Counting and valuing women's unpaid work in South Africa

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SENATE PLAGIARISM POLICY

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Abstract

Counting and valuing unpaid work provides a broader context to the inequality, poverty and gender discrimination in an economy and within households. Women all over the world spend a greater amount of time on unpaid work than men and this fact is no different for South Africa. This study undertakes to value the unpaid work performed by women in South Africa as a percentage of GDP, and their share of the contribution relative to men. This valuation is completed in a quest to figure out if we should be officially and routinely valuing the contribution of women's unpaid work in South Africa, and to what effect. Using the 2010 Time Use Survey and the 2010 and 2019 Quarterly Labour force earnings data, this study applies the mean/median wage approach, the generalist approach and an additional valuation using the minimum wage, which has not yet been applied by other researchers in the context of South Africa. The study shows that the overall contribution of unpaid work ranges between 9.91% and 27.61% of GDP between 2010 and 2019, across all methods, with women's share making up more than 70% of the value. This dissertation agrees that we should officially and routinely value unpaid work performed by women, so we can create impactful and relevant policies in this regard.

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Chapter 1: Introduction

1.1. Introduction

Counting and valuing women's unpaid work forms part of the study of gender economics, alternatively referred to as feminist economics. It is a new and rapidly growing area of interest in economics as it touches on inequality, poverty and gender discrimination in the economy. It is an important topic, especially in developing economies, given the need to ensure that economic development is more inclusive, by either allowing women enough opportunities to contribute to the paid economy, or to value activities they currently take part in in the unpaid economy. In post-apartheid South Africa, women's position in the labour market has been changing form (Casale et al. 2021). Despite this fact, women still carry a heavier share of unpaid work within the household (Casale et al 2021). This is not a problem unique to South Africa; many other researchers across the globe have undertaken to value the unpaid work carried out by women within households. In this context, this dissertation seeks to count and value unpaid work performed by women in South Africa as a percentage of GDP, by analysing their time use and allocating a relevant monetary value to that time. Not only will women's work be valued, but the share of women's contribution to the valuation will be compared to that of men.

1.2. Background

According to World Bank data, women became more visible in the labour force as their participation increased by 126% between 1960 and 1997 (Messing & Östlin, 2006). This has been the case for South African women as well (Casale et al. 2021). Despite this substantial increase, inequalities are still persistent in the paid and unpaid economies (Frazis & Stewart, 2011). Owing to the gendered nature of work, women mostly occupy underpaid and insecure jobs in the labour market (Antonopoulos, 2009), which are characterised by low earnings and equally low protection (Budlender, 2004). The United Nations Development Programme (UNDP) Human Development Report provides data on the earnings of males and females in

multiple countries, in an attempt to highlight that female income is only a fraction of male income. In South Africa, in 2002 the fraction was 45% for the non-agricultural wage (Budlender, 2004), although it has been between 63% and 72% for all wages between 1994 and 2017 (Casale et al. 2021). These statistics are not as alarming as they should be, considering South Africa is one of the most unequal countries in the world in many aspects (The World Bank, 2018). This inequality presents its ugly head in the unpaid economy as well (Messing & Östlin, 2006), which is where the focus of this research study lies.

Each country has a paid and unpaid economy, the paid economy comprises of the formal and the informal sector. The formal sector includes work in formal establishments such as a factory, an office or a mine where regular working hours and wages are set. The informal sector includes work in non-establishments such as street vending or hairdressing at home (Budlender & Brathaug, 2004). These activities are categorised by the Systems of National Accounts (SNA) as production work whose value is counted and accounted for in the calculation of a nation's GDP. Unpaid work refers to the production of goods and services by a household for the household's consumption, and includes tasks such as cooking, housework and caring for either children, old or sick people where the person doing this work is not paid (Budlender, 2004; OECD, 2011). This unpaid work is categorised as non-SNA production work and is therefore excluded when production is accounted for in calculations of GDP (Budlender & Brathaug, 2004; Stats SA, 2010a). Unpaid work and leisure are differentiated by the third-person criteria; if another person can be paid to perform the same activity, it is considered to be unpaid work and not leisure (OECD, 2011).

Just like paid work, unpaid work is heavily plagued with inequality. Using Time Use Surveys (TUS), which are records on how people use their time during a 24-hour day (Stats SA, 2010a), it becomes evident that men generally perform less unpaid work than women (Antonopoulos, 2009; Suh et al. 2020). Time use in Organisation for Economic Co-operation and Development (OECD) and emerging economies shows that women perform more unpaid work than men and the gap averages 2.5 hours per day (OECD, 2011). Therefore, women are contributing to the economy through formal and informal work and significantly through unpaid work in their households and those of relatives at times.

This important unpaid work, predominantly done by women, tends to be invisible or hidden in the economy because it does not accrue a monetary payment and therefore is not included in

the national accounts. By continuing to neglect the value of unpaid work, we are missing out on a considerable contribution to the production and wellbeing of the country. In addition, we would be overlooking its contribution to the paid economy through the reproduction of labour (Antonopoulos, 2009). Continuing as if this invisible economy does not exist disadvantages women significantly because policies that impact them in this regard will not be tailored to their needs or adjusted in ways that will benefit women (Himmelweit, 2002). The fact that the unpaid economy is dominated by women has negative implications for their labour force participation (Chopra & Zambelli, 2017). Women have to trade off paid work for unpaid work more than men (Antonopoulos, 2009; OECD, 2011), and since this type of work is "gendered" as women's work, women find their skills undervalued in the labour market as they are expected to only be good at domestic types of work (Messing & Östlin, 2006; OECD, 2011).

Cognizant of this serious omission in the national accounts, feminist economists have tried to attach a monetary value to unpaid work and show by how much GDP would increase if it were to be included. Depending on the valuation method used (described in more detail in the literature review), Budlender & Brathaug (2004) found, using 2000 TUS data, that the contribution of unpaid work to the South African economy ranged from 10% to 55% of GDP. However, there has not been much recent work on this topic for South Africa, in which updated estimates of the value of unpaid work are produced. Posel & Grapsa (2017) provide an analysis of time use using the more recent 2010 TUS but they do not provide a valuation of women's unpaid work relative to men's.

Therefore, this study aims to value the unpaid work performed by women and men in the economy and estimate what proportion of GDP the value would amount to if included in the national accounts, as well what proportion is accounted for by women relative to men. In doing so, the study will make use of the most recent TUS and labour force survey data, as explained in the methodology section. This study will also reflect on the impact of the Covid-19 pandemic on unpaid work and draw inferences on how this might have impacted estimates of the value of unpaid work. In view of the findings, this paper will also consider the implications for policy and how the results can be used to help inform policy that aims to better support people performing unpaid work and redress gender inequality.

1.3. Research problem and questions

The broad research problem this study is interested in is: should we be officially and routinely valuing the contribution of women's unpaid work in South Africa, and to what effect?

In order to answer this, the following sub-questions will be answered:

- What is unpaid work, and how is it distributed between men and women in South Africa?
- What is the value of unpaid work in South Africa as a percentage of GDP, and what portion of this is accounted for by women in comparison to men?
- Why is it useful to measure and value unpaid work? How can it be used to inform policy aimed at redressing gender inequality?

1.4. Organisation of dissertation

The study contains 5 chapters and is ordered as follows: Chapter one defined unpaid work and painted a picture of the economy and how it keeps unpaid work invisible. It also established the importance of valuing unpaid work and why it should be prioritised. Chapter two provides a summary and discussion of the literature on this topic. Chapter three provides a description of the data used in this study and outlines the methods used to perform the valuation. Chapter four presents the results from the methods applied, accompanied by a thorough analysis. This chapter also considers the implications of Covid-19 on current time use patterns and applicable policy recommendations. Chapter five summarises and concludes with the main outcomes of the paper.

Chapter 2: Literature Review

2.1. Introduction

As outlined above, in this chapter I provide a broad summary of the literature on the topic. Section 2.2 summarises the literature on why feminist economists deem it necessary to value unpaid work. This will paint a clear picture of why this topic itself is important and the severity of the consequences that follow when unpaid work is invisible. Section 2.3 provides literature on the methodologies applicable to valuing unpaid work, some of which this study adopts. Section 2.4 summarises the global empirical evidence on the topic. Section 2.5 provides a summary of the literature on the topic for South Africa, summarizing the findings and different approaches that other researchers took. Lastly, in Section 2.6, I conclude the chapter with an outline of my contribution to the topic.

2.2. Why feminist economists value unpaid work

The implications of poverty and inequality on women's contribution to unpaid work

The disproportionate share of unpaid work by women is clearly explained and substantiated in the introduction, and despite the facts, contributors to the body of work on this topic still highlight that this type of work remains invisible in most economic analyses. This neglect often results in economic policies that are only targeted at the paid economy, and that end up having unintended negative impacts on the unpaid economy and the women responsible for this work (Himmelweit, 2002). Antonopoulos (2009), Beneria et al. (2016) and Parry & Gordon (2020), among other authors, also emphasise that when the gendered impacts of policies are brought to light, governments are able to make policy amendments in ways that will support all those that are impacted. For example, Smith, (2019) cites work done on valuing the cost of not breastfeeding, which was found to be too high, and policies were implemented in this regard. She then continues to argue that if the same visibility is brought to unpaid work done by women, relevant policies targeted at supporting these women would become prioritised (Smith, 2019).

Work done by the ILO (2018) and Mosomi (2019) on the gender pay gap shows that women earn less than men on average. This may be attributed to the unfavorable labour market conditions that women face compared to men (Antonopoulos, 2009; Mosomi, 2019), which include job segregation or even discrimination. Antonopoulos (2009) and OECD (2011)

highlight in their work how the labour market has been gendered in a way that women are either unemployed, underemployed or mostly concentrated in low-paying and insecure jobs that are often part-time.

These unfavorable labour market conditions can also be linked to the fact that women are often exclusively or at least mostly responsible for unpaid work, limiting their ability to participate in and function productively in the paid economy (Antonopoulos, 2009; Chopra & Zambelli, 2017). This double work responsibility in paid and unpaid work can also impact women's health; in a study on how total working hours (paid and unpaid) among Swedish women and men are related to depressive symptoms, Peristera (2017) indicated in their results that longer total working hours are associated with higher depressive symptom trajectories. Women being mostly concentrated in insecure and low-paying jobs suggests that they are more likely to be financially strained than men and or suffer a higher incidence of poverty than men (Chant, 2008). This is supported by the fact that, according to the expanded unemployment rate[1], 42.4% of women in South Africa were unemployed in the fourth quarter of 2019 compared to 35.5% of men (Stats SA, 2020), meaning almost half the population of economically active women were without employment and therefore without a reliable source of income.

The previous point above translates to female-headed households being generally poorer than male-headed households (Chant, 2008; Budlender & Lund, 2011; Chopra & Zambelli, 2017). Female-headed households are also reported to house relatively more dependents (children) (Hunter 2010; Hatch & Posel 2018). In her PhD studies, Hunter (2010) highlights an important point: more children in South Africa, about 39% in 2005, lived in single-mother households, while only about 4% lived in single-father households. Children who were not living with either parent, are most likely to be staying with unemployed young adult females or female pensioners (Budlender & Lund, 2011). In addition, Posel et al. (2011) discuss marriage rates in South Africa, which they found to be very low compared to most countries, meaning that many women will not have the financial backing of a spouse's income. This translates into there being a considerable number of single-mother households with a single insecure income and a large amount of time spent on unpaid work (Budlender & Lund, 2011; Parry & Gordon, 2020). Therefore, not recognizing unpaid work and not offering relevant support not only leaves

[1] The expanded unemployment rate covers individuals who are within the 15-64 age range, who are willing and available to work but are discouraged from seeking work. These discouraged job seekers are excluded from the official unemployment rate calculation. (Stats SA, 2019a)

women vulnerable and progressively more impoverished, but their dependents also suffer the same predicament.

Wei et al. (2021) make the point that reducing the burden of poverty on women can assist in reducing the overall burden of poverty and improve societal well-being. Ky (2011)'s work in Burkina Faso measured unpaid work and its impact on innovation, development and human capabilities. She indicates that women work the most hours but are still the poorest within the population. The poverty referred to is both monetary and time poverty in its different forms (Ky, 2011). Ignoring unpaid work in this regard also ignores the possibility that these women may be able to seek employment or invest in their training to enable them to earn better if there was enough support provided to reduce their time spent on unpaid work (Antonopoulos, 2009).

Spending a lot of time on unpaid work has implications for a person's ability to engage in paid work (Casale et al. 2021). Chopra & Zambelli (2017), for example, show that women remaining primary caregivers disadvantages them in the workplace. OECD (2011) shows, through the OECD's Secretariat estimates based on national TUS data, that there is a strong negative relationship between a country's female employment rate and women's average unpaid working time. This implies that women must trade off time spent on taking care of the household and time doing paid work. Antonopoulos (2009) cites a study by the Economic Commission for Latin America and the Caribbean (2007), where a large number of women from selected Latin American countries stated that the main reason they are unable to look for employment is household responsibilities.

With unpaid work not being valued and therefore not being assigned monetary compensation, women's disproportionate responsibility for it reduces their earnings potential and therefore also their bargaining power and decision-making ability within the household (Antonopoulos, 2009; Narayan, 2017). Friedberg & Webb (2006) explain the concept of bargaining power as a notion rooted in options a person will face after leaving a union/marriage or a household. A person's fallback position impacts the amount of bargaining power they have in the household and therefore the amount of influence they have on decisions made (Friedberg & Webb, 2006). Lundberg & Pollak (1996) argued that if a woman's options are limited outside of marriage, then she will have less bargaining power within their marriage because she will have a weak threat point due to a lack of alternatives.

Bargaining power is impacted by factors such as available income and resources, among others. Lundberg & Pollak (1996) and Friedberg & Webb (2006) highlight how women who live in a household with a male breadwinner and primarily perform unpaid work will have little to no bargaining power due to the lack of earnings and financial dependence on their husbands. Marilyn Waring, as quoted by Postner (1992), along with other feminist economists who have subsequently contributed to the topic, make the strong point that the appropriate accounting and assessment of unpaid work can improve women's position within the household and can be a mechanism for reducing gender inequities. Therefore, it is these women that specialise in unpaid work whose livelihoods depend on the potential benefits of visibility and valuation of unpaid work.

Budlender (2004) acknowledges a very important aspect of unpaid work, which is that although there may be some utility drawn from performing unpaid work such as caring for your children, for example, it does take a toll on the emotional and physical well-being of a person. Antonopoulos (2009), Ky (2011) and Narayan (2017) support this point by mentioning that while numerous women derive pleasure and satisfaction from the unpaid work they perform, when it is not equally distributed and falls mostly on their shoulders, it results in time poverty, poorer health, and lower well-being, and it perpetuates women's unequal position in society. Therefore, those who perform it (women) will need support whether they are taking care of their loved ones or members of the community.

Unpaid work also contributes greatly to society. By definition, the services provided through unpaid work include taking care of one's household and the wider community either through helping the elderly or doing volunteer and community work (Himmelweit, 2002; Budlender, 2004). Ironmonger (1996), Himmelweit (2002), Antonopoulos (2009) and Narayan (2017) make the point that unpaid work contributes to human capital through the production and conservation of human capabilities, thus maintaining the labour force and the paid economy. As Ironmonger (1996: 49) states, *"all the meals, clean clothes, rest, recreation and leisure provided in households can be counted as caring for human capital".*

Impact on GDP

Considering that unpaid work adheres to the third-person criterion, meaning that one can hire another person to perform the activity on one's behalf (Budlender & Brathaug, 2004), it is clear within the theory that the work done indeed has monetary value (OECD, 2011). By not valuing

this work, there is considerable loss to the value of the GDP (Budlender & Brathaug, 2004), especially where valuing domestic work is concerned. Antonopoulos (2009) argues that households not only supply labour for production but they are also linked to the rest of the economy through their production capability as they produce goods and services, that are usually marketised. She further argues that the GDP calculation should be expanded to include what is currently termed the 'non-economic' contribution, as suggested by Marilyn Waring in her foundational work done on the topic, and that unpaid work should be linked to the marketised part of the economy. Since this type of work falls outside of the SNA production boundaries and there is no standard calculation of its value, it cannot directly be added to the SNA, Ironmonger (1996) and Antonopoulos (2009) therefore suggest that the inclusion of unpaid work into the System of National Accounts (SNA) be done through satellite accounts. These satellite accounts are described as accounts that capture economic activities outside the SNA production limit, and they would represent total household production (Ironmonger, 1996; Antonopoulos, 2009). For all this to be possible, it is important that a light is shed adequately on unpaid work.

2.3. Valuing unpaid work

Feminist economists collectively conceptualised the "accounting for women's work" project, which is referred to as the Accounting Project (Beneria et al. 2016). Beneria et al. (2016) further explain that this project seeks to value unpaid work performed by women in order to value their contribution to society and to include its consideration in policy. This follows the work initiated by Marilyn Waring when she criticised the valuation of GDP by the SNA, specifically related to the exclusion of household production in the reported statistics (Postner, 1992). These feminist economists suggest that the valuation be done through estimating time spent on household activities, then attaching a monetary value to the activity and the time spent on it (Beneria et al. 2016).

There are two main approaches used to value unpaid work, the input and the output approaches. Nevertheless, valuing this type of work is not without complications, as Budlender and Brathaug (2004) and Budlender (2004), among other authors, have expressed in their work. The input-based approach only focuses on the labour input used in unpaid work, and is commonly used because labour input data are more readily available. The output-based approach values the actual product produced from the unpaid work done, but is less commonly

applied given data constraints (Budlender & Brathaug, 2004; Hunter, 2010). The input-based approach as, mentioned, is the commonly applied approach and its the approach this study focuses on and adopts below.

The input-based approach has four main valuation methods which are described by Budlender (2004) as follows: 1) the mean (average) wage approach, where the mean wage for all employees across all occupations is calculated and assigned to unpaid hours worked; 2) the opportunity cost approach, where the normal wage or income from paid work that a person could have earned had they not performed unpaid work is used to value the unpaid work; 3) the generalist approach which utilises the mean wage of workers performing similar work to the unpaid work; and finally 4) the specialist approach which focuses on the activity and not the person, and where, for each activity, the wage earned by paid workers whose tasks and conditions are similar to the unpaid work concerned, is used.

These methods are sometimes used together but often authors select ones better suited to their data and their goals (Budlender, 2008a). These approaches each have their own nuances and limitations. The mean (average) wage approach will undervalue unpaid work because women's mean earnings are much lower than that of men's, and will therefore bring down the average (Budlender, 2004 and Hunter, 2010). Authors such as Hunter (2010) question the logic of the opportunity cost approach, saying that time spent cooking by a qualified doctor will be valued higher than time spent cooking by an uneducated domestic worker, even though the latter may be a better cook. The opportunity cost method, therefore, assumes that highly productive people in the paid economy will be just as highly productive in household production (Frazis & Stewart, 2011). It also assumes that hours of paid work are easily adjustable and attainable (Frazis & Stewart, 2011).

The generalist approach gives the lowest estimates in most cases because jobs similar to unpaid work are usually low-paying jobs, i.e., domestic work (Budlender, 2004; Hunter, 2010). In contrast, the specialist approach yields high values as it values the work according to the market production value (Hunter, 2010), which means time spent preparing food at home will be valued using a qualified chef's wage rate although the chef's food may be of better quality and taken more skill to prepare. This will likely lead to an overestimated value of unpaid work. These observations and analyses are common among most authors. McDaid (2001), also cited by Hunter (2010), raises another important valuation issue, which pertains to the fact that each

unit of time does not have the same value to all individuals, as is assumed by approaches used to value unpaid work. Rather, the value of time spent on care work will depend on the relationship between the caregiver and the person they are caring for prior to the onset of the need for care. Although this may be valid, it may be difficult to account for it monetarily.

In applying these valuation methods, most researchers use a combination of time use and labour force survey data to calculate the monetary values of unpaid work. Stats SA (2010: 3) describes the Time Use Survey as a "*household-based survey that measures and evaluates the time spent by women and men, girls and boys, the rich and the poor, on different activities over a specified period within a country*". This survey classifies activities according to productive formal work, informal work, unpaid work and leisure (Stats SA, 2010). Labour force surveys provide data on labour market activities data, which include unemployment statistics, hours worked in employment and earnings for different occupations[2] (Stats SA , 2010d). The valuation of unpaid work is done through measuring the relevant hours spent on unpaid work from the TUS, and applying the relevant hourly wages from labour force surveys to the unpaid work hours to get an estimated contribution. The contribution is then valued as a percentage of GDP.

When these values are arrived at, they still have no place in the SNA valuation and GDP estimation. This is where the satellite accounts come into use. These accounts treat households as a production unit and account for the value of non-market work (Suh & Folbre, 2016). These accounts were formulated to house these values, instead of expanding already existing accounts, to avoid what are perceived as arbitrary and uncertain imputations of household production (Landefeld et al. 2009). The uncertainty would compromise the "*credibility, and usefulness of the accounts for analysing, projecting, and managing market policies and activities,"* according to Landefeld et al. (2009: 206). Therefore, the creation and utilisation of these accounts assist with a monetary value for unpaid work, and as they bring the household sector's production into light, therefore, allow for consideration by policymakers (Antonopoulos, 2009).

[2] The use of these surveys to value unpaid care will be expanded on in more detail in the methodology chapter.

2.4 Global evidence on the value of unpaid work

A number of studies valuing women's unpaid work have now been conducted throughout the world. In the literature, the authors use the valuation methods mentioned above, and they also use TUS and labour force surveys as data sources. Applying time use and earnings data from 25 OECD countries using the opportunity cost, generalist and specialist wage approaches, OECD (2011) finds that unpaid work accounts for about a third of the GDP in the OECD member countries, with women responsible for the greater share of it. This was concluded for the 1998-2009 period. Within these OECD countries, the value of unpaid work in Portugal makes up 53% of the country's GDP (OECD, 2011), making it the highest valued among the selection of countries. Korea has the lowest value at less than 20% (OECD, 2011). The difference can be attributed to the fact that people in Korea spent more time in paid work than on unpaid work compared to Portugal (OECD, 2011).

Suh et al. (2020) undertook to value care work in Bhutan. They use the generalist wage approach and the specialist wage approach. Using the specialist wage approach, the total estimated value of unpaid work by both women and men was Nu25.65 billion in 2017 (Suh et al. 2020), with women accounting for 68% of the amount. The amount made up 16% of the GDP for 2017. With the generalist wage approach, the share was about 10% of GDP. As expected, the generalist wage gave lower values than the specialist approach. Suh et al. (2020) also cite values by other authors. For example, they highlight that the Hungarian Central Statistical Office estimated that including household production in their 2010 GDP calculation would have seen the value increase by 25% (Suh et al. 2020). Landefeld et al. (2009), also cited by Suh et al. (2020), when valuing the United States of America's (USA) unpaid work between 1965 and 2004, found that the value decreased significantly in 2004 compared to 1965 and that could be attributed to the increased labour force participation for women (Landefeld et al. 2009).

de Vaus et al. (2003) focused their study on valuing unpaid household caring and voluntary work of the older Australian population. They reported a contribution of $39 billion per year through unpaid work by the elderly population aged 65 and older (de Vaus et al. 2003) in 1997. This was about 9% of the GDP value for that year, and the elderly women contributed a higher share than the elderly men (de Vaus et al. 2003). For the 15-64 age cohort in Australia, OECD

(2011) reports a share of about 50% of GDP over the period 1998 - 2009. This highlights the extent of unpaid work performed even during the 'retirement' years, with the elderly continuing to contribute to the economy.

Childcare as an activity is often combined with other activities and usually treated as a secondary activity (OECD, 2011). This can cause the time spent on childcare to be underreported and possibly overlooked. Suh & Folbre (2016) confront the measurement and valuation devoted to childcare that is commonly applied in satellite accounts. They make a case for the addition of 'supervisory childcare time' that occurs simultaneously with other activities. In their estimates, they find that the value of childcare in 2004 and 2010 surpasses previously estimated values of all unpaid work in the USA (Suh & Folbre, 2016). This resulted in an increased adjustment of GDP by approximately 43% as opposed to the previously suggested 26% (Suh & Folbre, 2016). This work by Suh & Folbre (2016) highlights that it is important to value childcare properly considering that the bulk of it falls on women's shoulders.

Statistics Canada (1995) provides valuations of unpaid work in Canada between 1961 and 1992. They find that the values range from 30% to about 60% of GDP (depending on the method applied) during these years. According to Hamdad (2003), the estimated value of unpaid work in Canada increased by 18.3% between 1992 and 1998, although as a percentage of GDP, it decreased from 36% to 33%, which may be as a result of a depreciation in the currency. Employing the same methods as Statistics Canada (1995), OECD (2011) estimates the value of unpaid work in Canada to amount to a little over 20% for the generalist wage and specialist wage methods, and about 50% for the opportunity cost approach when measured as a percentage of GDP in the 1998 - 2009 period. The value has remained relatively high over the years.

Hirway (2000) values unpaid work in three countries, namely; Japan, Australia and Nepal. She finds that in Japan during the year 1996, the value of unpaid work made up 23.2%, 20.0% and 15.2% of the GDP when measured using the opportunity cost approach, the specialist wage approach and the generalist wage approach respectively. She also reports that for Australia in the year 1997, the value of unpaid work amounted to 69%, 58% and 54% of the GDP, according to the same three approaches respectively (Hirway, 2000). This is in line with findings from OECD (2011) and as seen in the study, the people in Australia spend a lot more time on unpaid work, while in Japan they spend a lot more time on paid work. The differences may also be

attributed to the accelerated economic growth, urbanisation and industrialisation in Japan (Mosk, 2001). And finally, in Nepal, unpaid work contributed about 47% to the GDP overall, with women accounting for more than 90% of the value (Hirway, 2000).

2.5 South African literature on the topic

Since the release of the first South African TUS in 2000, a number of authors undertook to measure and value unpaid work in the country. The release of these statistics allowed feminist economists to begin the analysis and valuation of time use within the population. Given the global findings, authors confirm what we already suspect would be true for South Africa as well, which is that women spend more time performing unpaid work than men do in South Africa (Budlender & Brathaug, 2004; Hunter, 2010; Floro & Komatsu, 2011).

Budlender & Brathaug (2004) conducted an extensive valuation of unpaid work in South Africa performed by both women and men, testing out the four input-based approach methods, and using a combination of the TUS 2000 and LFS 2000 data from Statistics South Africa. They find that the sex-disaggregated values of unpaid labour, as a percentage of GDP in the year 2000 range from 11% to 55% depending on the data and the methods used, with women contributing more to the value than men. These values generally correspond to those found by OECD (2011) in their study when they assessed OECD member countries' value of unpaid work. The values ranged from 19% to about 75% across different countries and different valuation methods.

Hunter (2010) in her PhD thesis values unpaid (care) work through assessing the gendered implications of South Africa's home-based care policy. She values caregivers' labour time spent in unpaid (care) work also using the four valuation methods. She concludes that unpaid home-based care for the sick in KwaZulu-Natal (KZN) during the 2004-2005 period if reimbursed would cost the government about R1 million more than their budget for the monthly health and welfare spending on home-based care in the province within the same financial year (Hunter, 2010). This means that the government also benefits substantially from the unpaid (care) work done largely by women.

Oosthuizen (2008) counts women's unpaid work through analysing National Time Transfer Accounts[3] (NTTA) using the 2000 TUS, which have been utilised to describe the generational economy within countries. Generational economies are defined by D'Albis & Moosa (2015: 409) *as "economic flows within and between generations and over time".* Linking these NTTAs to the SNA revealed that women's household contribution has been undervalued. NTTAs are made up of profiles of economic flows by single-year age groups, from age zero to the oldest, and the flows represent the economic life cycle. Oosthuizen (2008) uses a mathematical identity where the inflows equal the outflows, and from that equation he calculated the value of transfers. As Oosthuizen (2008) undertook to value this contribution, he calculates that the value of household production is about 27% of GDP in 2010, and women accounted for about three-quarters of the value. The work by Hunter (2010) and Oosthuizen (2008) brings to light the fact that whichever route one takes in valuing unpaid work, women contribute more to the total value than men in South Africa, as in many other countries.

While there has not been a substantial amount of work done on valuing unpaid work in South Africa specifically, some authors that focused on multiple countries in their studies also included South Africa. Although they may not value the contribution of unpaid work to the country's GDP per se, they analyse the TUS data collected. For example, Antonopoulos (2009) included South Africa in her analysis of TUS data and she also affirmed that the well-documented pattern that women perform more unpaid work than men applies in South Africa as well (based on the 2000 TUS). Rubiano-Matulevich & Viollaz (2019) found a similar result using the same TUS data.

2.6. Contribution of this study

As mentioned in the introduction, this study aims to value the unpaid work performed by women and men in the South African economy. As in Budlender and Brathaug (2004), this study will attempt to place a value on unpaid work, and measure its contribution as a percentage of GDP, using the 2010 TUS as opposed to the 2000 survey used in their work. In doing so, the study will make use of the most recent TUS and labour force survey data. The valuation will also be further disaggregated by age and sex using the methods already applied by other authors. Additionally, the study aims to value unpaid work using the minimum wage now applicable in South Africa.

[3] "The objective of NTTA is to estimate patterns of time allocations to productive activities in particular across the lifecycle and by gender" (Oosthuizen, 2008: 3).

This study will also reflect on the impact of the Covid-19 pandemic on unpaid work, following the work done by Casale and Shepherd (2021), and draw inferences on how that could have impacted estimates of the value of unpaid work. In light of the findings, this paper will also consider the implications for policy and how the results can be used to help inform policy that aims to better support people performing unpaid work and redress gender inequality.

Chapter 3: Research Methodology

3.1. Introduction

As outlined in both chapters 1 (Introduction) and 2 (Literature review), this study aims to value the unpaid work performed by women and men in the economy and estimate what proportion of the Gross Domestic Product (GDP) the value would amount to if included in the national accounts, as well as what proportion is accounted for by women in comparison to men. This is done using unpaid work minutes provided by the Time Use Survey (TUS), valued using earnings estimates obtained from Quarterly Labour Force Survey QLFS) data. Population, GDP, and minimum wage data will also be used as supplementary data for the valuation, as explained in more detail below.

The valuation is conducted for men and women and further disaggregated by age, given the evidence provided earlier that those of retirement age continue to contribute substantially to the economy through unpaid work. The main valuation methods used are all input-based methods and include the mean (average) wage approach, which usually produces the highest values of all methods (Budlender, 2004; Oosthuizen, 2008; Hunter, 2010) and therefore provides an upper bound, and the generalist approach, which produces a lower bound. The study includes an additional valuation approach, namely using the national minimum wage applicable in South Africa to value unpaid work hours.

In this chapter, I describe the data that is used in the study in the fulfilment of the valuation, including a description of the main valuation methods used in attaining the results outlined in chapter 4 (Results). Section 3.2 provides details on the TUS and the QLFS, the two main datasets used in the analysis. Section 3.3 provides more detail on the chosen valuation methods and how they are being applied in this study. Section 3.4 includes a description of how the hours and wages are calculated, and provides clear steps on how the methods are applied. Lastly, Section 3.5 discusses limitations to the study. The results attained from the data and methods will be provided in Chapter 4.

3.2. Data

The first set of data to be used in this study is from the most recent TUS of 2010. The TUS is outlined and discussed in Section 3.2.1. The second and third sets of data are acquired from the QLFS for the years 2010 and 2019. The 2019 QLFS contains the most recent disaggregated earnings data for South Africa, while the 2010 QLFS contains similar earnings data, but from the same year as the TUS data. The purpose of these data sets is explained in Section 3.2.2. Both the TUS and the QLFS are conducted by Statistics South Africa (Stats SA) and were obtained through the DataFirst website at the University of Cape Town. Further information on supplementary data is provided in sections where the data is utilised.

3.2.1. The Time Use Survey (TUS) data

The TUS is a household survey conducted by Statistics South Africa. It is a 'yesterday' diary format questionnaire in which respondents are asked to record what they spent their time on in the 24 hours of the day preceding the survey interview (Stats SA, 2010a), with the 24 hours segmented into 30-minute time slots. The survey records what activities are performed, how the activities are performed, and how long it takes to perform those activities. The activities include paid, unpaid, leisure and personal activities, among other fields (Stats SA, 2010a). This survey sheds light on the differences in activities by gender and is therefore pivotal to this study. The TUS allows for up to three activities to be reported for each 30-minute timeslot. The respondents were asked to state whether each activity was performed alone or simultaneously with other activities. The survey report does not distinguish between primary, secondary, and tertiary activities (Budlender & Brathaug, 2004).

The sample for the TUS, consisting of 30 000 dwelling units in South Africa, covers the entire country and, within each province, four different settlement types: formal urban, informal urban, commercial farms, and other rural settlements (Budlender & Brathaug, 2004). The survey sample covers the non-institutional population aged 10 years and older, excluding those living in worker's hostels (Stats SA, 2010a). It therefore represents roughly 39,9 million people when weighted with the appropriate population weights for 2010. The data collection period is from October 2010 to December 2010 (Stats SA, 2010a).

The survey contains 10 broad categories, categorised according to the type of production as stated in the Systems of National Accounts (SNA). The SNA provides three production categories that underly the calculation of the national gross domestic product (GDP). The categories are SNA production activities, non-SNA production activities and non-productive activities. Activities classified under SNA production, such as work in establishments, subsistence farming and production of other goods and services such as hairdressing, are included in the national accounts and contribute toward the valuation of a nation's GDP, excluding the collection of wood and water although the SNA suggests they should be included (Budlender & Brathaug, 2004). Activities within the non-SNA production, such as household maintenance (including collecting wood and water), care of persons, and community service (including volunteering), are largely classified as unpaid work and they fall outside the calculation of a nation's GDP, although they are referred to as 'productive' activities (Budlender & Brathaug, 2004; Stats SA, 2010). Collecting wood and water was re-categorised to form part of household maintenance in 2010 because it is expected to better inform policy if it were classified under unpaid work together with other household work (Stats SA, 2010b: 6). Lastly, non-productive activities, such as learning and consuming mass media, are completely excluded by the SNA as they do not fit the third person criterion. Table 1 below details the aforementioned categories.

Table 2: SNA-provided categories

SNA Production activities
"1. Work in establishments includes activities such as waged employment, domestic work, and looking for work. *2. Primary production not for establishments includes activities such as subsistence farming* *3. Other production of goods and services not for establishments includes activities such as home-based production, informal street trading, and informal provision of services such as hairdressing.*
Non-SNA Production activities
4. Household maintenance includes activities such as housework, collecting wood and water, and personal and household shopping. *5. Care of persons in the household includes looking after children, the sick, elderly and disabled members of the household.*

6. Community service to non-household members includes activities such as caring for non-household members, cooking for collective occasions, and volunteering with an organisation.
Non-Productive activities
7. Learning includes activities such as attendance at school, doing homework, and attending work-related and non-formal courses. *8. Social and cultural includes activities such as socialising, participating in cultural and religious activities, participating in and observing sports.* *9. Mass media use includes activities such as watching television, listening to the radio and visiting the library.* *10. Personal care includes activities such as sleeping, eating and drinking, washing and dressing oneself, and receiving medical and personal care."*

Source: Time Use Survey, 2010

This study focuses on the data collected in categories 4-6: household maintenance (including collecting wood and water), care for household members, and community work. These categories are grouped together and termed by Schafer and Schwarz (n.d) as 'household production' (Budlender & Brathaug, 2004). Travel to work is being excluded in alignment with Statistics South Africa's classification system. In this system, travel associated with a particular category of work is accounted for in that category (Budlender & Brathaug, 2004). The point of the valuation exercise in this research report is to measure what proportion of GDP the non-SNA activities would amount to, therefore it will be beneficial to be consistent with the calculations of GDP. Table 2 provides a more detailed list of activities (with associated codes) that fall within categories 4-6.

Table 3: Unpaid work activities

Code	Activity
410	Preparing food & drink
420	Cleaning and upkeep of dwelling
430	Care of textile
440	Shopping for personal & household goods
441	Accessing government services
448	Waiting to access government service
450	Household management
460	D-I-Y home improvements
470	Pet care
480	Travel related to household maintenance
490	Household maintenance, nec*
491	Chopping wood not for cooking
511	Physical care of children: spontaneous
512	Physical care of children: prompted
521	Teaching of household children: spontaneous
522	Teaching of household children: prompted
531	Accompanying children: spontaneous
532	Accompanying children: prompted
540	Physical care of non-child household members
550	Accompanying adults
561	Supervising those needing care: spontaneous
562	Supervising those needing care: prompted
580	Travel related to care
590	Care of household members: nec*
610	Community organised construction
615	Cleaning of classrooms
620	Community organised work
630	Organisational volunteering
650	Participation in meetings
660	Involvement in civic responsibility
671	Caring for non-household children: spontaneous
672	Caring for non-household children: prompted
673	Caring for non-household adults
674	Other informal help to other households
680	Travel related to community services
690	Community services nec*

Not elsewhere classified

Source: Time Use Survey, 2010

3.2.2. Quarterly Labour Force Survey (QLFS) data

The QLFS is also a household-based sample survey conducted by Statistics South Africa, which collects quarterly labour market activities data from a sample of approximately 30 000 households (including those living in hostels). The labour market activities of individuals aged 15 years and older are covered, although the report released by Statistics South Africa on employment and earnings only covers labour market activities of working-age individuals,

namely 15-64 years (Stats SA, 2019a). Although the survey has limitations, among them, the exclusion of in-kind payments and additional payments by the employer and the under-reporting of earnings by respondents, it is the best nationally representative data source available regarding coverage of both the formal and informal sectors (Budlender & Brathaug, 2004). The QLFS captures gross earnings data and not income data. Earnings capture an individual's reward for employment, while income data is measured at the household level and includes all sources of revenue (such as grants, rental income, investment income, etc) and not only earnings from employment (Stats SA, 2019b).

The earnings data collected for the QLFS is not directly reported in the QLFS report, therefore Stats SA compiles a Labour Market Dynamics in South Africa (LMDS) report, within which they analyse the patterns and trends of annual labour market results over six years based on the QLFS estimates (Stats SA, 2010c). All estimates within the report are averaged over four quarters of each year. Therefore, this study uses the QLFS estimates from this report as it provides one figure for the year (as opposed to four quarterly figures) and presents the data in a disaggregated format. Oosthuizen (2008) uses the same report (from a different year) in his research. For example, the report provides earnings data disaggregated by sex and age. This level of granularity within the earnings estimates is sufficient for this study.

The QLFS collects information on weekly wages as well as 'usual hours' spent on paid work per week, which are converted to monthly earnings in the LMDS report. The earnings reported are median earnings. The report provides median instead of mean earnings to avoid the skew caused by the very high values inherent in a highly unequal country like South Africa (Stats SA, 2010c). The TUS provides the mean time in minutes spent on the range of activities listed in Table 2. Therefore, in this study, monthly earnings from the LMDS need to be converted to hourly rates. These calculations follow the guidelines in Budlender & Brathaug (2004) and Oosthuizen (2008), and will be outlined in Section 3.4. It should be noted that since the QLFS/LMDS only provides earnings data excluding in-kind payments and additional payments by the employer, such as contributions to the Unemployment Insurance Fund (UIF) and a possible thirteenth cheque (Budlender & Brathaug, 2004; Stats SA, 2010c; Stats SA, 2019b), the valuation exercise in this study will likely underestimate the contribution of unpaid work.

This study uses QLFS estimates for 2010 and 2019. This enables an analysis of the changes that may have occurred within the labour market between 2010, when the most recent TUS

was conducted, and 2019 which is the year with the most recent earnings estimates. One small limitation of using the Stats SA survey reports in this way is that the age ranges do not perfectly align. The TUS samples individuals aged 10 years and older and presents the data in the report disaggregated by age and other cohorts, while the QLFS reports on labour market activities for the working-age population (15-64 years). The implication is that the minutes spent on unpaid work by those aged between 10 and 14 years will be assigned, or valued at, wages earned by those that are older, and the unpaid work performed by those above the age of 64 will be assigned wages earned by those younger. This is unlikely to affect the valuation method substantially as most employed individuals fall within the 15 to 64 age range. Nonetheless, one does not want to ignore the unpaid work contributions made by those outside the working-age range.

3.3. Methods

As mentioned, this study utilises the mean wages approach (although median wages are used as a substitute) and the generalist approach commonly used in the literature. These methods are supplemented with an additional valuation approach which uses the national minimum wage rate in South Africa. The opportunity cost method is excluded because it becomes cumbersome and difficult to apply in the context of a country with such high unemployment; because a large number of people have never been employed, there would not be enough occupation data for an individual to calculate their opportunity cost (Budlender & Brathaug, 2004). The specialist approach is excluded because separating unpaid work done in the household into categories that fit particular and very specific occupations may not yield accurate estimates and the wages may be overstated for some occupations. For example, using wages for a chef to value the hours spent on cooking in the household would result in an overstated contribution by this method, as the chef's meals may be of higher quality with more intricate preparation methods, justifying a higher cost, as explained in the literature review.

The mean/median wage approach

For the 'mean' wage approach, the median wages for all employees across all occupations applied (population median wage) are used to value unpaid work. As a supplementary exercise, this study also applies median wages disaggregated by sex. In other words, there is a valuation for the unpaid work for females valued using the wage rate for females and the same is done for males. This will also expose and allow for some discussion of the inequality in earnings

between men and women. Additionally, the time spent on unpaid work grouped by age and sex is valued using the population median wage. This allows every individual's labour time to be valued fairly without being impacted by discrimination, considering that individuals of a different sex or age earn different wages even though the value of their unpaid work may still be the same. This valuation also sheds light on which age cohorts spend more time on unpaid work than others and therefore contribute more to the proportion of GDP.

The generalist wage approach

The generalist approach utilises the median wage of workers performing similar work to the unpaid work. Therefore, this study uses wages for the domestic worker occupation to value the unpaid work done in the household. This is a similar approach undertaken by Brathaug (1990), Budlender & Brathaug (2004) and Oosthuizen (2008). The domestic worker wage is considered the classic generalist wage where household production is concerned (Oosthuizen, 2008). Of course, the estimates only reflect an approximation, because domestic work done by domestic workers may not entail the exact duties performed by individuals in the household and some occupations that have tasks similar to unpaid work activities may pay higher or lower wages in the market. However, domestic work is the occupation most closely aligned to unpaid work in the home in South Africa.

The minimum wage approach

South Africa is characterised by very high levels of poverty and inequality (National Treasury, 2016). This may be attributed to very high levels of unemployment and low levels of economic growth. In 2016, the poverty line was estimated to be about R4 317 for a family of four (National Treasury, 2016). Over half of the workforce in South Africa earned below R3 700 and approximately 11% did not even earn R2 500 per month in 2016 (National Treasury, 2016). This meant that even some employed people could not meet their basic needs, although they earned an income. The National Treasury clearly states that an overwhelming majority of low-income earners are women. This, among many other reasons, led to the formulation of the national minimum wage, implemented in 2019. The initial minimum wage was R20 per hour, adjusted to a monthly wage of approximately R3,500 as a starting level (National Treasury, 2016).

In this study, a third approach is used to value unpaid work, namely the use of the minimum wage. Only one valuation is estimated, for 2019, because the minimum wage was not in existence earlier. The minimum wage approach uses the same wage for both men and women in the valuation. It is done with the assumption that women and men performing unpaid work would be earning at least the minimum wage if they were in the labour market. The study acknowledges that each of these methods has limitations and is not perfect, and it is for this reason that a variety of methods is being used and a range of estimates produced.

3.4. Calculating hours spent on unpaid work and the hourly wage rate

The valuation process in this study is modelled after the process applied by Budlender & Brathaug (2004) and Oosthuizen (2008). This allows for standardised calculations within each method, which will produce as accurate and comparable results as possible. Therefore, the calculation of hours and wages closely resemble those applied by these researchers' studies, with reference to other studies where a deviation was necessary.

Calculating hours spent on unpaid work

The TUS provides the mean daily minutes spent by individuals on non-SNA production (unpaid work). The yearly hours will therefore be calculated in the following way: by dividing the mean daily minutes by 60 minutes to convert the minutes to daily hours, and then multiplying the daily hours by 365 days in a year (assuming that unpaid work is performed seven days a week). Oosthuizen (2008) does a similar conversion of daily minutes to yearly hours. We follow Budlender & Brathaug (2004) here, who then apply these individual hours to the relevant population by multiplying the average individual yearly hours by the total population aged 10 years and older (to align with the TUS age ranges used)[4]. The hours of unpaid work estimated in this way are then multiplied by the hourly wage rates for the three methods decribed above to obtain the total contribution of unpaid work in monetary terms.

[4] It should be noted that because the TUS does not collect information on those younger than 10 years, unpaid work undertaken by very young children will be overlooked, and values of total unpaid work performed underestimated.

Calculating wages

The median wages[5] obtained from the LMDS report are monthly wages that are converted into hourly wages within this study, for the sake of the valuation. The LMDS provides average weekly hours worked in employment by the different sub-groups accounted for in the report. Therefore, to obtain the hourly rates for sub-groups covered in the report; namely, age and gender cohorts, their monthly wages are divided by the average monthly hours worked in employment by that sub-group. These monthly hours are calculated as follows: the average weekly hours worked in employment are multiplied by 4.3 weeks in the month, as stipulated in the Basic Conditions of Employment Act, which will provide the relevant monthly hours worked per sub-group. These hours will then be used to divide the monthly wages to obtain the hourly wage rate.

Gross domestic product (GDP) data

The yearly hours spent on unpaid work and the hourly wage rates are multiplied to obtain the total valuation (in Rands) of unpaid work for the total population and for the sub-groups of interest, namely all men and women, and men and women in each age group. The value of unpaid labour is then calculated as a percentage of GDP for the years 2010 and 2019 to estimate the contribution of this important work relative to SNA activities.

The GDP data used for 2010 and 2019 is in constant 2010 prices and is seasonally adjusted to allow for comparison over time. The value for 2010, which was an average of four quarters, is R 2 748 008 000 000 and the value for 2019, calculated in the same way, is R 3 149 337 250 000. The data is obtained from the South African Reserve Bank (SARB).

3.5. Limitations

The limitations of each method of valuation employed are described earlier in this chapter, and will be picked up on again when the results are presented and discussed in the section below. A more general limitation of the study, however, has to do with the survey period. The latest time use data available is from 2010, while the earnings and GDP data paired with it are from

[5] The earnings for 2019 are deflated using the 2010 Consumer Price Index (CPI) to reflect values in 2010 constant prices using 2010. Therefore, all monetary values are in 2010 constant prices.

2010 and 2019. The time use data may be somewhat out of date (it is 11 years old), if time use patterns have changed dramatically for women and men. However, given more recent work on time spent on childcare using the NIDS-CRAM data (Casale et al. 2021; Casale & Shepherd, 2021), the evidence suggests that women still spend many more hours a day on childcare than men. Nonetheless, insofar as the time spent on unpaid work has shifted from women to men in the last decade, the results for women's contribution to GDP will be overestimated. It is also possible, however, for the value of unpaid work to be underestimated by using the 2010 time use data if the Covid-19 pandemic has resulted in women taking on additional childcare compared to 2010 relative to men. Future research could explore these changes when additional data becomes available.

Chapter 4: Results

4.1. Introduction

The previous sections made it clear that women have been and still are spending a disproportionately large amount of time on unpaid work. This study expects that this is still the case for South Africa in 2010 as it was in 2000. It is also expected that their contribution, in monetary value, should exceed that of men in both 2010 and 2019. This chapter provides results generated from the valuation methods as described in the methodology chapter. These results are presented and analysed with the study's expectations in mind and in comparison with literature on the topic. A summary of time use patterns in 2010 is provided in Section 4.2. Section 4.3. presents and discusses the results based on each method. This is followed by a summary and a comparison of the findings from each method in Section 4.4. The chapter continues with an analysis of the implications of the Covid-19 pandemic for time use in Section 4.5. Lastly, I conclude the chapter with relevant policy recommendations that could assist with alleviating the disproportionate weight of unpaid work on women.

4.2. Summary of time use in 2010

This section aims to paint a picture of the respondents who took part in this survey. It highlights the average time use patterns of respondents in general. Furthermore, it provides time use patterns of respondents disaggregated by sex, age, location, marital status, etc. as provided in the TUS report. It should be noted that not all the time use data/patterns discussed within this section will be used to obtain the results in the sections to follow. This summary only seeks to provide a birds' eye view of time use by South Africans in 2010.

4.2.1. Description of respondents

The time use survey estimates were raised to the total population using the appropriate population weights when the results were analysed, therefore the analysis is based on approximately 39.9 million individuals aged 10 years and older (Stats SA, 2010b). See Tables 3 and 4 which show population totals by the categories of interest (gender and age group) for the years 2010 and 2019 based on Statistics South Africa's mid-year population estimates for

those years. Those aged between 18 and 45 years made up more than half of the population surveyed. The share of men between the ages of 10 and 45 was slightly larger than the share of women in the same age group, while there were more women in the older age group, 46 years and older, than there were men (Stats SA, 2010b). During this period, black Africans made up 78% of the South African population aged 10 years and older, while for the total population, for every 100 females, there were 93 males (Stats SA, 2010b).

Table 3: Total population estimates by sex (age 10 and older)

	2010 Estimates	2019 Estimates
Female	20 548 400	24 443 081
Male	19 141 000	22 860 556
Total population	39 689 400	47 303 637

Source: Mid-year population estimates report by Stats SA, 2010 and 2019

Table 4: Total population estimates by sex and age group

	2010 Estimates			2019 Estimates		
Age group	10-17 years	18-45 years	46 and older	10-17 years	18-45 years	46 and older
Female	5 181 400	10 038 300	4 528 600	5 005 374	11 944 213	7 493 493
Male	5 247 100	9 524 100	4 369 800	5 082 531	12 193 090	5 584 935

Source: Mid-year population estimates report by Stats SA, 2010 and 2019

About 72% of the population had an education of less than Grade 12, while only 9.1% had a tertiary education (Stats SA, 2010b).The gender differences in terms of educational attainment between women and men were not notable. Although, it may be worth noting *"that men were more likely than women to have grade 12 without tertiary while women were more likely than men to have tertiary education"* (Stats SA, 2010b : 9).

The survey also shows that 36% of respondents resided in non-urban areas made up of tribal and rural-formal areas, and a larger share of women than men resided in tribal areas (Stats SA, 2010b). Those in urban areas made up about 60% of the respondents (Stats SA, 2010b). There were 31,5 million persons aged 18 years or older in 2010, and only about 25% lived with at least one of their own children under the age of 7 years in the same household (Stats SA, 2010b). The majority of the respondents did not have children in that age range. Lastly, 57.6%

of the respondents had never been married, and the share of those who had never been married was lower among women than among men.

4.2.2. Time use patterns

In general, there were more men participating in SNA production work than there were women, while women dominated participation in the non-SNA production activities (Stats SA, 2010b), in line with the literature and this study's expectations. Less than 80% of men participated in non-SNA activities within each province while over 89% of women participated in similar activities. About 66% of employed males participated in non-SNA production, compared to 90.3% of employed females. This implies that a greater percentage of employed women than men are facing the double burden of paid and unpaid work activities during a single 24-hour day. These statistics support the expectation that women will be the largest contributor to the share of GDP in the valuation. The survey also reports that a greater percentage of unemployed than employed respondents participated in non-SNA production.

Women spent about double the minutes on non-SNA production than their male counterparts within all age groups (see Table 5). For example, women aged 18 – 45 years spent an average of 268 minutes on these activities compared to only 103 minutes spent by males in the same age cohort (Stats SA, 2010b). In contrast, males spent more time than women in SNA production work. For example, males aged 46 years and older spent 239 minutes in paid work while females in the same age cohort spent only 134 minutes performing similar work (Stats SA, 2010b).

Table 5: Mean minutes spent on unpaid work by all respondents per day by age group and sex

	Minutes by Sex	Minutes by Age group		
		10-17 years	18-45 years	46 and older
Females	229	120	268	231
Males	98	69	103	107
Combined average	165	95	187	175

Source: Time use survey 2010

Respondents with grade 12 as their highest education level spent more time on non-SNA production than those with either higher or lower education, and females were still spending

double the time that males spent within all levels of educational attainment (Stats SA, 2010b). Time spent on unpaid work by married women living with their husbands is more than time spent by widowed/separated[6] and never-married women. The same pattern is not observed for males. Widowed/separated males spent more time on household/unpaid work than men in the other marital categories (Stats SA, 2010b). This would be expected as they would need to cover the work previously undertaken by their wives who are no longer residing in the household.

Both women and men in rural formal areas spent the longest time on SNA production than those in other areas and in contrast, time spent on non-SNA production was highest for both women and men in tribal areas (Stats SA, 2010b). On average, respondents residing in the Western Cape spent more time on SNA production, while respondents in the Eastern Cape spent more time on non-SNA production on average. Women who lived with their children in the same household spent less time on SNA production compared to males in similar households. In contrast, males who lived with their children in the same household only spent about 32% of the time spent by females in similar households on non-SNA production. This highlights the disproportionate gender allocation of time on childcare within households.

[6] Widowed/separated covers widows, widowers, divorcees or separated partners (Stats SA, 2010b)

4.3. Results from methods

This section provides results from the valuation methods discussed in Chapter 3, these include analysis and discussion of the results per method as provided in the tables within each sub-section below.

4.3.1. Mean/median wage method

Table 6 provides a sex-disaggregated valuation of unpaid work based on the economy-wide median wages for both 2010 and 2019. In 2010, the average weekly hours worked in employment amounted to 42.7, and they increased to 43 in 2019. The hourly wage rate in 2010 was R15.79, which increased to R18.40 in 2019, adjusted to 2010 prices. As shown in Table 6, applying the economy-wide hourly median wage to the hours spent on non-SNA activities for men and women gives a value equal to 22.81% of GDP for 2010 and 27.61% for 2019. Women contributed 71.83% and 71.75%, in 2010 and 2019 respectively, to the total value of non-SNA production. Considering that women spent more than double the time (229 minutes) on unpaid work than men (98 minutes), the values make sense. These estimates are also in line with the literature and expectations of this study.

Table 6: Unpaid work valuation disaggregated by sex, using economy-wide median hourly wage

	Female	**Male**	**Combined**
Mean daily minutes on unpaid work	229	98	165
Mean daily hours on unpaid work	3,8	1,6	2.8
Mean yearly hours on unpaid work	1387	584	1022
Population aged 10 and above in 2010	20 548 400	19 141 000	39 689 400
Total hours on unpaid work in 2010	28 500 630 800	11 178 344 000	40 562 566 800
Average weekly hours worked in employment in 2010	42,7	42,7	42,7
Monthly hours worked in employment	183,61	183,61	183,61
Monthly wages for 2010 (R)	2900	2900	2900
Hourly wages for 2010 (R)	15,79	15,79	15,79
Yearly contribution of unpaid work for 2010 (R)	450 148 844 398,45	176 554 640 814,77	640 659 243 614,18

Unpaid work as a % of GDP in 2010	16,38%	6,42%	22.81%
Total share of contribution for 2010	71,83%	28,17%	100
Population aged 10 and above in 2019	24 443 081	22 860 556	47 303 637
Total hours in 2019	33 902 553 347	13 350 564 704	48 344 317 014
Average weekly hours worked in employment in 2019	43	43	43
Monthly hours worked in employment	184,9	184,9	184,9
Monthly wages for 2019 (R)	3402	3402	3402
Hourly wages for 2019 (R)	18,40	18,40	18,40
Yearly contribution for 2019 (R)	623 777 644 599,75	245 638 837 874,57	889 493 599 143,47
Unpaid work as a % of GDP in 2019	19,81%	7,80%	27.61%
Total share of contribution for 2019	71,75%	28,25%	100%

The total contribution has increased by approximately 4 percentage points between 2010 and 2019. From the data provided in Table 6, it is clear that wages have increased, in real terms, and the population has slightly increased, therefore the minutes spent on unpaid work are being valued at a higher wage rate and are being raised to a larger population than in 2010. Women's wages have also generally increased between these years (Stats SA, 2019b), therefore possibly pushing the population median wage slightly higher as well. The change in the total contribution is not very large though because the minutes spent on unpaid work obviously are not changed as we only have the 2010 estimate of time use. This may lead to an over- or undervaluation of time spent on unpaid work in 2019 depending on whether this kind of work has increased or decreased (and relatively more so for women or men) between 2010 and 2019.

The data in Table 7 is similar to that in Table 6, except Table 7 provides wages disaggregated by sex as is done in Budlender & Brathaug (2004) where they used the 2000 TUS. Women's hourly wage rates amount to R 13.78 in 2010 and R 18.04 in 2019, while men's hourly wage rates are R16.54 and R 18.51, in the respective years. Women's wages are lower than men's wages, although this gap has narrowed over time, as shown by Mosomi (2019) and others. The total contribution of unpaid work as a percentage of GDP in 2010 was 21.02%, with women contributing 68% despite them earning lower wages. In 2019, the contribution increased by 6.3 percentage points to 27.27% and women still contributed the majority share of 71.23%. The stark difference between these years is because, according to the LMDS report, the gap between women's and men's wages narrowed substantially by 2019. Nonetheless, women's share remains substantially larger than that of men in 2019 as in 2010. This makes it clear that despite the gender wage gap (possibly in part due to discrimination) that we witness in Table 7, women still contribute a lot more to the value of unpaid work. It is also important to note that the value of unpaid work by women (and men) decreases when the wage is sex-disaggregated, making it important to value all unpaid work with the same wage to avoid the potential spillover of discrimination from the paid economy.

Budlender & Brathaug (2004) also apply the mean wage method using sex-disaggregated wages. They report a total contribution of 32%, which is slightly higher than this study's findings. Considering that they use the mean wage (which is slightly higher) and not the median wage as this study does, the findings make sense and are aligned. Women's contribution has remained steady with the rise in prices, wages and values of GDP across the years. Oosthuizen (2008)'s findings and analysis also agree with this study and with Budlender & Brathaug (2004).

Table 7: Unpaid work valuation disaggregated by sex, using the sex-disaggregated median hourly wage

	Female	**Male**
Mean daily minutes	229	98
Daily hours	3,8	1,6
Yearly hours	1387	584
Population aged 10 and above in 2010	20 548 400	19 141 000

Total hours in 2010	28 500 630 800	11 178 344 000
Average weekly hours worked in employment in 2010	40,5	45
Monthly hours worked in employment	174,15	193,5
Monthly wages for 2010 (R)	2400	3200
Hourly wages for 2010 (R)	13,78	16,54
Yearly contribution for 2010(R)	392 773 551 076,66	184 861 502 842,38
Unpaid work as a % of GDP in 2010	14,29%	6,73%
Total share of contribution for 2010	68,00%	32,00%
Population aged 10 and above in 2019	24 443 081	22 860 556
Total hours in 2019	33 902 553 347	13 350 564 704
Average weekly hours worked in employment in 2019	40	45
Monthly hours worked in employment	172	193,5
Monthly wages for 2019 (R)	3103	3581
Hourly wages for 2019 (R)	18,04	18,51
Yearly contribution for 2019 (R)	611 625 715 324,08	247 071 690 982,04
Unpaid work as a % of GDP in 2019	19,42%	7,85%
Total share of contribution for 2019	71,23%	28,77%

As much as time use varies between females and males, it also varies between individuals of different ages. Table 8 provides a valuation of unpaid work based on the population median wage, disaggregated by sex and age. Therefore the wage values and average weekly hours are the same as those presented in Table 6. Generally, women across all age cohorts spent more time on unpaid work than their male counterparts, therefore their contribution is higher regardless of the age cohort.

Across both sexes, the 18-45 years age group spent the most amount of time on unpaid work and therefore they contributed the highest share of total unpaid work, namely 55.51% in 2010 and 57.35% in 2019. Considering that this group makes up most of the working-age population (15-64 years) and are most likely to have children living with them, there is a high possibility that they face the double burden of paid and unpaid work within the same 24-hours.

The 46 and older age cohort contributes more through unpaid work than the 10-17 years cohort. Considering that a high proportion of the younger group will be in school, and a high proportion of the older group will be retired, this is to be expected. The data also show that the older group

contributes significantly to the economy through non-SNA activities, namely by 5.36% of GDP in 2010 and 8.37% in 2019. This is in line with other research that has found the older group spends most of their unpaid work minutes on care work (Stats SA, 2010b; Posel & Grapsa, 2017), which makes up a large part of unpaid work. The values also align with those presented by de Vaus et al. (2003) in their valuation of household and care work done by the older population in Australia. From the results in Table 8, the elderly's share in the contribution of unpaid work in South Africa increased to 30.25% in 2019 from 23.09% in 2010, and the increase seemingly absorbs the decrease seen by other age cohorts in 2019 relative to 2010. The elderly population also increased more than the others, especially for females, which could explain the increase in their share considering that females contribute relatively more to unpaid work.

Table 8: Unpaid work valuation disaggregated by sex and age group, using the economy-wide median hourly wage

	Female			**Male**		
	10-17 years	18-45 years	45 years and above	10-17 years	18-45 years	45 years and above
Mean daily minutes	120	268	231	69	103	107
Daily hours	2	4,5	3,9	1,2	1,7	1,8
Yearly hours	730	1642,5	1423,5	438	620,5	657
Population within age group in 2010	5 181 400	10 038 300	4 528 600	5 247 100	9 524 100	4 369 800
Total hours in 2010	3 782 422 000	16 487 907 750	6 446 462 100	2 298 229 800	5 909 704 050	2 870 958 600
Average weekly hours worked in employment in 2010	42,7	42,7	42,7	42,7	42,7	42,7
Monthly hours worked in employment	183,61	183,61	183,61	183,61	183,61	183,61

Monthly wages for 2010 (R)	2900	2900	2900	2900	2900	2900
Hourly wages for 2010 (R)	15,79434671	15,79434671	15,79434671	15,79434671	15,79434671	15,79434671
Yearly contribution for 2010(R)	59 740 884 483,42	260 415 731 577,80	101 817 657 480,53	36 299 038 287,68	93 339 914 737,76	45 344 915 527,48
Unpaid work as a % of GDP in 2010	2,17%	9,48%	3,71%	1,32%	3,40%	1,65%
Total share of contribution for 2010	9,37%	40,86%	15,98%	5,70%	14,65%	7,12%
Population within age group in 2019	5 005 374	11 944 213	7 493 493	5 082 531	12 193 090	5 584 935
Total hours in 2019	3 653 923 020	19 618 369 853	10 666 987 286	2 226 148 578	7 565 812 345	3 669 302 295
Average weekly hours worked in employment in 2019	43	43	43	43	43	43
Monthly hours worked in employment	184,9	184,9	184,9	184,9	184,9	184,9
Monthly wages for 2019 (R)	3402	3402	3402	3402	3402	3402
Hourly wages for 2019 (R)	18,40	18,40	18,40	18,40	18,40	18,40
Yearly contribution for 2019 (R)	67 229 021 709,25	360 961 028 870,77	196 263 335 561,23	40 959 207 476,24	139 204 400 203,84	67 511 987 061,06
Unpaid work as a % of GDP in 2019	2,13%	11,46%	6,23%	1,30%	4,42%	2,14%
Total share of contribution for 2019	7,71%	41,39%	22,51%	4,70%	15,96%	7,74%

4.3.2. Generalist method

As explained in Chapter 3, the generalist wage used in this study is the domestic worker wage. Therefore, Table 9 presents the valuation of unpaid work disaggregated by sex using the domestic worker median wage value. The wages and hours worked are not disaggregated by

sex because very few men are domestic workers and their separate valuation would have the same discrimination effects as sex-disaggregated wages shown in Table 7. The generalist wage valuation resulted in a total value of unpaid work of 9.91% of GDP in 2010 and 14.99% of GDP in 2019. The increase can be attributed to the increase in the hourly median wage for domestic workers between 2010 and 2019.

Table 9: Unpaid work valuation disaggregated by sex, using the domestic worker hourly median wage

	Female	Male	Combined
Mean daily minutes	229	98	165
Daily hours	3,8	1,6	2.8
Yearly hours	1387	584	1022
Population aged 10 and above in 2010	20 548 400	19 141 000	39 689 400
Total hours in 2010	28 500 630 800	11 178 344 000	40 562 566 800
Average weekly hours worked in employment in 2010	33,9	33,9	33,9
Monthly hours worked in employment	145,77	145,77	145,77
Monthly wages for 2010 (R)	1000	1000	1000
Hourly wages for 2010 (R)	6,86	6,86	6,86
Yearly contribution for 2010(R)	195 517 807 504,97	76 684 804 829,53	278 264 161 350,07
Unpaid work as a % of GDP in 2010	7,11%	2,79%	9.91%
Total share of contribution for 2010	71,80%	28,16%	100%
Population aged 10 and above in 2019	24 443 081	22 860 556	47 303 637
Total hours in 2019	33 902 553 347	13 350 564 704	48 344 317 014
Average weekly hours worked in employment in 2019	35	35	35

Monthly hours worked in employment	150,5	150,5	150,5
Monthly wages for 2019 (R)	1791	1791	1791
Hourly wages for 2019 (R)	11,90	11,90	11,90
Yearly contribution for 2019 (R)	339 166 975 168,11	133 026 007 335,55	482 708 020 855,81
Unpaid work as a % of GDP in 2019	10,77%	4,22%	14.99%
Total share of contribution for 2010	71,84%	28,18%	100%

As expected, women's share of the contribution is significantly larger than the contribution by men, with women accounting for close to 72% of the total value of unpaid work in both years. Using the 2000 TUS, Budlender and Brathaug (2004) found the total value of unpaid work as a percentage of GDP to range between 11% and 18%, which roughly aligns with the estimates provided here. The difference can largely be attributed to the difference in wages used because time spent on unpaid work has not changed significantly between 2000 and 2010 (by less than 10 minutes), as seen in Budlender & Brathaug (2004) who presents the TUS 2000 statistics and the Stats SA, (2010b) report which provides TUS 2010 statistics. Oosthuizen (2008)'s results also show that women's contribution is larger than men's using the generalist wage method and applying domestic worker wages.

4.3.3. Minimum wage approach

Table 10 resembles Table 6, in that it provides a valuation disaggregated by sex using the economy-wide national minimum wage of R 20 per hour, but for 2019 only. To adequately value the contribution using the 2019 minimum wage, the GDP value used for this valuation is in 2019 prices. The total contribution for 2019 using this method amounts to 16.86%, with women contributing 71.75% of that. The contribution value is about 8% less than the median wage contribution using the economy-wide wage rate.

Table 10: Unpaid work valuation disaggregated by sex, using the 2019 hourly minimum wage

	Female	Male	Combined
Mean daily minutes	229	98	165
Daily hours	3,8	1,6	2,8
Yearly hours	1387	584	1022
Population aged 10 and above in 2019	24 443 081	22 860 556	47 303 637
Total hours in 2019	33 902 553 347	13 350 564 704	48 344 317 014
Minimum hourly wage rate	20,00	20,00	20,00
Yearly contribution for 2019 (R)	678 051 066 940,00	267 011 294 080,00	966 886 340 280,00
Unpaid work as a % of GDP in 2019	12,10%	4,76%	16.86%
Total share of contribution	71,75%	28,25%	100%

A similar conclusion as in Table 8, is reached for Table 11. Since the only difference is the wage rate, the 18-45 years cohort still contributes a higher share because they spent the most time on unpaid work. Similarly, the values are lower than those provided by the median wage method, providing higher upper-bound values.

Table 11: Unpaid work valuation disaggregated by sex and age group, using the 2019 hourly minimum wage

	Female			Male		
	10-17 years	18-45 years	45 years and above	10-17 years	18-45 years	45 years and above
Mean daily minutes	120	268	231	69	103	107
Daily hours	2	4,5	3,9	1,2	1,7	1,8
Yearly hours	730	1642,5	1423,5	438	620,5	657
Population aged 10 and above in 2019	5 005 374	11 944 213	7 493 493	5 082 531	12 193 090	5 584 935
Total hours in 2019	3 653 923 020	19 618 369 853	10 666 987 286	2 226 148 578	7 565 812 345	3 669 302 295
Hourly wages for 2019 (R)	20	20	20	20	20	20

Yearly contribution for 2019 (R)	73 078 460 400	392 367 397 050	213 339 745 710	44 522 971 560	151 316 246 900	73 386 045 900
Unpaid work as a % of GDP in 2019	1,30%	7,00%	3,81%	0,79%	2,70%	1,31%
Total share of contribution	7,71%	41,40%	22,51%	4,70%	15,96%	7,74%

4.4. Summary of core results

The calculations provided a wide variety of valuations for non-SNA production work. The contribution of unpaid work to GDP, if counted, would amount to values ranging from 9.91% to 27.61% of the GDP estimates across the years, as shown in Table 12. The main findings from the methods are in agreeance with findings from similar studies. Women spend much more time on unpaid work overall, and therefore their contribution to the value of unpaid work is higher than that of men regardless of whether their median hourly wage is equal to or less than that of men. This is evident across all methods applied, therefore meeting the expectations of this study.

Table 12: Core results from methods

Method	Contribution to GDP in 2010			Contribution to GDP in 2019		
	Total contribution (% of GDP)	Women's share	Men's share	Total contribution (% of GDP)	Women's share	Men's share
Median wage valuation	22,81%	71,83%	28,17%	27,61%	71,75%	28,25%
Generalist wage valuation	9,91%	71,80%	28,16%	14,99%	71,84%	28,18%
Minimum wage valuation	-	-	-	16.86%	71,75%	28,25%

The generalist wage valuation, as expected, provides the lower-bound value of unpaid work. Budlender & Brathaug (2004), Oosthuizen (2008), Suh et al. (2020) and many others, arrive at a similar conclusion with the method. This may be attributed to the fact that occupations that are similar to unpaid work, i.e. domestic work, usually pay the lowest wages in the market.

Although the working hours are also lower, they are not low enough to compensate for the large gap in wages.

Even with the additional minimum wage valuation, the median wage valuation still provides an upper-bound value, as it does in similar bodies of work. The contribution valued using this method is always higher because it uses the economy-wide median (or mean for some) wage, which accommodates all types of wages for all types of occupations. Therefore, the minimum wage valuation provides a value in between the generalist and the median wage values. The same is observed when the valuations are disaggregated by age. This may not continue to be the case in the years to come if the minimum wage grows at a faster pace than the other wages that make up the economy-wide wage.

4.5. Covid-19 implications for time use

The South African studies, including this dissertation, are based on time use data collected in either the 2000 or 2010 TUS (the only two waves of the survey conducted in SA). Of course, time use patterns may have changed since then, and more recently, the Covid-19 pandemic will likely have affected the way men and women spend their time. The pandemic has been a terrible shock both socially and economically (Spaull et al. 2020) and after the first hard lockdown, the National Income Dynamics Study (NIDS) – Coronavirus Rapid Mobile Survey (CRAM) identified an 18% decrease in employment between February 2020 and April 2020 (Spaull et al. 2020) and women accounted for about two-thirds of this value (Casale & Shepherd, 2021). Considering that women are still concentrated in insecure employment where they are vulnerable to economic shocks (Parry & Gordon, 2020; Sarker, 2020), these findings are perhaps not so surprising. Adams-Prassl et al. (2020) identify similar devastating labour market conditions for women in the USA, UK and Germany. Fewer women in employment (overall and relative to men), would mean more women at home, and there would be a strong likelihood that their unpaid work would have increased as a result.

According to Parry & Gordon (2020) and Casale & Shepherd (2021), the unequal time spent on unpaid work in South Africa in the form of childcare may have worsened during the Covid-19 pandemic, as women would have likely borne the brunt of the additional care work due to school closures due to what is termed the historical *"inequitable gendered practices"* (Parry & Gordon, 2020: 1). This implies that the time spent on unpaid work by women may have

increased compared to men since the beginning of the pandemic. The pandemic has made visible the "invisible" unpaid work with more people working from home and facing the double burden of paid and unpaid work (Ding & Williams, 2022). The time spent on unpaid work is expected to have increased mostly where caring work is concerned, especially childcare (Casale et al. 2021; Alon et al. 2020) for women in South Africa and around the world. This is expected even for women who live with a male spouse in the same household (Alon et al. 2020). Therefore, the contribution of unpaid work to GDP as calculated above may have actually increased if we had more recent TUS data that captures the impact of the Covid-19 pandemic. However, there are also likely to have been more general shifts in unpaid work over time, with men taking on a larger share in more recent years compared to 2010 (as has been identified in a number of other countries). Unfortunately, the extent to which the upheaval of the Covid-19 pandemic would have derailed these trends is not known for South Africa given the lack of new TUS data.

4.6. Policy recommendations

The South African government has already set up an impressive social assistance system post-apartheid that offers social grants to the previously disadvantaged that are financially destitute, in the form of money transfers (Armstrong & Burger, 2015). These social grants could form a good basis from where to begin. The grants include the Child Support Grant (CSG), the Old Age Pension (OAP), the disability grant and others (Bhorat & Kohler, 2020). All these grants are conditional as they are either means-tested and require you to be of a certain age (18 and younger in the case of the CSG or 60 and older in the case of the OAP) or disabled. There is currently no permanent grant available for those of working age who are unemployed or out of the labour force (and looking after children). A number of commentators and researchers (for example, see Kollamparambil & Oyenubi, 2020) have suggested a Basic Income Grant (BIG) should be introduced to replace the Special Relief of Distress (SRD) grant that was introduced to cover those not working (aged 18-59) during the Covid-19 pandemic (Bhorat & Kohler, 2020; Kollamparambil & Oyenubi, 2020).

A Basic Income Grant of this kind would provide women (and men) who are not working because they have to look after children access to social support in their own right. A basic income grant of this kind would assist with covering basic needs, job-seeking costs and it would somewhat increase the bargaining power of women within the household. There are concerns

that this will not be attainable at this point in South Africa given our fiscal constraints (Kollamparambil & Oyenubi, 2020), but it is definitely a policy to consider in future. Alon et al. (2020) also suggests a government subsidy targeted at those most impacted by job losses and having to care for children, which would be inevitably benefit women more, as they are much more likely to care for children than men and have lost their job during Covid-19. They also advocate for grants that are not attached to conditions, which would increase accessibility. Sarker (2020) agrees by recommending that socioeconomic plans should be designed with a women-centered focus.

Chapter 5: Conclusion

This dissertation has explored unpaid work in the context of South Africa, paying specific attention to the valuation of unpaid work performed by women as a percentage of GDP, and analysing their share of the value compared to men. The study sought to answer this more general question: 'should we be officially and routinely valuing the contribution of women's unpaid work in South Africa, and to what effect?' The main question was answered through the following sub-questions: 'What is unpaid work, and how is it distributed between men and women in South Africa?', 'What is the value of unpaid work in South Africa as a percentage of GDP, and what portion of this is accounted for by women in comparison to men?', and 'Why is it useful to measure and value unpaid work? How can it be used to inform policy aimed at redressing gender inequality?'

In Chapter Two I provided a broad summary of the literature contributing to the topic. In the first subsection, the chapter covered literature on why feminist economists deem it necessary to value unpaid work. The reasons include the fact that the continued invisibility of unpaid work will continue to result in ineffective policies. Also, with the changing family structures in South Africa, female-headed households find themselves poorer and needing more support. Making women's much larger contribution to unpaid work more visible would help motivate for additional support for women and for caregivers more generally. It was also established in this section of the chapter that there are some women that have to make the tough choice to trade off paid work for unpaid work due to lack of support. Finally, the feminist economics literature considers it necessary to value unpaid work because of the forgone contribution to a nation's GDP.

In the same chapter, I provided literature on the methodologies applicable to valuing unpaid work, and I noted that most studies adopt one or more of a number of input-based methods such as the mean wage method or the generalist wage method. In the summary of global empirical findings, it was made clear that women contribute more to unpaid work in monetary terms than men. Evidence was provided for countries such as Canada, Australia and Japan. Lastly, I summarised the South African literature. Work done in South Africa included research by Budlender & Brathaug, (2004) and Oosthuizen, (2008), both of which I relied heavily on in my methodology and my results analysis. The findings by South African authors based on the

2000 TUS are in line with the findings of this study. Women indeed contribute a larger share of the value of unpaid work as a percentage of GDP both in 2000 and in 2010.

Chapter 3 described the methodology and data used in this dissertation. This study used TUS 2010 data for the mean minutes spent on unpaid work, while the earnings data were accessed from the 2010 and 2019 QLFS through the LMDS. The methodologies adopted by this study were the mean/median wage method which used the economy-wide median wages and the sex-disaggregated median wages in the valuation, and the generalist wage method which applied the domestic worker wage in the valuation. An additional method was used, which was a valuation of unpaid work using the national minimum wage. This has not been done by any other researchers in South Africa and makes up part of this study's contribution. An additonal contribution was that the gendered results were also dissagreated by age cohort to show that the elderly (and especially elderly women) also contribute significantly to the economy through unpaid work.

The fourth chapter presented the results. This chapter answered the first and second sub-questions posed in this study as it calculated the value of unpaid work in South Africa as a percentage of GDP and showed how it is distributed between women and men. The findings showed that applying the mean/median wage approach using the economy-wide wage rate results in a total value of 22.81% of GDP in 2010 and 27.61% in 2019, with women contributing just over 70% to each value. These findings are consistent with the findings reported in similar literature for South Africa and elsewhere. Applying the median wage approach using the sex-disaggregated wages gave similar results for women's contribution despite the potential discrimination inherent in the gender wage gap. The results using the generalist wage approach were 9.91% of GDP in 2010 and 14.99% in 2019 with women still contributing the largest share (above 70%). This method provides a lower-bound value given the low returns to domestic work in the labour market, as has been found by other researchers. The minimum wage method provided results more similar to the generalist approach, their values differ by approximately 2 percentage points. The mean/median wage approach provided the upper bound value of unpaid work as a percentage of GDP, at 27.61%. For all methods, individuals in the 18-45 years age cohort contributed more towards the value of unpaid work than the other two cohorts, however, those in the 46 years and over category still made a substantial contribution to unpaid care as a percentage of GDP. Across all age groups, women contributed a much larger share of the total.

At the end of the chapter, the implications of the economic shock from the Covid-19 pandemic were considered. The valuation of unpaid work, and particularly the share performed by women, would be expected to have increased compared to the pre-Covid period. This is because unpaid work rose during Covid-19 as a result of, among others, school closures and work-from-home policies, and evidence from South Africa and other countries suggests women took on a greater share of this additional burden. However, the extent to which the upheaval of the Covid-19 pandemic would have derailed more egalitarian trends since the TUS 2010 is not known for South Africa given the lack of newer time use data.

Lastly, I considered the policy implications of the findings. I suggest that the results, which make women's much greater contribution to unpaid work visible, help motivate the introduction of a Basic Income Grant (BIG) or a grant for unemployed caregivers. Considering that women are more likely to be unemployed than men, and they are much more likely to be involved in care work, the latter policy option would benefit women relatively more than men. I conceded that this may only be possible in the future given the country's current budget deficits.

In conclusion, this study found that women in South Africa bear the heavier weight of unpaid work, contributing more than twice the value that men contribute. Given these findings, it is important that we officially and routinely value the contribution of women's unpaid work in South Africa, and include its contribution to the value of GDP through satellite accounts. To do this, Statistics South Africa would need to commit (with government funding support) to collect TUS data more frequently, as this survey is crucial in highlighting the gendered time use patterns in paid and unpaid work over time.

With that being said, the study acknowledged the data limitations, given that the latest time use data available is from 2010, while the earnings are from 2010 and 2019. The time use data may be somewhat out of date, considering that time use patterns may have changed more generally over the previous decade and been significantly impacted by the Covid-19 pandemic. In the event that the time spent on unpaid work has shifted from women to men in the last decade, the results for women's contribution to GDP will be overestimated. It is also possible, however, for the value of unpaid work to be underestimated by using the 2010 time use data if the Covid-

19 pandemic has resulted in women taking on additional childcare compared to 2010 relative to men. Future research could explore these changes when additional data becomes available.

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