



The Value of Social Production in the United States

Measuring Mental Wealth

ACKNOWLEDGMENTS

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Executive Summary

- In 2021, Americans contributed more than US\$**2.293 trillion** in social production, equating to 9.8% of GDP that year.
- Social production is the value of unpaid social contributions American's make including through volunteering, educating and caring for children, participating in community groups, environmental restoration, and informal training and mentoring. These contributions are not only essential to the integrity of the social fabric of the nation, they also bolster economic productivity and national resilience.
- The greatest contributors to social production are those that are traditionally undervalued by the formal economy.
- Women are the largest generators of value in terms of social production, across most of the currently measured activity categories, while males contribute more to the category of volunteering.
- In 2021, those who were not employed made larger per capita social contributions than those employed in the labour market, contributing on average \$20,892 per person, per year.
- Americans aged 65 years and over contributed US\$319.22bn in social production through voluntary work and community building activities, the largest of any age group.
- Estimates of social production in the U.S are significantly under-enumerated due to data gaps. Further data collection is needed to better understand the extent of, and temporal trends in, social production to estimate the Mental Wealth of the nation.
- Mental Wealth is a measure of the strength of a Wellbeing Economy.

Introduction

We find ourselves in a complex moment, with multiple economic and geopolitical challenges set against the backdrop of the pandemic, rising food insecurity, rapid advances in generative ai, and climate change. Clearly, it is a moment for action. The interconnectedness of these challenges requires collaborative efforts, innovative solutions, and long-term planning. Public and private sector leaders need to take concrete measures to build more unified, creative, and resilient societies capable of meeting these challenges and forging a path towards a more inclusive, prosperous, and sustainable future.

One important step to meet this goal is to invest in brain capital (a collective term for mental capital, mental health, collective wellbeing, and brain health). Building brain capital is a priority for a resilient society. Beyond the compelling moral argument, companies that focus on their staff's well-being often outperform their rivals. Those that prioritize the needs of their communities alongside the financial interests of their shareholders will be more resilient and therefore better positioned to build value and recover from setbacks.

The same holds true for nations. Investing in brain capital helps countries protect their economies, their national security, and their most important resource — their people. Such investments are an essential foundation for sustainable development and societal resilience.

This report builds on a concept established by the Mental Wealth Initiative (MWI) at University of Sydney to measure and forecast the Mental Wealth of nations. Mental Wealth is a measure that values social production (unpaid activities that contribute to the social fabric of nations) as explicitly productive within GDP, making it a more holistic indicator of national prosperity (Occhipinti et al., 2022). The term 'Mental Wealth' signifies the foundation on which economic and social productivity relies; namely, brain capital.

While efforts that value nature, such as Gross Ecosystem Product (GEP), have received attention, social production has not received the same attention. Last year, the White House announced a 15-year plan to develop a new summary statistic that would show how changes to natural assets — the natural wealth on which economies depend — affect GDP. This alone will not sufficiently measure the social prosperity required for resilient economies and nations, particularly in light of emerging crises in youth mental health, social disconnection, and loneliness.

This is why the Reform for Resilience's Americas Hub is joining forces with the MWI to estimate the value of social production in the United States and provide insights into the future work needed in implementing the new Mental Wealth metric and identifying and promoting policy opportunities to foster brain capital and thereby, the Mental Wealth of nations.

We hope that this will help policy and business leaders to take concrete steps to advance the brain capital of their citizens, employees, and stakeholders.

Why measure Mental Wealth?

The Mental Wealth metric provides a holistic measure of national prosperity, capturing the value of both economic and social production. As such, Mental Wealth is a measure of the strength of a Wellbeing Economy recognising the fundamental importance of Brain Capital; our collective cognitive and emotional health and wellbeing (Occhipinti et al., 2023).

There have been numerous efforts to redefine the economy and reconceptualize what it means to be a prosperous society. Despite decades of advocacy and a broad range of indices and dashboards that have been developed to move beyond gross domestic product (GDP), the original statistic remains the top-line indicator of national prosperity that dominates national decision making. The Mental Wealth Initiative seeks to refine, augment, and improve GDP as a measure of social welfare by broadening the boundary of production to include the value of goods and services provided by populations that are not currently monetised, but make genuine contributions to social prosperity and quality of life.

Individuals contribute in many ways to the prosperity of their nation, and those contributions change over the course of our lives. Some contributions are measured and valued in GDP, while others are not. The value generated from economic productivity is captured in GDP, a measure of the strength of the economy. What is not adequately measured and reported is the value generated from social contributions (social production). These contributions are not only essential to the integrity of the social fabric of our nation, but they also bolster economic productivity and national resilience. Without the measurement and reporting of this unpaid social production, it will continue to be undervalued by decision makers and society. This report aims to provide a monetary value for this important contributor to Mental Wealth and in doing so, recognise its significant role in fostering resilient communities, social cohesion, and collective wellbeing.

The Mental Wealth Initiative was founded in 2021 with the aim of promoting and understanding the factors that generate positive outcomes for mental health across the life course and contribute to thriving, productive and resilient communities. It is a transdisciplinary initiative of the University of Sydney's Brain and Mind Centre in collaboration with the Business School. The MWI is supported by leading Australian economists and politicians, and international collaborators including the OECD Neuroscience-Inspired Policy Initiative, Paris, France; the Brain Capital Alliance, US; the UK based SIPHER Consortium applying systems science in public health and economic research; and CSART, an international alliance of centres of excellence in systems modelling, simulation, and global health.

Reform for Resilience is a global policy group committed to generating policies and tools for building healthier, more economically resilient societies at the regional, national, and local levels. As global stakeholders gathered to tackle societal challenges at the recent World Economic Forum's annual meeting at Davos, Reform for Resilience urged government and business leaders to elevate health as a key driver of economic success. This work was delivered in collaboration with the Americas Hub at Harvard T.H. Chan School of Public Health.



Section 1: Background and Definitions

Defining Mental Wealth

Mental Wealth is defined as a measure of national prosperity that captures the value generated by the deployment of collective mental assets and supporting social infrastructure and focuses on the contributions made by all human beings across the life-course to material and especially non-material standards of living.

Specifically, Mental Wealth is the monetary value of the market and non-market goods and services produced by the population over a given period that contributes to economic and social prosperity, calculated as follows:

Box 1

$$\text{Mental Wealth} = \mu \text{GDP}_r + C_s + I_s$$

GDP_r is real GDP (for a given period) calculated using the expenditure approach.

μ is the devaluation coefficient; the downward adjustment to GDP_r to account for the proportion of expenditure not underpinned by mental capital (e.g., the value of mineral exports net of human input).

C_s is Social Consumption; the consumption of non-monetised, socially provided services.

I_s is Social Capital Investment; the sum of government (and nongovernment) investment in social capital infrastructure (in a given period), not already captured in GDP.

The component **C_s** of the Mental Wealth metric is the focus of the current report, with other components to be examined in a future Mental Wealth report. For tractability, the value of social production will be used as a proxy for social consumption and its estimation will be dependent on the measurement of activities that provide a social contribution.

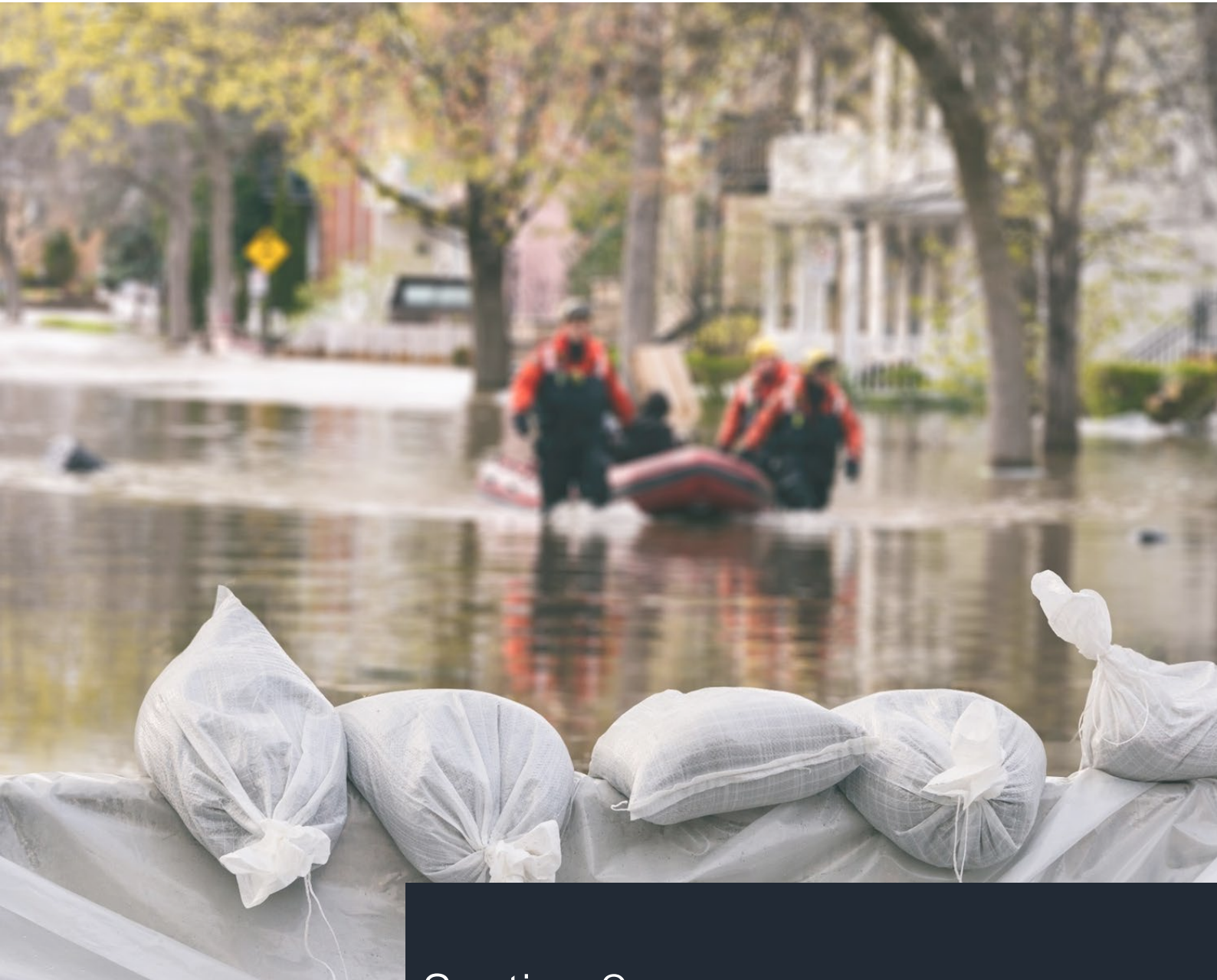
The estimates presented here of social production in the United States are a significant underestimate of its true value due to the lack of data availability. The magnitude of underestimation is also unknown. Strengthening the data infrastructure to enable regular monitoring of temporal trends in America's social production and the Mental Wealth of the nation is therefore a national priority.

Social contributions that comprise overall social production have been grouped into eight activity categories (currently data is only available for the highlighted categories):

- Volunteering and unpaid charity work
- Unpaid education and care of children
- Unpaid care of the sick, elderly, or disabled
- Providing a crowd service (where no direct or indirect income is received)
- Unpaid contributions to the creative arts
- Community participation and contributions to building community infrastructure
- Unpaid ecological restoration / rewilding
- Unpaid informal on the job training, development, and mentoring

A tractable, non-market, input-based valuation method is applied to estimate the monetary value of social contributions (see Section 3). Further information is provided in:

Occhipinti, J., *et al.* (2023). *Estimating the Mental Wealth of nations: valuing social production and investment*. **Nature Mental Health**, 1(4), 247-253. <https://doi.org/10.1038/s44220-023-00044-w>



Section 2: Valuing Social Production

2.1 Valuing Social Production in the United States

This section presents the estimated value of social production of the United States, as well as outlining its components and the valuation approach used. The production and consumption of social contributions are not mediated by monetary valuation in markets. Given activities are likely to be differentially valued by receivers, the calculation of their monetary value is based on the cost of time spent delivering the social contribution (input valuation).

This analysis has relied on data from the 2021 American Time Use Survey (ATUS) to estimate the value of social production in the United States. Therefore, the definitions of the ATUS have been adopted for this research. It has been noted that differences exist between the ATUS data used and the MWI's social production definitions of the categories intended to be measured. Table 3.1 contains the MWI's definitions of the categories of social production.

Table 2.1 MWI Social Production Categories and definitions

Social Production Category	Definition
Volunteering and unpaid charity work	Volunteer or charity work such as participating in the delivery of essential community services, emergency services, fundraising, etc.
Unpaid education and care of children	Providing education, active supervision, and domestic care for children aged under 18 years. This includes own children and children of friends, neighbours, and extended family.
Unpaid care of the sick, elderly, or disabled	Domestic support for the sick, elderly, or disabled including those suffering from dementia.
Crowd service	Producing free digital goods, including open source/free to licence software, and contributing knowledge, advice, instructions, and training via the internet e.g., Wikipedia, YouTube, etc., (where no direct or indirect income is received).
Unpaid contributions to the creative arts	Performing / creating works of art, music, dance, and drama.
Community participation and contributions to building community infrastructure*	Developing physical and technical facilities for a community and engaging in community activities. This includes time spent supporting a community clubs, organisations, associations, participating in religious activities, or organising community forums and cultural events etc.
Unpaid ecological restoration / rewilding	Revival of ecosystems (incl. forests, marine, urban areas, animal habitats), animal rescue, environmental clean-up, etc.
Unpaid informal on the job training, development, and mentoring	Providing informal professional mentoring, guidance, capacity building/training workshops to co-workers where these activities are not the primary responsibilities of the salaried position.

Currently US data is only available for the categories of shaded cells. Therefore, it was only possible to estimate social production based on four of the eight categories. *The ATUS activity "Organizational, civic, and religious activities" has been used here for the estimated value of this category.

2.2 Findings

The value of unpaid social contributions of individuals to the Mental Wealth of the United States in 2021 was estimated to be at least **US\$2.293 trillion** (Table 2.2), which is equivalent to 9.8% of GDP. The greatest contributors to America's social production are those that are traditionally undervalued by the formal economy; namely, women, those aged 65 years and over, and those not employed.

The value of unpaid education and care of children constitutes the largest proportion of social production and is estimated to be US\$1.170 trillion.

The MWI has employed an input-based approach where a universal value is applied to every hour spent on activities that make a social contribution. This approach is similar to the convention followed in valuing public sector contributions to consumption where such services are not mediated through the market. We apply a universal value to every hour spent making a social contribution that is equivalent to the median hourly earnings in the U.S. in 2021, thereby equating the value of market and non-market work. Further discussion of the valuation method can be found in Section 3.3.

Table 2.2. Value of Social Production by Category, 2021 (\$bn)

Social Contribution Category	Total	Males	Females
Caring for and helping household adults	107.40	39.44	67.97
Caring for and helping household children	981.12	328.65	652.47
Caring for and helping non household children	188.52	52.58	135.93
Caring for and helping non household adults	174.03	78.88	95.15
Organizational, civic, and religious activities	601.86	289.22	312.64
Volunteering	240.21	131.46	108.74
Total	2,293.14	920.23	1,372.90

Source: MWI analysis, U.S. Bureau of Labor Statistics, U.S. Census Bureau

Across the social production categories women generally contribute a greater proportion of the value contributed compared to men, apart from volunteering. Women contribute almost double the unpaid contributions when it comes to the unpaid education and care of children compared to men, at \$788.40bn compared to \$381.24bn. Men contribute 54.7% of the value of volunteering.

Table 2.3. Social Contribution as a Percentage of GDP, 2021

Social Contribution Category	
Caring for and helping household adults	0.5%
Caring for and helping household children	4.2%
Caring for and helping non household children	0.8%
Caring for and helping non household adults	0.7%
Organizational, civic, and religious activities	2.6%
Volunteering	1.0%
Total	9.8%

Source: MWI analysis, U.S. Bureau of Labor Statistics, World Bank

Table 2.3 presents the value of social contributions as an equivalent proportion of GDP for the year 2021. Note that these percentages of GDP have been calculated without adding the value of unpaid social contributions to the GDP amount in 2021. It is estimated that the value of social contributions equates to 9.8% of U.S. GDP in 2021. It is likely that social contributions represent a larger proportion of GDP given missing data (i.e., the American Time Use Survey provides estimates for only 4 of the eight categories of social contribution). The education and care of children constitutes the largest equivalent proportion of GDP at 5%.

Table 2.4. Value of Social Contribution by Age Group, 2021 (\$bn)

Social Contribution Category	15-24	25-34	35-44	45-54	55-64	65 years and over
Caring for and helping household children	42.46	358.68	449.13	112.28	21.09	5.50
Caring for and helping household adults	8.49	8.97	12.83	16.04	21.09	38.53
Caring for and helping non household children	16.99	4.48	12.83	32.08	67.49	60.54
Caring for and helping non household adults	12.74	17.93	29.94	20.05	46.40	44.03
Organizational, civic, and religious activities	55.20	62.77	64.16	84.21	88.58	225.66
Volunteering	16.99	31.38	25.66	28.07	37.96	93.56
Total	152.87	484.22	594.57	292.72	282.62	467.82

Source: MWI analysis, U.S. Bureau of Labor Statistics

Table 2.4 presents the total value of social contributions by age group. The 35–44-year age group generated the largest social value of \$594.57bn in 2021, of which education and care of children accounted for the largest source of value generation. Those aged 65 years and over made the greatest contribution in terms of voluntary work and community building activities than any other age group, contributions from these activities totalled \$319.22bn in value.

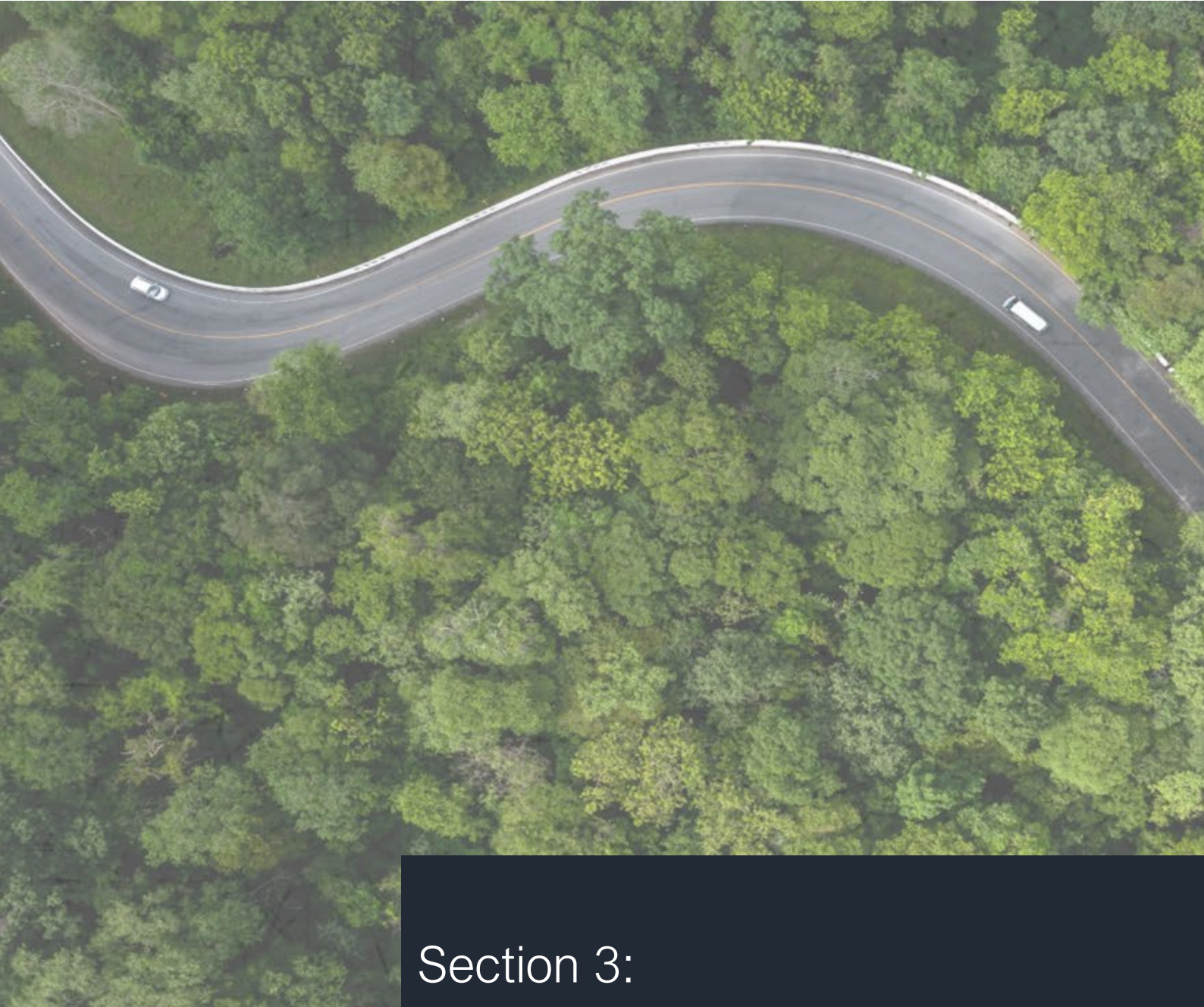
Table 2.5. Average Value of Social Contribution by Labor Force Status, per capita, 2021 (\$)

Social Contribution Category	Not employed	Employed Part time	Employed Full time
Caring for and helping household children	15,275.25	4,040.55	4,040.55
Caring for and helping household adults	689.85	295.65	197.10
Caring for and helping non household children	492.75	788.40	295.65
Caring for and helping non household adults	394.20	689.85	591.30
Organizational, civic, and religious activities	3,055.05	1,971.00	1,576.80
Volunteering	985.50	689.85	689.85
Total	20,892.60	8,475.30	7,391.25

Source: MWI analysis, U.S. Bureau of Labor Statistics

Table 2.5 presents the per capita value of social contributions corresponding to labour force status. Those that have been included in this estimation have identified themselves as either 'Not employed, Employed Part time or Employed Full time'. Those that are not employed are estimated to make the larger contribution to social production per year (on average, \$20,892 per person), followed by those who are employed part time (on average, \$8,475 per person), then those employed full time (on average, \$7,391 per person). The education and care of children constitutes the greatest proportion of social contributions made across all labour force status groups. Those who are not employed on average contribute the most in the terms of volunteering, community building activities, and caring and helping household adults.

America faces pressing national and global challenges including climate change, energy and food insecurity, conflict, polarisation, misinformation, and declining trends in youth mental health. These challenges are converging to cause socio-political and economic disruption, reducing social cohesion, and weakening democracies. Investing in our nation's Mental Wealth will provide us with the capacity, resources, and resilience to face these challenges more successfully. Strengthening the data ecosystem to enable regular monitoring of the Mental Wealth of the nation is therefore a national priority.



Section 3: Method

3.1 Method

A universal value is applied to every hour spent undertaking activities that fall under the eight social production categories. This universal value is based on median hourly earnings in the year in which activities are undertaken, which was US\$27/hour in 2021. Time spent on activities has been taken from the American Time Use Survey (ATUS) administered by the U.S. Bureau of Labor Statistics. In estimating the value of social production only the cost of labour inputs will be used, capital costs have not been included. This method broadly aligns with approaches of most other practitioners valuing unpaid work.

Number of Hours

Estimates of the number of hours spent providing social contributions per person in 2021 were derived from ATUS data as follows:

$$H_{ij} = D_{ij} \cdot 365$$

H_{ij} = average hours in 2021 on unpaid work category i per person in demographic group j

D_{ij} = average hours per day on unpaid work category i per person in demographic group j

Estimating the value of social contributions

The input-based valuation estimates of social contributions for 2021 were derived as follows:

$$C_s = \sum_{i=1}^M \sum_{j=1}^N H_{ij} P_j W$$

C_s = Total social contribution

H_{ij} = average hours in a given year spent on unpaid work category i per person in demographic group j

P_j = Number of persons in demographic group

W = Median hourly wage rate (median hourly earnings) for a given year.

3.2 Input data for the Estimates

The preparation of the 2021 estimates of social production presented in this report required three sets of data:

- Estimates of average time spent on activities that contribute to social production
- Population estimates
- Median hourly earnings

Estimates of the value of social production in 2021 were derived for each 'demographic subgroup' by expanding average daily hours released in the ATUS estimates to derive an annual figure spent on the unpaid activities that contribute to social production.

Time Use Survey

The analysis in the report is based on the 2021 American Time Use Survey which is conducted by the U.S. Census Bureau for the Bureau of Labor Statistics (BLS). The ATUS is an annual survey concerned with how individuals aged 15 years and over spend their time. In 2021, a random sample of 9,000 individuals participated in the survey (U.S. Bureau of Labor Statistics, 2022).

Wage Rate Data

Valuations are based on the median hourly earnings in a given country in a given year. The wage rate used for 2021 was US\$27 per hour, the median hourly earnings, sourced from the United States Census Bureau (U.S. Census Bureau, 2022).

Population Data

The population data used to extrapolate time spent making social contributions from the survey sample to the population level was sourced from United States Census Bureau. The total female and male population figures were sourced from the U.S. Census Bureau population estimates for those aged 15 years and over by gender (U.S. Census Bureau, 2022).

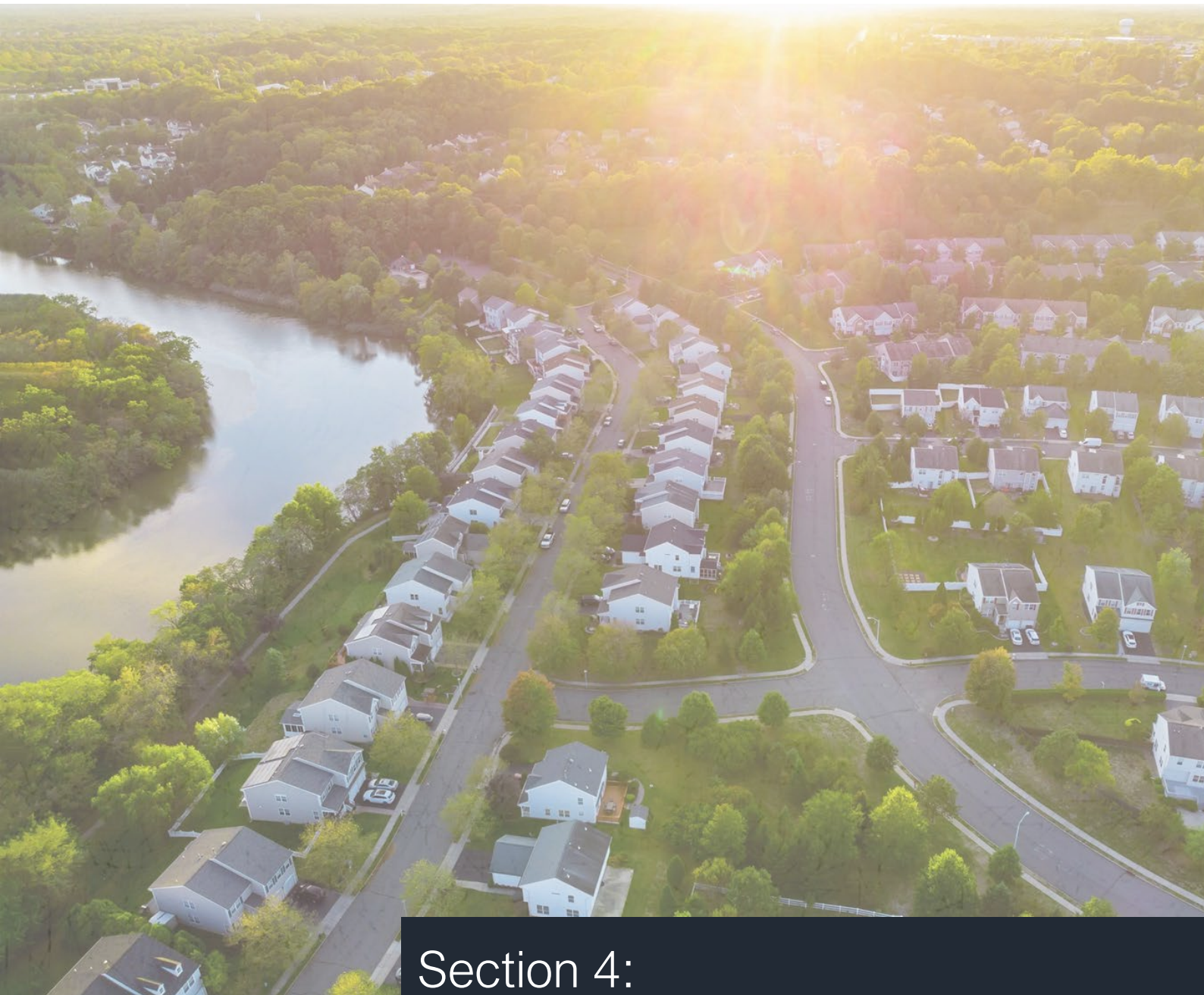
3.3 Valuation Method Discussion

Estimates of the economic value of 'unpaid work' can vary considerably depending on the valuation method used. The most common valuation methods utilised when estimating the monetary value of unpaid work include: the replacement cost, opportunity cost, and social benefit approach (Salamon et al., 2011).

- *The replacement cost* approach uses an 'observed market proxy' which involves pricing voluntary time at a wage rate which is equal to the cost to hire a paid worker to perform roughly the same task.

- *The opportunity cost* approach seeks to value the unpaid time in terms of the value of the alternative activity the individual has forgone in order to volunteer, this is generally the rate of pay which they would receive in a paid job if they were not volunteering.
- *The social benefit* approach seeks to estimate the social value of the output of volunteering. This approach requires a market proxy for the output, or where this is indeterminate, it would require a willingness-to-pay assessment which seeks to value the output from volunteers based on what the provided service is worth to the receiver.

There are a number of drawbacks to the above approaches discussed in Occhipinti, *et. al.* (2023). The MWI uses an alternate approach to those mentioned above, employing an input-based approach where a universal value is applied to every hour spent undertaking social contributions. The value used for this estimation is the median hourly earnings in a given country, in a given year. Applying the median wage rate universally across activities and across demographic categories avoids exacerbating existing distortions in the market economy (such as the gender pay gap) and avoids the application of differential activity values in each country that would prohibit meaningful international comparisons. The strength of this approach also lies in its feasibility, requiring very few parameters to calculate, and ensuring its tractability for standard application across high-, medium-, and low-income countries. The regular measurement and reporting of Mental Wealth across countries will be important for international comparisons of progress towards a Wellbeing Economy.



Section 4: Establishing the data infrastructure for monitoring Mental Wealth

The Digitally Deployed Time Use Survey

Social and economic development is fundamentally shaped by what is measured. There is growing agreement among economic, public policy, and academic communities of the lack of appropriateness of GDP as a measure of prosperity. While the value generated by economic productivity is captured by GDP, the value generated by social productivity (social production) is not systematically measured and regularly reported. Mental Wealth is a single indicator of the strength of a Wellbeing Economy.

The Mental Wealth Initiative recognises social wellbeing as the foundation of cohesive, productive, resilient, and flourishing communities and nations. The ability to monitor and rapidly respond to changes in the Mental Wealth of the nation is becoming vitally important. The Initiative is working with international partners to operationalise the Mental Wealth metric which will be instrumental in assessing the future success of policies and investments to improve economic and social prosperity.

Next Steps

The Mental Wealth Initiative, Reform for Resilience, and international partners are establishing the necessary infrastructure to regularly measure and monitor Mental Wealth. Current time-use surveys do not comprehensively and frequently capture the activities that comprise social production needed to estimate Mental Wealth.

A Digitally Deployed modified Time-Use Survey (DDTUS) is under development to monitor the dynamics of social production. DDTUS will be available for deployment at state and national levels by early 2024.

For the purposes of monitoring temporal trends in social production, population sampling would be conducted annually, with the time-use surveys deployed at quarterly intervals (i.e., at 4, 8, and 12 months) to recruited participants via the digital app downloaded to their mobile devices.

In addition to its administrative function, DDTUS can be deployed for research purposes with additional modules that include validated measures of psychological distress (Kessler-10 Psychological Distress Scale), and community connectedness (Sense of Community Index). Repeated measures with such additional modules would facilitate analysis aimed at understanding the drivers of change in social and economic production including mental health, social connectedness, housing, education, employment conditions, etc.

Monitoring social production in addition to economic production promotes coordinated policies to foster both, encouraging stewardship and accountability in the transition to a Wellbeing Economy. Deployment of DDTUS across diverse settings would create new knowledge and opportunities for policy innovation of national and global relevance.

Get Involved

We need your support to realise our goal.

For more information on measuring, monitoring, and forecasting Mental Wealth in the US, or to become a Mental Wealth Sponsor, contact the Co-Director of the MWI at jo-an.occhipinti@sydney.edu.au.

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