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Bente Nora Borchers B.Sc.

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Univ.-Prof. Dipl.-Ing. Dr. Christine Zulehner
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Abstract

Unpaid Labor has historically been associated with women and the fulfillment of their traditional role in society. Women and feminists have long argued that these expectations are unjustified and reflect structural inequality. The undervaluation of women's contribution to the economy often puts women in a situation of economic dependence. Women are more likely to be victims of domestic violence and suffer from old-age poverty. This thesis aims to determine a monetary value for unpaid labor and to identify the higher-income earner. And see how the distribution of time spent on unpaid labor has changed over time. The data used for this purpose are the Time-Use Surveys of 2021/22 and 2008/09 from Statistik Austria. Both studies are based on the Microcensus and contain relevant information on how women and men spend their time. The survey results were used to calculate the average time women and men spent on unpaid labor, including tasks such as childcare, cooking, and cleaning. To estimate the monetary value of unpaid labor, three valuation methods were used: the replacement cost approach, the market cost approach, and the opportunity cost approach. In addition, the analysis considers different perspectives and sociodemographic factors, such as educational level, parental status, and age, to examine how the value of unpaid labor differs across population groups. This thesis finds that women shoulder 64% of all unpaid labor (in 2022), spent more time on unpaid labor than men, in all cases that were examined, and if losses of the gender pay gap were added to their total income, would be the main income earners.

Zusammenfassung

Unbezahlte Arbeit wird seit jeher mit Frauen und der Erfüllung ihrer traditionellen Rolle in der Gesellschaft in Verbindung gebracht. Frauen und Feministinnen argumentieren seit langem, dass diese Erwartungen ungerechtfertigt sind und strukturelle Ungleichheit widerspiegeln. Die Unterbewertung des Beitrags von Frauen zur Wirtschaft führt oft dazu, dass Frauen in eine Situation wirtschaftlicher Abhängigkeit geraten. Frauen sind häufiger Opfer häuslicher Gewalt und leiden unter Altersarmut. Diese Masterarbeit zielt darauf ab, einen monetären Wert für unbezahlte Arbeit zu ermitteln und herauszufinden, wer das höhere Einkommen erzielen würde, wenn unbezahlte Arbeit fair bewertet und der Gender Pay Gap außer Acht gelassen würde. Außerdem wird untersucht, wie sich die Verteilung der für unbezahlte Arbeit aufgewendeten Zeit im Vergleich zur Vergangenheit verändert hat. Die dafür verwendeten Daten stammen aus der Zeitverwendungserhebung 2021/22 und 2008/09 von Statistik Austria. Beide Studien basieren auf dem Mikrozensus und enthalten relevante Informationen darüber, wie Frauen und Männer ihre Zeit verbracht haben. Anhand der Umfrageergebnisse wurde die durchschnittliche Zeit berechnet, die Frauen und Männer für unbezahlte Arbeit wie Kinderbetreuung, Kochen, Putzen usw. aufwenden. Um den monetären Wert der unbezahlten Arbeit zu schätzen, wurden verschiedene Bewertungsmethoden angewendet, darunter der Wiederbeschaffungskostenansatz, der Marktkostenansatz und der Opportunitätskostenansatz. Darüber hinaus berücksichtigt die Analyse verschiedene Perspektiven und soziodemografische Faktoren wie Bildungsniveau, Elternstatus und Alter, um zu untersuchen, wie sich der Wert der unbezahlten Arbeit zwischen verschiedenen Bevölkerungsgruppen unterscheidet. Diese Arbeit kommt zu dem Ergebnis, dass Frauen 64 % der gesamten unbezahlten Arbeit leisten (Stand 2022), in allen untersuchten Fällen mehr Zeit für unbezahlte Arbeit aufwenden als Männer und, würde man die Verluste durch den Gender Pay Gap zu ihrem berechneten Gesamteinkommen hinzurechnen, die Hauptverdienerinnen wären.

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List of Abbreviations

<i>GDP</i>	Gross Domestic Product
<i>HETUS</i>	Harmonized European Time-Use Study
<i>TUS</i>	Time-Use Study
<i>HHM</i>	Household Management
<i>HH</i>	Household
<i>CPI</i>	Consumer Price Index
<i>ISCED</i>	International Standard Classification of Education

List of R Variables and Data Sets

<i>HHC3B or Kidsu3</i>	Children age 0 to 2
<i>HHC3 or Kidsu7</i>	Children age 3 to 6
<i>HHC4 or Kidso7</i>	Children age 7 to 17
<i>efile</i>	Data set activities
<i>indfile</i>	Data set socioeconomic info
<i>kindfile</i>	Data set children
<i>ddfile</i>	Data set average daily routine
<i>HID</i>	Household identification number
<i>PID</i>	Person identification number
<i>DIARY</i>	Weekday = 1 or weekend = 2
<i>MACT</i>	Main activity, by HETUS 2018 Guidelines
<i>DDV1A</i>	Day, 1 for weekday 2 for weekend
<i>HHC9A</i>	Household income in range
<i>IND1</i>	Gender, male = 1 or female = 2
<i>IND2</i>	Age group 1 to 14, 5-year steps starting at age 10 to 75+
<i>IND8</i>	Hours per week of paid labor
<i>IND11</i>	Part- or full-time employment
<i>INDC7</i>	Highest level of education (ISCED 2011)
<i>sumMin</i>	Sum of all <i>MACT</i> in min
<i>Sumhour</i>	Sum of all <i>MACT</i> in hours
<i>SalaryTotal</i>	Sum of all salary columns
<i>ZVE_2008_09</i>	Data set 2008/09
<i>HT_LNR</i>	Main activity
<i>asbper</i>	Household and person identification number
<i>WOTAG</i>	Day of the week 1 to 7, starting with Monday
<i>xkind3</i>	Children age 0 to 2
<i>Xkind6</i>	Children age 3 to 5
<i>xkind18</i>	Children age 6 to 17
<i>bsex</i>	Gender, male = 1 or female = 2
<i>balt</i>	Age in numbers
<i>dstd</i>	Hours per week of paid labor
<i>xdstd</i>	Part-time (up to 35h/week) or full-time (from 36h/week) employment
<i>xhatlevel</i>	Highest level of education (ISCED 1997)

Introduction

Throughout history, women have always been expected to take care of their families without any compensation except being told it is their “job” and in their nature. Due to the traditional role allocation, in heterosexual relationships, the man is usually the main income earner in many families (Harkness, 2010). Additionally, as men, on average, get paid more for the same job, it makes economic sense for men to be the main income earner (Eurostat, 2023). This fact is often used to argue that women should take on more of the household work, be stay-at-home mothers or wives, and have an “easy life,” while disregarding that household and care work are not privileges but hard, unpaid labor. Additionally, even if both partners are working, women still take on most of the household work and childcare (European Institute for Gender Equality., 2021).

The consequences of not having an income on one’s own, especially for women, are a higher chance of poverty in old age, mostly due to career breaks (in the case of employment) and motherhood, dependency on a partner, and the inability to leave a relationship in case of psychological and physical violence due to the financial dependency (Bundeskanzleramt, 2022; Sanders, 2015). If tasks, such as taking care of the household, cooking, and childcare, were outsourced, one would have to compensate the person providing such services, e.g., kindergarteners or nannies, cooks, and cleaning services. This leads to the following research question: if women were paid for these tasks, in addition to income from their actual jobs, who would be the higher-income earner?

Therefore, this thesis aims to determine the monetary value of unpaid labor and to identify who earns more when the average annual salary and the imputed value of unpaid labor are combined. For this, data from Austria's Time-Use Surveys (TUS) for 2021/22 and 2008/09 are used to calculate the monetary value of unpaid labor. Additionally, the data will show whether there has been an improvement in the division of unpaid and paid labor toward gender equality in the labor market. Ultimately, the research question of the true value of unpaid labor will be answered.

Literature Review

The existing literature has examined several important aspects of unpaid labor, such as the historical development of GDP calculation methods, the evolution of women’s rights and their

position in society, and the economic conditions of countries worldwide over time. Unpaid labor is not included in statistical measurements like the Gross Domestic Product (GDP), but it should be (Elson, 2017). In some countries in the 19th and early 20th centuries, for example, Sweden and Norway, the national accounts did include unpaid labor (Aslaksen & Koren, 1996). However, with the United Nations' standardization of statistical measurements in 1953, unpaid labor was excluded, and only goods and services sold, not used for own consumption, are included nowadays (Avaro & Morin, 2024). This leads to a severe underestimation of the female contribution to the GDP (Miranda, 2011). Feminists and feminist movements have always tried to put a spotlight on the fact that unpaid labor was underappreciated and undervalued and that it is of economic importance (Avaro & Morin, 2024). Perkins Gilman and Margaret Reid did so in 1898 and 1934, respectively, but their attempts to make unpaid labor seen were largely ignored by their male peers (Aslaksen & Koren, 1996; Avaro & Morin, 2024). The disregard of the importance of unpaid female labor is likely due to the patriarchal structures in society (Heath & Ciscel, 1988). Many early economists, such as John Stuart Mill, believed that household work should not be considered part of the economy or even regarded as work at all, as they thought it originated from maternal love rather than considering it as economic activity (Avaro & Morin, 2024).

The foundation for the now so-called GDP was introduced by Simon Kuznets, a man (Avaro & Morin, 2024). He designed the general accounting system for measuring national income (Avaro & Morin, 2024). Though his approach does not include unpaid labor itself, he admitted that omitting unpaid labor would cause a bias in the calculations (Avaro & Morin, 2024). The United Nations System of National Accounts (SNA) was developed on the basis of his calculations, drawing on a 1947 report by the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts (Avaro & Morin, 2024). The first version of the work group did include one woman, Hildegard Kneeland (Avaro & Morin, 2024). However, the work group was eventually reduced in size, and only men drafted the UN System of National Accounts published in 1953 (Avaro & Morin, 2024). The first standard for national accounts was based on a market approach, hence only goods and services that were exchanged for money were included (Aslaksen & Koren, 1996). It took the UN roughly 40 years to recognize unpaid labor as what it is, labor. The UN Human Development Report included unpaid labor in the 1995 report. The report studied gender equality and the development of women's rights worldwide and concluded that women spend more hours on unpaid labor and

fewer hours on paid labor than men, but their overall workday is longer (Aslaksen & Koren, 1996). It also stated that women are most likely to be the breadwinners if unpaid labor were valued fairly (UNDP, 1995).

Dr. Hildegard Kneeland was an economist who worked in the Bureau of Home Economics at the U.S. Department of Agriculture from the 1920s onward. She was the Chief of the Division of Economics and an advocate for female rights (Avaro & Morin, 2024). In 1929, Hildegard Kneeland released a paper about women's contributions to the household (Kneeland, 1929b). Based on a time-use study done by the Bureau of Home Economics, Dr. Kneeland calculated the average time spent on homemaking per week and the resulting hypothetical salary. More than 2,000 female homemakers were interviewed on how they typically spent their time over the span of seven days in one week. The results showed that the majority of homemakers spent at least 42 hours per week on homemaking (Kneeland, 1929a), while on average, women spent 51 hours on homemaking per week. Women in cities spent a little less time on homemaking because of the conveniences of city life, such as restaurants and services. Dr. Kneeland's study was inspired by the "wages for wives" movie, in which women demand a fair valuation for household work. To calculate such a value, she built the "wage" based on a combination of part-time jobs performed by various specialists based on the number of hours spent on average on household tasks and the wage rates customarily paid for each of these tasks. The tasks Hildegard Kneeland named were cleaning, laundering, mending, sewing, care of members of family such as dressing and bathing children, teaching and supervising them as well as other direct care tasks, and lastly purchasing, planning, and other management tasks (Kneeland, 1929a). Based on this calculation, she found that the salary would amount to 1,450 USD in 1929, which is equivalent to around 24,700 USD in 2022, adjusted for inflation (Federal Reserve Bank of Minneapolis, 2025). If the husband had to pay his wife what she "saved" him by her labor, he would have to give her more than half of his income. This would lead to a change in power dynamics. While he would make her economically independent, only to become dependent on her himself (Kneeland, 1929b).

One of the countries that included unpaid labor in their national accounts was Norway. But with the standardized valuation approach of the UN being published, from 1950 onwards, unpaid labor was no longer included in the national accounts calculation (Aslaksen & Koren, 1996). In 1912, the value of unpaid labor was estimated to be around 15% of national accounts (Aslaksen & Koren, 1996). Based on time-use surveys of different countries in the late 1990s

and 2000s and the replacement cost approach, the value of own-account household production as a share of GDP was estimated to be 22% in Norway, 24% in the United States, and 29% in Austria (Ahmad & Koh, 2011). Another approach to calculate the value of unpaid labor by Statistics Norway was the opportunity cost approach, or the specialized wage rate of skilled workers (Aslaksen & Koren, 1996). All methods yielded similar outcomes (Aslaksen & Koren, 1996). Avaro & Morin (2024) named 18 different approaches to valuing unpaid labor during their research. The two most used valuation methods are the opportunity cost approach, the potential wage a homemaker could earn if participating in the labor force, and the replacement cost approach, how much a substitute worker would cost (Avaro & Morin, 2024). Norway and other Scandinavian countries calculated the value of unpaid labor by multiplying the number of housewives and daughters by the wage rate for domestic servants (Aslaksen & Koren, 1996). In the 1980s, Norway calculated the value of unpaid labor based on time-use surveys, filled out over the span of two days, in 15-minute intervals (Aslaksen & Koren, 1996). The differentiation of household labor and leisure activities was based on whether an activity could be performed by a third person, that is, whether paid services or market goods could replace the task. If yes, it would be considered a household task, otherwise it would be considered a leisure activity. This criterion is called the “third-person criterion” by Margaret Reid (Aslaksen & Koren, 1996; Avaro & Morin, 2024). The results of the time-use studies from the 1980s and 1990s showed that women work more in unpaid labor than men, but the overall hours per day spent on labor were similar (Aslaksen & Koren, 1996). Men, however, did more household work in 1990 than in 1970 (Aslaksen & Koren, 1996). In 1996, when the paper was published, men’s relative share of household work was around one-third compared to one-fourth in 1970 (Aslaksen & Koren, 1996). The UNDP report found that men spent around two-thirds of their time in paid labor and one-third in unpaid labor, while for women, it was the opposite (UNDP, 1995).

As another example, the TUS of 2014, in the US, showed that on average, men spent 34.8 hours per week on paid work and 15.6 hours on unpaid labor, while women spent 24.1 hours on paid labor and 25.4 hours on unpaid labor (Blau & Winkler, 2018, Chapter 4). Based on these values, the estimated share of unpaid labor, depending on the estimation model, ranged from 25% to 44% of GDP. Continuously, from the 1960s to the 2010s, the time spent on unpaid labor decreased for women and increased for men. For women, this is likely due to technological advancements over time, a smaller average family size, and a higher real wage

in the labor market (Kneeland, 1929a). The increase in real wages also increased women's bargaining power within the family and subsequently led to a reallocation of responsibilities and tasks, and hence, men took on more of the household labor (Blau & Winkler, 2018, Chapter 4). Women also increased their hours spent in paid labor. The time spent on unpaid labor for men increased mainly in the 1980s and remained largely unchanged thereafter. The study found that highly educated parents spent more time with their children than parents with lower levels of education. Partly because they can afford it, and even if the opportunity costs are higher for highly educated parents, they see spending time with their children as an investment in their future.

In theory, there are different models that describe families' decision-making regarding unpaid and paid labor. The neoclassical model, as described by Blau & Winkler (2018, Chapter 3), views the family as a unit that aims to maximize its overall utility. One basic assumption of this model is that the family makes rational, informed decisions and that each family member's preferences are the same. However, a study done in the UK proves that this assumption does not hold up. After a policy change in child support allocation, women received child support from the government instead of the income earner receiving it with the paycheck. This resulted in women being in control of some of the finances, and they allocated a greater share to the education and well-being of their children than men did when they were in control, proving that the assumption is oversimplified (Blau & Winkler, 2018, Chapter 3). The neoclassical approach assumes an altruistic head of household who makes decisions to maximize the family's utility as a whole. Yet, there is a difference in the bargaining power of women and men due to differences in income, unequal access to education, and alleged comparative advantage. Women are assumed to be better at household labor, but it is more likely that they are better at it because it is expected of them and they are raised to learn it at an early age. Gender norms and traditional gender roles are hard to get out of the head, especially if they are already taught at birth, as traditional gender roles are already present in teenagers. Men, however, have a comparative advantage in the labor market due to the traditional gender norms, the fact that they are not childbearing, and the gender pay gap. The assumption that women have a comparative advantage in household work is unrealistic, as household labor involves many tasks, making it unlikely that women are better at all of them. The bargaining model emerged as an alternative to the neoclassical model, considering the personal preferences of all family members. In this model, both partners have a threat point,

their level of well-being if the partnership ends. Men usually have more bargaining power because they have higher incomes and often control the finances. Women, given the traditional gender roles, are more likely to invest their time into the relationship and family rather than their labor market position, which often leads to women being dependent on their partners. This can often lead to an abuse of power, leading to domestic violence, out of which it is hard for women without financial independence to get out. Policy changes such as easing divorce laws and increasing wage rates put women in a higher position in terms of bargaining power and eventually lead to a decrease in domestic violence.

As this thesis aims at finding a monetary value for unpaid labor and also focuses on the development of distribution of household and care labor between women and men in Austria, it is crucial to know which policies have been introduced between the conduction of both surveys. Between the 2008/09 and 2021/22 TUS, several new policies were introduced in Austria to improve gender equality in the workplace and at home. In the 1980s, more than half of women (25-64 years) only completed compulsory schooling, they lacked higher education (Bundeskanzleramt, 2010). Following educational expansion in 2019, women dominate higher education (Bundeskanzleramt, 2022). Across the European Union, the same pattern can be observed: women have higher educational levels than men (Kelin et al., 2023). In their 2023 study, Kelin et al. analyzed the influence of education on time spent on household work. The study found that people, regardless of gender, spend more time on household work after retirement. In addition, time spent on household and (child) care increases over the course of their lifetime. The educational level does not have an impact on the time spent on household work for men, but it does for women. As a result, the better their education, the less time they spend on household work. Given the increase in opportunity costs, it is more reasonable to hire someone to do household work rather than do it oneself. Men with a low education level, conversely, also spent the least amount of time on household tasks (Kelin et al., 2023). The paper also finds that higher education is associated with higher salaries and, hence, less time spent on household work (Kelin et al., 2023). And while the gender gap in household chores decreases with higher educational levels, women, regardless of their education, always spend more time on unpaid labor than men (Kelin et al., 2023). Munsch (2015) finds that even when women are the primary breadwinners, they continue to perform a disproportionate share of unpaid labor and often downplay their financial contributions to the household. Moreover, although women tend to attain higher levels of education than men,

many continue to work part-time, largely due to their continuing responsibility for childcare and the care of elderly family members (Balabanova, 2007). In Austria, 37.17% of women are employed part-time, while only 10.08% of men are employed at a similar level (based on calculations on STATcube, 2025; Statistik Austria, 2024a, 2024b, see Table 1 below).

This leads to a pension gap in old age of roughly 40% (as of 2021), meaning women receive only 60% of the retirement pay that men receive on average (Bundeskanzleramt, 2022; Hobson, 1990). This is also because, on average, women are more likely than men to work in lower-paying sectors, and part-time jobs often pay lower hourly wages than full-time positions (Bundeskanzleramt, 2010; Statistik Austria, 2025b). Hence, in Austria, 25% of women aged 65 and older are at risk of poverty (as of 2020) (Bundeskanzleramt, 2022). One measure being implemented to raise awareness of the risk of old-age poverty is distributing flyers and other informational materials. The question is whether the material will even reach the target group (Bundeskanzleramt, 2022). In 2011, the transparency in income levels was implemented (Bundeskanzleramt, 2022), nevertheless the gender pay gap in Austria was still at 18.7% in 2022, of which only around one-third could be explained due to socioeconomic factors, while the other two-thirds continue to be unexplained (Statistik Austria, 2025b). Several policies were introduced to ease parents' workload. The free last year of kindergarten was introduced in 2009, along with more kindergartens, more childcare facilities, more all-day schools, and the option for both parents to alternate in the allocation of parental leave (Bundeskanzleramt, 2022). Studies have shown that a greater supply of child care facilities leads to a higher labor force participation rate among women, as traditional gender roles, such as childcare, prevent women from participating in the labor force (Balabanova, 2007; Bundeskanzleramt, 2010). The main reason the share of women working part-time far exceeds that of men is the compatibility of work and childcare. Part-time employment, however, does not secure women's economic independence due to low pay (Bundeskanzleramt, 2010). The patriarchal structures in society normalize the idea for women to be largely responsible for homemaking (Balabanova, 2007). Getting the anchored image of the good housewife, who cooks, cleans, and takes care of everything and everybody, out of society's head is crucial for changing social structures and improving women's social position (Bundeskanzleramt, 2010). In 2011, the Istanbul Convention was signed as a step to prevent violence and domestic violence against girls and women and to remove the taboo surrounding violence. As part of this, more financial support was granted for women's shelters (as of 2021) and counseling centers for sexual

violence, as well as emergency and safe houses for women. On the other side, violence prevention counseling centers for the perpetrators were opened to teach them how not to use violence to solve conflicts or express their emotions (Bundeskanzleramt, 2022).

The UNDP report from the 1990s included an action plan, or at least outlined strategies, to address and eventually eliminate gender disparities in equality. For example, to raise women's awareness of their rights and encourage men to take on a greater share of childcare and household work. These include the strengthening of women in her societal position through control over her own fertility, universal education for women, and credits and loans for women to control her own finances to be independent (UNDP, 1995).

Methodology

The following section describes the methodology and data used for this research. This thesis is based on the time-use surveys conducted in 2008/09 and 2021/22 by Statistik Austria. Both time-use surveys use daily household data, depicting how a random sample of representative households spent their time and other socioeconomic information about society.

Sample Size Fit

	Level	Population	Population in %	Sample	Sample in %
Women					
	full-time employment	986,493	36.14	490	33.70
	part-time employment	1,014,507	37.17	625	42.98
	no employment	728,482	26.69	339	23.31
	Total	2,729,482	100.00	1,454	100.00
Men					
	full-time employment	1,938,969	69.92	1,056	77.76
	part-time employment	279,531	10.08	107	7.88
	no employment	554,463	20.00	195	14.36
	Total	2,772,963	100.00	1,358	100.00

Table 1: Sample Fit, Women and Men, AT 2021/22
 Source: TUS 2021/22, Statistik Austria; STATcube, 2025; Statistik Austria, 2024b, 2024a

Table 1 and Table 2 show the distribution of employment levels in the data sample and in the Austrian population in 2021/22 and 2008/09. As can be seen, the sample data reflects the population of Austria by their employment level in 2021/22. Table 1 shows the gender difference in labor force participation between gender and employment level. Around one-third of women are full-time employed, while the share of men working in full-time

employment is almost twice as big. Most women work in part-time employment, and around one-fourth are outside the labor force. In this thesis, due to the data, everyone who is not employed is considered outside the labor force. 14.36% of men are outside the labor force, while an even smaller share of less than one-tenth work in part-time employment. As seen in Table 2, the distribution of employment levels in 2008/09 between women is quite equal between being employed or not, with roughly a third of women in each employment status. Comparing both years, a smaller share of people are not employed. The share of people in full-time employment has been consistent, while the share of people in part-time employment has increased over the years.

	Level	Population	Population in %	Sample	Sample in %
Women					
	full-time employment	990,003*	38.58	1,136	35.92
	part-time employment	749,897*	29.22	1,040	32.88
	no employment	826,480	32.20	987	31.20
	Total	2,566,380	100.00	3,163	100.00
Men					
	full-time employment	1,809,499*	70.76	2,016	77.12
	part-time employment	174,601*	6.83	125	4.78
	no employment	573,027	22.41	473	18.09
	Total	2,557,127	100.00	2,614	100.00

Table 2: Sample Fit, Women and Men, AT 2008/09

Source: TUS 2008/09, Statistik Austria; STATcube, 2025; Statistik Austria, 2024b, 2024a

Time-Use Survey 2021/22

The Time-Use Survey 2021/22 from Statistik Austria (Statistik Austria, 2023d) is based on diary entries of 4,342 households, including 7,863 household members age 10 and older. Of these 7,863 household members, 4,244 were female, and 3,619 were male (Statistik Austria, 2025c). The data collection took place from mid-October 2021 until the end of December 2022 (Statistik Austria, 2025c). The participants of the sample were chosen based on two random samples from the Central Population Register or the Microcensus (Statistik Austria, 2025c). The gross sample included 18,778 households, 7,778 from the Microcensus and 11,000 from the Central Population Register, of which 4,342 households took part in the survey (Statistik Austria, 2025c). The sample was equally distributed over the year (Statistik Austria, 2025c). Hence, seasonal chores are considered. Participants were incentivized and reimbursed with a 35 EUR or 50 EUR gift certificate (Statistik Austria, 2025c). All respondents were asked to fill

out either a physical diary or an online diary to record the time spent on activities that lasted longer than 10 minutes. The time spent on activities was captured in 10-minute intervals, resulting in 144 entries per day. The respondents were asked to fill out the diary for two days, one weekday and one weekend day, whereas bank holidays were considered as weekends (Statistik Austria, 2025c). Socioeconomic information about each participant was collected, like age, gender, income, household size, and much more (Statistik Austria, 2023d). The diary entries were then coded according to the Harmonized European Time-Use Study (HETUS) guidelines and, together with the socioeconomic data, put into four different Excel datasets. To fit the needs of this thesis better, the tables were stepwise merged by using common identifiers, the variables that were included in all datasets. The four datasets, *efile*, *indfile*, *kindfile*, and *ddfile*, describe the activities during the two days, the socioeconomic information about each person, information about the children in the households, and information about average daily routines, respectively, resulting in a comprehensive dataset containing all relevant information without duplicate entries (Statistik Austria, 2023a, 2023b, 2023c, 2024c). The comprehensive dataset contains 1,062,400 observations of 246 variables. Originally, the produced data set included 288 rows per person, 144 for a weekday and 144 for a weekend. “NA” entries, based on missing information due to a lack of full coverage of all socioeconomic information in all four tables, were fixed by filling the “NA” with the corresponding info from other rows. The data was then restructured and adjusted to contain two rows per person, one for each day. This was done by grouping by *HID* (Household ID), *PID* (Person ID), and *DIARY* (Day 1 or 2), while counting the number of entries for each *MACT* (main activity) count per person and day. Additional variables that were used for this study are *DDV1A* (the day, either 1 for weekday or 2 for weekend), *HHC3* (children under the age of seven, adjusted to exclude the children under the age of three by subtracting *HHC3B* from *HHC3*), *HHC3B* (children under the age of three), *HHC4* (children between age 7 to 17), *HHC9A* (household income in range), *IND1* (gender, 1 for men 2 for women), *IND2* (age-group, 3 to 11, in 5 year steps, starting at 20), *IND8* (hours per week spent of paid labor), *IND11* (full- or part-time employment), *INDC7* (highest level of education (ISCED 2011)) and the *MACT* (main activity count). The total *MACT* count was multiplied by ten to represent the time spent on each main activity in minutes. As this thesis deals with the value of unpaid labor, the data focuses on the working population, hence, only women and men ages 20 to 64 are included. After cleaning the data and removing individuals who only filled out the diary on one of the two days and considering the age groups,

the sample featured 2,812 individuals, 1,454 women, and 1,358 men. The data was subdivided into various subsets for each combination of gender, day of the week, parental status, educational level, employment level, or age. The subsets were filtered to include only the MACT categories representing household and care tasks. These categories include "Cooking", "Dish Washing", "Food Preparation", "Cleaning Dwelling", "Gardening", "Cleaning Garden", "Heating", "Arranging", "Recycling", "Others HH", "Laundry", "Ironing", "Other Textiles", "Tending Pets", "Caring Pets", "Walking Pets", "Other Pets", "House Renovation", "Repairs to Dwelling", "Maintaining Equipment", "Vehicle Maintenance", "Other Repair", "Shopping", "Commercial Services", "Other Shopping", "HH Management", "Physical Care/ Supervision Child", "Teaching Child", "Reading/ Playing w Child", "Accompanying Child", "Other Childcare", as well as "Care of Adult Household Members", and "Other Tasks related to Adult Members", and lastly "Unspecified". Columns showing the total time spent on these activities were added to the subsets, displaying the time both in minutes and in hours (*SumMin* and *SumHour*). They were calculated by summing the count for each MACT category and dividing by 60 for the hour display. Additionally, with regard to the following calculations, the MACT categories were summarized to better fit one single job description. This resulted in eleven different categories ("Cook", "Clean", "Garden", "Textile", "HHM" (Household Management), "Child", "Adult", "Shopping", "House", "Pets" and "Unspecified") representing all activities to do with cooking, cleaning, gardening, textiles, household management, and childcare and care of adult household members. The activity category "Cook" is defined as the summary of "Cooking", "Dish Washing", and "Food Preparation". "Clean" refers to "Cleaning Dwelling", "Heating", "Arranging", "Recycling", and "Other Household" tasks. "Garden" encompasses "Cleaning Garden" and "Gardening". "Textile" covers "Laundry", "Ironing", and "Other Textiles". "HHM" stands for "Household Management". "Child" refers to activities such as "Physical Care and Supervision of the Child", "Teaching the Child", "Reading or Playing with the Child", "Accompanying the Child", and "Other Childcare". "Pets" summarizes "Tending Pets", "Caring Pets", "Walking Pets", and "Other Pets". "House" includes "House Renovation", "Repairs to Dwelling", "Maintaining Equipment", "Vehicle Maintenance", and "Other Repair". "Shopping" means "Shopping", "Commercial Services", "Other Shopping", and lastly "Adult", which contains "Care of Adult Household Members", and "Other Tasks related to Adult Members". "Unspecified" describes other tasks that do not fit under any other description.

Replacement Cost Approach

As stated before, there are several approaches to determine the value of unpaid labor. As this thesis was inspired by Hildegard Kneeland, her replacement cost approach will be used. She proposed calculating the value of unpaid labor by the cost of replacing the housewife with a paid worker (Kneeland, 1929b). She calculated the value by using the average number of hours a housewife spends on each task per week and the wage rates of comparable paid occupations. To calculate the value of unpaid labor of women, the *MACT* categories' accompanying professions' salaries and the time spent on each task are used to compute the value of unpaid labor and the average time spent per week on unpaid labor. To calculate the salary, firstly, suitable professions for the eleven categories mentioned above were needed. Hence, the salaries for the professions of Assistants ("Shopping" and "HHM"), Caregivers ("Adult"), Cleaners ("Clean"), Cooks ("Cook"), Craftsmen ("House"), Gardeners ("Garden"), Launderers ("Textile"), Pet sitters ("Pets"), Teachers, and Kindergarten teachers ("Child") were obtained from several data sources (Eichinger, 2025; WKO, 2022e, 2022d, 2022g, 2022f, 2022b, 2022a, 2022c; younion, 2022b, 2022a). Secondly, a common time unit was needed, therefore the salaries were adjusted to a salary per minute. For the replacement cost approach, there are three different options to calculate the minute-based salary, depending on the data from the sources. In the case of a given gross monthly salary, the gross wage per minute is calculated by dividing the gross monthly salary by the average number of working hours per month (174) and the number of minutes per hour (60). With a given gross hourly wage, the wage is simply divided by the minutes per hour (60). If only the annual salary is given, the gross wage per minute is defined as the gross annual salary divided by the number of paychecks per year (14), the average working hours per month (174), and the minutes per hour (60). If needed, the prices were adapted to 2022 price levels, deflated by the Consumer Price Index (see Appendix Table 1 based on WKO Statistik (2025b)). To calculate the salary for each combination of gender, day of the week, parental status, educational level, employment level and age, the resulting salary per minute for each profession, as calculated before, was multiplied by the minutes spent on each task according to the data set and added up, represented by the column *Salary Total* in each corresponding subset.

Market Cost Approach

To check whether the results from calculating the cost of unpaid labor based on the corresponding professions seem reasonable, the value of unpaid labor was additionally calculated using services instead of salaries as a substitute.

Because most prices in this approach are fixed, unlike in the first approach, the salary is calculated per day rather than per minute. For the eleven categories, each daily salary is calculated as described below, the costs for facility and shopping, however, are still dependent on the time spent on the task. The tasks associated with household management and shopping (e.g., grocery purchases) were monetarily valued using the market cost of a personal assistant or household helper (Eichinger, 2025). The reported hourly wage was adjusted to 2022 price levels and converted to a per-minute rate by dividing it by 60. The care of elderly family members was valued using the market prices of professional nursing services obtained from *pflegeboerse.at* (2025). An average price was calculated across all levels of care needs, care quality, and travel costs applicable to Vienna (see Appendix Table 2). These prices were subsequently adjusted to 2022 price levels. As the fee structure is based on a 28-day period, the adjusted price was divided by 28 to obtain a daily cost. Cleaning services were valued using the price of a professional cleaning service listed on *extrasauber.at* (*Reinigungskräfte suchen und buchen*, 2025). The cost estimate is based on a four-room apartment with two bathrooms and a kitchen, totaling 102 m², corresponding to the average housing size in Austria (Statistik Austria, 2025a). The average service price was adjusted for 2022 price levels, multiplied by the assumed cleaning frequency (twice per month), and divided by the average number of days per month (30) to obtain a daily value (see Appendix Table 3). Cooking activities were valued by substituting the costs with two cold meals and one hot meal per day. The cold meals were priced using average costs of bread rolls from Austrian bakeries (Felzl, 2025; *Hausbrot*, 2025) (see Appendix Table 4). The cost of a hot meal was derived from a study conducted during the COVID-19 pandemic that aimed to assess the quality of delivered food, as many people ordered from food delivery services during the pandemic (Petra Lehner, 2021). All meal prices were adjusted to 2022 price levels using the Consumer Price Index (CPI) (see Appendix Table 1). Gardening activities were valued using the cost per square meter for lawn mowing (0.13 EUR per m², adjusted to 2022 price levels) as reported by *Kosten Für Rasenmähen: Was Sie Wissen Müssen - MyHammer* (2025). This rate was multiplied by the average garden size in

Austria (307 m²) (bellaflora, 2023) and the assumed mowing frequency (twice per month). The resulting monthly cost was divided by 30 to derive a daily value. Repair and household maintenance tasks were valued using average market prices for professional electricians, plumbers, and painters, based on data provided by Manuela Delapina (2024). The average of these service costs was calculated and adjusted to 2022 price levels (see Appendix Table 5). Laundry services were valued using the average cost per kilogram from several laundry service providers in Vienna (Andreas Furigan, 2025; Hammerl Textilcare, 2024; OS Textilreinigung, 2025; Putzerei Gottschalk, 2025; Putzerei Pavlov, 2025). The cost per kilogram was adjusted to 2022 prices and multiplied by the assumed laundry volume (8 kg per washing machine), frequency (4 washes per week), and number of weeks per month (4). The total monthly cost was then divided by 30 to obtain a daily value (see Appendix Table 6). Pet care was valued using the hourly cost of dog walking services, based on data from tiersitter24.at (2025) (see Appendix Table 7). The hourly rate was adjusted for inflation and multiplied by the assumed number of walking sessions per day (2). Education was valued using expenditures on school materials reported in the “Schulkostenstudie 2023/24” by Glaser & Schönherr (2024, p. 31). The annual schooling costs were divided by 12 months and further by the average number of days per month (30). The resulting daily value was adjusted to 2022 price levels using the CPI, with 2024 as the base year. To substitute early childhood education, the cost of meals provided in kindergartens was included. As public kindergartens in Vienna are largely free of charge apart from meal fees (Stadt Wien, 2022), the monthly meal cost was divided by 30 to obtain a daily value.

Opportunity Cost Approach

A third approach to calculating the value of unpaid labor is the opportunity cost approach. To calculate the value of unpaid labor, a value that would be equivalent to what a person could earn in the labor market instead of unpaid labor, given socioeconomic traits such as age, gender, or education. Used in this approach were the educational level and the employment level. The average income was estimated using the midpoint (rounded up) of the net income range (*HHC9A*) as a proxy for fixed income. This value was multiplied by 12 for annual income. To the resulting value, the associated tax burden was added, according to the (Bundesministerium Finanzen, 2026) (see Appendix Table 8).

Time-Use Survey 2008/09

The data is based on the diary entries of 8,234 interviewees over the age of nine. 12,422 households were interviewed, of which 4,757 households participated in the survey (Statistik Austria, 2016). The survey took place from the end of March 2008 until the beginning of April 2009. It was a random sample drawn through voluntary participation in the Microcensus. The participating households received a little present as compensation for their time (Statistik Austria, 2016). The interviewees were asked to list what they did for one day. Starting from 5 a.m. until 5 a.m. the next day. The distribution of weekdays was balanced throughout the year. Included were activities that lasted longer than 15 minutes. The diary assigned 84 time intervals, unlike the 2021/2022 study, which used 144 time intervals. The diary entries from the 2008/2009 study were measured using different time frames than those from the 2021/2022 study. The 2021/22 study was measured in 10-minute times frames, while the 2008/09 one was measured in 15- or 30-minute intervals, depending on the time of day. From 5 a.m. to 11 p.m., the time slots were measured in 15-minute intervals, from 11 p.m. to 5 a.m., the intervals were measured in 30-minute intervals (Statistik Austria, 2016). Due to these circumstances, some adaptation of the data was needed, and the columns of the data set counted in 30-minute intervals of the data set were duplicated to account for the differences in time measurement. The original data set, *ZVE_2008_09*, consists of 8,234 observations of 987 variables (Statistik Austria, 2010). After filtering for ages 20 to 64, the sample size was reduced to 5,787 individuals. Eventually, three individuals were removed from the data as the time spent on unpaid labor and paid labor exceeded what is possible in terms of time, and another nine individuals were removed due to incomplete data on time spent on paid labor. The resulting data sample contains 5,775 individuals, 3,163 women, and 2,612 men. The data was adapted to fit the calculations of the 2021 study. The same R code was used and adjusted as well as possible to fit the 2008/09 data, to have as little deviation as possible, and results that were obtained on the same basis. A subset was created including only the *HT_LNR*, the main activities at each time interval for each interviewee, and the household ID *asbper*. Then the *HT_LNRs* were counted and multiplied by 15 to obtain a minute overview. The number of children had to be calculated manually. The variable designation for the age groups was, for example, 18 or younger. Therefore, each age group included all children who were exactly that age or younger. For this study, it was not only relevant whether a household had children, but also the children's age, as for children under the age of six or seven (depending on the survey),

the salary of kindergarteners was used, and for older children, the salary of teachers. Hence, the younger age groups were subtracted from the older ones. This resulted in three different age groups, different from the 2021/22 data: 0-2 years, 3-5 years, and 6-17 years, rather than 0-2 years, 3-6 years, and 7-17 years. A subset was created that included the relevant socioeconomic information for each person. This included the household and person identification *asbper*, *WOTAG* (the day 1-5 Monday to Friday, 6-7 Saturday to Sunday), the adjusted *xkind3*, *xkind6* and *xkind18* (age groups 0-2 years, 3-5 years, and 6-18 years), *bsex* (gender, 1 for men, 2 for women), *balt* (age in numbers), *dstd* (hours in paid labor), *xdstd* (part-time up to 35 hours or full-time from 36 hours up), and *xhatlevel* (highest level of education (ISCED 1997)) (Statistik Austria, 2008a, 2008b). Then the subset including the socioeconomic information and the subset including the main activities, adjusted for time, were merged by common identifier *asbper*. The data was then filtered to include only people of the age between 20 and 64 to represent the working population. Based on the codebook presented by Statistik Austria (2008c), the accompanying household tasks were summed to fit the categories of the 2021 study and the description of Hildegard Kneeland. Similar to the 2021/22 study, the categories and tasks are almost identical. However, if a task was not mentioned by any interviewee, it was erased from the list of tasks. The categories are identical to the 2021/22 study, but the tasks assigned to the subordinate are slightly reduced as “Unspecified” is missing. “Cook” consists of “Cooking” and “Dish Washing”. “Clean” includes “Cleaning Dwelling”, “Heating”, “Arranging”, “Recycling”, “Others HH”. “Textile” covers “Laundry”, “Ironing”, and “Other Textiles” while “Garden” involves “Cleaning Garden” and “Gardening”, “Pets” involves “Caring Pets”, “Walking Pets”, and “Other Pets”. “House” is simply “House”, including similar tasks around maintenance of the functions of a house. “Shopping” refers to “Shopping” and “Commercial Service”, “HHM” refers to “HH Management” and “Child” encompasses “Physical Care/Supervision of the Child”, “Teaching the Child”, “Reading or Playing with the Child”, “Accompanying the Child”, and “Other Childcare” and lastly, “Adult” refers to “Care of Adult Family Members”.

Replacement Cost Approach

The calculation of the job salaries was the same as for the TUS 2021/22. For the price levels, 2022 salaries were used and later adjusted for 2009 price levels when calculating the GDP by using CPI. The average hours and salary were based on a single day, as the 2008/09 data only requested diary entries for one day, not two. The average daily hours were multiplied by 7 to

get a value of weekly hours or salary based on unpaid labor per week and then multiplied by 52 for the annual salary.

Calculation of Hours

The hours spent on unpaid labor for each *PID* in 2021/22, for each combination of gender, day of the week, parental status, educational level, employment level, or age, were calculated by summing the values across the eleven categories mentioned above. The average of each *PID*'s *SumHour* per subset represents the average value of each combination of gender and day of the week, parental status, educational level, employment level, or age. The hours spent on each combination are calculated on a daily basis (weekday or weekend), weekly basis (weekday * 5 + weekend * 2), and annual basis (weekly * 52). The same procedure was used to calculate the hours spent on unpaid labor in 2008/09. However, due to the nature of the data, the weekly value was calculated by multiplying the average daily value by 7.

Children

Children do have an undeniable influence on the time spent on household work and care work. If at least one of *Kidsu3*, *Kidsu7*, or *Kidso7*, for the 2021/22 study, or *xkind3*, *xkind6*, or *xkind18*, for the 2008/09 study, is equal to or greater than 1, that person is considered to be a parent, while if all categories stated above equal 0, that person is not a parent.

Education

The level of education is sorted according to the International Standard Classification of Education (ISCED) categorization of 2011 for the 2021/22 study and according to the 1997 version for the 2008/09 study.

The 2011 version of the ISCED includes nine levels (Statistik Austria, 2022b). Level 0 describes early childhood education, such as kindergarten education. Level 1 refers to primary education, such as a visit to a primary school. Level 2 is similar to middle school or secondary grade one. Level 3 then describes the secondary grade two or equivalent. The fourth ISCED level is non-tertiary post-secondary education, including intermediate and advanced specialized courses, schools for health care and nursing. Level 5 is the non-university tertiary education. It includes vocational academies, craft schools, and equivalents. Levels 6, 7, and 8 describe the university degrees bachelor's, master's, and doctorate, respectively. Compared to the 2011 version of the classification, the 1997 version only includes seven levels, where

the first five are similar to the 2011 approach, but the sixth level includes all of university education in one and does not differentiate between the levels of university qualification (Statistik Austria, 2022a).

Employment

In 2021/22, the classification for the employment level was done through self-assessment (Statistik Austria, 2024d). In 2008/09, part-time employment was defined as up to 35 hours per week, while 36 hours or more per week was considered full-time employment (Statistik Austria, 2008a).

Age

The 2021/22 study was categorized in five-year steps (Statistik Austria, 2024d), while the 2008/09 study gave exact ages of participants, which were then, for this thesis, sorted according to the five-year age groups of 2021/22 (Statistik Austria, 2008a) from age 20 to age 64.

Results

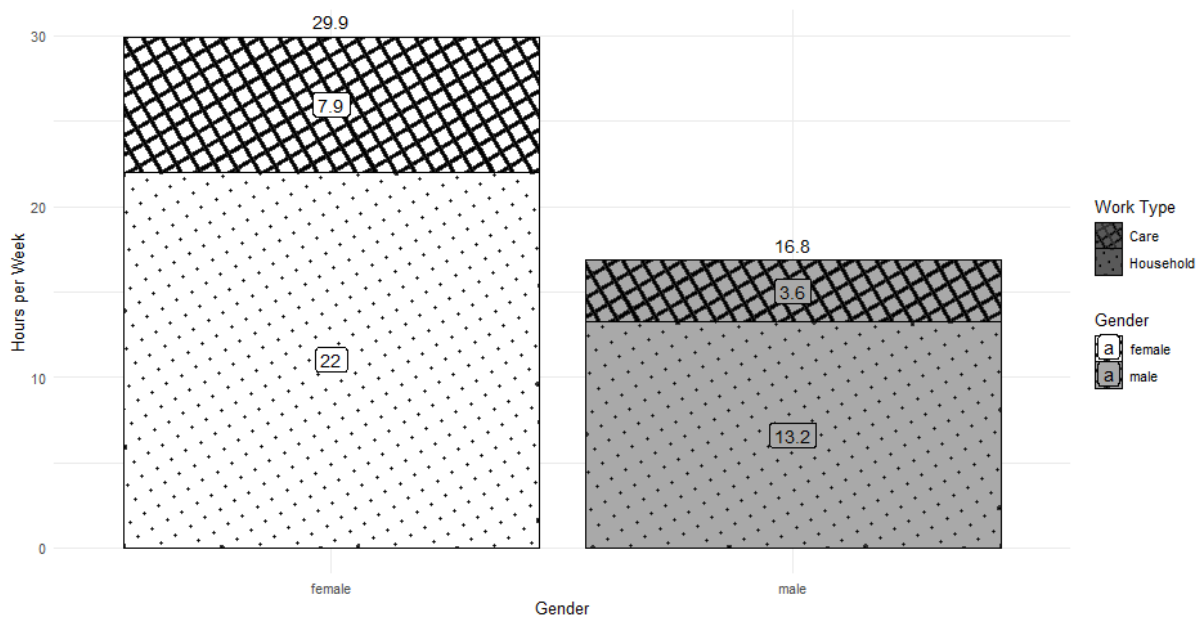


Figure 1: Average Weekly Hours Spent on Homemaking and Care Work, by Gender, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

As seen in Figure 1, in 2021/22, women spent almost twice as much time on household and care tasks as men. This applies to both household work and care work, including taking care of children and especially elderly household members. Women spent, on average, roughly 30 hours per week on unpaid labor tasks, of which 22 hours are spent on taking care of the household, including tasks such as cleaning, cooking, and laundry. Another eight hours were spent taking care of children and other family members. While the percentage share of allocation of time on both tasks was similar between the genders, men, on average, spent only 16.8 hours on unpaid labor. In Figure 2, one can see the average weekly time spent on unpaid labor in 2008/09. These values do not consider differences between educational levels, employment levels, or the presence of children or not. Both genders spent around 1/6 to 1/5 of their time on care work and the rest on other household tasks such as cleaning, cooking, or doing laundry. Women spent twice as much time on overall household and care work as men do. In total, they spent 25.7 hours per week on unpaid labor, of which 20.5 hours were spent on household tasks and 5.3 hours on childcare. On average, men spent 12.4 hours per week on household tasks and only spent two hours per week on the care work of their children (if existing). Compared to 2008/09, both genders spent more time in 2021/22 on care tasks, such

as childcare or caring for elderly family members, and more time on household chores. Hence, the overall time spent on unpaid labor has increased slightly.

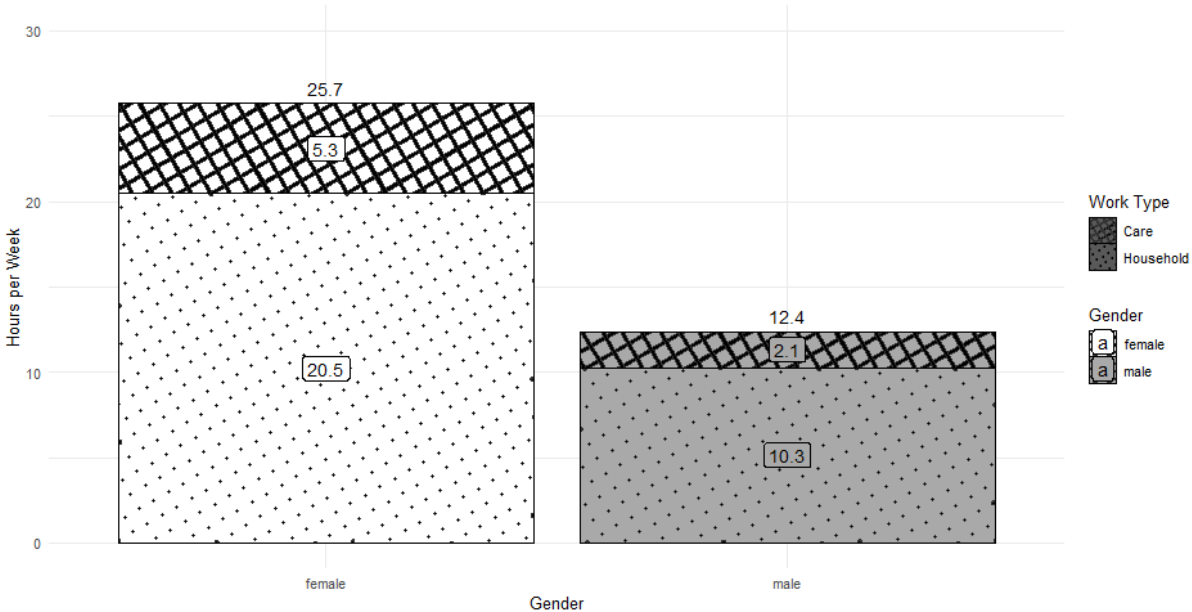


Figure 2: Average Weekly Hours Spent on Homemaking and Care Work, by Gender, AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

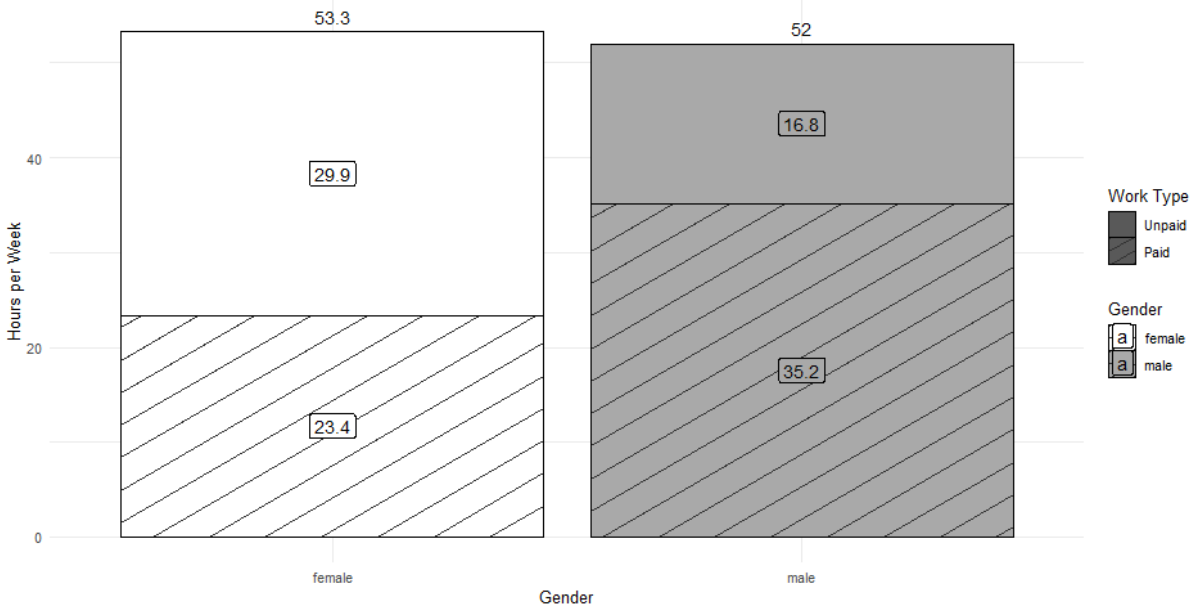


Figure 3: Average Weekly Hours Spent on Paid and Unpaid Labor, by Gender, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

As seen in Figure 3, the total labor time in 2021/22, between women and men, did not differ much, but the allocation of time spent on unpaid labor and paid labor is very different. Women were, based on their average time spent on paid labor, mostly part-timers and spent more time per week on household and care tasks than on paid labor, while the allocation for men was the opposite. As studies mentioned above have already stated, women do work slightly more than men do when combining unpaid and paid labor (Aslaksen & Koren, 1996; UNDP, 1995). These findings support the results from UNDP (1995) that men spent around two-thirds of their time on paid labor and one-third on unpaid labor. Figure 4 presents the average weekly hours spent on unpaid and paid labor by women and men in 2008/09. For women, their time is almost equally spent between unpaid and paid labor. Men spent around 75% of their time on paid labor and the rest on unpaid labor. Compared to 2008/09, in 2021/22, the overall time spent on labor went up slightly, both women and men spent more time on unpaid labor. Women also spent slightly more time on paid labor, while men slightly decreased their time spent on paid labor. Interestingly, the changes over time fit the findings from Aslaksen & Koren (1996) that in the 1970s men would spend roughly three-quarters of their time on paid labor and the rest on unpaid labor, and in the 1990s it had changed to men spending two-thirds and one-third of their time on paid and unpaid labor, respectively. Compared to other TUS results, the allocation of time for unpaid and paid labor aligns with findings in the United States. In 2014, women spent 25.4 hours on unpaid labor and 24.1 hours on paid labor, while men spent 15.6 hours on unpaid labor and 34.8 hours on paid labor (Blau & Winkler, 2018, Chapter 4). Additionally, the book by Blau & Winkler (2018, Chapter 4) also stated that women would spend less time on unpaid labor, contrary to the book's findings, however, in this study, women increased their time spent on unpaid labor. This could be due to the survey period being during the COVID-19 pandemic.

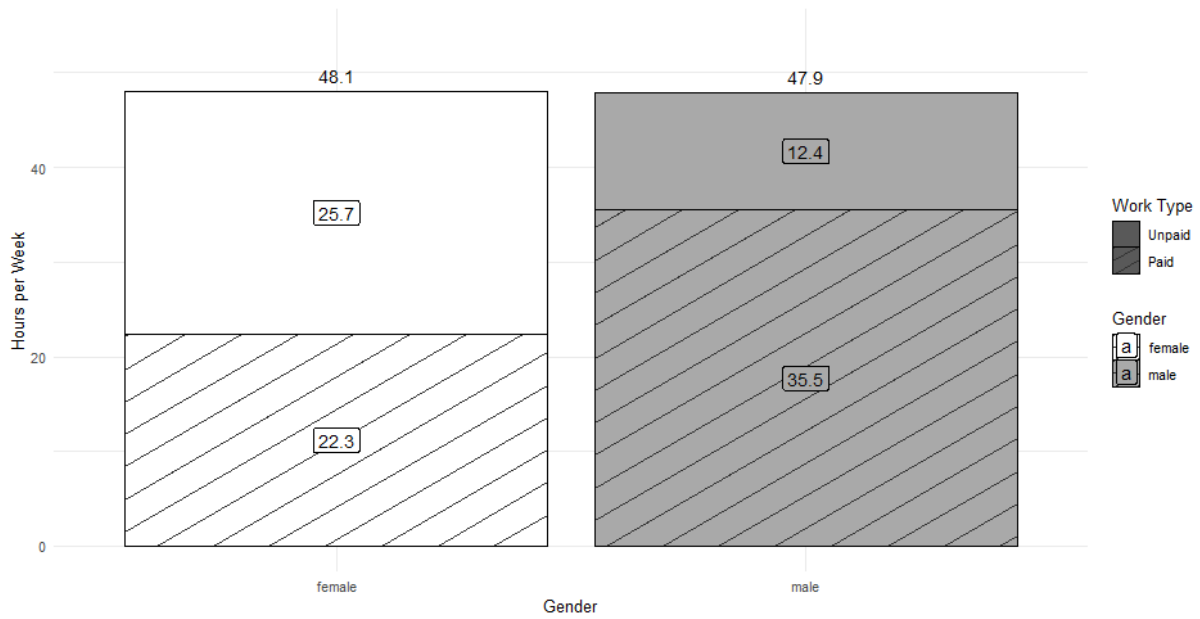


Figure 4: Average Weekly Hours Spent on Paid and Unpaid Labor, by Gender, AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

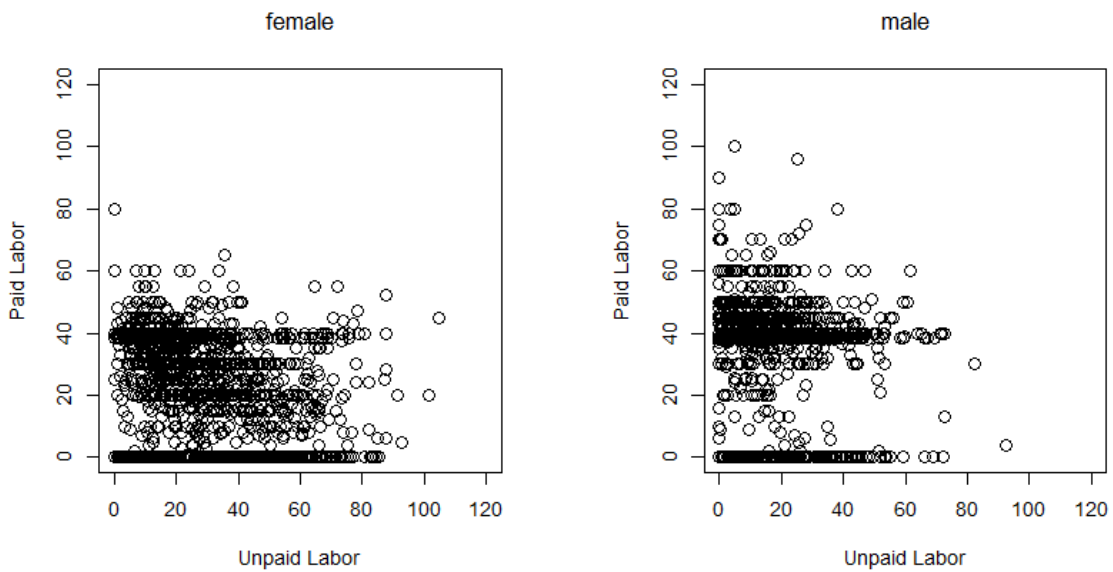


Figure 5: Scatterplot, Unpaid and Paid Labor Hours, by Gender, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

As shown in Figure 5, a scatterplot of the 2021/22 comparison of unpaid and paid labor, it is clear that more women than men were either not employed or employed part-time, while men mostly worked full-time. The range and variation of unpaid and paid labor of women differ much from that of men, where it clearly pools around 40 to 50 hours a week of paid labor and between zero and 50 hours of unpaid labor. Among men, it becomes apparent that

only a small proportion of men worked part-time. For women, one can see that even when employed, regardless of whether part-time or full-time, the time spent on unpaid labor was immense. The range of hours that men spent on paid work corresponds, for women, to the range of hours they spent on unpaid work. Figure 6 shows the distribution of unpaid and paid labor for women and men in 2008/09. Here as well, it seems as if women spent more time on unpaid labor than men do. While it appears that the upper limit for both genders is similarly spread, a slightly greater part of men spent more than 50 hours on paid labor compared to women in the same number of hours spent on paid labor. However, clearly more women than men worked less than 40 hours per week in paid employment. While the majority of women spent between 0 and 40 hours on paid labor, the majority of men spent 40 or more hours on paid labor. When looking at the individuals who only dedicate their time toward unpaid labor, the upper limit for women dominated that of men. The maximum for women is 100 hours per week, for men, it is 70. Compared to 2008/09, fewer women and men in 2021/22 spent extreme hours on paid labor. It appears that women in 2021/22 spent less time in either very long hours of paid work or very few hours of paid work. Instead, their working hours tend to cluster around 20, 30, or 40 hours per week, rather than showing a wider variation. For men, the working hours seem to cluster between 40 and 50 hours per week.

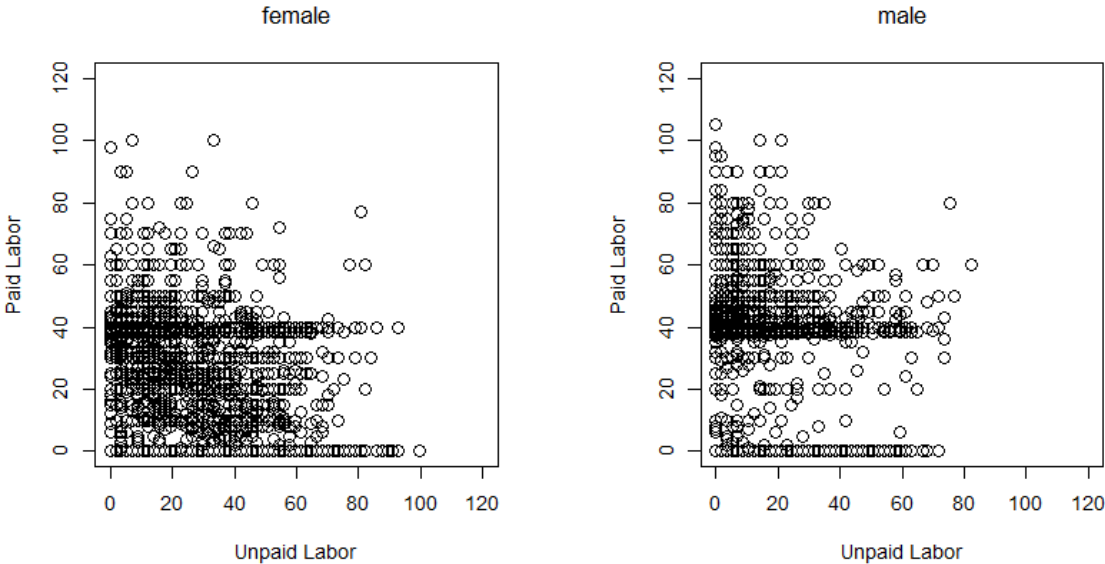


Figure 6: Scatterplot, Unpaid and Paid Labor Hours, by Gender, AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

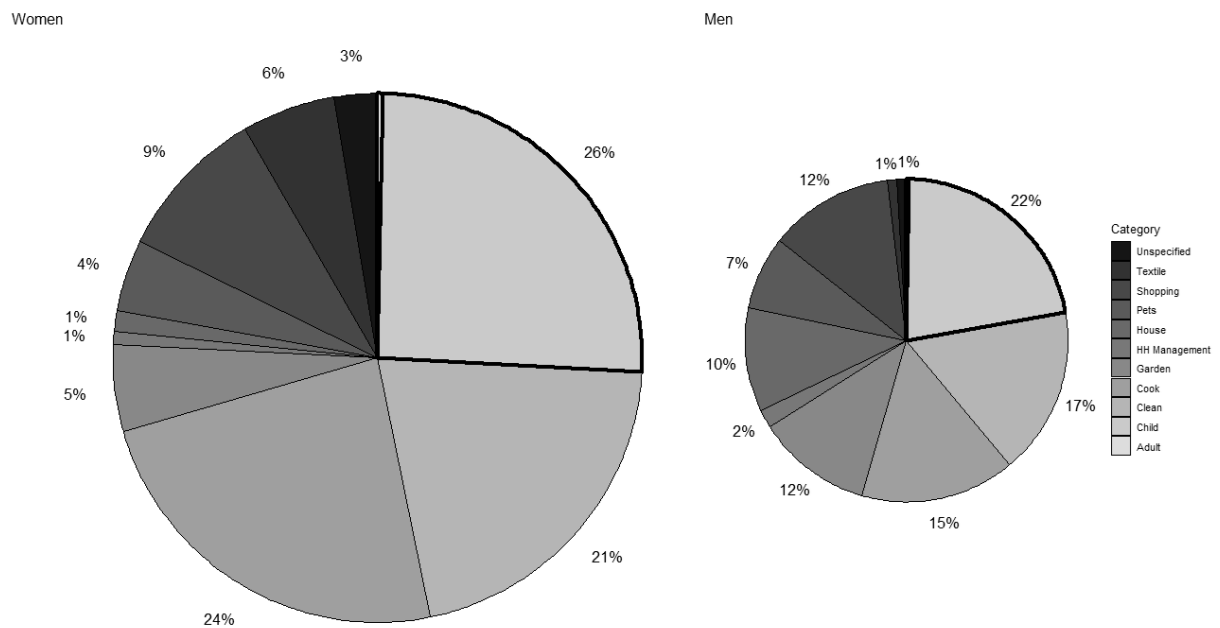


Figure 7: Percentage Share of Time Spent on Unpaid Labor, Proportional to Total Share of Time Spent on Unpaid Labor, by Gender, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

Figure 7 presents the allocation of time spent on household tasks, proportional to the overall time spent on household tasks by gender. In 2021/22, women accounted for roughly two-thirds (64%) of all time spent on unpaid labor, while men accounted for one-third (36%). Marked in thick lines are the shares of care tasks, including childcare and care for elderly family members, compared with household tasks. Both genders spent the biggest amount of their time on childcare, followed by cleaning and cooking. Women spent the least amount of their time on household management and taking care of the house, meaning repairs and maintenance of the house. Men spent the least amount of time on unspecified tasks and laundry. In 2008/09, women accounted for 72% of all unpaid labor, while men accounted for 28%. Comparing both survey results, time spent on care work increased for women and men, with the vast majority being spent on childcare, as has been found previously by Kelin et al. (2023).

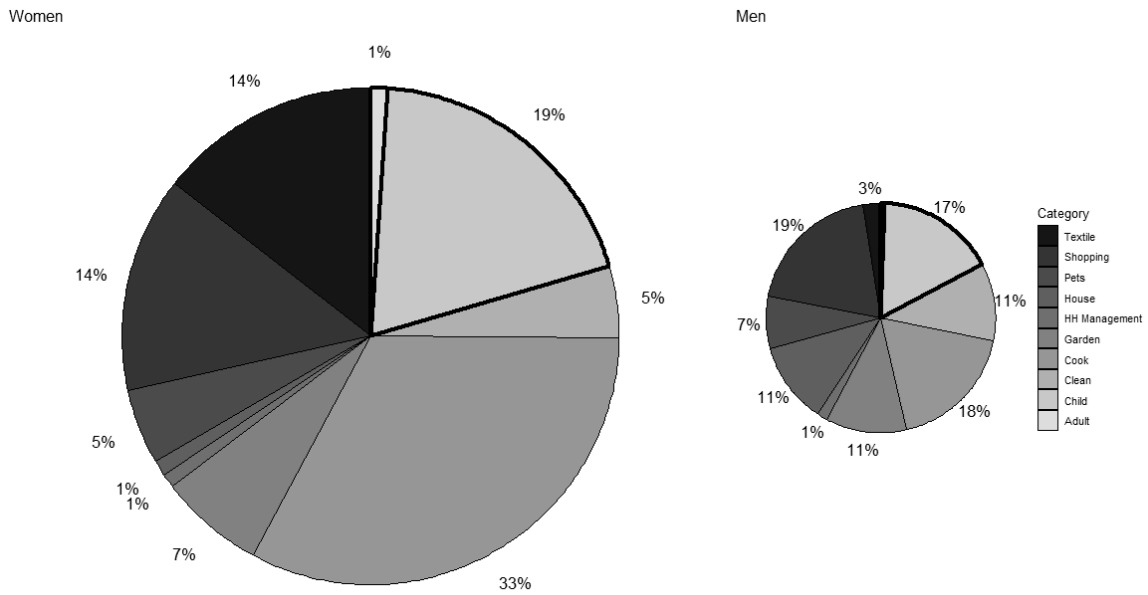


Figure 8: Percentage Share of Time Spent on Unpaid Labor, Proportional to Total Share of Time Spent on Unpaid Labor, by Gender, AT 2008/09

Source: TUS Austria 2008/09, Statistik Austria

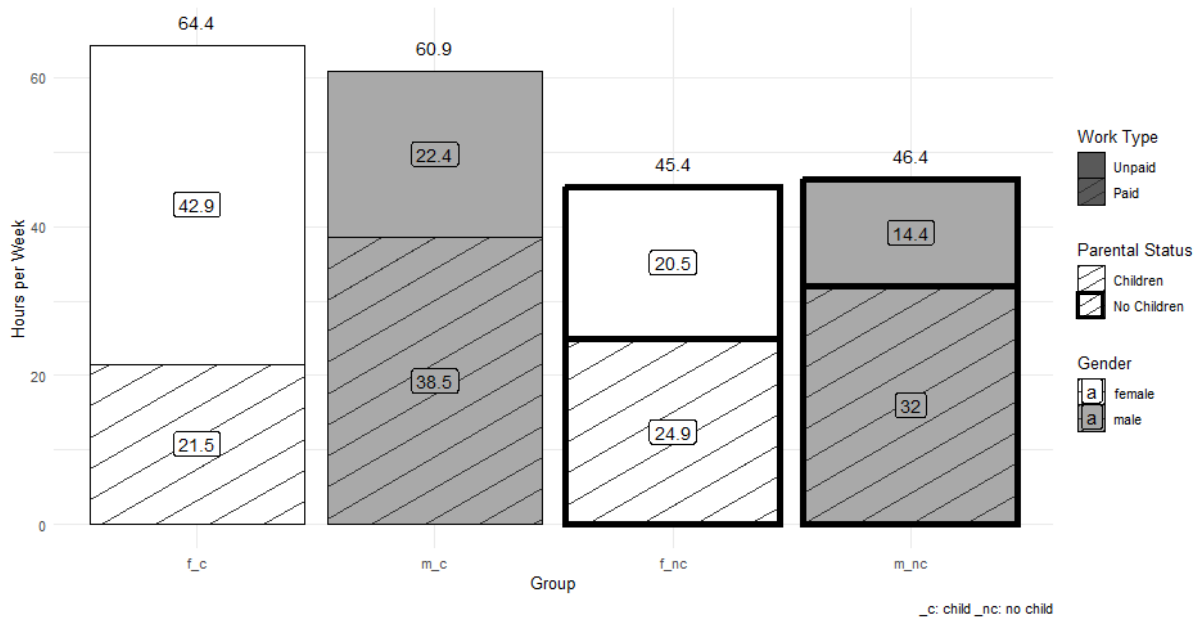


Figure 9: Average Weekly Hours Spent on Unpaid and Paid Labor, by Gender and Parental Status, AT 2021/22

Source: TUS Austria 2021/22, Statistik Austria

Whether one person has children has an immense influence on the amount of time spent on unpaid labor. As seen in Figure 9, women with children spent roughly 20 hours more per week

on household tasks and childcare, meaning the time spent on these tasks doubled when having children. While women, on average, spent less time on paid labor when having children, compared to not having children, men increased their time spent on paid labor when being a parent. Figure 10 presents the average weekly hours spent on paid and unpaid labor by gender and parental status in 2008/09. As in 2021/22, women and men with children spent more overall time on labor. While women spent slightly less time on paid labor when having a child than when not having a child, men worked around 10 hours more per week in paid labor. The same allocation of time spent on unpaid labor and paid labor from Figure 9 applies here as well. Women without children spent around half their time each on unpaid and paid labor, while men spent one-fourth on unpaid labor and three-quarters of their time on paid labor. Compared to 2008/09, men and women with children both spent 5 to 10 hours more, respectively, on labor in 2021/22. As indicated by the number of hours spent on unpaid labor, being a mother, childcare, and the resulting household care remained primarily the responsibility of mothers, as Balabanova (2007) also found.

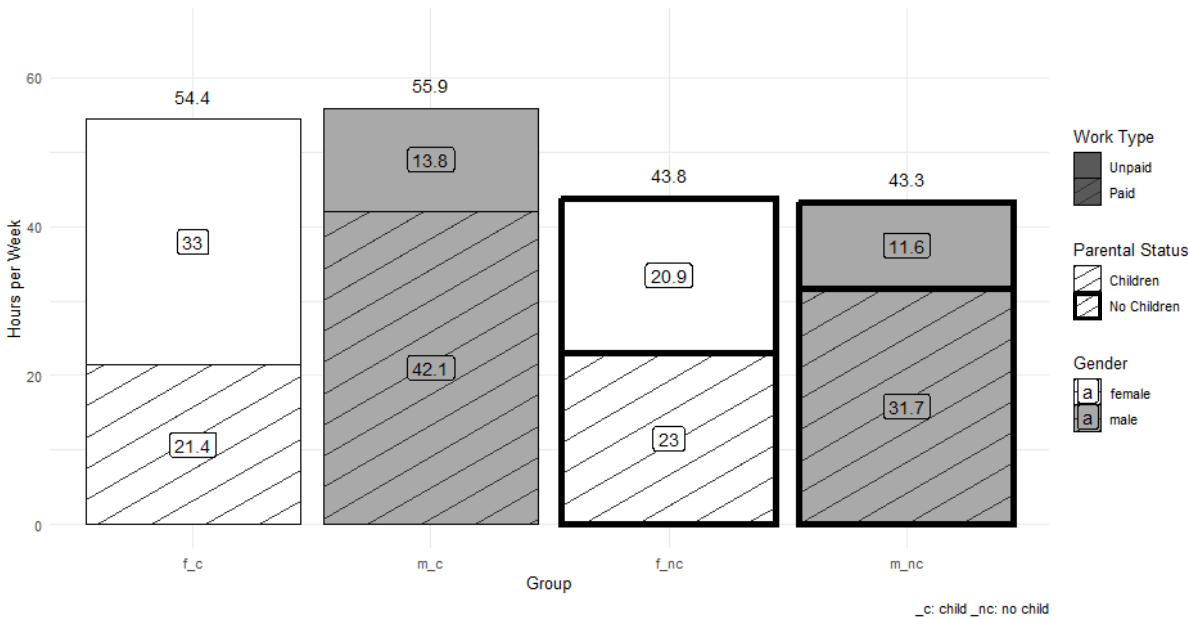


Figure 10: Average Weekly Hours Spent on Unpaid and Paid Labor, by Gender and Parental Status, AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

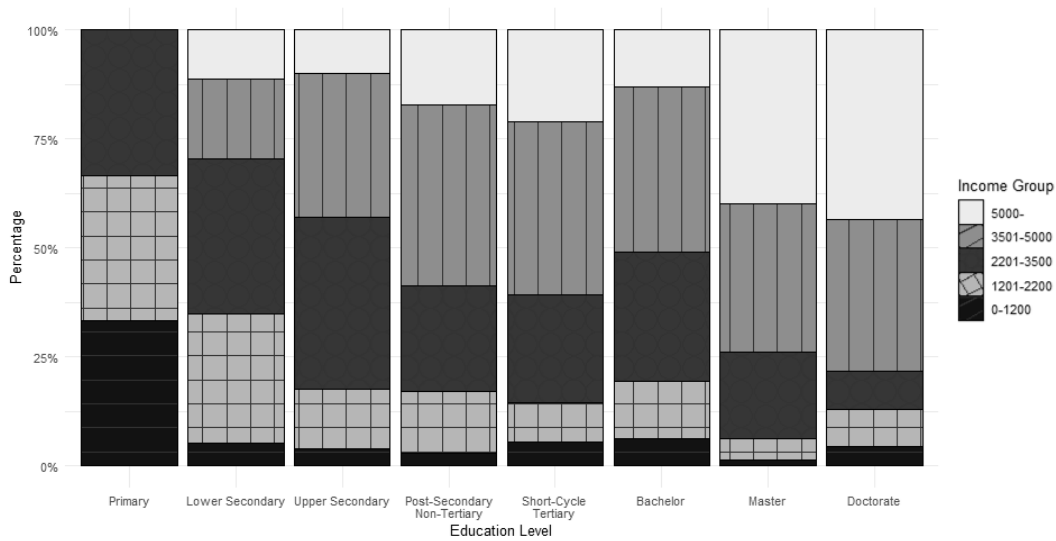


Figure 11: Income by Education Level, Women, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

Figure 11 and Figure 12 show the percentage share of income per education level. In both cases, for women and men, it is visible that the higher the educational level, the higher the average income. However, due to the nature of the data, only the household income in euros was available, but not personal income. Hence, it is unclear whether the income is truly associated with the educational level or not of women and men. It should be noted that the sample sizes for women and men with primary education and for men with post-secondary non-tertiary education were below 20.

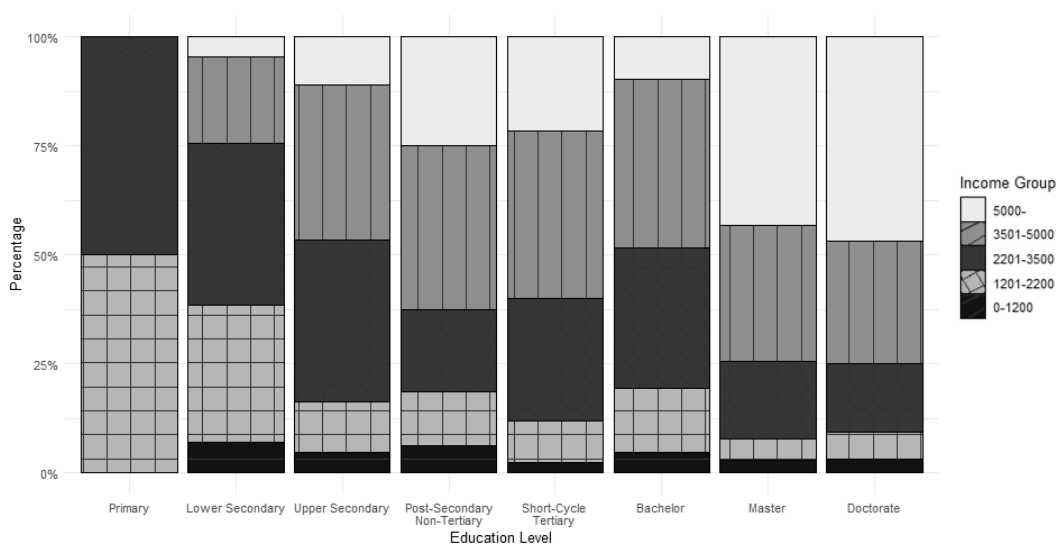


Figure 12: Income by Education Level, Men, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

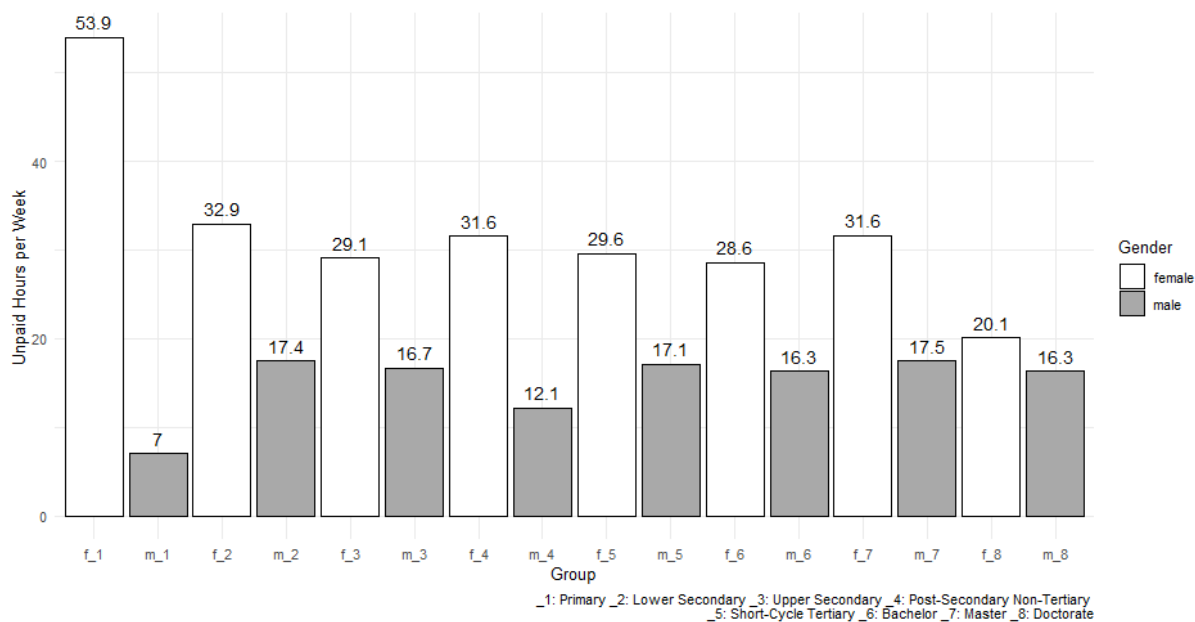


Figure 13: Average Hours Spent on Unpaid Labor, by Gender and Education Level (ISCED 2011), AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

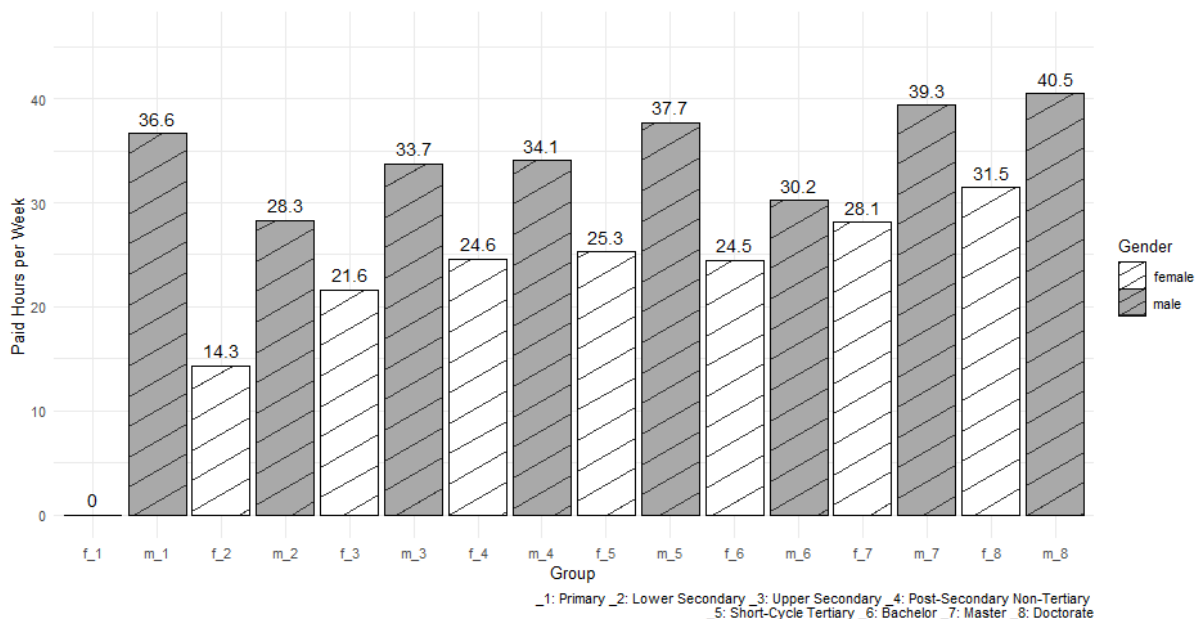


Figure 14: Average Hours Spent on Paid Labor, by Gender and Education Level (ISCED 2011), AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

In Figure 13 and Figure 14, the average time spent on unpaid labor per week in 2021/22, depending on the educational level, is presented. Noticeable here is that the educational level appears to have very little influence on the average time spent on unpaid labor. Women at the lowest and the highest levels of education were outliers, while women with education levels ISCED 2 to 7 were consistent with the time spent on unpaid labor. For men, education seems

to have an even more insignificant influence on the time spent on unpaid labor. For women, the higher the educational level, the more hours they would spend in paid labor. For men, the relationship between educational level and average paid labor hours appears not to have a clear direction. It is important to note that in both surveys, the sample sizes for women and men with primary education, as well as for men with post-secondary non-tertiary education, were below 20. Figure 15 shows the time spent on unpaid labor in 2008/09 by gender and educational level. Unexpectedly, in contradiction to the study from 2021/22, women with the lowest education spent the least amount of time on unpaid labor. Here again, the lowest and highest education levels were the outliers, as women with an education level between ISCED levels 2 and 5 showed a decrease in time spent on unpaid labor, the higher their education, but women with the highest level of education spent more time on unpaid labor, contrary to the assumption that with a higher level of education comes a decrease in unpaid labor (Kelin et al., 2023). Men did not show any relation between education and hours of unpaid labor, as has also been found by Kelin et al. (2023). At all levels of education, women spent about twice as much time on unpaid labor as men. Figure 16 shows a similar distribution of paid labor as in Figure 14. With an increase in education, women also increased their time spent in paid labor. With higher education levels, the same can be said about men. Comparing both surveys, it becomes apparent that in all education levels, women and men spent more time on unpaid labor in 2021/22 than they did in 2008/09.

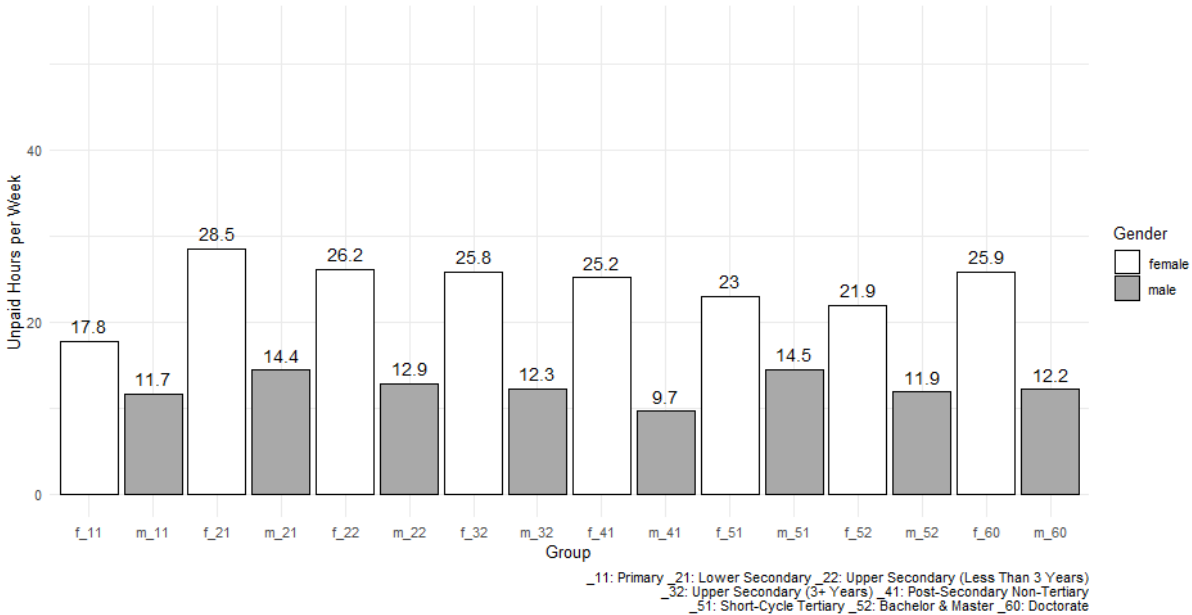


Figure 15: Average Hours Spent on Unpaid Labor, by Gender and Education Level (ISCED 1997), AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

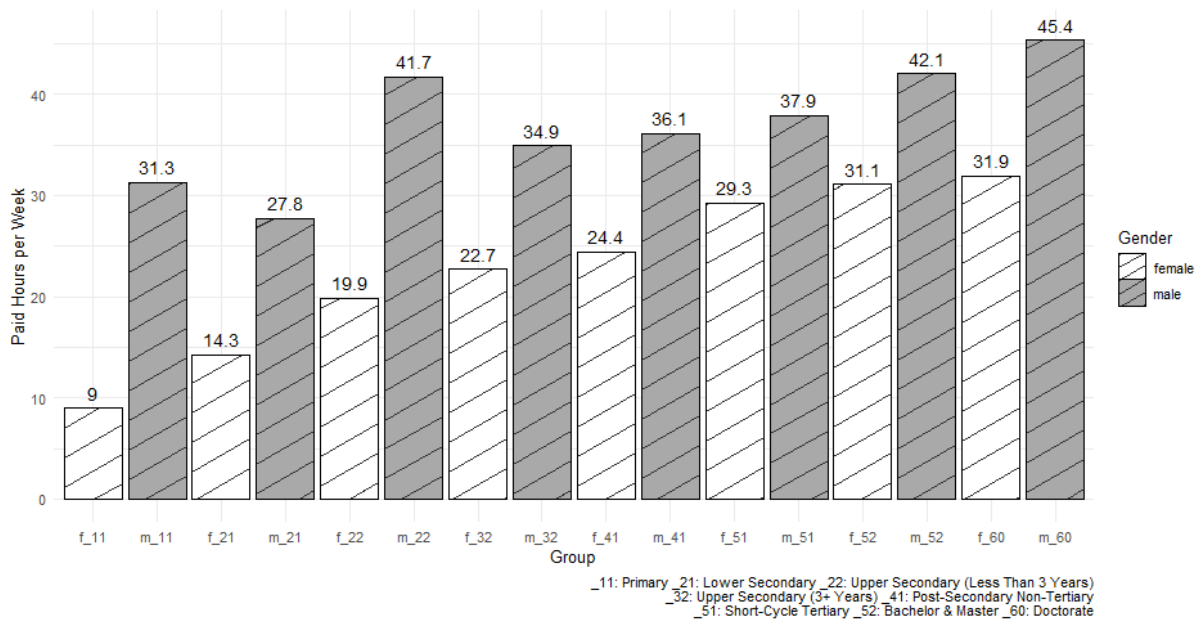


Figure 16: Average Hours Spent on Paid Labor, by Gender and Education Level (ISCED 1997), AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

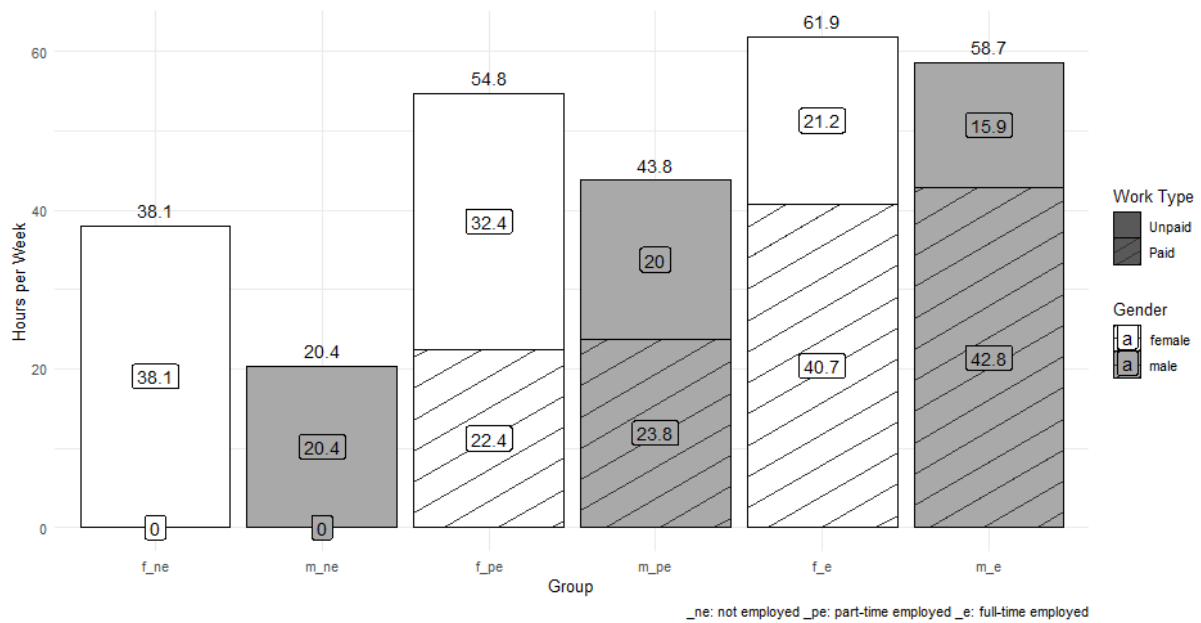


Figure 17: Average Weekly Hours Spent on Unpaid and Paid Labor, by Gender and Employment Level, AT 2021/22
 Source: TUS Austria 2021/22, Statistik Austria

On a weekly basis, as shown in Figure 17, women who were not employed spent on average 38.1 hours per week on unpaid labor in 2021/22. Men with the same employment level only averaged up to 20.4 hours per week. The variation between the employment levels did not influence the time spent on unpaid labor for men as much as it did for women. On average,

men across all employment levels spent between 15.9 hours per week on unpaid labor for full-time workers and 20.4 hours for men outside the labor force. Women spent less time on unpaid labor, the more hours they spent on paid labor. A woman who worked full-time spent another 21 hours a week on homemaking and care work, a part-time job next to her full-time employment. The average time spent on paid labor did not differ much between the genders, as shown in Figure 3. When unpaid and paid hours are combined, it shows that all women, whether employed or not, worked at least 38 hours a week, while men worked at least 20 hours a week. Women who worked part-time spent more time on unpaid labor than women who worked full-time, yet they worked the hours of a full-time job but were only compensated for half of it. The differences between the genders in unpaid labor hours decreased as paid working hours increased, but women still did more total labor than men.

Figure 18 shows the total time spent on labor per week in 2008/09, including unpaid and paid labor. As depicted below, women spent around twice as much time on unpaid labor in 2008/09 as did men. On average, women who were not employed spent 33.2 hours a week on homemaking and caregiving, while men who were not employed spent 14 hours less on unpaid labor. Women who were part-time employed spent more time on paid labor than men in the same employment level did and additionally spent more time on unpaid labor as well, almost twice as much on unpaid labor as men did. Looking at part-time employment, men spent roughly 12 hours less on unpaid labor, and, for full-time employees, around 7 hours less on care work and household tasks. While men spent slightly more time in full-time paid employment, women always performed more overall. Women spent at least 33 hours per week in paid or unpaid labor. It supports the idea that, in all cases, women do more unpaid labor than men, even when working almost exactly the same paid hours a week as men do. Comparing both studies, the overall trend was to spend more hours in part-time employment, while people in full-time employment spent less time on paid labor than in 2008/09. While in all employment levels, the time spent on unpaid labor increased.

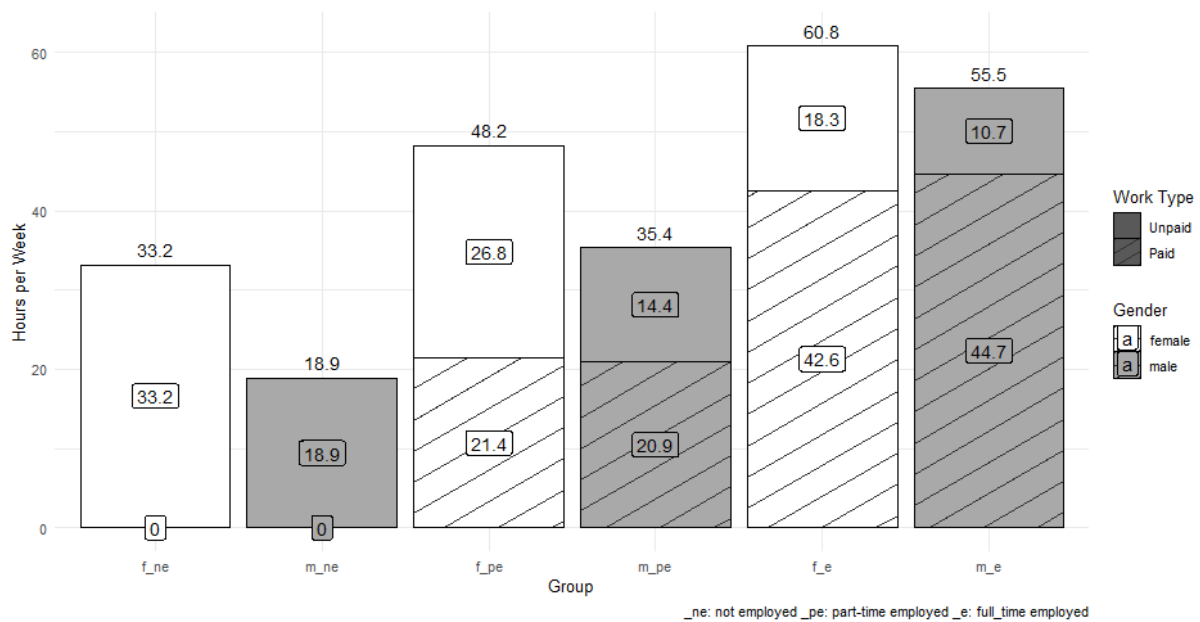


Figure 18: Average Weekly Hours Spent on Unpaid and Paid Labor, by Gender and Employment Level, AT 2008/09
Source: TUS Austria 2008/09, Statistik Austria

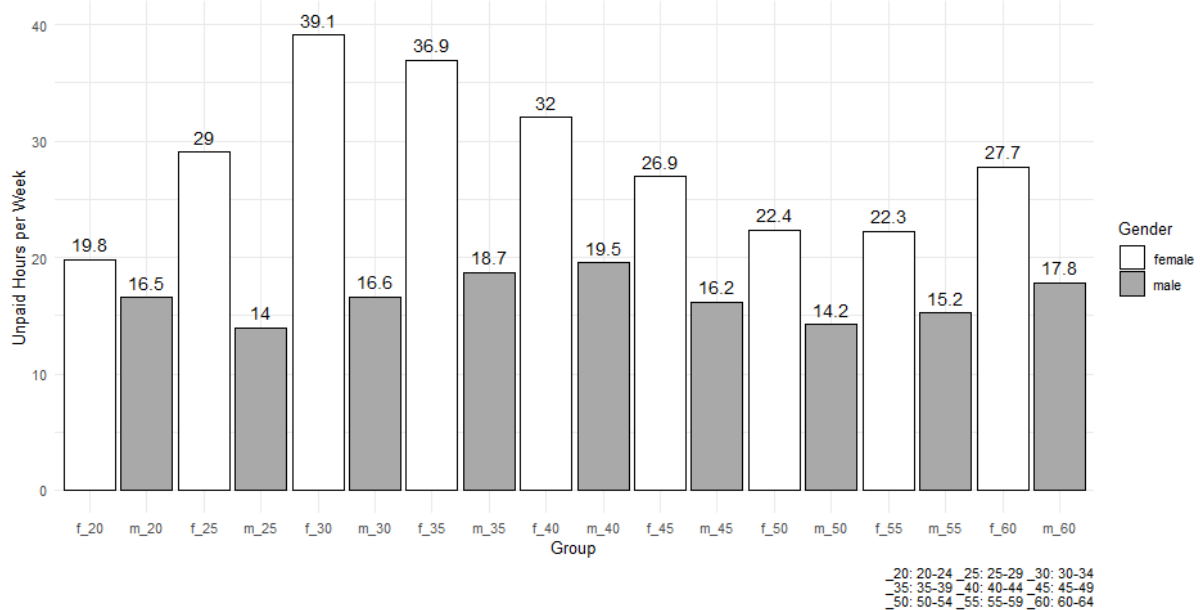


Figure 19: Average Weekly Hours Spent on Unpaid Labor, by Gender and Age, AT 2021/22
Source: TUS Austria 2021/22, Statistik Austria

Figure 21 depicts the average weekly time spent on unpaid labor by gender and age in Austria in 2021/22. The lowest level of unpaid labor is observed among women aged 20 to 24. From then on, the time spent on unpaid labor increased until it peaked at ages 30-34. Coincidentally, 30.3 years was also the average age at which women in Austria in 2022 had their first child (Klimont, 2023). From then on, a steep decrease, at age 50-54, the time spent on unpaid labor

has been reduced by half, likely due to children moving out of their parents’ house. After this point, with increasing age, the time spent on unpaid labor increased as well, which could be due to people becoming older and slower, which would be consistent with the findings of Kelin et al. (2023). For men, age did not appear to be as relevant for the time spent on unpaid labor. There is a slight increase between ages 30 and 40, but overall, men show a small fluctuation across age groups, whereas the age-related pattern is more pronounced for women. Figure 20 shows the average time spent on unpaid labor in 2008/09, divided by gender and age. The results are quite similar to those from the 2021/22 study. Between ages 30 and 45, the time spent on unpaid labor was highest for women. Then it slowly decreased and increased again from age 50 onward. The age at which women first became mothers was 28 in 2009 (United Nations Economic Commission for Europe, 2025). Compared with 2021/22, women in 2008/09 spent less time on unpaid labor in their 30s. While in 2021/22 women spent around 39 hours per week on unpaid labor, in 2008/09 the value was way lower, at 30 hours. With increasing age, the time spent on unpaid labor approached the level it was in their 30s. Men showed less pronounced differences across age groups. The most time spent on unpaid labor was at age 60-64. Comparing both studies, rather than alignment, between the genders, what can be seen are more extreme disparities between the genders and the age groups. Again, this could be due to COVID-19 and the increased time spent at home.

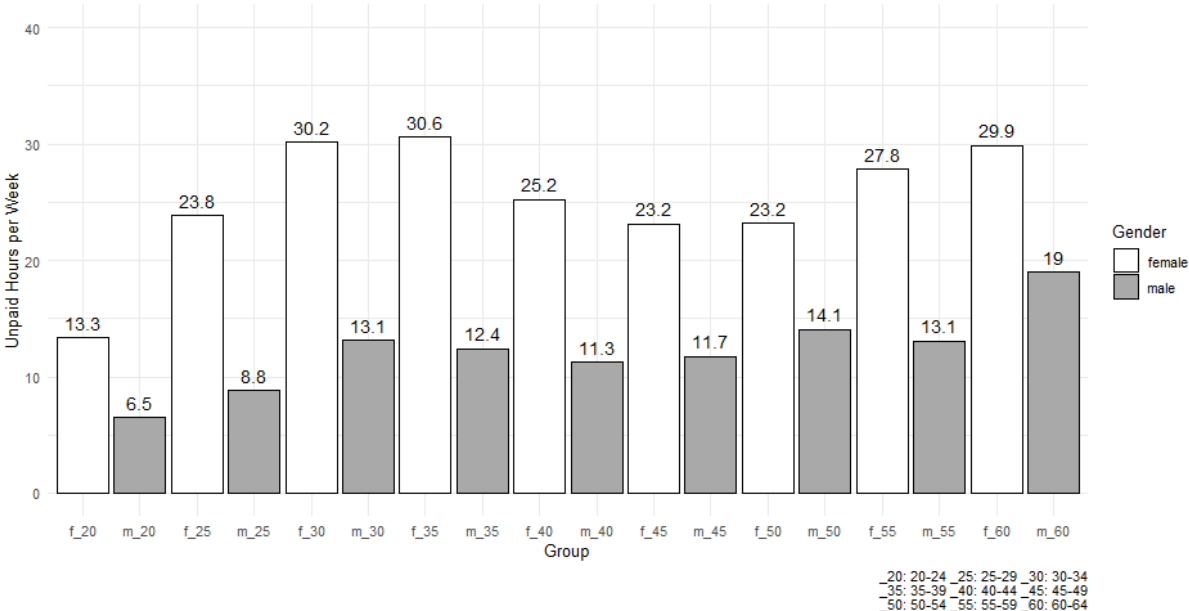


Figure 20: Average Weekly Hours Spent on Unpaid Labor, by Gender and Age, AT 2008/09
 Source: TUS Austria 2008/09, Statistik Austria

Replacement Costs, Market Costs, and Opportunity Costs

Approach	Gender	no employment	part-time employment	full-time employment
replacement cost	female	26,518.95	22,971.96	14,758.34
market cost	female	21,311.89	19,569.55	14,921.54
opportunity cost	female	48,021.24	59,640.00	64,856.57
replacement cost	male	13,259.01	14,203.82	11,358.07
market cost	male	20,207.92	16,601.98	15,934.97
opportunity cost	male	49,064.62	51,648.22	61,823.52

Table 3: Annual Salary in Euros, Comparison of Replacement Cost, Market Cost, and Opportunity Cost Approaches, by Gender and Employment Level, 2021/22

Source: TUS Austria 2021/22, Statistik Austria; Eichinger, 2025; WKO, 2022e, 2022d, 2022g, 2022f, 2022b, 2022a, 2022c; younion, 2022b, 2022a ; Andreas Furigan, 2025; bellaflora, 2023; Eichinger, 2025; Felzl, 2025; Glaser & Schönherr, 2024; Hammerl Textilcare, 2024; Hausbrot, 2025; Kosten Für Rasenmähen: Was Sie Wissen Müssen - MyHammer, 2025; Reinigungskräfte suchen und buchen, 2025; Manuela Delapina, 2024; OS Textilreinigung, 2025; Petra Lehner, 2021; pflegeboerse.at, 2025; Putzerei Gottschalk, 2025; Putzerei Pavlov, 2025; Stadt Wien, 2022; Statistik Austria, 2025a; tiersitter24.at, 2025

Table 3 compares the replacement cost approach, the market cost approach, and the opportunity cost approach by gender and employment level. Under the replacement cost approach, women would always earn more than men. This pattern holds both when examining differences in employment levels and when examining educational levels. In Table 4, which presents the three approaches by educational level, differences between educational levels and gender reach up to 35,000 EUR. However, the group of women with an ISCED 1 education level consists of only three individuals. Notably, the lowest potential salary of women is still higher than the highest potential value calculated for men. The market cost approach yields results similar to those of the replacement cost approach. However, some tasks are overvalued compared with the replacement cost approach, while others are undervalued (see Appendix Table 9). As shown in Figure 7 and Figure 8, men spent more of their time on tasks such as house maintenance, gardening, or grocery shopping. In the market cost approach, house maintenance and repair work are among the highest-valued tasks (see Appendix Table 9). Hence, men’s unpaid labor is valued higher under the market cost approach than under the replacement cost approach. Additionally, since most services have a fixed price, except “Shopping” and “Assistants”, the variation across gender and employment or education level does not depend on time spent on each task, but rather on the number and type of tasks performed. In contrast to the replacement cost approach, the overall market cost values do not differ much between women and men. The differences between the replacement approach and the market cost approach for women range from 150 EUR for full-time employment to 5,000 EUR for those not employed. In contrast, the deviation between the two

approaches is more pronounced for men. The difference amounts to between 2,000 EUR and 7,000 EUR. The opportunity cost approach shows an even smaller differentiation between the genders when evaluating it based on the level of education. However, opportunity costs are calculated using the average net income per household rather than individual income. Hence, men's income is included as a basis for a woman's opportunity cost in the labor market, depending on employment or educational level. Notably here, opportunity costs for women in employment are higher than for men, reflecting women's higher educational levels (Bundeskanzleramt, 2022). Across all three approaches, the opportunity cost for women is higher than the cost of substituting household tasks under the replacement-cost or market-cost approaches. From a financial perspective (ignoring taxes and social benefits), under this model, every household would be better off if women participated in the labor force. Especially when the losses due to the gender pay gap are added.

Approach	Gender	ISCED 1	ISCED 2&3	ISCED 4	ISCED 5	ISCED 6&7&8
replacement cost	female	41,563.30*	19,991.29	22,033.33	20,788.15	22,692.78
market cost	female	16,657.63*	19,236.94	20,815.49	18,053.27	16,778.16
opportunity cost	female	27,295.00*	54,051.36	59,976.00	61,019.54	65,362.76
replacement cost	male	5,590.20*	11,534.03	8,073.87*	12,246.13	12,511.23
market cost	male	3,640.23*	16,902.59	10,107.29*	17,979.87	15,345.79
opportunity cost	male	36,172.50*	54,960.32	60,952.50*	61,975.85	66,436.81

* n < 20

Table 4: Annual Salary in Euros, Comparison of Replacement Cost, Market Cost, and Opportunity Cost Approaches, by Gender and Employment Level, 2021/22

Source: TUS Austria 2021/22, Statistik Austria; Eichinger, 2025; WKO, 2022e, 2022d, 2022g, 2022f, 2022b, 2022a, 2022c; youunion, 2022b, 2022a; Andreas Furigan, 2025; bellaflora, 2023; Eichinger, 2025; Felzl, 2025; Glaser & Schönherr, 2024; Hammerl Textilcare, 2024; Hausbrot, 2025; Kosten Für Rasenmähen: Was Sie Wissen Müssen - MyHammer, 2025; Reinigungskräfte suchen und buchen, 2025; Manuela Delapina, 2024; OS Textilreinigung, 2025; Petra Lehner, 2021; pflgeboerse.at, 2025; Putzerei Gottschalk, 2025; Putzerei Pavlov, 2025; Stadt Wien, 2022; Statistik Austria, 2025a; tiersitter24.at, 2025

Average Income

	no employment	part-time employment	full-time employment
female unpaid labor	26,518.95	22,971.96	14,758.34
female paid labor	0.00	23,422.00	43,713.00
total female labor	26,518.95	46,393.96	58,471.34
+ 18.7% gender pay gap	31,477.99	55,069.63	69,405.48
male unpaid labor	13,259.01	14,203.82	11,358.07
male paid labor	0.00	23,740.00	49,902.00
total male labor	13,259.01	37,943.82	61,260.07

Table 5: Annual Salary in Euros, Based on Unpaid and Paid Labor, by Gender and Employment Level, AT 2021/22
Source: TUS Austria 2021/22, Statistik Austria; Allgemeiner Einkommensbericht 2024, Court of Audit Austria

This measure compares the average annual gross salary across all employment levels and adds the estimated value of unpaid labor based on the previous calculations. Table 5 presents the annual gross salary based on the calculations above, alongside the values of the average gross income for full-time and part-time employees from Table 8 of the Allgemeiner Einkommensbericht 2024, published by the Court of Audit Austria (Rechnungshof Österreich, 2024, p. 49). It shows that in two out of three cases, if unpaid labor were valued in monetary terms, women would be the overall breadwinners. Only in the case of full-time employment, the total salary of a man would be slightly higher than that of a woman in the same position. And this is most likely not due to men working more and harder, but due to the gender pay gap, where women get paid roughly 20% less for the same job (Statistik Austria, 2025b). If these 18.7% were added to the total of women’s labor, this would result in a total annual salary of 69,405.48 EUR and would make women the higher income earners in all cases. This supports Hildegard Kneeland’s findings and the 1995 UN report, which argues that women would be the true breadwinners if all of their work were valued fairly. Based on Table 62 of the Allgemeiner Einkommensbericht 2024 from the Court of Audit Austria (Rechnungshof Österreich, 2024, p. 146) and the values of unpaid labor calculated before, Table 6 shows a comparison across educational levels. The results are the same as when comparing the employment levels in Table 5. The income gaps between women and men are not extreme, in two out of five cases, women would be the higher income earner. However, it has to be said that for ISCED level 1, one of the two cases, the sample size is below 20. When factoring in the losses for women due to the gender pay gap, women would be the main income earner in all five cases, earning up to 10,000 EUR more per year than men.

	ISCED 1	ISCED 2&3	ISCED 4	ISCED 5	ISCED 6&7&8
female unpaid labor	41,563.30*	19,991.29	22,033.33	20,788.15	22,692.78
female paid labor	30,295.49*	35,537.76	41,638.00	42,507.04	56,896.61
total female labor	71,858.79*	55,529.05	63,671.33	63,295.19	79,589.39
+ 18.7% gender pay gap	85,296.38*	65,912.99	75,577.86	75,131.39	94,472.61
male unpaid labor	5,590.20*	11,534.03	8,073.87*	12,246.13	12,511.23
male paid labor	37,835.49*	46,327.62	50,373.70*	54,972.86	72,451.74
total male labor	43,425.69*	57,861.65	58,447.57*	67,218.99	84,962.97

* n < 20

Table 6: Annual Salary in Euros, Based on Unpaid and Paid Labor, by Gender and Educational Level, AT 2021/22
Source: TUS Austria 2021/22, Statistik Austria; Allgemeiner Einkommensbericht 2024, Court of Audit Austria

Share of GDP

Female				
Category	Group	Count	Avg. Salary p.p (EUR)	Value (EUR)
Employment Level	Employed	2,001,000		
	Unemployed	728,482		
Employed	Full-time (Count)	986,493	14,758.34	14,559,002,037.50
	Full-time (Share %)	49.30		
	Part-time (Count)	1,014,507	22,971.96	23,305,213,847.46
	Part-time (Share %)	50.70		
Unemployed	Unemployed (Total)	728,482	26,518.95	19,318,575,374.95
Totals and GDP Share	Total Income Value			57,182,791,259.91
	Austria GDP			449,380,000,000.00
	GDP Share (%)			12.72
Male				
Category	Group	Count	Avg. Salary p.p (EUR)	Value (EUR)
Employment Level	Employed	2,218,500		
	Unemployed	554,463		
Employed	Full-time (Count)	1,938,969	11,358.07	22,022,952,264.64
	Full-time (Share %)	87.40		
	Part-time (Count)	279,531	14,203.82	3,970,409,130.77
	Part-time (Share %)	12.60		
Unemployed	Unemployed (Total)	554,463	13,259.01	7,351,630,611.75
Totals and GDP Share	Total Income Value			33,344,992,007.17
	Austria GDP			449,380,000,000.00
	GDP Share (%)			7.42
	Combined GDP Share (%)			20.14

Table 7: Employment, Unemployment, and GDP Share, by Gender, AT 2021/22

Source: TUS Austria 2021/22, Statistik Austria; STATcube, 2025; Statistik Austria, 2024b, 2024a; WKO Statistik, 2025c

Based on various datasets from Statistik Austria (STATcube, 2025; Statistik Austria, 2024a) detailing the number of women in Austria and labor employment rates, the total number of women both inside and outside the labor force was calculated. Due to the nature of the data used, there is no differentiation between people actively looking for employment, those who are currently unemployed, and people who do not engage in paid labor at all. Hence, everyone at the time point of the survey is considered outside the labor force. The analysis focused on

women ages 20 to 64. The number of non-employed women was then derived by subtracting the number of employed women from the total. In the year 2022, 50.7% of employed women were working part-time, and 49.3% (Statistik Austria 2024b) were working full-time. Based on this, the number of women working full-time was 986,493, while 1,014,507 were working part-time, adding up to a total of 2,001,000 employed women. The total number of women aged 20 to 64 in Austria was 2,729,482, leaving 728,482 women outside the labor force (STATcube, 2025). To calculate the share of unpaid female labor of GDP, the total number of women inside and outside the labor force was multiplied by the salaries calculated based on the method described before. In 2022, the estimated monetary value of unpaid labor performed by women in Austria was approximately 57.2 billion euros. The GDP in Austria in 2022 equaled 449.38 billion euros (WKO Statistik, 2025c), resulting in a percentage share of unpaid female labor as a share of GDP of 12.72%. Based on the same approach, the share of unpaid labor of men of the GDP equals 7.42%. Combining both values, the total share of unpaid labor in Austria in 2021/22 amounts to 20.14% of GDP. This is more than the biggest industries of mining at 16%, or public administration, education and teaching, and health and social services, also at 16% (WKO Statistik, 2025c).

For the calculation of the 2008/09 values, the same method as for 2021/22 was used. The numbers for full-time employed and part-time employed had to be slightly adapted, as the multiplication with the percentage share of full-time and part-time employment resulted in a decimal number, but humans only exist as a whole. As the 2008/09 values were previously calculated based on 2022 prices, the *Total Income Value* was adjusted for 2009 prices based on the report “Wirtschaftslage und Prognose” from WKO Statistik (2025b) (see Appendix Table 1). In 2009, the share of unpaid labor of women of GDP was 11.37%. The share of unpaid male labor was 5.76%. Comparing both years, the share of female unpaid labor increased by 1.35%-points, while the share of male unpaid labor increased by 1.66%-points. While both values increased, women still shoulder the greater share of unpaid labor.

Female				
Category	Group	Count	Avg. Salary p.p (EUR)	Value (EUR)
Employment Level	Employed	1,739,900		
	Unemployed	826,480		
Employed	Full-time (Count)	990,003*	12,229.84	12,107,581,024.17
	Full-time (Share %)	56.90		
	Part-time (Count)	749,897*	18,841.50	14,129,179,035.03
	Part-time (Share %)	43.10		
Unemployed	Unemployed (Total)	826,480	21,888.74	18,090,606,209.08
Totals and GDP Share	Total Income Value			44,327,366,268.28
	Total Income Value, Adjusted			32,536,286,840.92**
	Austria GDP			286,270,000,000.00
	GDP Share (%)			11.37
Male				
Category	Group	Count	Avg. Salary p.p (EUR)	Value (EUR)
Employment Level	Employed	1,984,100		
	Unemployed	573,027		
Employed	Full-time (Count)	1,809,499*	7,634.66	13,814,914,750.69
	Full-time (Share %)	91.20		
	Part-time (Count)	174,601*	9,964.01	1,739,724,693.03
	Part-time (Share %)	8.80		
Unemployed	Unemployed (Total)	573,027	12,079.21	6,921,715,835.57
Totals and GDP Share	Total Income Value			22,476,355,279.29
	Total Income Value, Adjusted			16,497,644,775.00**
	Austria GDP			286,270,000,000.00
	GDP Share (%)			5.76
	Combined GDP Share (%)			17.13

* rounded to the next full digit

** adjusted for 2009 price level

Table 8: Employment, Unemployment, and GDP Share, by Gender, AT 2008/09

Source: TUS Austria 2008/09, Statistik Austria; STATcube, 2025; Statistik Austria, 2024a, 2024b; WKO Statistik, 2025c

EU Comparison

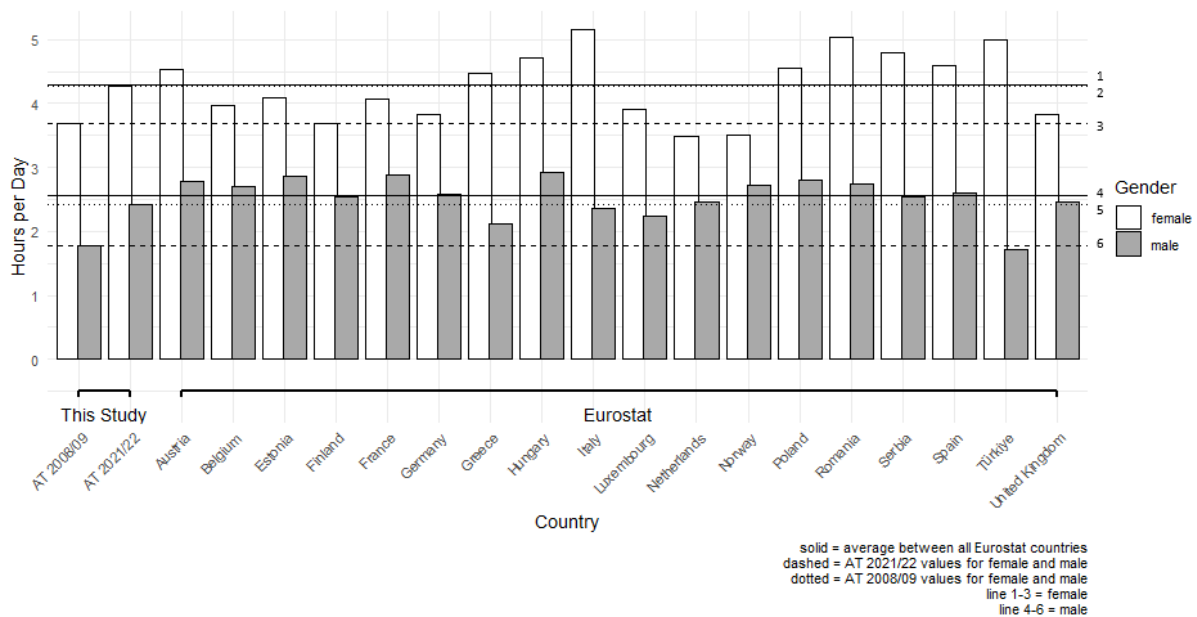


Figure 21: EU Comparison of Average Hours per Day Spent on Unpaid Labor, by Gender and Country
 Source: TUS Austria 2021/22, Statistik Austria; TUS Austria 2008/09, Statistik Austria; Eurostat 2019

Figure 21 shows a country comparison of the average time spent on unpaid labor by both genders in comparison of countries of the EU and candidate countries based on the 2010 HETUS wave (Eurostat, 2019), with data collected between 2008 and 2015, including 18 countries, of which 15 were EU member countries, as well as Norway, Serbia, and Türkiye. Shown in the figure above are the results from this study, compared with results from Eurostat. What is striking is the difference between this study's result of the Time-Use Survey of 2008/09 and the result of Eurostat. For both genders, the time spent on unpaid labor is underestimated, likely due to other filter options in the dataset. In this study, only people aged 20 to 64 were considered. Another noticeable difference is between the results of the 2021/22 study and those of the 2008/09 study. Contrary to what one would expect, time spent on unpaid labor increased by roughly 35 minutes per day for both genders. However, the 2021/22 TUS was conducted during the COVID-19 pandemic, hence many people were working in home offices and naturally had more time to spend at home and on unpaid labor. For example, instead of eating at work, one would now cook and eat at home, for that reason alone, one would spend more time each day on unpaid labor. Based on the 2021/22 TUS, Austria ranks in the middle regarding unpaid female labor. On the contrary, unpaid labor by men is among the lowest in this comparison. The only other countries, among the 17 presented above (excluding Austria), with even lower levels of unpaid male labor were Luxembourg, Greece, Italy, and Türkiye.

Countries with the least discrepancies in unpaid labor between the genders are Norway (47 minutes), the Netherlands (1:02 h), and Finland (1:09 h). On average, women spent 4.27 hours on unpaid labor per day, while men spent 2.53 hours per day on it.

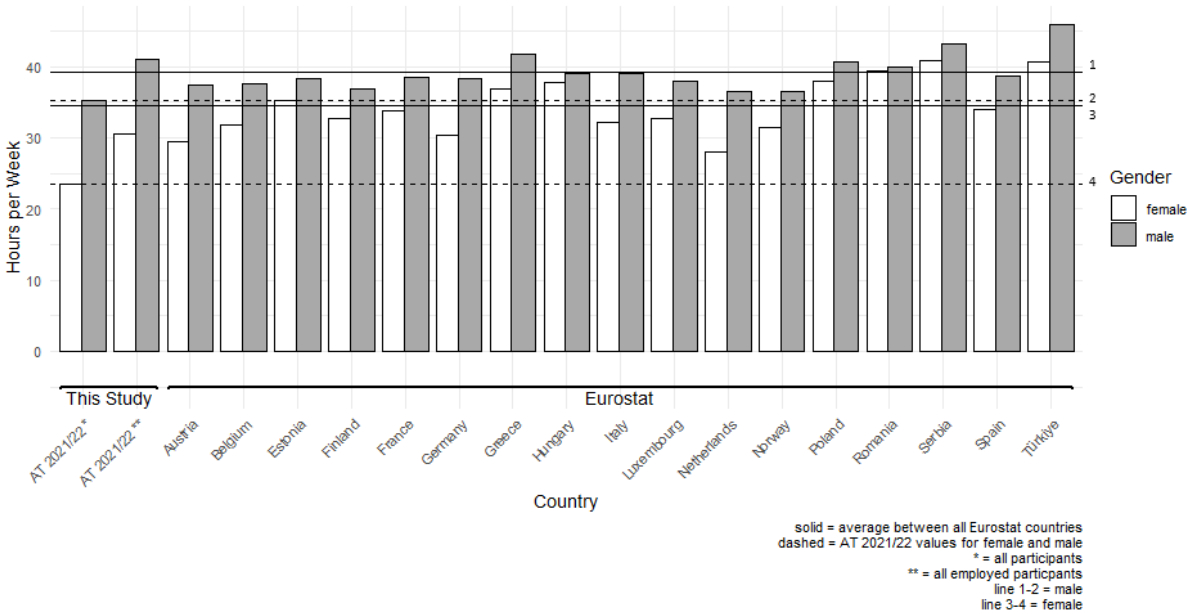


Figure 22: EU Comparison of Average Hours per Day Spent on Paid Labor, by Gender and Country, AT 2022
 Source: TUS Austria 2021/22, Statistik Austria; Eurostat 2025

Figure 22 presents a comparison of the average hours spent on paid labor in the EU. The original data set from Eurostat (2025) includes 36 countries, only 17 countries were included for Figure 22, to match the countries covered in the unpaid labor EU comparison. While the data span 2015 to 2024, only 2022 data were used for this diagram to compare it with the 2021/22 results of this study. The age group is 20-64. Strikingly, this study’s results are well below the averages for Eurostat countries for both women and men. The data for the paid labor figure from Eurostat includes only people who were employed during the period covered by the data collection. Even when considering only employed people in Austria, the time spent on paid labor is still below average, 30.46 hours for women and 41.06 hours for men. Across the countries presented above, excluding this study’s findings, the average weekly time spent on unpaid labor was 30.2 hours per week for women and 17.94 hours for men, compared to 34.42 hours of paid labor for women and 39.15 hours of paid labor for men. Austria is slightly below average. In all countries, men work more in paid labor than women do, with the smallest discrepancies in hours per week in Romania (0.7), Hungary (1.3), and Serbia (2.2), and the biggest gaps in Italy (6.8), Germany and Austria (7.8), and the Netherlands (8.5).

Historical Comparison

As this thesis is partly based on the replacement cost analysis from Hildegard Kneeland (Kneeland, 1929b, 1929a), it is essential to compare her findings with the current ones. As stated before, Hildegard Kneeland found unpaid labor to average 51 hours per week, in 1929 in the US.

	1929	2022
> 42h	83.33	38.64
> 48h	>50	29.20
> 56h	33.33	22.42

Table 9: Share of Women of Hours Spent on Homemaking in Percentage, 1929 and 2021/22
 Source: Kneeland 1929, Statistik Austria TUS 2021/22

Table 9 provides an overview of the distribution of time spent on homemaking. In 1929, the time spent on homemaking was significantly higher than in 2022. 83.3% of homemakers reported that they would spend more than 42 hours per week on homemaking. More than half of them spent 48 hours or more, while one-third spent more than 56 hours on homemaking. In 2022, 38.64% of female homemakers invested 42 hours or more in homemaking. Additionally, Table 10 further reveals a significant shift in the allocation of time spent on specific tasks. Notably, more time is devoted to childcare and meeting children's needs, as well as to cleaning activities. Although the study does not explicitly provide data for time spent on cooking, the total of 51 hours of unpaid labor suggests that approximately 25.25 hours may have been allocated to this task. Conversely, time spent on organizing and planning has decreased, and there has been a substantial reduction in time devoted to textile-related work. This decline is likely attributable to the increased availability of store-bought clothing and the widespread use of electric washing machines, which have replaced traditional practices such as mending and handwashing.

Activity	1929	2022
Adult		0.18
Child	4.50	9.56
Clean	7.50	8.32
Cook (25.25)		9.44
Garden		1.90
HHM	2.50	0.22
House		0.39
Pets		1.19
Shopping		3.75
Textile	11.25	2.33
Unspecified		0.79
Total	51.00	38.06

Table 10: Detailed Hours Spent on Homemaking, 1929 and 2021/22

Source: Kneeland 1929, Statistik Austria TUS 2021/22

Hours	Kneeland	Result	Minimum Wage AT
51.00	23,495.30		
40.00	18,427.68	27,841.42	23,800.00
38.10		26,518.95	

Table 11: Annual Income in Euros, Based on 40h, 1929 and 2021/22
Source: TUS Austria 2008/09, Statistik Austria; Kneeland, 1929b, Zuckerstätter, 2026

The Kneeland study estimated the monetary value of unpaid labor to be approximately 1,450 USD in 1929 (Federal Reserve Bank of Minneapolis, 2025), which corresponds to 24,731.89 USD or 23,495.3 EUR in 2022 (WKO Statistik, 2025a), based on 51 hours of weekly unpaid work. Austria does not have a universal minimum wage, instead, wages are determined by collective agreements, the majority of which have a minimum monthly wage of at least 1,700 EUR, paid 14 times annually (Zuckerstätter, 2026), resulting in an annual gross salary of 23,800 EUR. When calculating the annual equivalent salary for 40 hours of unpaid domestic labor per week, the estimated value for non-employed women, based on unpaid labor, was 18,427.68 EUR in 1929 (Kneeland study) and 27,841.42 EUR in 2022 (this thesis), a difference of roughly 9,500 EUR. Compared to the minimum wage in Austria, unpaid labor is valued at approximately 4,000 EUR above the annual minimum wage, equating to an additional 330 EUR per month.

However, this raises a critical question: whether such a valuation truly captures the full societal and economic value of unpaid domestic labor or only represents a numerical value.

Discussion and Limitations

Given the current results, it is important to note that the thesis has a set of limitations. The following section outlines key methodological limitations that could have an impact on the results of this study. This thesis only considered the main activities and completely disregarded secondary activities, for example, if an individual is cooking while simultaneously supervising a child, only cooking is counted as unpaid labor, whereas childcare is not recorded at all. This could lead to an underestimation of various aspects of unpaid labor, particularly care work, which is often performed with other tasks. Additionally, taxes, social benefits, and potential receipt of child support, as well as insurance payments, were completely disregarded. These elements do influence the individual's financial situation. Moreover, relationship status or marital status is not considered, which could play an important role in the division of unpaid labor. Due to a lack of data, it was not possible to compare the share of unpaid and paid labor of single and married women, which would have provided insight into whether the amount of

unpaid labor would decrease for women and men in relationships, due to it being shared or increase due to it being the responsibility of one person only. It is important to mention that both TUS in Austria were conducted during or after serious crises, the financial crisis and the COVID-19 pandemic. It would be interesting to compare the findings to a study from a non-crisis period. As for the 2021/22 study, one has to consider that many people worked in home offices instead of going to the office every day, hence, the time spent on paid labor could potentially be reduced due to shorter distances to and from work or less time spent on taking breaks. Additionally, the incentive to finish work quicker when one is already at home and has more time for leisure if work is finished early. Due to these circumstances, time spent on household tasks such as cooking or cleaning would naturally be at a higher level than in a non-home office situation, as one has to cook instead of going to the cafeteria and thereby spends more time on cooking and cleaning up afterward.

A comparison of the TUS 2008/09 and 2021/22 has shown that the trend is towards working more hours in unpaid labor, regardless of gender, and to a certain extent also in paid labor, contrary to the belief that average working hours are reduced (OECD, 2021, p. 304), however, one has to bear in mind that both studies were conducted after the financial crisis in 2008 and the COVID-19 pandemic. Overall, both women and men spent more time on unpaid labor, including household work and care work, women continue to shoulder a larger part of unpaid labor. Women with children spent a far greater share of time on unpaid labor than women without children do. The time spent on unpaid labor by women increased drastically at the age of 30, the average time women get their first child (Klimont, 2023), and when getting closer to retiring age (Kelin et al., 2023), for men, the contribution is constant throughout life. Compared to 2008/09, men have increased their share of household labor, while previously taking on 28% of all unpaid labor, in 2021/22, it increased to 36%. Women today have, on average, a higher educational level than in previous decades (Bundeskanzleramt, 2010, 2022), yet the average time spent on unpaid labor has not decreased but increased. While education does have an influence on time spent on paid labor for women, due to higher opportunity costs, education does not have an influence on men at all. Yet, men with the lowest education do the least amount of unpaid labor, which aligns with the findings of Kelin et al. (2023). While Kelin et al. (2023) also found that the higher the education, the less time is spent on unpaid labor, this study suggests differently. The neoclassical model fails to explain the results of this study. The models assume that the higher-income earner participates in the labor market, and

the lower-income earner performs household and care labor. According to the comparative advantage, men would therefore do the paid labor while women would do the unpaid labor. However, this study finds that women would, in fact, be the higher-income earners, as they have higher opportunity costs of not participating in the labor market. The bargaining model explains the results a bit better. The power dynamics are not attributed exclusively to real income but also to theoretical, potential income if one were to participate in the labor market. Other factors, such as social norms and expected gender roles, also influence decision-making. This would explain why women with higher earnings tend to still take on a greater share of household labor. The replacement cost approach and the market cost approach do show similar results across part-time employment and full-time employment for women, but not so for men. The estimates for not employed women and men do not match up, most likely due to over- and undervaluation of costs. This does not match the findings of Aslaksen & Koren (1996). Additionally, while the findings suggest higher income for women in some cases, one has to bear in mind that women also spend more time on unpaid labor, hence, naturally the income calculated based on it would be higher. For the market cost approach, most prices are Vienna-based prices, regional variation, especially for smaller cities in the countryside, could exist. The substitution for cooking, for example, only considers one person, disregarding potential children, food allergies, or preferences. The opportunity cost approach does show higher valuations for women when looking at it from an employment-level perspective, likely due to women's higher average educational level. When comparing by educational levels, the differences by gender are minimal. In the opportunity cost approach, the household and care work of people with higher education is worth more, however it does not matter whether someone with primary education or with a doctorate is cleaning, as the outcome would be the same. When estimating the share of unpaid labor of GDP, the results of this study are lower than what other studies across the years have found to be the estimated share of GDP of Austria. Ahmad & Koh (2011) estimated the value of unpaid labor in Austria at 29% of GDP in 2008 using the replacement cost approach, while this study estimated a share of 17.13% of GDP in 2009. This could be due to considering different age groups or valuing unpaid labor differently.

Conclusion

While emancipation and independence of women have increased, in some aspects developing further than men (education), women are still mainly responsible for the household and childcare. Men's development toward a more equally engaged role in household and care work has stagnated since the 1990s, as the UNDP report has shown. Austria's development from 2008/09 to 2021/22 shows similarities to the UNDP findings of the 1990s, a study conducted 30 years ago, suggesting that progress has been slow and limited. The lack of valuation of unpaid labor is increasingly recognized as an important issue, however it is hard to determine the real value of unpaid labor as many aspects factor in. Valuing unpaid labor and remunerating it could potentially reduce the risk of old-age poverty for women, provide greater financial independence, autonomy, and more bargaining power, especially to women who are victims of domestic violence. The resulting values from this study appear on the lower side, given the amount of unpaid labor. But assigning a monetary value to the upbringing of children, mental load, emotional support, or individual needs is challenging. Those aspects cannot be captured by economic models, hence these results cannot fully cover the value of unpaid labor. While women and men, on average, spent the same total amount of time on unpaid and paid labor, the allocation between both differs significantly. This leads to unequal financial resources. However, the three approaches presented in this study suggest that if unpaid labor was valued, even at a low level, women would out-earn men. When combining unpaid labor and paid labor and adjusting for the gender pay gap of 18.7%, women's economic output would exceed that of men, whether looking at it from an employment perspective or an educational perspective. This answers the question of the thesis, who would be the true breadwinner, and additionally proves the UNDP (1995) that if unpaid labor were valued fairly, women would, in fact, be the higher income earners. If women and men were enumerated equally and fairly, without the gender bias, the higher opportunity cost of women's labor, suggest that they should participate in the labor market rather than staying at home. The overall economic output could be maximized if both genders would engage in paid labor, while unpaid labor should be outsourced. The replacement cost approach and the market cost approach show lower values than the opportunity cost approach, hence hiring a housekeeper would be efficient on all ends. Ultimately, inequalities still exist because of social and traditional reasons. Traditional gender roles influence the way people think and behave. While the problems are obvious, it raises the

question why the change in such an important matter is so slow. To reduce these differences, not only does unpaid labor have to be valued more, but also a change in social norms, policies, and how responsibilities are shared at home is needed.

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Statement on the Usage of Artificial Intelligence

During the preparation of this thesis the author used ChatGPT, Blackbox.io, Grammarly, LanguageTool to improve the language and formatting of tables. Zotero has been used as citation tool. Further, it assisted in the creation of the R code. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of this thesis.

Appendix

Year	1995 = 100	2009 = 100	2021 = 100	2022 = 100	2023 = 100	2024 = 100	2025 = 100
1995	100.0	78.4	62.5	57.5	53.4	51.9	50.1
2000	107.2	84.0	67.0	61.7	57.2	55.6	53.7
2005	118.6	92.9	74.1	68.2	63.3	61.5	59.4
2006	120.3	94.3	75.2	69.2	64.2	62.4	60.3
2007	123.0	96.4	76.9	70.8	65.7	63.8	61.7
2008	126.9	99.5	79.3	73.0	67.8	65.8	63.6
2009	127.6	100.0	79.8	73.4	68.2	66.2	64.0
2010	130.0	101.9	81.3	74.8	69.4	67.4	65.2
2011	134.3	105.3	83.9	77.3	71.7	69.7	67.3
2012	137.5	107.8	85.9	79.1	73.4	71.3	68.9
2013	140.3	110.0	87.7	80.7	74.9	72.8	70.3
2014	142.6	111.8	89.1	82.0	76.2	74.0	71.5
2015	143.9	112.8	89.9	82.8	76.8	74.6	72.1
2016	145.2	113.8	90.8	83.5	77.6	75.3	72.8
2017	148.3	116.2	92.7	85.3	79.2	76.9	74.3
2018	151.2	118.5	94.5	87.0	80.7	78.4	75.8
2019	153.5	120.3	95.9	88.3	82.0	79.6	76.9
2020	155.6	121.9	97.3	89.5	83.1	80.7	78.0
2021	160.0	125.4	100.0	92.1	85.4	83.0	80.2
2022	173.8	136.2	108.6	100.0	92.8	90.1	87.1
2023	187.3	146.8	117.1	107.8	100.0	97.1	93.9
2024	192.8	151.1	120.5	110.9	102.9	100.0	96.6
2025	199.5	156.3	124.7	114.8	106.5	103.5	100.0

Appendix Table 1: CPI Austria in Percent
Source: WKO Statistik, 2025b

Care Allowance	Care Level	Basic	Good	Very Good	Excellent	Mean
200.8	1	2364.2	2564.2	2814.2	3114.2	2714.2
370.3	2	2194.7	2394.7	2644.7	2944.7	2544.7
577	3	1188	1388	1638	1938	1538
865.1	4	899.9	1099.9	1349.9	1649.9	1249.9
1175.2	5	589.8	789.8	1039.8	1339.8	939.8
1641.1	6	123.9	323.9	573.9	873.9	473.9
2156.6	7	-391.6	-191.6	58.4	358.4	-41.6
						1345.56

Appendix Table 2: Average Cost per 28 Days in Euros for Care, AT 2025
Source: pflegeboerse.at, 2025

Euro	Count	Total Euro
109.95	2	219.90
114.95	1	114.95
119.95	2	239.90
124.95	10	1249.50
129.95	2	259.90
134.95	3	404.85
139.95	3	419.85
149.95	16	2399.20
154.95	1	154.95
174.95	3	524.85
249.95	1	249.95
Sum	44	6237.80
Mean		141.7682

Appendix Table 3: Average Cost in Euros for Cleaning Service in Vienna, 100 sqm, 4 Rooms, Kitchen and 2 Bathrooms, AT 2025

Source: *Reinigungskräfte suchen und buchen*, 2025; Statistik Austria, 2025a

Euro	Count	Total Euro
2.95	1	2.95
3.19	1	3.19
3.30	1	3.30
3.35	1	3.35
3.45	1	3.45
3.69	2	7.38
3.90	1	3.90
4.50	1	4.50
4.55	1	4.55
4.99	1	4.99
5.15	1	5.15
5.29	2	10.58
5.30	1	5.30
5.39	3	16.17
5.90	2	11.80
6.00	1	6.00
6.90	1	6.90
6.99	1	6.99
Sum	23	110.45
Mean		4.80

Appendix Table 4: Average Cost in Euros for Bread Rolls, AT 2025

Source: Felzl, 2025; *Hausbrot*, 2025

	Time		Travel Expense	Hourly Rate Skilled Worker	Total
Electrician	Working Day	Own District	62.40		
		Neighbouring District	84.38		
		Mean	73.39	111.73	185.12
Plumber	Working Day	Own District	32.89		
		Neighbouring District	67.69	111.81	
		Mean			
	Working day (past 8 pm)	Own District	88.71		
		Neighbouring District	98.40	245.37	
	Sunday Public Holiday	Own District	97.89		
Neighbouring District		109.71	263.45		
	Mean	82.55	206.88	289.43	
Painter	Working Day	Own District	45.49		
		Neighbouring District	67.47		
		Mean	56.48	71.41	127.89
Total Mean					200.81

Appendix Table 5: Average Cost per Hour in Euros for Craftsman, AT 2024

Source: Manuela Delapina, 2024

Name	Euro	Kilo	Euro	Kilo
OS Textilreinigung	9.9	1		
Putzerei Gottschalk	3.8	1	19	5
Putzerei Hammerl	11.49	1		
Putzerei Pavlov	6.5	1		
Wäscherei Furigan	7.7	1		
Mean	7.878			

Appendix Table 6: Average Cost in Euros for 1 Kilo of Laundry, AT 2025

Source: Andreas Furigan, 2025; Hammerl Textildcare, 2024; OS Textilreinigung, 2025; Putzerei Gottschalk, 2025; Putzerei Pavlov, 2025

Euro	Count	Total Euro
15	13	195
14	1	14
13	3	39
12	6	72
11	1	11
10	13	130
9	3	27
7	1	7
6	2	12
5	2	10
Sum	45	517
Mean		11.49

Appendix Table 7: Average Cost per Hour in Euros for Pet Sitting, AT 2025

Source: tiersitter24.at, 2025

Income Brackets in Euros	Marginal Tax Rate 2022
up to 11,000	0%
more than 11,000 up to 18,000	20%
more than 18,000 up to 31,000	32.5 %
more than 31,000 up to 60,000	40%
more than 60,000 up to 90,000	48%
more than 90,000 up to 1,000,000	50%
more than 1,000,000	55%

Appendix Table 8: Income Tax Brackets, AT 2022

Source: Bundesministerium Finanzen, 2026

Task	Replacement Cost	Market Cost
Cook	8.46	11.73
Clean	6.48	4.19
Garden	2.79	0.39
Laundry	1.25	5.05
Child	15.75	2.78
House	2.03	13.66
Pets	1.91	2.97
Adult	0.14	0.51
Assistant/Shopping	5.31	5.31

Appendix Table 9: Daily Costs in Euros, Replacement Cost Approach and Market Cost Approach

Source: TUS 2021/22 Statistik Austria; Andreas Furigan, 2025; bellaflora, 2023; Eichinger, 2025, 2025; Felzl, 2025; Glaser & Schönherr, 2024; Hammerl Textildcare, 2024; Hausbrot, 2025; Kosten Für Rasenmähen: Was Sie Wissen Müssen - MyHammer, 2025; Reinigungskräfte suchen und buchen, 2025; Manuela Delapina, 2024; OS Textilreinigung, 2025; Petra Lehner, 2021; pflegeboerse.at, 2025; Putzerei Gottschalk, 2025; Putzerei Pavlov, 2025; Stadt Wien, 2022; Statistik Austria, 2025a; tiersitter24.at, 2025; WKO, 2022f, 2022g, 2022d, 2022e, 2022a, 2022c, 2022b; youunion, 2022b, 2022a