulos 2009). These include health care and essential public services. Households look after sick and chronically ill individuals and disabled and elderly persons and provide children with education, health, and nourishment (Antonopoulos 2009). Voluntary unpaid services also supply individuals with services for which the government is supposed to be responsible. Unpaid employment also helps to fill infrastructural gaps.

In other words, unpaid labor subsidizes the government by providing for the needs of households. Households similarly subsidize the corporate sector. At a macro level, unpaid labor cuts labor costs. The private sector must pay a fraction of what it would otherwise have to spend to keep workers' living standards the same (i.e., the wear and tear on workers, or labor depreciation, is taken care of by unpaid household services). At the macro level, this increases earnings, resulting in increased capital accumulation and economic expansion. However, due to

this unpaid employment, the labor market participation rates of unpaid employees (women) are declining, lowering the economy's overall workforce/labor force (Economic Commission for Latin America and the Caribbean 2007, Hirway 2008). Because of their household responsibilities, many women do not participate in the paid labor market. Hence, from SNA perspective, unpaid household work is not an optimal use of labor in the economy (IMF 2013).

Despite accounting for half of the population (or 48–49%), women's contribution to the traditional macroeconomy is little in labor market participation and their proportion in high-productivity sectors. Women contribute far less to the economy than they could (IMF 2013). Unpaid labor places an uneven burden on women, dividing the labor market along gender lines (IMF 2013, Hirway 2008, Esquivel 2008). Women accumulate less human capital (health, education, skills) due to the burden of unpaid labor and the societal norms and traditions associated with it, limiting their performance in the labor market (Hirway 2015). Most women enter the job market with a load of unpaid work on their shoulders, which prevents them from having a fair playing field right away. Women's lower educational and skill levels and their reduced mobility result in lower labor market participation, overcrowding in low-productivity occupations, lower salaries, and higher unemployment rates (Hirway 2015). Segregation and discrimination affect women's opportunities in the work market (Hirway 2015). Female entrepreneurs have additional challenges since they have less capital, finance, and technology (IMF 2013). A sex-based division of labor at home and in the marketplace prevents an economy from realizing its full potential. According to the International Monetary Fund (IMF), tapping the full potential of a country's female work population may boost GDP significantly.

Neoliberalism's proponents believe that the markets can best manage the production process and downplay the state's role in achieving better outcomes. Neoliberal policies negatively influence the economy due to their impact on unpaid labor (Elson 2008). According to Nancy Folbre, neoliberal policies have shifted the expense of these programs to unpaid employees (Folbre and Yoon 2008). Elson (2008) also claims that the effectiveness of neoliberal policies in boosting economic growth is often at the expense of women, resulting in macroeconomic losses. Trade liberalization, for example, increases the rate of economic growth by expanding worldwide markets for domestic products. However, trade liberalization results in the reorganization of production and labor (mainly for flexibility and reducing labor costs). In general, women accept

jobs of poor quality, i.e., jobs with low earnings, little or no social protection, low employment status, and terrible working conditions. It tends to increase the overall workload, resulting in more time pressure and loss of well-being for a portion of the workforce (typically women), depletion of human capital (of women), and inefficient use of the labor force in the economy (Folbre and Yoon 2008). In the long run, this diminishes the potential advantages of women's contribution to measured economic activity, growth and well-being because domestic work often which remains unseen and unaccounted for in GDP. Fofana, Cockburn, and Decaluwé (2005) examined the impact of trade liberalization on male and female labor in Nepal. In Nepal, the total abolition of tariffs on imported commodities benefits women more than males in terms of incomes, and female market-work hours increase in rural families but decrease in urban households, according to the evidence presented in this study. It also demonstrates that women end up with a "double day," i.e., no reduction in the number of hours they spend on unpaid domestic chores. As women enter the labor market, their spare time decreases. Furthermore, the study finds that trade liberalization increases the amount of leisure time spent by males, which is larger than that spent by women. The authors conclude, among other things, that women are more receptive to the market when the potential to substitute between domestic household work and the market job is greater, i.e., when males are more active in domestic work.

When governments cut spending to reach fiscal deficit objectives (as they usually do for macroeconomic stability), they cut spending on health, education, and government services (Hirway 2015). As a result, the burden of unpaid labor on women tends to rise. Because privatization makes these services more costly, they are introduced into homes as a coping technique, diminishing their well-being and human capital/productivity on the one hand, and contributing to economic care insufficiency on the other (Hirway 2015). Due to a lack of data, many detrimental effects go unnoticed, and suitable policies do not address those effects. In other words, a narrow understanding of the economy and myopic policies persists on the macroeconomic front (Hirway 2015).

It is increasingly possible to claim that non-SNA work is an integral aspect of the macroeconomy. SNA and non-SNA activity are inextricably intertwined, and together they make up the macroeconomy. There are no distinct watertight containers for these different types of

activity. Not just for families with varied features,⁷ but also under varying macroeconomic situations, activities transition from SNA to non-SNA status. During a slump, if employment and income are falling, households may increase their unpaid work as a coping strategy by bringing some paid activities into the home; conversely, during a boom, when employment and incomes are rising, households may reduce their unpaid work by taking it to the market, as they can now afford to buy market services (Hirway 2015). Unpaid work's anti-cyclical tendency is a valuable predictor of both kinds of work's macroeconomic linkages. Considering women's limited capacity to provide care may imply that the economy will suffer from a care crisis during a downturn unless the government gets involved aggressively. It also indicates a continuum between paid (SNA) and unpaid (non-SNA) work, that unpaid work should be considered in the economy, and that macroeconomic and labor laws should protect unpaid employees (Hirway 2015). A vital issue is incorporating unpaid labor into the macroeconomy and macroeconomic policies in this setting.

The mechanism for valuing unpaid effort becomes essential. The replacement cost method appears to be the most common approach to the valuation of unpaid work at the moment, in which different market wage rates value the labor component of unpaid work (Fukami 2000, Hitoshi 2000, Nath 2003, Budlender and Brathaug 2000). The debate on the wage rate is still ongoing and now recognizes that the input method is inadequate (Eun, K. and S. Ryu 2012), because it ignores the productivity of unpaid time. In output methods, in which unpaid time turned into outputs (for example, the number of meals made, the number of clothing laundered, the number of rooms cleaned, and so on), the value is determined using market pricing of the goods and services produced. Though the output strategy looks more rational, converting all unpaid services into goods is not always feasible.

The macro-micro framework called Social Accounting Matrix analysis has also been used to create systematic satellite accounting of unpaid household services. Satellite accounts meet the requirement to extend national accounting's analytical ability for specific areas of social concern flexibly, without overburdening or interrupting the central system (UN 1993, 2008). The unpaid

⁷ Home income, structure, size, and composition, number of seniors, ill or disabled members in the household, existing societal norms, and other factors all influence the amount and character of unpaid labor at the household level.

work satellite account is an expansion of the national accounts system outside its traditional boundaries. This approach tries out fresh ideas and methodologies while also providing a broader picture of national revenue accounting. In short, the valuation of unpaid work in money terms has some advantages in integrating unpaid work with the mainstream economy. The task of integrating unpaid work with the mainstream economy by compiling satellite accounts is still a pending task. While valuation is essential, there is also a need to go beyond it. Valuation does not completely incorporate unpaid labor into policymaking since it separates it from paid employment. It demonstrates the significance of unpaid work in terms of its contribution to overall well-being; however, it does not guide how this underdeveloped and underserved sector of the unpaid economy could be integrated into mainstream economic policymaking so that productivity and working conditions can improve.

The Levy Institute Measure of Time and Income or Consumption Poverty (LIMTIP/LIMTCP), developed by Levy Economics Institute of Bard College, stresses that official poverty thresholds neglect the reality that unpaid home labor adds to the attainment of material needs and wants, which are necessary for achieving a minimal quality of life (Zacharias, 2011). These official figures create an erroneous picture of the breadth and depth of poverty by taking homework for granted. Hence, LIMTIP is an alternative measure of poverty that considers both time and income deficiencies. Korea's time poverty problem extends beyond child care; the impact of public provisioning through the voucher program has benefited families with children (Zacharias et al., 2014). It is necessary to establish a methodology that goes beyond valuation to incorporate unpaid work into macroeconomic policy and recognize it as a component of the macroeconomy.

The partner who works for paid employment outside the home will spend less time on household work (Bianchi et al. 2000; Geist and Ruppanner 2018; Gough and Killewald 2010; Lachance-Grzela and Bouchard 2010). The number of hours in a day is fixed, so time spent in paid employment lowers the availability of time spent on household work. This poses the question of what factors influence/determine who chooses to work more time in paid employment outside the home. Several socio-economic factors like income and assets of the household, social norms, cultural values, and educational level, determines who chooses to work more time in paid employment outside home. Paid employment is not joint in underdeveloped countries like Nepal. Working for the family business (mainly own farms) in rural regions may allow even more work

freedom, but it may also raise the chance of a double burden for women who can now work on the farm while still contributing to domestic production. The rise in flexible work arrangements may add to her time constraints (Zacharias et al., 2018).

Even in nuclear families, resource-based models developed in Global North ignore children's involvement in housework and childcare (Geist and Ruppanner 2018). It is especially crucial in Southeast Asia and Sub-Saharan Africa, where children are often in charge of cleaning, collecting water and firewood, and caring for younger siblings. Delegating these jobs to children might reduce the amount of time adult women spend doing these chores, but it would also place an extra load on children, limiting their educational chances (Sawo 2020). Gender norms and values impact how men and women see themselves and the responsibilities they believe they must undertake in the household. Social norms play an important role in delegating responsibility within household because men possess the power to make almost all decisions, for example, men assign household responsibility to women or children in the family, with few families deviating from the “norm.” The social norm restricts women’s decision-making power outside the household work, for example in financial or political matters (Ghimire and Samuels, 2020). The negative effects of social norms on men and boys, notably expectations about what responsibility males should take for women in their homes as dads and brothers. Ghimire and Samuels (2020) research in Nepal has found that fathers and brothers, who are regarded 'guardians' of women and girls, have societal responsibility to protect and provide for their sisters and daughters while also ensuring that women in the household follow conventional social norms. Men are expected to make decisions for their female relatives since they are considered as guardians of women in the family. Attitudes about gender roles drive couples to display their "proper" roles in the household (breadwinner husband and homemaker wife under current social convention). Deeply established social norms in South Asia harm a woman's economic contribution to society (Ramachandran, 2008).

Action Aid International researched unpaid care work back in 2011 as a collaborative effort between an international non-governmental organization and local partners in Nepal, Nigeria, Uganda, and Kenya (ActionAid International Nepal, 2013a). The conceptual research framework was inspired by the work of Diane Elson, a prominent feminist economist, to increase policy support for recognizing, reducing, and redistributing (the ‘3R’s’) women’s disproportionate share

of care work (Falth and Blackden, 2009). Action Aid based its research framework on unpaid care in a similar line to research carried out by feminist economists across South Africa, India, and Tanzania, to name but a few countries (Budlender, 2008; Elson and Cagatay, 2000; Fontana and Natali, 2008). Since few scholars (see Acharya and Bennett, 1983) have conducted research on unpaid work based on a time-use survey in Nepal, I review research carried out in South Asia and Sub-Saharan Africa.

Women's labor-force participation rates in India are determined mainly by their time on home chores. Furthermore, social conventions tend to assign males the primary duty of obtaining household money through a job, while women are supposed to dedicate their time to domestic care (Das, 2006). It is true in the case of Nepal as well. Increasing household earnings, husband education, and the stigma against educated women pursuing menial jobs are the key labor supply drivers (Das, 2006). On the labor demand side, employment in sectors suited for educated women grows slower than the supply of educated employees, causing many women to leave the labor field (Das, 2006). The literature on unpaid work tends to focus on the forms of unpaid labor performed by females in the home. However, few studies focus on the burden of unpaid work done by females and the type of labor supply and unpaid work done by them in rural agricultural homes (Das, 2006).

On average, women specialize in unpaid work and non-agricultural self-employment in households with young children, while men specialize in other forms of paid employment. According to Gallaway and Bernasek (2002), education and family obligations are significant determinants in predicting labor force participation and sector of employment in Indonesia. Furthermore, the presence of babies and young children reduces a woman's chance of participating in paid jobs outside the house compared to work at home. It also raises the likelihood that a woman may participate in informal sector employment rather than formal sector employment. The most disadvantaged women, those with the least education and earning capacity, work in the informal sector in Nepal (CBS 2018). In a Turkish urban labor market study, Dogrul (2012) identified education as a crucial determinant predicting involvement in contemporary wage work. The data indicate that education negatively influences informal sector work; plausible explanations include that success in informal sector employment is primarily

dependent on skills and capital rather than a high degree of education. As a result, the share of working women in the informal sector is more prominent than in the formal sector.

Most research on the link between unpaid work and labor market outcomes focuses on labor force participants in developed countries (Mascherini et. al., 2016). Not much research has been carried out on the relationship between unpaid work and labor market outcomes in developing countries. Unpaid care work for young children decreases female labor force participation or increases part-time employment in developed countries (Cassirer and Addati, 2017). As a result of the gender disparities in unpaid care work, there are larger gender inequalities in labor outcomes.

Gender differences in unpaid care work could occur by discriminatory societal norms (Mascherini et al., 2016). Some differences in time use between men and women could also occur by socio-demographic and economic characteristics such as education and wealth. The social and economic linkages that assign unpaid family obligations to women account for at least part of the explanation for women's majority among the most vulnerable workers (Cassirer and Addati, 2017). Fontana and Natali (2008) found that women spent three times as much time as males on domestic duties and care in Tanzania in 2006. Robles (2010) finds comparable patterns in Ethiopia, where women spend 36 hours per week on home production while males spend only 7 hours per week. Fontana and Natali (2008) discover the lowest ratio in Ghana, where women spend 5 hours and 42 minutes per day on domestic tasks compared to 3 hours and 8 minutes for males. Arora (2015) discovered, using data on time usage in Mozambique, that males spend roughly 1.5 hours per day on home tasks, whereas women spend nearly five times as much (7.6 hours).

Other home procurement tasks have exhibited similar tendencies, such as collecting water and wood. Floro and Komatsu (2011) estimate that women spend 14.43 minutes per day getting fuel and gathering water, compared to men's 5.71 minutes per day, based on the 2000 South African National Time Use Survey. Fontana and Natali (2008) find that women spend an average of 30 minutes per day gathering water in Tanzania, while males spend 20 minutes, with comparable values for wood collection. Children tend to be involved in water fetching and firewood collection activities. According to Charmes (2006), girls and boys aged 7–14 spend 46 minutes and 19 minutes per day, respectively, fetching water in Benin; in Madagascar, girls spent 31

minutes and boys 16, respectively; and in Ghana, they spent 41 minutes and 38 minutes, respectively, fetching water.

Participation in unpaid care labor and the number of time women and men spend completing these chores differs with age profile in most nations, with some of the most significant discrepancies reported for women in their mid-20s and 30s however this disparity narrows as the population ages (Amporful et al. 2018; Mitik and Decaluwe 2009; Oosthuizen 2018). The relationship between housework and social norms has also been examined through the lens of gender perspectives (Robles 2010; Simister 2013; Ferrant and Thim 2019), and "all household activities are predominantly considered feminine" (Robles 2010, p. 308; Simister 2013; Ferrant and Thim 2019). According to Ferrant and Thim (2019), increasing levels of economic growth do not result in a more equitable allocation of unpaid care labor between men and women, which ascribes to the existence of restrictive gender norms.

The inclusion of other home members, such as children and other adults, reduces the validity of the time availability hypothesis since other household members, the head of the household and their spouse, can conduct household responsibilities. With considerable evidence from Ghana (Costa et al. 2009), Ethiopia (Robles 2010; Getahun 2018), and Sierra Leone, the presence of small children in the family increases the time women spend on household production (Wodon and Ying 2010). If additional household members can assist with these duties, the stress of housework decreases for the individual woman and man; nevertheless, this may increase the necessary time for household production, which can have mixed consequences on the couple's allocation of household work. In Ethiopia, an increase in the number of adult males in the home tends to increase women's time spent on housework, but an increase in the number of women, regardless of age, tends to decrease both women's and men's time spent on housework (Robles 2010). In many Sub-Saharan African nations, the presence of additional home members (extended family or other adults) has a statistically negative relationship with women's housekeeping time (Getahun 2018; Wodon and Ying 2010).

Access to basic amenities and the house's construction are the two last aspects that may influence the household's hours allocation. Arku and Arku (2013) investigate the function of a couple's household arrangement and how it influences the type and amount of housework that men and

women are willing and able to undertake. Their findings show that people in self-contained residences, which may have the most privacy, had the highest rates of males engaging in housekeeping. Herrera and Torelli (2013) discovered that women who live with extended families and those who live in polygamous households devote less time to domestic tasks than other households. Access to and availability of utility services such as water and electricity reduces the strain of housework for both men and women (Arku 2010; Wodon and Ying 2010; Costa et al. 2009; Charmes 2006; Lawson 2008; Fontana and Natali 2008). These authors also show that when households have access to electricity, time spent on wage-employment activities increases, but there is no influence on the likelihood of engaging in domestic work.

The mainstream economy includes unpaid work: (1) child care— when mothers are out of work, i.e., and (2) elderly care, taking care of the disabled. When given by households as unpaid care, this care is frequently inadequate, either in terms of its time or quality, regularity, and reliability. However, if new jobs are created in the mainstream economy to provide this care, the state can ensure the delivery of professional care with regularity on the one hand, and unpaid workers get released from the time stress of this burden on the other hand. The women released from this work may also participate in productive work in the mainstream economy, leading to optimal use of the labor force. Not all unpaid care/work can be to the mainstream economy. This reorganization of the labor force (paid + unpaid) due to the reallocation of care must be part of a national labor policy for several reasons. First, it provides a level playing field for women workers in the labor market—for gender justice and to raise women's workforce participation rates (WPR). Second, it creates new paid employment opportunities in the mainstream economy. It ensures professional care for individuals who require it (and addresses a fundamental problem of care insufficiency today). Third, it tends to maximize the utilization of the workforce in the economy. However, it can be contended that: (1) generating mainstream employment and ensuring professional child care have significant multiplier effects at the macro-level (Antonopoulos et al. 2014); and (2) the budget's financial space can be increased by adhering to the principle of "maximum available resources" (Balakrishnan et al. 2011). The benefits of labor reform will undoubtedly exceed the expenses.

The words "job guarantee" and "public service employment" have become more extensively used in recent years (Kaboub 2007b; Wray et al. 2018; Tcherneva 2020). The term "employer of

last resort" (Minsky 2013, 39) and "buffer stock employment model" have all been used to describe the job guarantee (Mitchell 1998). India's Mahatma Gandhi National Rural Employment Guarantee Scheme (NREGS) began in 2006, and Argentina's Plan Jefes y Jefas de Hogar Desocupados (PJJH), (translates to "Unemployed Head of Household Program") began in 2002, are two of the most well-known examples of employment guarantee implementation. NREGS provides each rural household in India with 100 days of unskilled employment per year, delivered within 15 days of application and 5 kilometers from home. The program successfully decreased poverty: per-capita food and non-food expenditures increased, food security improved, the likelihood of saving increased, and the prevalence of depression among rural households dropped (Ravi and Engler 2015). The program also positively impacted women's involvement in the workforce and salaries in rural labor markets (Chandrasekhar and Ghosh 2011). It helped reduce rural unemployment to 7.3% in June 2020 during the first wave of the COVID-19 pandemic, with 33 million families benefiting from the initiative in May 2020. (Times of India 2020). The program's performance in combating severe poverty is commendable; it is compatible with Nepal's framework due to its concentration on the rural population. Nepal also follows a similar job guarantee scheme as India.

Argentina experienced a financial crisis in 2001, which quickly turned into an economic and social crisis due to flaws in the IMF's neoliberal structural adjustment programs in the years leading up to the crisis (Kregel 2003). Argentina implemented PJJH as an emergency measure to contain the economic collapse by providing income and training participants at the union's request. PJJH provided the head of household with a job guarantee by conducting community work and training using conditional cash transfers. Two million unemployed people (13% of the workforce) participated, and in 2005, female heads of household accounted for almost three-quarters of the participants. Spending peaked at 1% of GDP in the initial phase of implementation. Although low monthly income did not decrease overall poverty, it helped decrease the extreme poverty of participating households and helped redefine the meaning of work by providing paid employment at the community level. (Tcherneva and Wray 2007). Nepal Prime Minister Employment Program aims to implement a similar program to decrease extreme poverty by involving unemployed workers in community-level work.

Antonopoulos (2009) takes a different approach focusing on the possibility of a job guarantee to promote gender equality and economic empowerment. She recommends scaling up the Expanded Public Works Programme (EWP) in social service delivery in health and education in her study on South Africa, a nation where women undertake 75% of total unpaid labor. Her study reveals that investing 1.1% of GDP creates 571,505 jobs, 60% of which are fulfilled by women, lowering the depth of poverty of participating ultra-poor households by 60-80% and generating pro-poor growth of roughly 1.8% of GDP. Her most exciting finding is that focusing job guarantee policies on the social sector led to more employment being created than in the construction industry, resulting in a higher poverty reduction.

Tepepa (2013) stresses that PJJH was not a neoliberal workfare program but an employment and poverty reduction scheme that "did not blame the poor for personal misalignments and lack of entrepreneurship," making the participants feel capable and valuable within their family and community (Tepepa 2013, 234, (Haim, 2020) translation). PJJH was highly popular among participants and facilitated the participation of social groups previously marginalized in the political decision process. However, in the long run, the low secure income did not improve the material living situation of people.

Several scholars have used this characteristic to propose job guarantees for nations in the Global South. In capital-constrained developing nations, Nell and Argyrous (2013) recommend using the employment guarantee to "retrain and upgrade the existing labor force" and "improve productivity in both the consumer and capital goods sectors." They base their argument on transformational growth theory, stating that economic progress can result from an endogenous demand-side dynamic in which household consumption grows as employment security allows for the introduction and development of mass markets for goods and services.

Kaboub (2007a), like Kregel, believes that a job guarantee is a better development strategy than traditional methods like import-substituting industrialization, export-led growth, or FDI-led growth. He advises that gradual rollout be done by gradually extending the target groups. In his approach for Tunisia, Kaboub proposes starting with a heads-of-household program similar to PJJH and gradually extending it to a full-fledged employment guarantee over six years, with

yearly expenses of 2.7% of GDP and a multiplier impact of 3.7% of GDP, which would balance program costs.

Economists such as Wray et al. 2018; Paul, Darity, and Hamilton 2018; Tcherneva 2020) have proposed job guarantee proposals for the United States. Wray et al. and Tcherneva's recommendations propose the MMT framework of employment guarantee as a macroeconomic policy. They propose a nationally sponsored scheme with decentralized local administration and a \$15 per hour minimum wage, which would be twice the current federal minimum wage in the United States. The employment guarantee is called a Community Jobs Bank, with the sorts of jobs envisioned as a National Care Act, including jobs that care for the environment, communities, and people (Tcherneva 2020, 92–96). Tcherneva emphasizes the democratizing potential of a job guarantee, stating that it may serve "as a conduit for a dramatic change in the workplace, in people's daily lives, and the economy as a whole" compared to earlier job guarantee ideas (Tcherneva 2020, 88). She offers a bottom-up participatory democracy model where residents, community members, and other public stakeholders are involved in project design, management, and implementation. MMT framework is questionable in the Global South because of limited fiscal space. However, Tcherneva's bottom-up participatory democracy model could be relevant in Nepal's federal system of government. The decentralized system allows local governments to implement employment programs that address community needs.

In Nepal's context, the most relevant job guarantee program would be similar to India's rural child care program called Anganwadi. In Hindi, Anganwadi means "courtyard shelter." The government of India started this program back in 1975 as part of the Integrated Child Development Services program to tackle child hunger and malnutrition. The Integrated Child Development Services (ICDS) program is India's national social welfare program. The ICDS' community-based service delivery component, Anganwadi Centers (AWCs), offers primary medical care and nutritional services to newborns and their mothers in the community.

Levy Economics Institute scholars' study on "Macroeconomic and Microeconomic Impacts of Improving Physical and Social Infrastructure in Ghana and Tanzania", found that investing in physical (road improvements) and social (early childhood education, also known as ECE) infrastructure reduces the employed women's time deficit by decreasing time spent on

commuting and household production (Zacharias et al. 2018). The study also highlights those individuals in households with small children ("beneficiary households") spend less time on domestic production as ECE becomes more widely available. This reduction has the immediate impact of lowering the household output thresholds for beneficiaries (Zacharias et al. 2018). Furthermore, the expansion of ECE reduces females' time spent on domestic production to a higher extent than males' time (Zacharias et al. 2018). In recipient homes, this results in a shift in the intrahousehold division of household production obligations (i.e., the threshold hours of household production).

There is more evidence to support the idea that increasing public spending on ECE has good macroeconomic and distributional consequences, including a reduction in gender inequality. Modeling the direct and indirect job creation associated with the expansion of ECE and its attendant effects on raising the employment rate of women, reducing gender pay disparity, lowering the incidence of income poverty, and diminishing the degree of income inequality in South Africa (Antonopoulos and Kim 2008) and Turkey (Illkkaracan, Kim, and Kaya 2015) demonstrate these outcomes. This evidence provides solid ground for Nepal to pursue ELR focused on strengthening social infrastructure and address the issue of unemployment and gender inequality.

The literature defined and address the concern about unpaid care work. It also underlined the definition and the use of the production boundary of System of National Accounts (SNA), and Non-system of National Accounts (non-SNA) in theory and policy making. The literature demonstrated that there are several linkages between unpaid labor and conventional macroeconomics, necessitating the extension of conventional macroeconomics to include unpaid labor. The literature review showcased the unequal distribution of unpaid work across gender and how macroeconomic policies have impacted unpaid labor work.

Although some empirical work has been done in terms of incorporating unpaid work into macro policies (for example, understanding the effects of macroeconomic policy on paid and unpaid work), more sound theoretical work on the dynamics of paid and unpaid work linkages, as well as how these dynamics change over time and space, is required. The literature review made it clear that it is right time to recognize the value of unpaid work and macroeconomic studies will

remain incomplete and incorrect unless unpaid work is taken into account. Moreover, the literature review stressed on the importance of implementing ELR focused program ensuring the delivery of professional care to address the issue of unemployment and gender inequality.

3. METHODOLOGY

The main goal of this thesis is to provide a descriptive analysis of domestic work time in Nepal. The Nepal Labor Force Survey (NLFS) 2017/18 is the first survey in Nepal that captures time use data NLFS 2017/18 highlights basic statistics on time spent on domestic work by personal and household characteristics. After that, a regression analysis highlights the factors influencing household work.

3.1. Data Sources

The Central Bureau of Statistics and ILO Nepal conducted the Nepal Labour Force Survey (NLFS III) in 2017/18. The standards introduced after the 13th International Conference of Labor Statisticians (19th ICLS) in 1983 were amended following the 19th International Conference of Labour Statisticians (19th ICLS) in 2013 (ILO, 2013).

The survey captured data on different types of work that are not considered employment. Production of goods and services for their final consumption and providing services for their final use were among them. The NLFS 2017/18 measured other forms of work that included own use production work (both production of goods and provision of services for own final use). For this survey, a total of 18,000 household were selected, with 10,500 from the urban and 7,500 from the rural. The frame for the survey was the 2011 National Population and Housing Census. The total number of individuals interviewed were 78,496. The domains were the rural and urban areas of the seven provinces. As a result, the survey had 14 domains. There were 40,064 enumeration areas (EA) in the frame, which served as the primary sampling units (PSU). A two-stage stratified design was adopted, with EA as the primary stage unit (PSU) and households as the secondary stage unit (SSU), yielding 900 sample PSUs. The survey was spread over a 12 months period from July 2017 to June 2018 splitting the annual sample into three seasons (dry, rainy and winter), each representing four months in the Nepali calendar.

In many countries, the production of goods for household members' final use accounts for a large portion of total output and plays a vital role in improving and sustaining livelihoods. Households consume commodities and services that they themselves produce. During the 30 days preceding the survey interviews, respondents were active in at least six distinct production categories of goods for their final consumption. These included subsistence food production (farm work, cattle care, fishing, hunting, or gathering food), food processing for storage, household goods manufacturing, fetching water, collecting firewood and other fuels, and building or repairing one's own home. Production of services for own final use is a component of own use production work. This component is not part of the SNA production boundary but the overall production boundary. The survey asked if people had participated in these activities in the seven days leading up to the interviews. Housework/maintenance (e.g., preparing meals, doing the dishes, cleaning the house, doing laundry, household shopping), providing help or assistance to family members who are disabled or elderly, and finally looking after their own or family's children are all examples of these activities. The survey also captured SNA activities such as home maintenance and minor repairs.

3.2. Descriptive Statistics

At first, I present a thorough descriptive analysis of domestic work time in Nepal. Very few scholars have researched domestic work time in the context of Nepal. NLFS 2017/18 is used to provide basic statistics on time allocated to domestic work according to gender, age, urban/rural location status, access to water, access to electricity, employment status, education level, household size, ownership of the house, ownership of land. The NLFS 2017/18 questionnaire distinguishes between domestic chores or time use patterns for cooking, washing motor vehicles, sweeping, disposing of garbage, ironing clothes, shopping, taking care of children, running errands, fetching wood, and fetching water. The sample used in the study is the working-age population or those aged 15 to 59. I estimate an average number of hours per month/week allocated to domestic activities, shown separately for urban and rural areas by married men and women. This study reported descriptive statistics in terms of the mean using the sample weights.

3.3. Regression Model

Different regression models have been used to analyze household production. The empirical analysis involves individual and household data from the Nepal Labor Force Survey 2017/18. Since there was an immense number of missing values, a multivariable regression model determines which characteristics might explain allocating time to household work. In this study, I drop 11,661 observations, out of 33,035 sample observations, and the regressions analysis were done based on remaining 21,374 sample observations. The large number of missing values (not reported or not available or not applicable data) were mainly because respondents didn't answer the question so enumerators assigned it as not available. Regressions for the determinants or correlates of domestic work are presented separately for urban men, urban women, rural men, and rural women.

The models were built according to the formula:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + U_i$$

The dependent variable (Y) is the individual's total domestic work time per month. The independent variables include education level, age, employment status, access to water, source of light, source of cooking fuel, household size and interaction of age group and household size.

"Total Domestic Work Time" is the dependent variable comprising Time spent on-farm work, livestock, fishing, food preparation, crafts work, fetching water, firewood, housing repair, cooking, elderly care, and child care. Independent variables are education level, age bracket, labor force status, access to water, source of light, cooking fuel type, household size, and the interaction between age and household size. Appendix B contains the regression equation and the regression results in Appendix C. The coefficient of determination (R^2), standard errors of regression coefficients $D(b)$, and the p-value assess the modeling quality. The t-test determines the significance of regression coefficients. F-test (Fisher-Snedecor) analyses variance (Hozer, 1998; Weinbach, Grinnell, 2007).

4. FINDINGS

The thesis examines factors that may explain gender (working age group, married men and women, 15-60 years) inequalities in allocating time to household production in Nepal. The

findings sections have been divided into four parts: Descriptive Statistics based on Personal Characteristics and Household Characteristics, Patterns in unpaid care work by Personal level characteristics, Patterns in unpaid care work by Household Characteristic and Regression Analysis.

In this study, the age distribution involves segregation into four categories: 15-25, 26-35, 36-45, 46-60. The age range 15-25 accounts for a larger share of the total population for males and females. Most married men fall under the age category 46-60 in both urban (7.7%) and rural areas (5.3%), whereas most of the married women fall under the age category of 26-35 (11.4% in urban areas and 6.8% in rural areas). Both males and females completing the Grade 10 level or less account for a larger share of the total and sample population. According to employment status in the total population, working-age men and women comprised 45.5% and 54.4%. This breakdown is skewed by the fact that labor migration from Nepal is predominantly male, with males comprising more than 80% of the total labor migration population in 2017/18 (MOLESS 2020).

In terms of access to water, 87% of households have access to water and only 13% have no access to water in Nepal. Regarding cooking fuel type, 65.7% of households use firewood as the source of cooking fuel, followed by LP Gas, Bio Gas, and Kerosene and Electricity in Nepal. In terms of source of light, most households have access to electricity in both urban and rural. Regarding owning land, 72% own land in Nepal, out of which, 52% and 39% own land in urban and rural respectively. Similarly, over 9% household owned a house in Nepal.

On average, married men in urban and rural tend to spend 161.6 hours and 127.2 hours monthly producing goods for final use activities. Married men in urban spent more hours on housing repair work, followed by farm work and crafts work. Married women in rural spend more hours on livestock-related work, followed by farm work and housing repair work. On average, married men in urban and rural areas tend to spend 24.4 hours and 25.1 hours monthly on the production of services for final use activities, respectively. Married women in urban and rural locations spent more hours on childcare and cooking, followed by elderly care. Married women aged 15-25 and married men aged 36-45 spent more hours in domestic work among all age groups in urban areas of Nepal. Married men aged 45-60 spent fewer hours on domestic work among all

age groups in both urban and rural areas of Nepal, and a similar is the case for married women. The gender disparity is visible in allocating time to domestic work in Nepal's urban and rural areas.

The average number of hours spent on domestic work (clubbed three domestic works, namely cooking, elderly care, and child care) is lower in houses having access to water because the time required to bring wood or water gets significantly reduced if not eliminated. Women spend more time on household work without good access to cooking fuel types. Households with access to electricity were more likely to spend less time on household work.

Working-age group of 15-60 years, employed married men (122.4 hours per month) in urban areas spend less time on domestic work in comparison to employed married men (144 hours per month) and women (145 hours per month) in rural areas. Hence, married women in rural areas tend to shoulder a large share of the domestic work burden. The gender disparity persists in allocating time to household work in terms of employment status.

4.1. Descriptive Statistics on Personal Characteristics and Household Characteristics

This section covers the share of the working-age population based on personal characteristics such as age group, education level, and employment status. The total population comprises an age range from 0 to 105, irrespective of their marital status, whereas the sample population comprises married men and women aged 15-60. According to NLFS 2017/18, more than 40% of the 20.7 million working-age persons were between 15 and 34, indicating a young population. In the lower age range (15–44 years), females accounted for a more significant part of the working-age population, whereas males accounted for a larger share of the working-age population in the 45 years and over the group (CBS 2018). In this study, the age distribution involves segregation into four categories: 15-25, 26-35, 36-45, 46-60.

Table 1 depicts the share of population based on personal characteristics. Regarding the share of the total population, the female population (57%) has a larger share than the male population (44%). The frame for the survey was based on the 2011 National Population and Housing

Census. The Census had the larger share of total female population (51.5%). It is one of the reasons why we will observe larger share of female in the total and sample population. The share of the sample population also follows a similar pattern (59% vs. 41%). The age range 15-25 accounts for a larger share of the total population for males and females. In the sample population, the share follows the same pattern for married men, whereas for married women, the age range 26-30 accounts for a significant share.

Table 1 Share of Population based on Personal Characteristics (in percent)

Share of population	Age		Education (Age group 15-60)			Employment Status (Age Group 15-60)			
	Male	Female		Male	Female		Male	Female	
Sample Population	15-25	5.0	14.1	Grade 0-10	39	36	Employed	23.2	13
	26-35	11.6	18.3	High School	10	9	Unemployed	2.2	1.6
	36-45	11.3	14.0	Bachelors and Above	3	2	Potential Labor Force	5.3	9.3
	46-60	13	12.7	No Schooling	0	1	Out of Labor Force	12.3	33
	Total	41	59	Total	52	48	Total	43	56.9

Source: Own Calculations

Education level for the sample population is categorized into four components: grade completion from nursery to 10, high school (grade 11-12), bachelor and above, and no schooling. Both males and females completing the Grade 10 level or less account for a larger share of the sample: 39% of males completed grade 10 level or less of education compared to 36% of females.

The working-age population comprises individuals aged 15 years and older who fall into one of the four labor market components (employed, unemployed, potential labor force, and not in the labor force). In the sample population, the working-age population comprises individuals aged 15-60 years who fall into one of the four labor market components. Persons in employment are people of working age who were engaged in any activity to produce goods or provide services for pay or profit. If a person is working or trying to find work, he/she is in the labor force. Thus, the number of employed people plus those who are unemployed constitute the labor force. In order to be considered unemployed, three criteria must be met simultaneously: the person must be entire without work, currently available to work, and taking active steps to find work. The

potential labor force refers to persons, not in employment who express an interest in this form of work but for whom existing conditions limit their active job search and availability. Out of the labor force is the one who is not part of the labor force and is not available or looking for work. A person who reaches working age may not necessarily enter the labor force, and he/she may remain outside the labor force and is then regarded as not in the labor force.

In the sample population, 23.2% of 15-60 working age married men were employed and only 13% of 15-60 working age married women were employed. According to NLFS 2017/18, Men made up more than 60% of those employed. Men made up 86.8% of those in management jobs, while females made up 13.2% (CBS 2018). Women were more likely than men to work in skilled agricultural, forestry, and fishing jobs. Males dominated all but one of the jobs, but the plant and machine operators and assemblers were the most common (94.7%) (CBS 2018). Males worked more hours than females, with an average of 48 hours per week vs. 39 hours for females (CBS 2018). The labor force participation rate (LFPR) is a measure of the proportion of a country's working-age population that engages actively in the labor market, either by working or looking for work; it indicates the relative size of the supply of labor available to engage in the production of goods and services, relative to the population at working age (ILO, KILM 2015). The National Labor Force Participation Rate (LFPR) was 38.5%, and the Employment-to Population Ratio (EPR) was 34.2% (CBS 2018). However, there are gender differences, with males having higher LFPR and EPR than females. Males had an LFPR of 53.8% compared to 26.3% for females, while 48.3% of working-age males had jobs compared to 22.9% of girls (CBS 2018). On the other hand, females had a greater unemployment rate than males (13.1% and 10.3%, respectively). The out-of-labor-force status dominates the larger share of the sample population, on which the female labor force share when we compare male and female. Women were more likely than men to work in skilled agricultural, forestry, and fishing jobs.

Table 2 Age Distribution According to Location

Age Category	Urban		Rural	
	Married Men	Married Women	Married Men	Married Women
15-25	2.9%	8.3%	2.1%	5.8%
26-35	7.1%	11.4%	4.4%	6.8%
36-45	7.0%	8.5%	4.3%	5.5%

46-60	7.7%	7.5%	5.3%	5.3%
Total	25%	35%	16%	24%

Source: Own calculations based on NLFS 2017/18 data

Based on the age distribution depicted in Table 2, the largest share of married men fall under the age category 46-60 in both urban (7.7%) and rural areas (5.3%), whereas the largest share of married women fall under the age category of 26-35 (11.4% in urban and 6.8% in rural). The lowest working-age married men population falls under the age category 15-25 for urban and rural areas, whereas the lowest working-age married women population falls under the age category 46-60 in urban and rural areas.

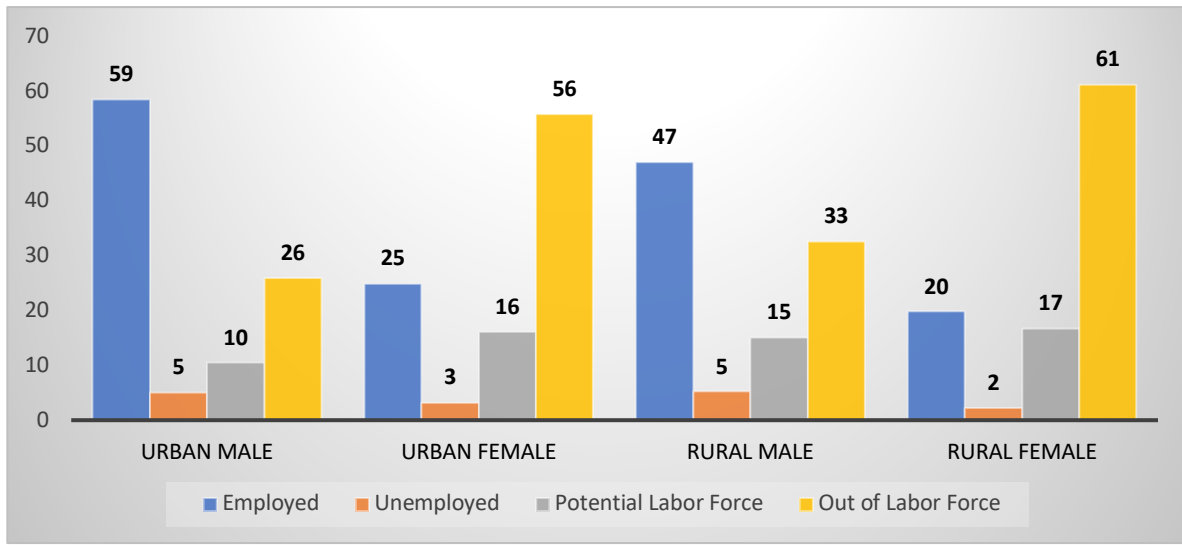
Table 3 Education Level According to Location

Educational Achievement	Urban		Rural	
	Married Men	Married Women	Married Men	Married Women
Grade 0-10	22.4%	21.4%	16.2%	15.0%
High School	6.9%	6.7%	3.0%	2.6%
Bachelors and Above	2.2%	1.4%	0.5%	0.3%
No Schooling	0.3%	0.6%	0.2%	0.3%
Total	32%	30%	20%	18%

Source: Own calculations based on NLFS 2017/18 data

Table 3 depicts the level of educational attainment for the working-age married men and women in both urban and rural locations. Most working-age married men and women attained Grade 10 level of education or less in both urban and rural locations. In urban areas, 22.4% of working-age married men and 21.4% of working-age married women completed grade 10 level of education or less, whereas in rural, 16.2% of working-age married men and 15% of working-age married women attained grade 10 level of education or less. Similarly, 6.9% and 6.7% of working-age married men and women attaining high school level of education respectively in urban areas were slightly higher compared to rural areas.

Figure 2 Employment Status According to Location (in percentages)

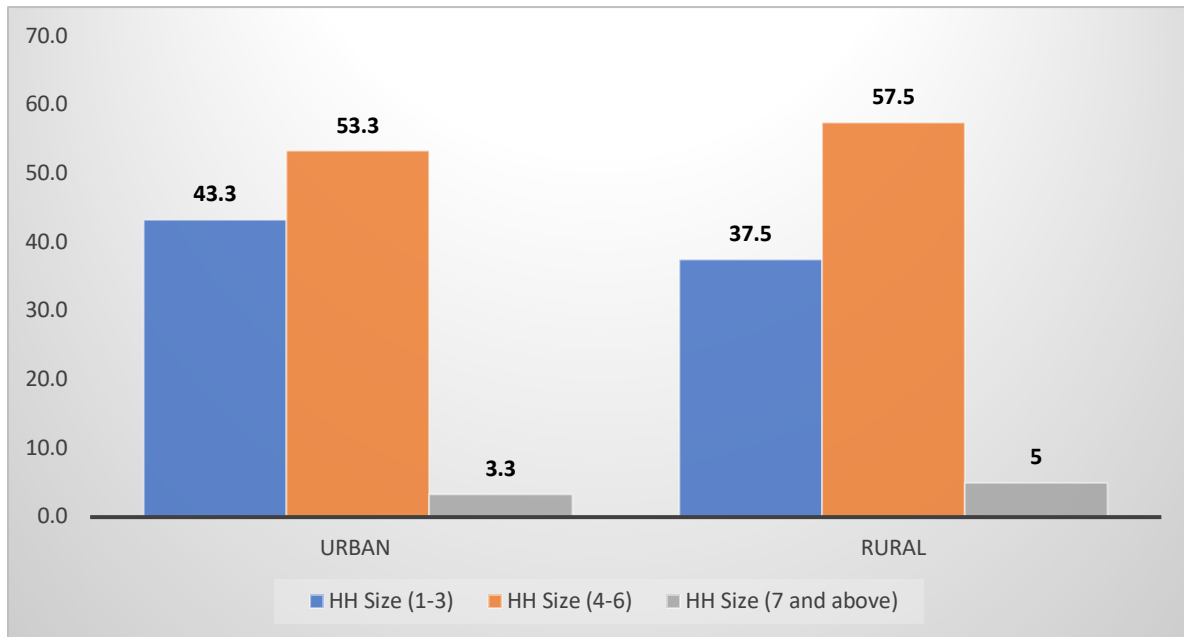


Source: Own calculations based on NLFS 2017/18 data

Figure 2 depicts the employment status according to the location of married men and women. According to sample population employment status, working-age married men and women comprised 59% and 25% in urban areas and 47% and 20% in rural areas. The higher share of working-age married men were employed in urban areas and rural areas, and it is just the opposite for the working-age married women, i.e., involved a larger share of out of labor force in both urban and rural locations. In terms of the unemployed, men's share was slightly higher than women in both urban and rural locations.

Figure 3 shows the distribution of household by size in the sample for the study—the household size divided into three categories. The number of households sizes of 1 to 3 falls under category one, 43% in urban areas and 37.5% in rural areas. The number of household sizes of 4 to 7 falls under category two, 53.3% in urban areas and 57.5% in rural areas. The number of households size above seven household members falls under category three, 3.3% in urban areas and 5% in rural areas. The average age of elders (61-105) years in both urban and rural households are 70 and 71 years respectively. The average age of children (0-14) years for both urban and rural households is 7 years.

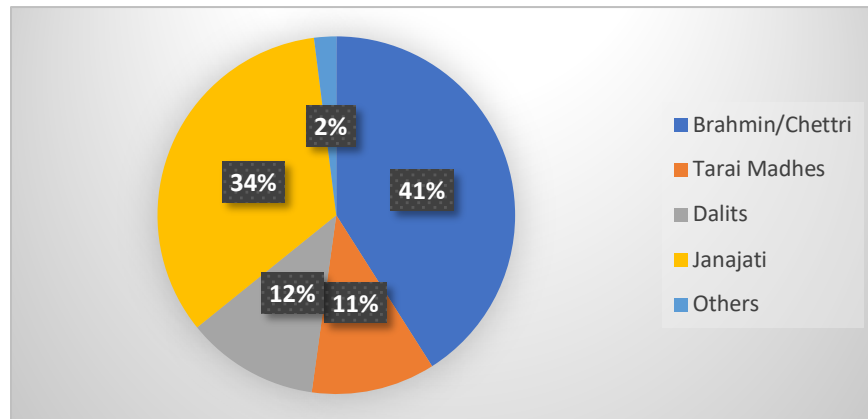
Figure 3 Share of Household Size According to Location (in percentages)



Source: Own calculations based on NLFS 2017/18 data

Figure 4 shows the working-age married population based on their caste/ethnicity. Nepal is home to almost 30 million people from over 61 ethnic groups, each with its language, culture, and way of life. It is officially a secular state. The caste system in Nepal is historically linked to the governance system, in which the upper caste (particularly the Brahmin and Chhetri castes) has long controlled the majority of official positions of power and privilege. As a result, various lower-caste communities have been marginalized and denied access to vital governmental structures and institutions. Figure 4 depicts that Brahmin/Chhetri comprises the largest share of the population, i.e., 41%, followed by Janajati, Dalits, Tarai Madhesh, and other ethnic groups.

Figure 4 Caste/Ethnicity



Source: Own calculations based on NLFS 2017/18 data

Caste/Ethnicity and social norms are intertwined in Nepali society. To a large extent, the surrounding institutions' rules/norms, beliefs, and behaviors shape who an individual is, how they are valued by society, and what they can and cannot accomplish. Since these institutions were predominantly defined by males from the dominant privileged caste group in Nepal, it is unsurprising that they are particularly disempowering for a single woman, Dalit, Janjati, or member of a linguistic or religious minority (World Bank and DFID 2011). Women, for example, must shift norms, beliefs, and behaviors in the home and family in order to exercise their agency (World Bank and DFID 2011). In rural Nepal, the belief that being touched by a Dalit caste member result in ritual impurity or religious impurity is still strongly ingrained in people's minds and integrated into social interaction norms (World Bank and DFID 2011). For Dalits, caste-based discrimination is most likely to be enforced and experienced harshly in their local community (World Bank and DFID 2011). Despite the restrictions he confronts in the community, a senior Dalit man remains powerful inside his family. In the household and the community, however, a Dalit woman gets dominated by a senior male member in the family because of patriarchal norms and long-held prejudices and social norms.

In addition to gender norms, cultural conventions predominate that women are "natural" carers (Ghosh et al., 2019). These limits could include only allowing women to collect firewood, only allowing women to carry manure and water jars, and so on, thus relegating these tasks to women. These norms are so strict in Jumla that males who want to help got frequently mocked. However, one of the study's limitations is that descriptive statistics and regression analysis are missing due

to complications of grouping more than 80 castes based on mentioned category. Therefore, the study only showcases how the population fares in terms of caste/ethnicity.

4.2. Share of Population Based on Household Characteristics

This section covers the share of the working-age population based on household characteristics. Household characteristics include access to water, cooking fuel, a source of light, owning land, and owning a house.

Table 4 Household Characteristics (in percentages)

Household Characteristic		Urban	Rural
Access to Water	Yes	88%	85.0%
	No	12%	15.0%
Source of Cooking Fuel	Firewood	54.7%	82.5%
	LP Gas	37.5%	9.8%
	Bio Gas and Kerosene	7.3%	7.5%
	Electricity and Other	0.5%	0.3%
Source of Light	Electricity	90.0%	70.0%
	Solar	6.7%	25.0%
	Others	3.3%	5.0%
Own Land	Yes	61.7%	87.5%
	No	38.3%	12.5%
Own House	House Own	87.2%	97.7%
	Rented	11.7%	1.8%
	Institutional	0.3%	0.0%
	Others	0.8%	0.5%

Source: Own calculations based on NLFS 2017/18 data

Table 4 shows the share of the working-age population based on household characteristics. In terms of access to water, 87% of households have access to water and only 13% have no access to water in Nepal. 85% and 85% of households have access to water in urban and rural locations respectively. Regarding cooking fuel type, 54.7% and 82.5% of households use firewood as the source of cooking fuel, followed by LP Gas, Bio Gas, and Kerosene and Electricity in urban areas and rural areas. In the both urban and rural household, firewood is main source of cooking

fuel, followed by LP Gas, Bio Gas, and Kerosene and Electricity. In terms of source of light, most households have access to electricity, followed by solar in both urban and rural locations. Regarding owning land, 61.7% and 87.5% own land in urban and rural locations respectively. Similarly, 87.2% and 97.7% household owned a house in urban and rural areas.

4.3. Descriptive Analysis Based on Personal Characteristics

In Nepal, communities and the government have shown little interest in the issue of women's unpaid care work. One of the first attempts to engage with the issue was in 1979 when the Status of Women in Nepal report (Acharya and Bennett 1983) revealed that rural Nepalese women spent 10.81 hours per day on unpaid care tasks, such as subsistence farming and animal care (around three hours more than men).

This section covers the average number of time spent by married men and women on producing goods and services for the final use. It is shown separately for urban and rural areas and the general population in both urban and rural areas by gender and age group. Domestic work involves two categories. First is the production of goods for final use, which involves farm work, livestock, fishing, food preparation, crafts work, fetching water, firewood, and housing repair. Production of goods for final use is measured in monthly mean hours. The second is the production of services for final use, which involves cooking, elderly care, and child care, calculated in terms of weekly mean hours. Many of the empirical findings in this study back up conventional wisdom: women work more than men in household activities. Having access to water, electricity, and fuel also reduces the work burden of both married men and women. At the same time, currently employed individuals spend a significant amount of time on household tasks, mainly married women. In other words, the assumption of clear division of labor between those who work in the labor market and those who work from home is not always justified.

Table 5 Domestic Work Categories According to Location (Monthly Mean Hours)

Domestic Work	Urban Married Men	Urban Married Women	Rural Married Men	Rural Married Women
Farm work	17.7	20.9	29.4	32.8

Livestock	13.4	25.7	24	39.4
Fishing	0.2	0.5	0.3	0.6
Food Preparation	10.6	9.1	11.9	10
Crafts work	18.7	18.8	23.4	17.5
Fetching water	11.6	16	11.1	14.2
Firewood	14.5	16.9	15.9	16.1
House repair	40.5	30.3	45.7	26.5
Total	127.2	138.2	161.8	157.2

Source: Own calculations based on NLFS 2017/18 data

Table 5 depicts the domestic work time for farm work, livestock, fishing, food preparation, crafts work, fetching water, firewood, and housing repair for both working-age populations aged 15-60 years residing in urban and rural locations. On average, married men in urban areas and rural areas tend to spend 161.6 hours and 127.2 hours monthly producing goods for final consumption activities. Married men in urban areas spent more hours on housing repair work, followed by farm work and crafts work. Similarly, married women in urban areas and rural areas tend to spend 138.2 and 157.2 hours monthly to produce goods for final consumption activities. Married women in rural areas spend more hours on livestock-related work, followed by farm work and housing repair work. Married men in the age group 36-35 spent on average 43 hours monthly, whereas married women aged 15-25 worked on average 35.4 hours monthly in an urban areas. Married men of age group 26-35 in the rural areas spent more time 66 hours on average than urban areas married men of all age groups. Similarly, married women aged 26-35 in the rural areas spent less time, 32.8 hours on average, than urban areas married women of all age groups. (Rana et al., 2018) found that women farmers' get socially ascribed responsibility for livestock rearing in their study on intra-household division of work in agriculture. Male out-migration and off-farm employment were the leading causes for women spending more time on livestock and farm work.

Nepal suffered a massive earthquake on April 25, 2015, that destroyed more than 60,000 homes⁸. People got compelled to stay in evacuation shelters or temporary residences after the disaster, and as a result, they were unable to maintain their quality of life. Housing is frequently the most valuable asset for citizens in developing countries, and disasters significantly impact the built environment in developing countries more than in affluent countries (Goda et al., 2015). Most of the homes got destroyed in rural areas. Since Nepal Labor Force Survey 2017/18 was carried out when Nepal was still in the rebuilding phase, married men in urban and rural and women in rural tend to spend more time in housing repair work.

Similarly, married women spent more on fetching water and firewood than married men in urban areas and rural areas. The mean time to collect water and firewood ranges from an average of 11 hours to 16 hours in urban areas and rural areas. Married men and women aged 45-60 spend on average 19.5 hours and 33 hours monthly on livestock in urban areas. Married men in the age group 45-60 worked on average 31.2 hours monthly, and married women in the age group, 36-45, worked 45.4 hours monthly in rural areas. Married men in the age group 36-45 spent 15 hours on average monthly collecting firewood and fetching water, whereas married women spent 18.2 hours on average monthly collecting firewood and fetching water. Water fetching continues to have the most significant impact on women and children in poorer rural communities, and it is a significant obstacle to family water security and sustainable development in locations where it is most needed. Up to 60% of children support wood and water collecting, spending up to 11.3 hours each week in some nations (Geere et al., 2017).

Table 6 depicts the domestic work time for activities such as cooking, elderly care, and child care for both working-age populations aged 15-60 years residing in urban and rural Nepal. On average, married men in urban and rural areas tend to spend 24.4 hours and 25.1 hours monthly on the production of services for final use activities, respectively. Married men in urban and rural areas spent more hours on child care and elderly care, followed by cooking. Similarly, married women in urban areas and rural areas tend to spend 42.5 and 41.6 hours weekly on the

⁸ According to the Post Disaster Needs Assessment Report, 2015, the Nepal Planning Commission reported that an earthquake took approximately 9000 lives in Nepal.

production of services for own final use activities. Married women in urban areas and rural areas spent more hours on childcare and cooking, followed by elderly care.

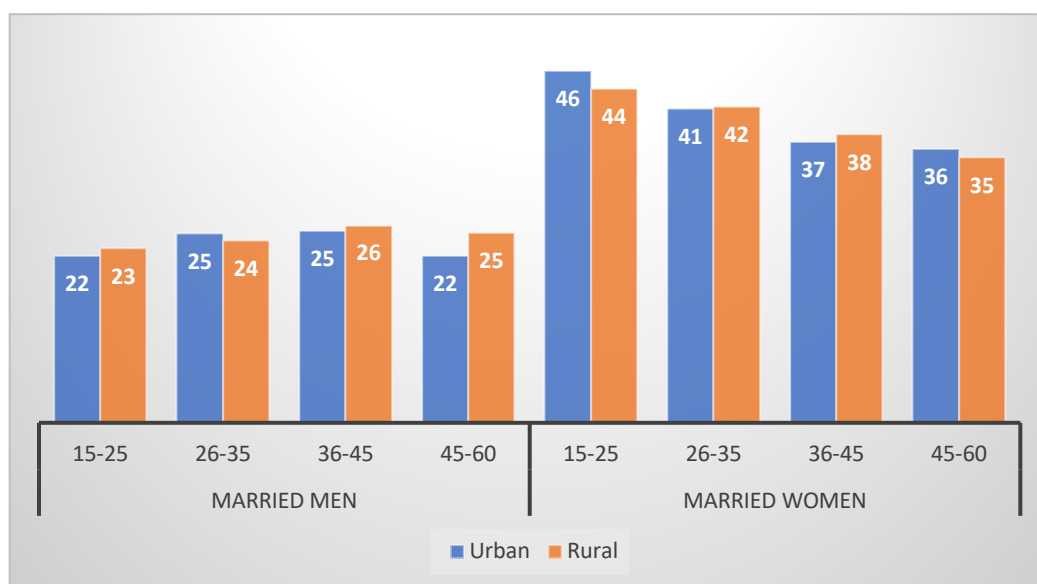
Table 6 Domestic Work Categories According to Location (Weekly Mean Hours)

Domestic Work	Urban Married Men	Urban Married Women	Rural Married Men	Rural Married Women
Cooking	6.7	15.6	6.8	14.8
Elderly care	8.8	9.4	9.4	9.8
Childcare	8.8	17.5	8.9	17
Total	24.4	42.5	25.1	41.6

Source: Own calculations based on NLFS 2017/18 data

Figure 5 depicts the domestic work time for activities such as cooking, elderly care, and child care for both working-age populations for all age groups residing in urban areas of Nepal. Married women aged 15-25 and married men aged 36-45 and 26-35 spent more hours in domestic work among all age groups in urban areas of Nepal. Married men aged 45-60 spent fewer hours on domestic work among all age groups in urban areas of Nepal, and a similar is the case for married women. In comparison between married women and men of all groups, married women spent more on domestic work than married men in urban areas. The gender disparity is visible in the allocation of time to domestic work in the urban area of Nepal.

Figure 5 Domestic Work According to Age Group and Locations (Weekly Mean Hours)



Source: Own calculations based on NLFS 2017/18 data

Figure 5 also depicts the domestic work time for activities such as cooking, elderly care, and child care for both working-age populations for all age groups residing in rural areas of Nepal. Married women aged 15-25 and married men aged 36-45 spent more hours in domestic work among all age groups in rural areas of Nepal. Married men aged 15-25 spent fewer hours on domestic work among all age groups in rural areas of Nepal, and a similar is the case for married women. In comparison between married women and men of all age groups, married women spent more time on domestic work than men in rural areas, similar to the case of urban areas. The gender disparity is also visible in the allocation of time to domestic work in the rural area of Nepal. ActionAid sought to research women's unpaid care labor in Nepal in 2013 (Budlender and Moussie 2013) and found that, on average, women spend 268 minutes per day on housework (cooking, cleaning, washing, and buying), compared to 56 minutes per day for men. My study also found that women spend much more time on domestic labor than men.

The following section covers the descriptive analysis of domestic work based on household characteristics.

4.4. Descriptive Analysis Based on Household Characteristics

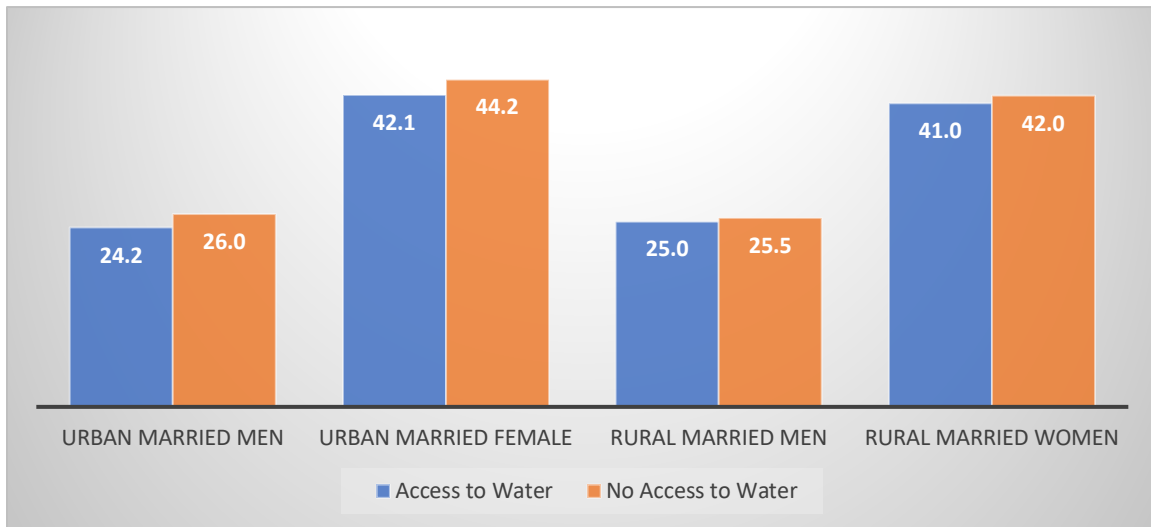
Figure 6 shows the average number of hours spent on domestic work (production of services for own use such as household chores, elderly care, child care) per week based on whether or not households have access to water (a household is said not to have access to water if the primary source of drinking water is a well without pump, a river, a lake, a spring, a pond, or rainwater) for both urban and rural area. NLFS 2017/18 does not have adequate data on the distance in time separating homes from an upgraded water supply when they do not have access to water, and the fact that they do not have access, aside from a distance, is a crucial predictor of time use.

As expected, the average number of hours spent on domestic work (clubbed three domestic works, namely cooking, elderly care, and child care) is lower in houses having access to water because the time required to bring wood or water gets significantly reduced if not eliminated. As shown in Table 4, the study found that 88% of households have access to water in urban areas and 85% of households have access to water in rural areas. Therefore, married men (women)

aged 15 to 60 who live in urban households without access to water spend 26 hours (44.2 hours) per week on domestic work, compared to 24.2 hours for married men and 42.1 hours for married women in households with access to water. The fact that a household has access does not imply that they spend much less time on domestic work. Chen et al. (2019) found that urban households had to wait five days for tap water to become accessible, with each availability period lasting about 100 minutes. Every day, the average respondent spent roughly 40 minutes collecting water, including all water-related actions, such as obtaining water from the tap and other sources inside and outside the home. This figure implies that households still spent a significant amount of time gathering water despite having a private tap.

Similarly, married men (women) aged 15 to 60 who live in rural households without access to water spent 25.5 hours (42 hours) per week on domestic work, compared to 25 hours for married men and 41 hours for married women in households with access to water. Women are disproportionately responsible for collecting water from the nearest source of water such as pond, river, community well. Women or men have to spend more time to walk to the nearest source and wait in line to fill the water, given that households do not have an access to water. Having an access to water, reduces time to collect water from the nearest source of water. Households that have no access to water also implies that children help their parents to collect water which restricts children to attend school or study. In rural Sub-Saharan Africa, water collectors (mainly women and girls) spend 36 minutes per trip for water collecting operations, compared to around 23 minutes in rural Asia (Cheung, 2010). A woman in India's water-scarce regions could spend up to three of her 15 productive hours each day collecting water (Sijbesma et al., 2009).

Figure 6 Domestic Work According to Access to Water (Weekly Mean Hours)



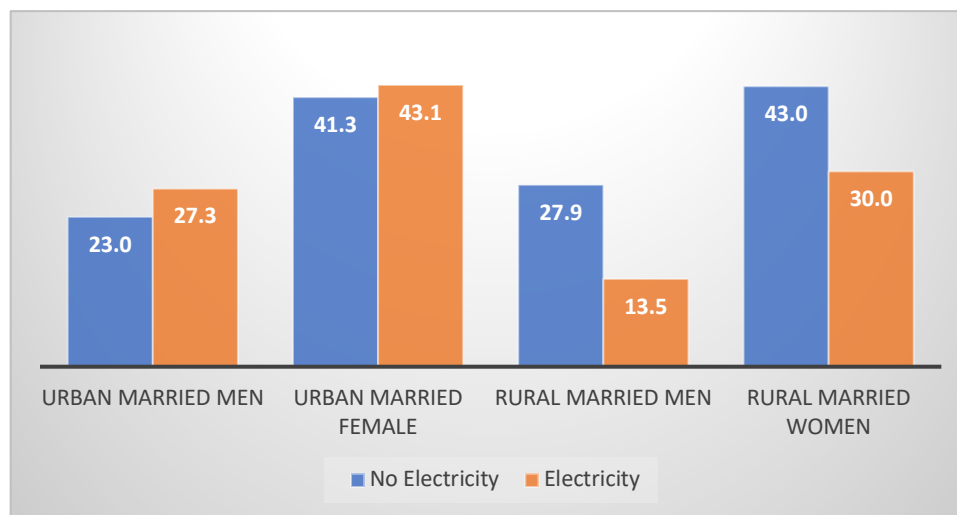
Source: Own calculations based on NLFS 2017/18 data

Figure 7 displays the average number of hours spent on domestic work (production of services for own use such as household chores, elderly care, child care) per week based on the type of cooking fuel (clubbed firewood, LP Gas, Bio Gas, Kerosene as without Electricity and Electricity and other such as briquette⁹ as with Electricity) households used for both urban and rural area. Married men (women) aged 15 to 60 who live in urban households without access to cooking fuel (firewood, lp gas) spend 23 hours (41.3 hours) per week on domestic work, compared to 27 hours for married men and 43 hours for married women in households with access to cooking fuel (electricity). Similarly, married men (women) aged 15 to 60 who live in rural households without access to cooking fuel (firewood, lp gas) spent 27 hours (43 hours) per week on domestic work, compared to 13 hours for married men and 30 hours for married women in households with access to cooking fuel (others and electricity). This shows that with and without to access to cooking fuel type, women spend more time on household work. Women are the backbone of the cooking system since they are in charge. Women in developing countries play a significant role in cooking fuel selection, as they produce or collect most of it (Shailaja, 2000). They choose to use fuelwood since it is readily available and cost-effective. They spend most of their time gathering fuelwood from local forests or areas (Das et. al., 2019). They do,

⁹ A briquette is a compressed block of coal dust or other combustible biomass material used for fuel and kindling to start a fire.

however, have additional domestic responsibilities and activities in addition to collecting fuelwood and cooking. These metabolically demanding, arduous actions go unaccounted for (Khamati et al., 2003). According to a previous study, switching to improved cookstoves (ICS) can save around 60% of time and energy (Das et al., 2019). Urban households in Kathmandu are willing to embrace electric cooking, but urban women lack the knowledge, information, and financial resources to invest in new technology (Shrestha et al., 2021). The same study found that creative technological solutions and women's financial power are critical, including a subsidy program to reduce the inequity between low and high energy household share variations and increase gender engagement. Even though households use electric source for cooking, lack of sufficient knowledge and switching to non-electric cooking fuel (lp gas) consumes time to cook food (Shrestha et al., 2021). Industrial load shedding officially ended in early 2018 in Nepal.¹⁰ Since survey was carried out during 2017-18, households that use electricity as source of cooking food had to suffer from frequent electricity shortage, which increased the domestic work time in urban area (Timilsina et al., 2021).

Figure 7 Domestic Work According to Cooking Fuel Type (Weekly Mean Hours)



Source: Own calculations based on NLFS 2017/18 data

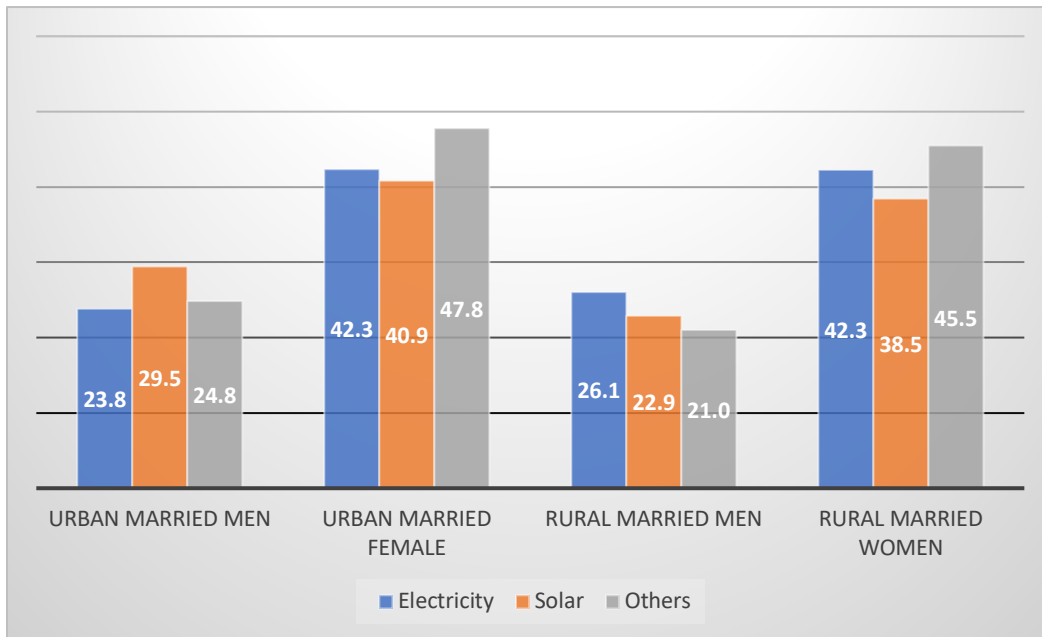
Figure 8 displays the average number of hours spent on domestic work (production of services for own consumption such as household chores, elderly care, child care) per week based on the

¹⁰ Between 2007 and early 2018, Nepal went through electricity supply shortage (industrial load shedding), that had drastic costs for Nepal's economy (6% of GDP).

type of source of light (electricity, solar, and others such as a candle) for both urban and rural area. Married men (women) aged 15 to 60 who live in urban households with access to electricity spend 23.8 hours (42.3 hours) per week on domestic work, compared to 29.5 hours for married men and 40.9 hours for married women in households with access to solar. However, married men (women) aged 15 to 60 who live in urban households without access to electricity and solar spend 24.8 hours (47.8 hours) per week on domestic work. Similarly, married men (women) aged 15 to 60 who live in rural households with access to electricity spend 26.1 hours (42.3 hours) per week on domestic work, compared to 22.9 hours for married men and 38.5 hours for married women in households with access to solar. Nevertheless, married men (women) aged 15 to 60 who live in rural households without access to electricity and solar spend 21 hours (45.5 hours) per week on domestic work.

Households with access to electricity were more likely to spend less time on household work. Households with access to solar also spend less time than those with access to electricity because solar has the backup battery that helps to light house in quick time. As mentioned above, the electric power cut was one of the major hindrances to light house in quick time until early 2018. Country suffers from shortfalls in electricity generation during winter so solar has become the next viable source and consequently reduces the time burden with respect to household work. Access to modern forms of energy, particularly electricity, is considered crucial for overall human development, and it is an essential pathway for improving gender equality and social inclusion, particularly in harsh living conditions and discriminatory norms that challenge women (Govindan et al., 2019) Existing literature from around the globe provides enough empirical evidence to validate the positive impact of access to adequate and reliable modern energy, including electricity, on people's lives, especially on women (Practical Action 2010).

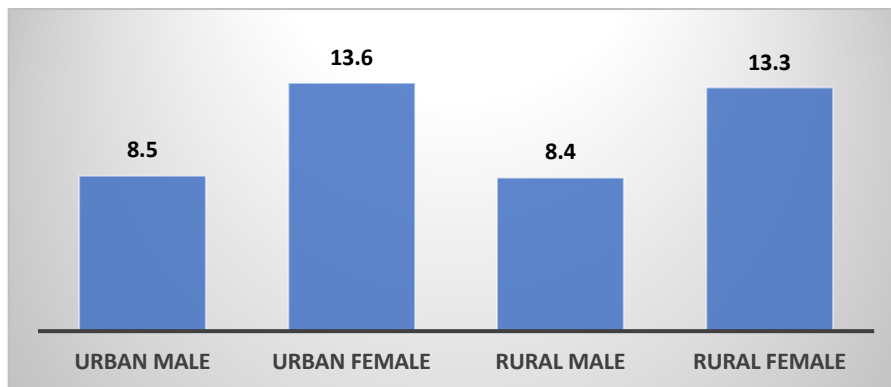
Figure 8 Domestic Work According to Source of Light (Weekly Mean Hours)



Source: Own calculations based on NLFS 2017/18 data

The NLFS 2017/18 classifies a person as employed when he/she has worked for at least one hour during the reference week. Appendix A covers the definition of other key labor market indicators. In Figure 9, domestic work time (includes production of services for own final consumption) statistics are depicted irrespective of employment status. The results show that the working-age group of 15-60 years married men in urban areas and rural areas spend less time on domestic work than married women in urban and rural areas respectively.

Figure 9 Domestic Work Irrespective of Labor Force Status (Weekly Mean Hours)



In Table 7, domestic work time (includes production of services for own final consumption) statistics are depicted according to the individual's employment status. The results show that the working-age group of 15-60 years employed married men in urban areas spend less time on domestic work than unemployed, potential labor force, out of labor force women in urban and rural areas. Working-age group of 15-60 years, employed married men (7.6 hours and 8.3 hours per week) in urban and rural locations spend less time on domestic work in comparison to employed married women (12.2 hours per week and 12.1 hours per week) in urban and rural locations. Hence, married women with paid employment tend to shoulder a large share of the domestic work burden. The gender disparity persists in allocating time to household work in terms of employment status. Research on the Nepalese labor market finds that having paid work makes a difference for women, but it has the most significant influence on women whose jobs are characterized by regularity, prominence, and social benefits (Kabeer, Mahmud, and Tasneem, 2011). 'Precarious jobs and economic insecurity translate into precarious lives and bad living conditions' (Beneria 2001). As a result, providing Decent Work becomes a prerequisite for women's empowerment.

Table 7 Domestic Work According to Employment Status (Weekly Mean Hours)

Employment Status	Urban Men	Urban Women	Rural Men	Rural Female
Employed	7.6	12.2	8.3	12.1
Unemployed	8.2	12.8	8.5	12.5
Potential LF	8.6	14.0	8.1	14.2
Out of LF	9.6	15.2	8.7	14.4

Source: Own calculations based on NLFS 2017/18 data

Similarly, Table 4 depicts that working-age group of 15-60 years, unemployed married men (8.2 hours per week in urban areas and 8.5 hours per week in rural areas) spend less time on domestic work in comparison to employed married women (12.8 hours per week in urban areas and 12.5 hours per week in rural areas). In terms of potential and out of labor force status, similar trend could be observed i.e., working-age group of 15-60 years married women spend more time on domestic work in comparison to married men. Irrespective of labor force status, women spend more time on domestic work. Unemployed spouses, according to Brines (1994), may regard housekeeping as a threat to their masculinity. The Nepal Jobs Diagnostic report found that

between 2008 and 2018, women took up three-quarters of new occupations in non-wage self-employment or unpaid family labor, the majority of which being agricultural work (Bulmer et al., 2020). Although high rates of female labor force involvement in Nepal, communities and the government have shown little interest in the 'double burden' of balancing unpaid care work with paid labor activities. Ghosh et al. (2017) found that women were unable to balance paid and unpaid care work due to several factors, including a lack of decent employment opportunities in rural areas, a lack of quality public resources and services, male migration, a lack of assets such as land, and prevailing gender norms, particularly around women's participation in unpaid care work and mobility. A complicated interplay of gender norms on the allocation of tasks and obligations, employment-related migration, and home structure determines men's participation in unpaid care work. The lack of availability and access to public resources and services, high levels of male migration, family structure, and gender norms on women's labor contribute to the severity of women's care job loads. The double burden on women has a spillover impact on girl children and older women in their families, resulting in a lack of care and depletion of these substitute carers' mental and physical well-being (Ghosh et al., 2017).

A study on the economic value of women's work in the Kathmandu Valley found that women's work is equivalent to about 91.3% of Nepal's GDP (Menaka et al., 2008). The same research sheds light on reviewing and reforming the concept, method, and practice of the economic valuation of unpaid work (Menaka et al., 2008). It is necessary to establish a methodology that goes beyond valuation to incorporate unpaid work into macroeconomic policy and recognize it as a component of the macroeconomy. The efforts of Levy Economics Institute scholars such as Thomas Masterson, Ajit Zacharias, Luiza Nassif Pires, and Fernando Rios-Avila are highly commendable for developing a framework to assess the mechanics of redistribution among family members and applying it to gender-based redistribution (Zacharias et al., 2021). Their study is the step in right direction to assess inequalities between households and among individuals within households which is important for formulating policies that promote gender, social, and economic justice coherently and consistently.

4.5. Regression Analysis

The previous section's time use profile based on individual and household characteristics is essential, but it does not give a clear picture of the correlates or causes of domestic work. Regression analysis is required to analyze the relationships between individual and household factors and domestic work while controlling for the potential effect of other parameters. In Appendix C, regressions for the determinants or correlates of domestic work are presented separately for urban men, urban women, rural men, and rural women. The dependent variable is the individual's total domestic work time per month. The independent variables include access to water, access to electricity, access to cooking fuel, employment status in the labor market, and the gender type of the household. In addition, I also control for age, gender, education level, and household size. The model and empirical data had low goodness of fit. The determination coefficients (R^2) for all the variants varied between 0.15 and 0.26.

In rural and urban regions, no access to water increases domestic work time for married men and women. Access to water reduces labor time by 7 to 18 hours each, with time savings of a similar order of magnitude for men and women and in urban and rural locations. There is a clear link between access to water and time allocation of women, who have primary responsibility for ensuring drinking water to their households, implying that changes in water infrastructure availability can reduce their burden in fetching water and free up their time locked up in the care economy for income-generating market economy activities. As a result, investing in water infrastructure can assist women in reallocating their labor time and reducing the stress associated with walking great distances to gather water.

Concerning the source of light, having access to electricity reduces domestic work time for married men and women. However, in both urban and rural areas, households having access to solar increases the domestic work time for both married men (19 hours per month vs. 7 hours per month) and women (25 hours per month vs. 15 hours per month) in comparison to the households having access to electricity. Similarly, in urban and rural areas, using electricity for cooking decreases the domestic work time for married men (29 hours per month vs. 35 hours per month) and married women (50 hours per month vs. 18 hours per month). Basic infrastructure, including potable water, sanitation, electricity for lighting and fuel, transportation, and childcare, all have a significant impact on the amount of time spent doing unpaid work. Furthermore, the

lack of the state to provide alternatives for care and domestic support increases the weight of unpaid work, limiting women's options for paid job because they are expected to provide this unpaid work (Das et al., 2015). The same study (Das et al., 2015) stresses that in order for the 'reduction' in unpaid work to reduce drudgery and stress among unpaid employees, the state has failed to provide basic infrastructural assistance to the home (e.g., providing water, fuel, transportation, and caregiving institutions, among other things). Marphatia and Moussié (2013) find that in India women are forced to engage in unpaid activities not because they want to, but because institutions (both market and state) have failed to provide alternatives.

The study also finds that with the increase in household members, the domestic work time decreases for both married men and women. Larger household have more household members and there are more people to do the work, so other women in the family member share the domestic work. When we interact with the different age groups, we find an opposite result for the urban married women, which is statistically significant. Older women may be less likely to have a sister or sister-in-law or daughter living with them. However, the time burden on domestic work for married men in urban and rural areas and married women in rural areas turns out to be positive from negative when we interact with age groups and household size. Hence, the result remains statistically not significant. Gender norms play a vital role in deciding who dedicates time to do domestic work. The larger household size also implies that the son/daughters-in-law take responsibility for the household work. Since the study did not take children involved in household work, this ignores the division of the household responsibility in the family. It has been observed that men and women who do not own a home are more likely to engage in unpaid domestic chores. Especially married women in both urban and rural area, spend more time than married men in domestic work and the result remains statistically significant.

Individual-level characteristics play a role in determining the amount of domestic work carried out by married men and women. Education plays a significant role in bringing changes in these gendered norms of a society that significantly impacts women's work status (Marphatia and Moussié, 2013). In terms of education, the married men and women completing high school, bachelor's, and above spend less time than the married men and women completing grade 10 level of education or less in urban and rural areas, except for married men in rural areas. For the age group 15-60 years, the sample size for married men with no schooling in rural and urban

areas was minimal. Married women with no schooling spend around 10 hours and 8 hours on domestic work in rural and urban areas, respectively. For married men in both urban and rural areas, education does not correlate statistically with domestic work. However, some studies find that women with less than an intermediate level of education are more likely to engage in unpaid domestic work (Singh and Pattanaik, 2019). As a result, women are forced to undertake unpaid household responsibilities due to an apparent mismatch between abilities acquired via formal schooling and skills required for obtaining a quality job in the labor market (Singh and Pattanaik, 2019). Similarly, technical education significantly impacts women's employment status, with women with no technical education four times more likely than women with any technical education to be involved in unpaid domestic work (Singh and Pattanaik, 2019).

Furthermore, the household's occupational position appears to be a crucial determining factor for women's job status. Unemployed, potential labor force, and out of labor force married men and women spend more time on domestic work than the employed married men and women in urban and rural areas. Unemployed, potential labor force, and out of labor force married men spent more time on domestic work (mainly on housing repair and crafts work) than the unemployed, potential labor force, and out of labor force married women. As NLFS 2017/18 was carried out a year after a massive earthquake in Nepal, married men in urban and rural areas tend to spend more time rebuilding their damaged houses. The work burden increased as they had to spend time building the temporary shelter. The reference taken for the age category is 15-25 years. The reference group tends to work less than the married men and women age group of 26-35 years. The married women in rural areas bore more burden of domestic work. The disproportionate amount of unpaid care work and lack of access to paid jobs that women have in the Nepali economy is linked to their existing low status. Domestic work is disproportionately performed by women due to a lack of paid employment opportunities and women's low social position (in terms of education and money). In Nepal, a large proportion of women work unpaid domestically due to three factors: societal and religious constraints, choices (market and state inability to provide needed provisioning), and career opportunities (low opportunity cost of unpaid work in the market).

It is important to remember that the results in Appendix C are illustrative. One concern is causation, which could not be shown given the restricted analysis utilized in this study and the

lack of panel data to further assess the influence of essential infrastructure availability. Another concern is the likelihood of non-linear correlations between the explanatory variables and time use outcomes. Given that most of the explanatory factors are dichotomic, this is unlikely to be a significant issue. Another potential difficulty is the type of econometric methods utilized in the inquiry. I have not compared the findings of log-linear regressions to those results, for example, using matching approaches. Bardasi and Wodon (2009) used data from Guinea to produce broadly similar results using both matching approaches and linear regressions.

5. EMPLOYMENT GUARANTEE PROGRAM For KARNALI PROVINCE

In Nepal's context, the most relevant job guarantee program would be similar to India's rural child care program called Anganwadi. In Hindi, Anganwadi means "courtyard shelter." The government of India started this program back in 1975 as part of the Integrated Child Development Services program to tackle child hunger and malnutrition. The Integrated Child Development Services (ICDS) program is India's national social welfare program. The ICDS' community-based service delivery component, Anganwadi Centers (AWCs), offers primary medical care and nutritional services to newborns and their mothers in the community. Anganwadi Centers provides medical treatment to women and their newborns while strengthening these mothers' physical, psychological, and financial capability and the surrounding community. Yatsu (2012) investigated the positive link between Anganwadi Centers' (AWCs) healthcare services and newborn survival rates in India. Individual factors such as financial motivations and family support; program factors such as beneficiaries' and AWWs' service choices and work environments; community factors such as caste dynamics and seasonal migration; and organizational factors such as corruption affect the service delivery of AW workers John, et al. (2020). These complex, interconnected performance factors must be considered in a program to increase performance (such as incentives, working environment, and supportive management). In the long run, a program like Anganwadi is not only about providing employment opportunities; it helps in the overall physical, psychological, and financial capability of these mothers, children, and the surrounding community. During the COVID-19 lockdown in Nepal, about 41% of women lost their jobs (UNDP Nepal, 2020). In response to their practical needs, UN Women has been assuring their access to food and nutrition through women-managed community kitchens across Nepal, with funding from the Finnish government.

Given the low labor participation in Nepal's labor market, community kitchen provides opportunities for men and women to utilize their skills in productive work. There is massive scope for capitalizing out of the labor population in productive work. Hence, the state can play a substantial role in pursuing a federal/province level employment program, namely a Job Guarantee to uplift women's economic empowerment by establishing respectable jobs in the care industry and elsewhere. According to the Prime Minister Employment Report 2020/21, out of 75 local governments, only 57 local governments in Karnali province implemented the chief minister prime minister employment program (MOLESS 2021). The local governments struggling to implement the program in other sectors can focus on programs like community kitchens. Local government can create employment opportunities in the domestic workstream, which reduces time limitations on women's labor and increase female labor force participation.

I propose a Community Kitchen program for Karnali Province, one of the least developed provinces in Nepal. This program has the prospect of integrating into the Karnali Chief Minister Employment Program. The Karnali Employment Program provides 100 days of guaranteed wage employment in a fiscal year to at least one family member in each household interested in unskilled manual labor. According to NLFS 2017/19, Karnali Province's working-age population that is not in the labor force is 565,000. Since this program is targeted only at people below the poverty line, Karnali Province Planning Commission estimated that 28.9% of people fall below the poverty line.

Appendix D has a detailed description of the cost calculation of the Community Kitchen Program for the Karnali Province. Table 8 shows a brief description of the cost of the community kitchen. According to calculations, wage and administrative costs would be around NPR 7.54 billion and 5.02 billion, respectively. The total cost (wages plus administrative) would be 6.3% of Karnali Province's GDP (estimated NPR 198 billion in FY 2021/22). In other words, this total cost would be around 0.2% of Nepal's GDP (estimated at NPR 4852 billion in FY 2021/22).

Table 8 Cost of Community Kitchen (Karnali Province)

Cost/GDP	Amount in NPR
Total Wage Cost	7,543,767,000
Administrative Cost	5,029,178,000
Total Cost	12,572,945,000
Percent of Karnali Province GDP (198 Billion) FY 2021/22	6.3%
Percent of Nepal GDP (4852 Billion) FY 2021/22	0.2%

According to the Prime Minister Employment Report 2020/21, administrative cost accounts to 40% of the total expenditure (MOLESS 2021). Given that the 40% administrative cost is high, the country faces the problem of corruption (embezzlement of funds). The province-level and local officials should utilize the money to implement a program that benefits the poor people instead of feeding political cadres. A collective effort between political leadership and bureaucracy is necessary to reap the benefits of the costly program. If implemented in a transparent and accountable manner, this program can have multiple positive externalities. Firstly, the program increases the value of unpaid work. Both men and women interested in working can engage in the community kitchen to prepare meals for daily wage workers. The meal can even be supplied to the nearby schools, which do not have provision for mid-day meals. Some meals could be offered at a lower rate than the usual market rate for the daily wage workers. The community kitchen also helps to ensure access to food and nutrition. The program

has the potential to become another source of revenue to cover the program's cost. Working close to their homes strengthens local communities and networks, eliminates involuntary unemployment, increases local community resilience, reduces poverty, reduces gender inequality, and offers a meaningful and socially helpful job to anyone willing to work. The program also helps increase the confidence of men and women and explore other opportunities in the labor market where there is the scope of earning a higher salary. They also feel proud to work for their community. The program provides opportunities to increase bargaining power and have an equal say in the household decision-making. The program has the scope of becoming an employment-led poverty reduction tool. In the initial phase, it should be targeted at the economically and socially vulnerable population struggling to meet their basic needs by providing a daily living minimum wage. The community kitchen provides an opportunity to earn income and helps to address the care burden among other men and women in the province. The program can be expanded to generate further employment opportunities for other population segments in the long run. The positive link between the community kitchen and its potential benefits is an empirical question. This becomes prospects for future research on studying the impacts of Employment of Last Resort (ELR) programs.

However, there are some challenges in implementing such programs. According to Policy Research Institute, the current daily wage of NPR 517 is too low by local standards, and it is necessary to revise the labor law regarding daily wages (Karna 2019). Some local governments did not utilize employment program funds by distributing them to their party cadres (Karna 2019). Moreover, employment coordinators are not well trained, which slows down the smooth implementation of such programs (MOLESS 2021).

These challenges and problems can be avoided if local citizens demand that local officials become transparent and accountable. Without a competent and visionary leader at the local level, it is not possible to implement such programs. If implemented with due diligence, the program has multiple benefits and plays a crucial role in uplifting economically and socially vulnerable populations falling below the poverty line.

6. CONCLUSION AND POLICY RECOMMENDATIONS

In Nepal, who bears the brunt of household labor? The findings in this study, for the most part, back up popular belief: women work significantly more on domestic activities than males, irrespective of location. Regardless of their labor market status, females were disproportionately more involved in producing services for their own final use, similar to the patterns observed in the production of goods. On average, married men in urban and rural areas tend to spend 161.6 hours and 127.2 hours monthly on the production of goods for final use activities. Married men in urban spent more hours on housing repair work, followed by farm work and crafts work. Similarly, married women in urban and rural tend to spend 138.2 and 157.2 hours monthly on the production of goods for final use activities. Married women in rural spend more hours on livestock-related work, followed by farm work and housing repair work. On average, married men in urban and rural tend to spend 24.4 hours and 25.1 hours monthly on the production of services for final use activities. Married men in urban and rural spent more hours on child care and elderly care, followed by cooking. Similarly, married women in urban and rural tend to spend 42.5 and 41.6 hours weekly on the production of services for own final use activities.

Married women in urban and rural areas spent more hours on childcare and cooking, followed by elderly care. Having access to water, electricity, and fuel also reduces the work burden of both married men and women. Individual-level characteristics play a role in determining the amount of domestic work carried out by married men and women. Married women with no schooling spend around 10 hours and 8 hours on domestic work in rural and urban areas. Unemployed, potential labor force, and out of labor force married men and women spend more on domestic work than the employed married men and women in urban and rural areas. Unemployed, potential labor force, and out of labor force married men spent more time on domestic work (mainly on housing repair and crafts work) than the unemployed, potential labor force, and out of labor force married women. The assumption of clear division of labor between those who work in the labor market and those who work from home is not always justified.

Given the low female participation in the labor market, women can utilize their free time for productive work. There is a huge scope for capitalizing on the out of the labor force population in productive work. Hence, the state can play a substantial role in pursuing a federal/province

level employment program, namely a Job Guarantee to uplift women's economic empowerment by establishing respectable jobs in the care industry and elsewhere. I propose a Community Kitchen program for Karnali Province, one of the least developed provinces in Nepal. This program has the prospect of integrating into the Karnali Chief Minister Employment Program. The total cost (wages plus administrative) would be 1.3% of Karnali Province's GDP (estimated NPR 19.8 billion in FY 2021/22). This program can have multiple positive externalities. The program increases the value of unpaid work. Working close to their homes strengthens local communities and networks, eliminates involuntary unemployment, increases local community resilience, reduces poverty, reduces gender inequality, and offers a meaningful and socially useful job to anyone willing to work.

However, there are some challenges to implementing such programs (low daily wages, corruption). These challenges and problems can be avoided if local citizens demand that local officials become transparent and accountable. Without a competent and visionary leader at the local level, it is not possible to implement such programs. If implemented with due diligence, the program has multiple benefits and plays a crucial role in uplifting economically and socially vulnerable populations falling below the poverty line. Another important problem is the voices of women seeking paid jobs near home to balance their unpaid caregiving and paid work duties. It is a challenging problem to handle since there is a risk that by suggesting such a possibility, we are supporting the gender norm that unpaid care work is primarily a woman's obligation. While closer locations are important for ensuring good working conditions, it is also critical to fighting for the redistribution of unpaid labor among family members, particularly men, to overcome the gender stereotype of women as primary carers.

Achieving a double boon will be impossible without a better knowledge of the core issue at the household, community, market, and state levels. For women and households to progress towards a double boon, ILO's 5 R approach; Recognize, Reward, Reduce, Redistribute, and Representation – in care work must be recognized and implemented at all levels. There is a pressing need for advocacy from top to bottom in policymaking, program design, and execution to recognize how care influences women's economic empowerment and vice versa and comprehend the different socioeconomic circumstances that impede women from achieving the double boon. Given the patriarchal mindsets that drive lawmakers and program designers, who

still view care work and unpaid employment as exclusively a woman's responsibility, it is not an easy task. In order to achieve optimal women's economic empowerment and a twofold boon, programs and policies must be inclusive and crosscutting across sectors.

Goal 5.4 of the Sustainable Development Goals emphasizes the necessity of recognizing, decreasing, and redistributing women's unpaid care work globally by 2030. (UN 2017). As a result, additional research requires exploring women's time and participation in care and unpaid work and their barriers to decent, paid work, particularly in Nepal's setting. In Nepal's development sector, advocacy for unpaid care work is still in its early stages, and more interaction between academics, practitioners, and policymakers on women's unpaid care burden is needed. Women empowerment programs must be designed and implemented with a care perspective. To provide appropriate paid jobs and disperse care work among the family, community, market, and state, grassroots communication and activism promotion lead to lessening women's double load and moving toward a double boon.

Lastly, the methodological and conventional bias shortcomings regarding economic valuation contributing to GDP formation have led to neglecting or undervaluing women's contribution when it bogs down to unpaid domestic work. Due to this shortcoming, unpaid domestic work carried out by women has often reduced the economic presence of women invisible. "A Study on Economic Valuation of Women's Unpaid Work in Kathmandu Valley," carried out by Resource Centre for Primary Health Care (RECPHEC) and Health Bridge in June 2008, found that GDP would nearly double if the unpaid work performed by women when included in estimating GDP. On the one hand, it is crucial to revise conventional methods of calculating GDP related to the System of National Accounts. Existing methods fail to recognize women's unpaid domestic work. On the other hand, society should stop relating household work to women's work. For this to happen, qualitative change in attitudes, values, and outlooks of policymakers and the general public about household work is required. Valuing the care and household work brings tremendous benefits at the household and national levels.

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APPENDIX A: KEY LABOR MARKET CONCEPTS

KEY LABOUR MARKET CONCEPTS

The working-age population comprises individuals aged 15 years and older who fall into one of the three labour market components (employed, unemployed, not in the labour force).

Persons in employment are people of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise:

- a) employed persons “at work”, i.e. those who worked in a job for at least one hour in the reference week
- b) employed persons “not at work due to temporary absence from a job, or to working-time arrangements (such as shift work, flexitime and compensatory leave for overtime).

Paid trainee work is regarded as employment.

In order to be considered unemployed, based on the official definition, three criteria must be met simultaneously: a person must be completely without work, currently available to work, and taking active steps to find work.

If a person is working or trying to find work, he/she is in the labour force. Thus, the number of people who are employed plus those who are unemployed constitute the labour force.

A person who reaches working age may not necessarily enter the labour force. He/she may remain outside the labour force and is then regarded as not in the labour force. These are individuals who did not work in the reference week, either because they did not look for work or try to start a business in the four weeks preceding the survey, or were not available to start work or a business in the reference week.

The unemployment rate measures the proportion of the labour force that is trying to find work.

The labour force participation rate (LFPR) is a measure of the proportion of a country's working- age population that engages actively in the labour market, either by working or looking for work; it provides an indication of the relative size of the supply of labour available to engage in the production of goods and services, relative to the population at working age (ILO, KILM 2015).

The employment-to-population ratio measures the proportion of the working-age population that is employed.

Source: NLFS 2017/18, pg 9 (CBS 2018)

APPENDIX B: REGRESSION MODEL

Urban Married Men(urbrur753 == 1&sex == 1)

$$\begin{aligned} &= lm(\text{totaltime} \sim \beta_0 + \beta_1 \text{as.factor(education level)} + \beta_2 \text{as.factor(age group)} \\ &+ \beta_3 \text{as.factor(labor force status)} + \beta_4 \text{as.factor(access to water)} \\ &+ \beta_5 \text{as.factor(source of light)} + \beta_6 \text{as.factor(source of cooking fuel)} \\ &+ \beta_6 \text{as.factor(own house)} + \beta_7 \text{as.factor(household size)} \\ &+ \beta_8 \text{as.factor(age group)} * \text{as.factor(household size)} \end{aligned}$$

Urban Married Women(urbrur753 == 1&sex == 2)

$$\begin{aligned} &= lm(\text{totaltime} \sim \beta_0 + \beta_1 \text{as.factor(education level)} + \beta_2 \text{as.factor(age group)} \\ &+ \beta_3 \text{as.factor(labor force status)} + \beta_4 \text{as.factor(access to water)} \\ &+ \beta_5 \text{as.factor(source of light)} + \beta_6 \text{as.factor(source of cooking fuel)} \\ &+ \beta_6 \text{as.factor(own house)} + \beta_7 \text{as.factor(household size)} \\ &+ \beta_8 \text{as.factor(age group)} * \text{as.factor(household size)} \end{aligned}$$

Rural Married Men(urbrur753 == 2&sex == 1)

$$\begin{aligned} &= lm(\text{totaltime} \sim \beta_0 + \beta_1 \text{as.factor(education level)} + \beta_2 \text{as.factor(age group)} \\ &+ \beta_3 \text{as.factor(labor force status)} + \beta_4 \text{as.factor(access to water)} \\ &+ \beta_5 \text{as.factor(source of light)} + \beta_6 \text{as.factor(source of cooking fuel)} \\ &+ \beta_6 \text{as.factor(own house)} + \beta_7 \text{as.factor(household size)} \\ &+ \beta_8 \text{as.factor(age group)} * \text{as.factor(household size)} \end{aligned}$$

Rural Married Women(urbrur753 == 2&sex == 2)

$$\begin{aligned} &= lm(\text{totaltime} \sim \beta_0 + \beta_1 \text{as.factor(education level)} + \beta_2 \text{as.factor(age group)} \\ &+ \beta_3 \text{as.factor(labor force status)} + \beta_4 \text{as.factor(access to water)} \\ &+ \beta_5 \text{as.factor(source of light)} + \beta_6 \text{as.factor(source of cooking fuel)} \\ &+ \beta_6 \text{as.factor(own house)} + \beta_7 \text{as.factor(household size)} \\ &+ \beta_8 \text{as.factor(age group)} * \text{as.factor(household size)} \end{aligned}$$

APPENDIX C: REGRESSION RESULTS

Independent Variables	Regression Results			
	Dependent variable: Time Spent on Household Work			
	Urban Male	Urban Female	Rural Male	Rural Female
High School	-4.979*** (1.303)	-10.010*** (1.372)	3.497 (2.544)	-14.041*** (2.786)
Bachelors and Above	-6.628*** (1.808)	-14.470*** (2.264)	-12.379** (5.137)	-26.469*** (7.446)
No education	-3.495 (6.632)	8.257** (3.872)	1.292 (9.561)	10.313* (5.810)
Age (26-35)	7.187** (2.918)	6.394*** (2.054)	15.529*** (5.338)	18.322*** (3.791)
Age (36-45)	8.160*** (2.934)	1.809 (2.367)	15.655*** (5.587)	11.159** (4.622)
Age (46-60)	10.406*** (2.964)	-7.275** (3.105)	25.142*** (5.494)	7.950 (6.921)
Unemployed	29.410*** (2.289)	8.162** (2.967)	39.816*** (4.195)	10.995* (6.404)
Potential Labor Force	35.597*** (1.944)	14.921*** (1.777)	54.621*** (2.988)	28.091*** (3.345)
Out of Labor Force	30.930*** (1.641)	12.286*** (1.398)	45.780*** (2.675)	17.760*** (2.728)
No Access to Water	7.347*** (1.698)	8.094*** (1.827)	9.476*** (3.435)	18.369*** (3.446)

Light type: Solar	19.423*** (2.866)	25.781*** (3.080)	7.965*** (2.706)	15.819*** (2.714)
Light type: Other	-3.208 (4.553)	-2.165 (5.264)	8.944 (5.482)	12.659** (5.730)
Fuel type: LP Gas	-31.250*** (1.394)	-43.080*** (1.493)	-27.993*** (3.291)	-39.612*** (3.274)
Fuel type: Bio gas and Kerosene	-1.642 (2.260)	-3.404 (2.524)	-9.777*** (3.569)	-15.717*** (4.076)
Fuel type: Electricity	-29.549*** (10.595)	-50.734*** (12.328)	-35.944** (14.670)	-18.056 (22.738)
Do not own house	-6.206*** (1.629)	-18.680*** (1.687)	-13.235* (7.144)	-27.276*** (7.830)
Household Size (4-6)	-11.081*** (3.274)	-14.588*** (2.200)	-2.216 (5.518)	-10.519*** (3.322)
Household Size (7+)	-22.754*** (7.252)	-31.981*** (5.328)	-7.000 (8.845)	-29.503*** (6.366)
Age (26-35) * Household Size (4-6)	6.687* (3.803)	6.960** (2.866)	-1.727 (6.645)	1.774 (4.953)
Age (36-45) * Household Size (7+)	7.157* (3.824)	9.270*** (3.435)	0.876 (6.898)	6.485 (6.353)
Age (46-60) * Household Size (4-6)	8.612** (3.948)	16.075*** (4.821)	-3.179 (7.059)	-3.859 (10.135)
Age (26-35) * Household Size (7+)	3.999 (8.281)	1.105 (7.097)	-19.127* (10.995)	-12.112 (9.735)
Age (36-45) * Household Size (4-6)	6.568 (9.073)	16.590* (9.877)	-7.602 (12.247)	-2.193 (17.667)

Age (46-60) *	14.555	11.827	22.722*	15.675
Household Size (7+)	(9.342)	(12.443)	(13.791)	(29.022)
Constant	35.361***	83.188***	31.018***	83.971***
	(2.732)	(2.215)	(4.685)	(3.569)
Observations	6,553	7,090	3,973	3,758
R ²	0.260	0.263	0.189	0.151
Adjusted R ²	0.257	0.260	0.184	0.145
Residual Std. Error	1,521.711 (df = 6528)	1,659.659 (df = 7065)	2,074.795 (df = 3948)	2,070.148 (df = 3733)
F Statistic	95.503*** (df = 24; 6528)	104.794*** (df = 24; 7065)	38.336*** (df = 24; 3948)	27.568*** (df = 24; 3733)

Source: Own Calculations

APPENDIX D: COST CALCULATIONS FOR THE COMMUNITY KITCHEN

Karnali Province Working age population Not in Labor Force (NLFS 2017/18)	565,000	565,000
Population below Poverty Line (Karnali Province Planning Commission)	28.9% of 565,000	163,285
Wage Cost	6 hours per day * NPR 77* 100 days = NPR 46,200* 163,285 people (see Note 1)	7,543,767,000
Administrative Cost	Around 40% of the total amount disbursed from the budget for the Karnali employment program (see Note 2)	5,029,178,000
Total Cost	(see Note 3)	12,572,945,000
Karnali Province GDP	198932000000	198,932,000,000
Nepal GDP	485200000000	4,852,000,000,000
Percent of Karnali Province GDP FY 2021/22		6.3%
Percent of Nepal GDP FY 2021/22		0.2%

Source: Own Calculations

Notes:

1. Wage Cost:

It is assumed that working age population work maximum of 6 hours in a day.

Daily Minimum Wage Per Hour According to Nepal Labor Law is NPR 77.

Chief Minister Employment Program Guarantees 100 days of employment in a fiscal year.

Calculation: 6 hours per day * NPR 77 * 100 days = 46,200* 163,285 = NPR 7543767000

2. Administrative Cost:

According to Karnali Province Official, administrative cost hovers around 40% of the total amount disbursed from the budget for the Karnali employment program.

$(1 - (1/(1-0.4))) * 7,543,767,000 = \text{NPR } 5,029,178,000$

3. Total cost = Wage cost + Administrative cost

4. Karnali Province and Nepal GDP for FY 2021/22 estimated by Central Bureau of Statistics Nepal