

Moving beyond Time Poverty

Measuring Women's and Men's Time-Use Agency

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Abstract

Economic research on time use has traditionally focused on the total time individuals spend across different activities. However, less is known about time-use agency, or the ability to make strategic choices on allocating one's time. This paper presents the findings from a novel, representative time-use study in Malawi, where men's and women's self-reported time use—collected continuously via a pictorial smartphone app—was complemented with a time-use agency survey module to quantitatively measure their ability to reallocate their time flexibly. The analysis reveals that women are 20 percentage points more likely than men to report inflexibility on being able to adjust the timing of activities across nearly all activity domains, including agriculture, unpaid domestic work, transport, leisure, and personal care. Women spend a significantly higher share of

total daily time in the domains they report as non-flexible, while men are more likely to report non-flexibility in leisure on its own, or in combination with other daily activities. The share of non-flexible daily time is negatively associated with women's desire for additional paid hours and their probability to look for work. Among women, intra-household differences (women's minus men's) in the share of non-flexible daily time are also associated with lower share of time in leisure, higher likelihood of being underweight, and weaker land rights. Overall, time-use flexibility (agency) captures a dimension of inequality that is empirically distinct from time poverty or total work burdens, with particularly strong relevance for women's work and wellbeing.

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**Moving beyond Time Poverty:
Measuring Women’s and Men’s Time-Use Agency**

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1 Introduction

Global evidence demonstrates the existence of substantial gender disparities in time use. On average, women spend about three times as many hours a day as men on unpaid domestic work and care work, including care of children and other adult household members, cooking, cleaning and other housework (United Nations 2020). The time burden and disproportionate share of responsibility women bear for these tasks is a major source of their disempowerment, e.g., reducing seeking paid employment and time for education, leisure, and social activities (Folbre 2006; Folbre et al. 2013; Gammage 2010; Floro and Komatsu 2011).

A great deal of work has been devoted to accurately measuring how men and women spend their time (Kilic et al. 2024; Gershuny et al. 2020; Field et al. 2023; Juster and Stafford, 1991). Statistics on time use typically stem from time use surveys — relying on self-reported or interview-based diaries of individuals' time in activities over a set reference period (for example, the last 24 hours) and implemented as a standalone survey or module in a broader household multi-topic or labor force survey. Discourse on gender and time use, as a result, has typically been limited to comparisons of average time in different key activities, as well as time poverty, when individuals do not have enough time for rest and leisure after taking into account time spent working (Vickery 1977, Bardasi and Wodon, 2010, Alkire et al 2013, Malapit et al 2019).

Understanding the channels by which individuals allocate their time, however, is also critical. Time allocation, for example, is the result of a complex set of decisions and negotiations, involving multiple tradeoffs and different motivations. Important dimensions of time use remain understudied, however, across work intensity (Floro and Pichetpongsa 2010), flexibility (Lu, Wang and Olsen 2023), cognitive labor (Daminger 2019), subjective well-being (Krueger et al. 2009; Hektner, Schmidt, and Csikszentmihalyi 2007; Seymour and Floro 2021), and time-use agency, that

is the ability to make strategic choices about how to allocate one’s time (Eissler et al. 2022; Sinharoy et al. 2023). All these dimensions are important in understanding broader socioeconomic choices and disparities across men and women; how responsive individuals would be to policies aiming to alleviate time constraints, across such areas as unpaid domestic and care work, transport, and employment; as well as resulting outcomes across earnings and labor productivity (Cortés and Pan 2023) and health (Mueller et al. 2023).

Lack of data in these areas stems, in part, from the costs and complexity of implementing traditional time-use surveys. These include material resources, as well as cognitive burdens that recall-based time-use surveys require of respondents — particularly in lower-income, low-literacy contexts — that prevent a broader look at other dimensions of time allocation beyond observed time use data. Time use diaries often do ask respondents about other activities that are multitasked alongside a primary activity, with an aim to better understand issues around work intensity, as well as supervisory or passive care of children and other household members (Folbre 2021; Seymour, Malapit, and Quisumbing 2020). However, difficulties in recalling time often lead to underreporting of these “simultaneous” activities vis-à-vis real-time data collection (Kilic et al. 2024).

Extending time-use data collection methods beyond their traditional focus, i.e. the amount of time spent on activities, as well as improving ways to more efficiently collect time use data, can also shed light on how and why people spend time on particular activities. Representative data on these outcomes is also essential for developing a broader policy-relevant view of time use inequalities within countries, across different subgroups and geographic areas.

As part of a novel time use experiment conducted in Malawi in 2023, this paper proposes an alternative, quantitative measure of time-use agency, designed to be implemented alongside a

standard time-use diary.² Harkening back to Kabeer’s definition of empowerment, as a process of change involving an “expansion in people’s ability to make strategic life choices in a context where this ability was previously denied to them” (1999, 437), Eissler et al. (2022) propose the concept of ‘time-use agency,’ defined as an individual’s ability to make strategic choices about how to allocate his/her time. Sinharoy et al. (2023) refines the concept of time-use agency as an individual’s critical awareness of, confidence in, and influence over the allocation of their time and develops a quantitative measurement tool.

The time-use agency module was designed under the Measures for Advancing Gender Equality (MAGNET) initiative, a research collaboration between the World Bank’s Africa Gender Innovation Lab and Living Standards Measurement Study teams, the International Food Policy Research Institute, the International Rescue Committee, and researchers at Oxford University, Makerere University, Asian Development Bank, The Brookings Institution, Tufts University, and University of Alicante.³ The module was implemented as part of a broader experiment between 2022-2023 on measuring time use allocation in Malawi, in a sample representative of the Southern and Central regions of the country. Specifically, the Malawi time use experiment compared standard interview-based time use diary approaches with real-time, smartphone-based data collection, the latter of which also allowed for a much more detailed view of multitasking across different activities (Kilic et al., 2024). Within the experiment, the time-use agency module asked respondents about their ability to manage and reallocate time, as well as receive support, for selected activities covered in the time use data collection component.

² A detailed discussion of time-use diary approaches is covered in Seymour, Malapit, and Quisumbing 2020, as well as Kilic et al. 2024.

³ For more information, visit the MAGNET Resource Center (<https://magnet.ifpri.info/>).

In this paper, we present several key findings from the initial piloting of the time-use agency tool in Malawi, alongside the continuous smartphone-based time use data collection that allows us to examine highly granular activity profiles across men and women. These findings build on evidence on gender inequalities in time use in low-income contexts:

(1) Along with spending more time than men across employed and unpaid (i.e., non-leisure) activities, we find that women in Malawi are significantly less able than men to reallocate their time, and that they spend significantly more of their time in non-flexible activities (i.e., activities over which they are unable to choose whether or when to do the activity). The share of activities where women could have chosen not to do all or some tasks was 29 percent, for example, compared to 39 percent for men, and women also had significantly lower shares of activities (39 percent, compared to 59 percent of men) where they could have chosen to change the timing of all or some tasks.

(2) We also find that the share of daily time spent in the last week on non-flexible activities is greater for women than men, across multiple activity categories (not just in unpaid domestic work, for example, but also within areas such as agriculture, unpaid domestic work, transport, leisure and personal care). Respondents could also report multiple activities in the time-use agency module; the findings show that women were much more likely than men to combine reporting of non-flexibility across different unpaid domestic activities, but also of unpaid domestic work with leisure, personal care, and work in nonfarm employment or agriculture. Men, on the other hand, were much more likely to report non-flexibility in leisure on its own, or in combination with other daily activities (across personal care/eating and drinking, as well as to a lesser extent transport and paid work). As we discuss in the paper, these findings have key policy implications — if non-flexibility (as in the case for men, for example) is mainly concentrated in leisure, then improving flexibility in this area might not lead to changes in economic behavior. For women, however, efforts to improve flexibility in unpaid

domestic work could have important connections with their being able to engage in other economic (and potentially paid) activity.

(3) Non-flexibility in time also has implications for different employment outcomes, particularly for women. In estimations, we find that as compared to men, women who have less flexibility in non-sleep and non-leisure time (i.e., across paid and unpaid activities) are significantly less likely to report they would have liked to work more paid hours, if employed, or look for work. Among those employed, women who are unpaid contributing family workers are also much more likely to report less flexibility across paid and unpaid activities, reflecting a concentration of poorer-earnings outcomes among women in this group. For men, non-flexibility in agriculture or non-farm employment has broader negative associations on their share of daily time in sleep, as well as leisure; for women, effects are limited to leisure. Overall time burdens in unpaid and paid work, on the other hand, do not have a separate significant effect on these employment outcomes, when controlling for inflexibility and other demographic and socioeconomic characteristics.

(4) Since the data on time use and time-use agency were collected at the individual level, for one adult man and woman within each household, we are also able to assess how relative intra-household inequalities in non-flexibility of time, vis-à-vis inequalities in overall time burdens, are associated with individual outcomes. We continue to find that greater intra-household inequalities between women and men in the distribution of non-flexible time reflect more pronounced effects on women's employment, health and leisure. Greater intra-household inequalities in the share of unpaid work, on the other hand, are more closely associated with poorer outcomes across women's sleep, leisure and happiness.

(5) The findings, overall, underscore that across different employment and wellbeing outcomes, frequent and significant distinctions emerge in the relative associations between (i) share of time

that is non-flexible and (ii) share of time spent on unpaid and paid work. This suggests that the ability to reallocate time captures something distinct from traditional time-use measures that are based wholly on the amount of time spent on different activities. The findings have important implications for how time use data are collected and resulting policy design, indicating that we can miss important information (particularly within understanding decisions around seeking employment) if we only consider how much time individuals spend on different activities.

In developing our time-use agency tool, we drew on general insights into the cognitive aspects of time-use survey methods, summarized by Seymour, Malapit, and Quisumbing (2020), which suggest that questions about the intensive margin of time use (e.g., how much time did you spend doing X?) are more difficult to comprehend and respond to compared to questions about the extensive margin of time use (e.g., did you spend any time doing X?). Hence, our tool asks about respondents' ability to choose not to do or choose when to do an activity, rather than respondents' ability to influence how much time is spent on an activity. As discussed in the paper, this approach yields essential information about respondents' ability to reallocate their time, which we consider to be an important indicator of time-use agency, without overly burdening respondents with cognitively difficult questions about their ability to influence how much time is spent on activities. We envision the tool to be particularly useful to development programs that aim to address gender inequalities in time use to aid in program design, monitoring, and evaluation, alongside traditional time-use measures.

2 Study design and time-use agency module

The time-use agency tool was piloted as part of a randomized methodological experiment in urban and rural areas of Southern and Central Malawi, comparing different approaches to time-use measurement (**Appendix Table A1**). The experiment — for which a full description of the study and findings are in Kilic et al. (2024) — was conducted between July 2022 and March 2023, and surveyed men and women aged 15-64 across two treatment arms: (i) a smartphone-based time diary application, *TimeTracker*, self-reported in real time by respondents; and (ii) a traditional 24-hour recall time diary, administered to respondents as part of a face-to-face interview.⁴ We focus on the smartphone sample for this study, given the continuous nature of reporting in the smartphone arm, leading to a much greater incidence and range of reported activities, and — as discussed in Kilic et al. (2024) — reporting of simultaneous activities. Respondents reported their time use over a 9-day period (**Appendix Figure A1**), choosing from 56 different activity categories across agriculture, non-farm employment, unpaid domestic and care work, transport, leisure, schooling, personal care, and sleeping and eating (**Appendix Table A2**).

The time-use agency tool was administered on Day 9 of the reporting period, as an interview (**Appendix Table A3**; gender matching of interviewers and respondents was enforced). A key objective of this module was to understand individuals' ability to choose how and when to spend time in different activities in which they were engaged. In particular, to ease module implementation and focus attention to activities that were noteworthy to respondents, individuals were first asked to identify the two activities — excluding sleep — that they felt (a) most satisfied doing during the last

⁴ Eligible households (that had at least one adult man and woman aged 15-64) were randomly drawn from a household listing within each of 72 enumeration areas (EAs), from the nine most populous districts in Southern and Central Malawi and split evenly across rural and urban areas. Sampling was with probability proportional to 2018 Population and Housing Census EA-level household counts. Within each treatment household, one man and woman aged 15-64 were selected randomly as the study participants.

24 hours, as well as (b) least satisfied doing during the last 24 hours. Remaining questions in the module on respondents' ability to flexibly reallocate time, if needed, and seek support for these activities, were then asked for each of the four identified activities. Flexibility, in particular, was elicited by asking whether respondents could have chosen not to do and/or change the times they conducted each activity. Based on this, we construct measures of individuals' ability to flexibly reallocate their time — and compare how this dimension of time allocation is differentially linked with different socioeconomic and health outcomes, as compared to average time spent in activities. As discussed in Section 3, interestingly, the distribution of activity categories across the two most- and least-satisfying activities was similar to the overall distribution of time across all activity categories reported by men and women in the sample, allowing us to consider implications for men's and women's overall time flexibility.

Prior to piloting, cognitive interviewing using an early version of the time-use agency tool was conducted among a sample of 12 adult men and 12 adult women in Zomba, Malawi in May 2022 (Mzungu et al. 2022). Cognitive interviewing is a qualitative approach used to probe for discrepancies in how researchers ask questions and how respondents interpret, recall information for, and respond to survey questions (Willis and Miller 2011). The findings from cognitive interviewing are often used to revise survey questions to elicit more accurate answers. Cognitive interviewing of the time-use agency tool led to two key revisions in the tool. First, the word “enjoyable,” used in the initial phrasing of questions one and two, was replaced by “satisfied,” which was more easily and consistently understood by respondents as something beneficial to oneself (Mzungu et al. 2022). Second, a series of questions included in the initial version of the tool that asked about respondents' preferences and ability to spend more or less time in an activity were dropped. Respondents tended to plan their activities according to what they could implement during a single day, and they struggled with the idea that someone could “choose” to spend more or less time on a given activity.

The underlying data on actual time allocation, on which the time-use agency module was based, was self-reported by respondents in the *TimeTracker* app, using a low-cost Android smartphone (Samsung Galaxy A12) provided to them for the duration of the reporting period. The phones were restricted to only allow respondents to use the *TimeTracker* app on the device. As discussed in Kilic et al. (2024), respondents recorded their activities in *TimeTracker* by tapping on an image of an activity (accompanied by captions in Chichewa) to begin recording time for the activity and tapping the image again to end recording time. Upon deployment of the phones (Day 2) interviewers carefully instructed respondents on the use of *TimeTracker*. Additional interviewer check-ins were conducted on days 3, 6, 9 and 11 to reinforce the basic tenets of the training provided on Day 2; download and review the time-use data from respondents' devices; identify and discuss potential anomalies in the downloaded data; and answer questions/concerns from the respondents. In total, respondents recorded 160,880 activities, over 9 full days of data collection between deployment (day 2) and pick up (day 11).

As described in **Appendix Figure A1**, additional survey modules eliciting a wide range of socioeconomic and demographic attributes were implemented to respondents on Days 1 and 9; means of these attributes for the smartphone sample are provided in **Appendix Table A4**, reflecting wide gender inequalities across ownership of assets, employment and education.

3 Results

3.1 Representativeness of activities reported in the time-use agency module

Table 1 shows that when aggregating women's and men's responses, the distribution of activity categories reported as either most or least satisfying in the time-use agency module (covering days 7 and 8 of the survey period, i.e. spanning the time period for which the time-use agency module

would roughly cover) closely reflects the category distribution of activities that were not reported. Some individuals, for example, would have reported activities in specific activity categories as either most or least satisfying, and other individuals reported activities in different categories, resulting in a similar distribution of activities within and outside the module. These patterns also held when extrapolating activities reported in the time-use agency module to the whole week – that is, considering activities reported as most or least satisfying in the 24 hours prior to the time-use agency module’s implementation as most or least satisfying during earlier days in the week as well.

Table 1. Share of daily non-sleep time, across categories (Days 7 and 8)

	Share of daily (non-sleep) time reported across categories			
	Women (obs=352)		Men (obs=358)	
	Reported in agency module ⁽²⁾	Not reported in agency module	Reported in agency module ⁽²⁾	Not reported in agency module
Agriculture	0.06	0.06	0.06	0.06
Nonfarm employment	0.05	0.06	0.14	0.13
Unpaid work: obtaining resources for HH	0.04	0.04	0.04	0.04
Unpaid work: cooking and cleaning	0.24	0.23	0.04	0.04
Unpaid work: care work	0.06	0.06	0.004	0.01
Transport	0.12	0.12	0.21	0.22
Schooling	0.01	0.01	0.01	0.01
Leisure	0.32	0.32	0.41	0.41
Community activities	0.01	0.01	0.01	0.01
Personal care and health	0.05	0.04	0.03	0.03
Eating/drinking	0.05	0.05	0.05	0.05

Notes: (1) Data are at the individual level, for days indicated in the graphs. Tests of equality of means within men and women, across (A) and (B), revealed no statistically significant differences ($p < 0.01$).

(2) These were identified by the respondent in the agency module, i.e. activities they found either most or least satisfying in the last 24 hours (Appendix Table A3).

As a result, reporting in the time-use agency module was not concentrated in specific categories, and we can consider the analysis in our paper—while focused on activities reported in the module—as relevant for the broader profile of activities reported in the smartphone diary. **Appendix Figure A2** shows that for days 7 and 8, the share of daily non-sleep time covered by activities reported in the time-use agency module was somewhat higher for women (44 percent) than men (39 percent). When extrapolating reporting to the entire week, these shares were slightly lower (0.41 for women and 0.35 for men).

3.2 Descriptives on time allocation and flexibility

The data clearly show that women spend more time across employed and unpaid domestic activities, and much of this is driven by the latter (**Appendix Figure A3**). We also find that women are less likely than men to have flexibility in their activities — **Table 2a** shows that over days 7 and 8, the share of activities where women could have chosen not to do all or some tasks was 29 percent, compared to 39 percent for men. Women also had significantly lower shares of activities (39 percent, compared to 59 percent of men) where they could have chosen to change the timing of all or some tasks. To better understand degrees of flexibility based on questions in the time-use agency module, **Table 2b** provides different specifications, based on the information in **Table 2a**, of flexibility in activities, from different degrees of flexibility (i.e. whether respondents could have chosen to not do, as well as adjust when the activity could be undertaken, for all tasks versus some tasks in that activity).

For non-flexibility in activities, two specifications are examined. *Specification B1* looks at whether respondents reported no to both (A) and (B) in **Table 2a**; *Specification B2* allows for greater latitude and considers whether the respondent replied no to either (A) or (B). As expected, the share of non-flexible (or flexible) activities for men’s and women’s activities goes up as the specification is relaxed from B1 to B2, but substantial gender differences persist across all cases.

Table 2a. Degrees of flexibility in activities (activity-level data, days 7 and 8), across men and women

	Share of activities that are flexible		Share of activities that are not flexible	
	Women	Men	Women	Men
<i>Share of activities that:</i>				
(A) Respondent could have chosen to not do during the last 24 hours				
X ₁ = All tasks within that activity	0.17***	0.26***		
X ₂ = All, or just some, tasks within that activity	0.29***	0.39***		
X ₃ = No			0.71***	0.61***
(B) Respondent could have chosen to change the times when activity was done, during the last 24 hours				
Z ₁ = All tasks within that activity	0.24***	0.38***		
Z ₂ = All, or just some, tasks within that activity	0.39***	0.59***		
Z ₃ = No			0.61***	0.41***
Number of activities	4,157	3,823	4,157	3,823

Notes:

(1) Data are at the activity level, for days indicated in the graphs. Flexibility was asked for most and least satisfying activities reported in the time-use agency module, representing about 26 percent of total women’s weekly activities and 23 percent of men’s.

(2) Tests of equality of means conducted between women and men; ***p<0.01, **p<0.05, *p<0.10.

Table 2b. Degrees of flexibility (activity level data, days 7 and 8), aggregate specifications

	Women	Men
<i>(A) Share of activities that are flexible:</i>		
<i>(A1): X₁ = 1 and Z₁ = 1</i>	0.11***	0.17***
<i>(A2): X₁ = 1 or Z₁ = 1</i>	0.12***	0.20***
<i>(Specification A3): X₂ = 1 and Z₂ = 1</i>	0.19***	0.32***
<i>(Specification A4): X₂ = 1 or Z₂ = 1</i>	0.49***	0.66***
<i>(B) Share of activities that are not flexible:</i>		
<i>(Specification B1): X₃ = 1 and Z₃ = 1</i>	0.51***	0.34***
<i>(Specification B2): X₃ = 1 or Z₃ = 1</i>	0.81***	0.68***
Number of activities	4,157	3,823

Notes:

(1) Data are at the activity level, for days indicated in the graphs. Based on the degrees of flexibility in Table 3a.

(2) Tests of equality of means conducted between women and men; ***p<0.01, **p<0.05, *p<0.10.

Table 3 and Figure 1 also establish that flexibility varies considerably across different types of activity as well – and not necessarily centered on either unpaid domestic activities or employment, although women’s non-flexibility in unpaid domestic work is quite common. **Table 3** shows, for example, that under Specification B1, women are significantly more likely than men to report non-

flexibility across all activity categories except nonfarm employment (the latter perhaps owing to a greater likelihood of women taking on contributing family or part-time roles). These gender differences carry over to unpaid domestic work, transport, leisure and personal care in Specification B2.

Since respondents could also report multiple activities in the time-use agency module, **Figure 1** breaks out combinations of activities reported as non-flexible. Women were much more likely than men to combine reporting of non-flexibility across different unpaid domestic activities, but also of unpaid domestic work with leisure, personal care, and work in nonfarm employment or agriculture. For men, on the other hand, around 40 percent under Specification B2 reported non-flexibility in leisure on its own, or in combination with other activities (personal care/eating/drinking, and to a lesser extent with transport and paid work). These descriptive findings have key implications for our understanding of individuals' mobility, including key differences for men and women — if non-flexibility (as in the case for men, for example) is mainly concentrated in leisure, then improving flexibility in this area might not lead to changes in economic behavior. For women, however, efforts to improve flexibility in unpaid domestic work could have important connections with their being able to engage in other economic (and potentially paid) activity.

**Table 3. Among activities reported in agency module:
share of women and men reporting non-flexibility (activity-level data)**

	Share of activities within category reported as non-flexible:				Number of observations per category ⁽²⁾	
	Specification B1		Specification B2		Women	Men
	Women	Men	Women	Men		
Days 7 and 8						
Agriculture	0.36	0.34	0.70	0.67	179	167
Nonfarm employment	0.31***	0.48***	0.81	0.83	144	351
Unpaid domestic work: obtaining resources for HH	0.43**	0.28**	0.80***	0.61***	238	72
Unpaid domestic work: cooking and cleaning	0.52***	0.34***	0.84***	0.74***	1,563	121
Unpaid domestic work: care of children or elderly	0.73***	0.41***	0.97	0.94	448	17
Transport	0.42***	0.24***	0.71***	0.56***	171	513
Leisure	0.43***	0.33***	0.72***	0.63***	962	1,797
Personal care	0.57***	0.14***	0.82	0.74	93	85
Eating/drinking	0.63***	0.38***	0.83	0.80	334	663
Full week						
Agriculture	0.37**	0.31**	0.67	0.69	626	702
Nonfarm employment	0.38***	0.46***	0.82	0.80	580	1,677
Unpaid domestic work: obtaining resources for HH	0.46***	0.34***	0.80***	0.54***	1,093	357
Unpaid domestic work: cooking and cleaning	0.52***	0.35***	0.84***	0.74***	8,122	529
Unpaid domestic work: care of children or elderly	0.71***	0.35***	0.96***	0.94***	2,293	63
Transport	0.44***	0.22***	0.76***	0.57***	919	2,363
Leisure	0.44***	0.34***	0.70***	0.65***	4,447	9,069
Personal care	0.59***	0.18***	0.90***	0.79***	382	359
Eating/drinking	0.61***	0.39***	0.82	0.80	1,641	3,218

Notes:

(1) Data are at the activity level, for days indicated in the graphs. Tests of equality of means conducted between women and men; ***p<0.01, **p<0.05, *p<0.10.

(2) These are the number of activities per category that were identified as either most or least satisfying (and as a result, for whom questions on flexibility were asked).

(3) Schooling, community activities had very few observations (were not identified to the same extent in the agency module by respondents) so were not included in the table.

Figure 1. Profiles of non-flexibility: share of women and men reporting combinations of non-flexible activities

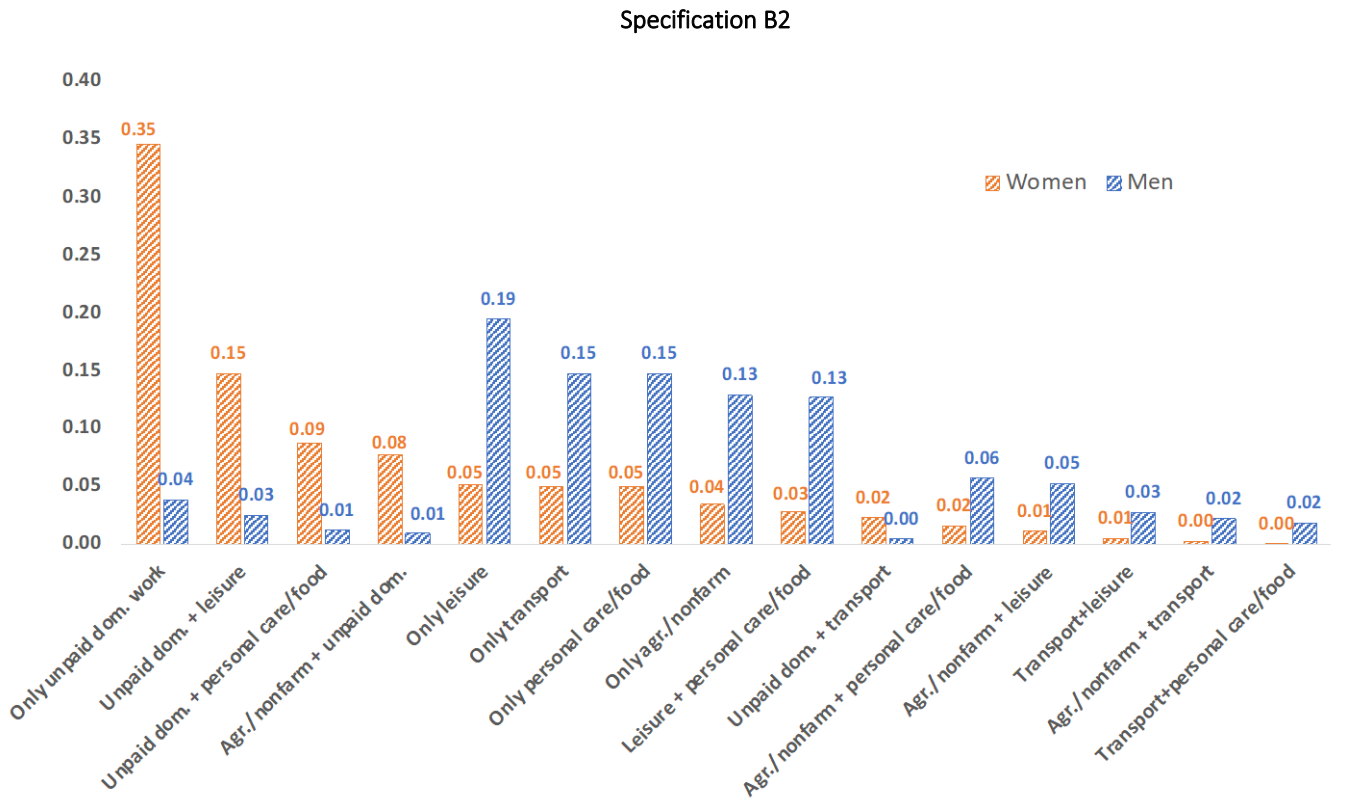
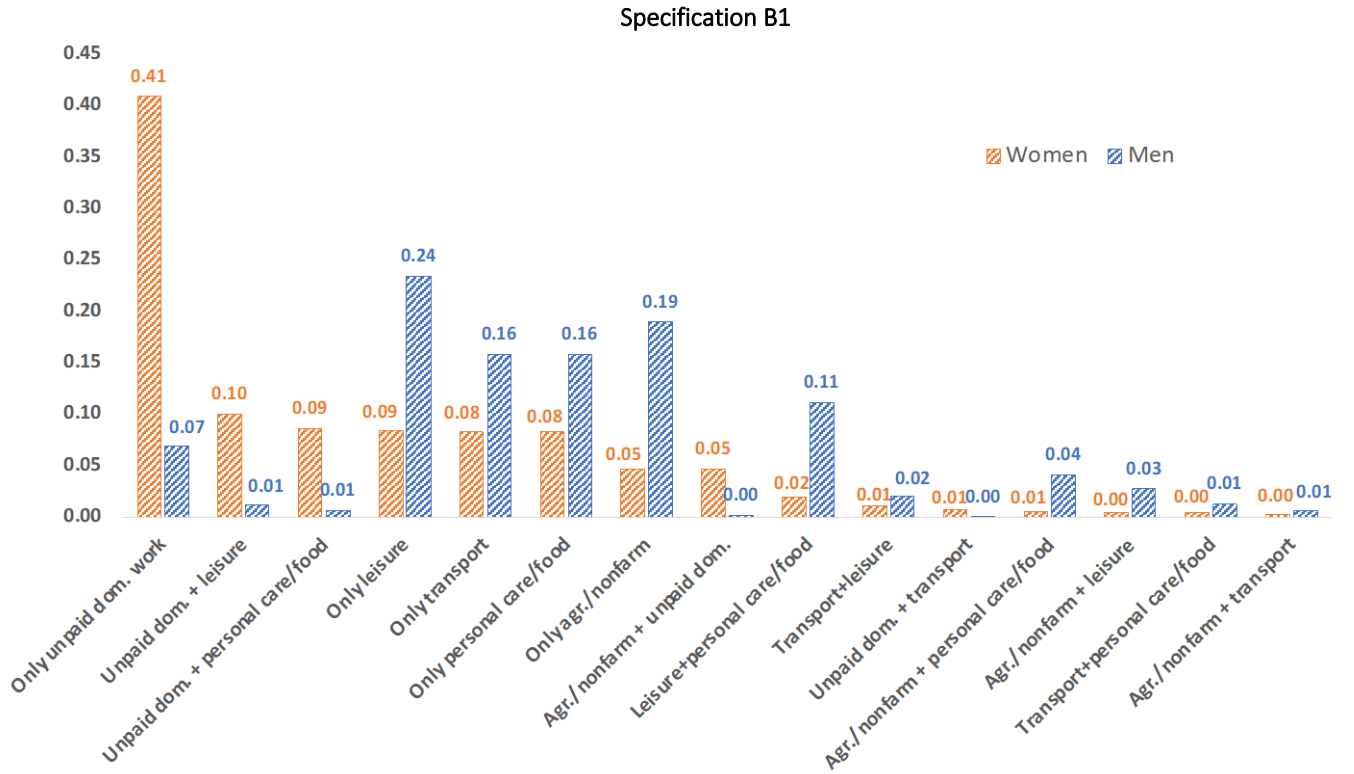


Table 4 also shows that that along with greater incidence of non-flexibility among women, the share of daily time spent in the last week on non-flexible activities is also greater for women than men, across both specifications (whether the denominator is all activities, only non-leisure activities, or unpaid activities). **Appendix Figure A4** also shows that the distribution of the share of time in non-flexible activities tends to be bimodal, with a greater share of respondents with either very low or very high shares of daily non-flexible time, and with the right tail of non-flexible time being much longer for women than men. Again, the results are very similar across tables when looking at the activities identified in the time-use agency module over the last week, as opposed to just restricting to Days 7 and 8. Overall, the findings underscore that the data on flexibility is providing important information beyond overall time allocation to different activities, with substantial relevance for women’s vis-à-vis men’s labor decisions. The regressions in Section 3.3 explore these distinctions further as well.

Table 4. Share of daily time that was reported as non-flexible in agency module

	Day 7		Day 8		Week	
	Women	Men	Women	Men	Women	Men
Share of daily time, across (A)-(E), that is non-flexible:⁽²⁾						
(A) Only non-leisure activities in the day						
Specification B1	0.23***	0.14***	0.26***	0.17***	0.25***	0.14***
Specification B2	0.40***	0.29***	0.44***	0.30***	0.41***	0.27***
Number of respondents	319	273	326	283	3,104	2,590
(B) Unpaid domestic, or employed, activities						
Specification B1	0.31***	0.18***	0.35***	0.24***	0.32***	0.17***
Specification B2	0.54***	0.34***	0.58***	0.44***	0.53***	0.32***
Number of respondents	317	253	321	258	3,086	2,449
(C) Only unpaid domestic activities						
Specification B1	0.35***	0.07***	0.37***	0.09***	0.34***	0.06***
Specification B2	0.56***	0.13***	0.58***	0.19***	0.55***	0.12***
Number of respondents	313	185	317	194	3,069	2,027
(D) Agriculture and nonfarm employment						
Specification B1	0.15	0.20	0.22	0.27	0.15***	0.21***
Specification B2	0.30**	0.40**	0.40**	0.51**	0.26***	0.40***
Number of respondents	196	199	192	196	1,802	1,864

Notes:

(1) Data are at the individual level, for days indicated in the graphs. Tests of equality of means conducted between women and men; ***p<0.01, **p<0.05, *p<0.10.

(2) All shares of daily time exclude sleep, since this was not asked in the time-use agency module.

3.3 Individual-level regressions: Examining the relative role of non-flexibility in time allocation, compared to overall time burdens

Following equations (A)-(C) below, **Tables 5a-5d** present individual-level, OLS regressions of how the share of daily time in non-flexible activities for individual i in household j and enumeration area k (d_{ijk}^N) is associated with different aspects of well-being and decision-making y_{ijk} :

$$y_{ijk} = \alpha + \theta d_{ijk}^N + \beta_1 s_{ijk}^U + \beta_2 s_{ijk}^E + \gamma X_{ijk} + v_1 A_k + v_2 I_{ijk} + \varepsilon_{ijk} \quad (\text{A})$$

$$y_{ijk} = \alpha + \theta_1 d_{ijk}^{NU} + \gamma X_{ijk} + v_1 A_k + v_2 I_{ijk} + \varepsilon_{ijk} \quad \text{if } s_{ijk}^U > 0 \quad (\text{B})$$

$$y_{ijk} = \alpha + \theta_2 d_{ijk}^{NE} + \gamma X_{ijk} + v_1 A_k + v_2 I_{ijk} + \varepsilon_{ijk} \quad \text{if } s_{ijk}^E > 0 \quad (\text{C})$$

For each outcome, equations (A)-(C) examine different aspects of the role of non-flexibility in time allocation, particularly given the different profiles of non-flexibility in time allocation observed in **Figure 1**, across unpaid domestic work and areas of employment. To better understand the separate effect of non-flexibility beyond overall time burdens, equation (A), in particular, examines individuals' share of daily non-sleep and non-leisure time in non-flexible activities d_{ijk}^N , along with the share of daily time spent in unpaid domestic work (s_{ijk}^U) and the share of daily time in agriculture or nonfarm employment (s_{ijk}^E). Equation (B) examines the share of daily time in unpaid domestic work that is non-flexible, among individuals who are engaged in unpaid domestic work. Equation (C) examines the share of daily time in agriculture or nonfarm employment that is non-flexible, among individuals engaged in these activities as well. The regressions also control for a vector of individual

and household characteristics X_{ijk} as included in **Appendix Table A4**,⁵ along with fixed effects for enumeration area A_k and day of reporting I_{ijk} .

Among outcomes, **Table 5a** examines effects on employment variables linked with respondents' mobility and ability to seek better earnings opportunities, as measured by employment in unpaid contributing family work (where women are heavily engaged); time-related underemployment⁶; and job search. **Table 5b** examines effects of non-flexibility in non-leisure and non-sleep time on respondents' share of time in these aspects of rest.

Looking first at **Table 5a**, women who have less flexibility in non-leisure and non-sleep time (Equation A) are more likely to be unpaid contributing family workers – and among those employed, are significantly less likely to say they would have liked to work more paid hours or look for work. In general, these effects are also stronger when examining non-flexibility by the stricter specification B1, as opposed to B2. Importantly, we find that non-flexibility in time allocation has important links with key areas of employment beyond paid and unpaid time burdens; there are no separate effects for women's outcomes in these areas related to their overall share of time in unpaid or agricultural/nonfarm work. **Table 5a** also shows that much of the effects for women on time-related underemployment stem from the share of daily time in unpaid work that is non-flexible (Equation B), but for contributing family work and job search, effects are distributed across different areas of non-flexible work, including within agriculture and nonfarm employment (Equation B). We also see some interesting gender differences — non-flexibility has weaker effects on these employment outcomes

⁵ These include individuals' headship status; age; marital status; education; religion; reported months away from home; number of children aged 12 and under; whether the respondent had a main occupation in agriculture or nonfarm employment as reported in the labor module; individual ownership and rights of different assets across land, financial accounts, and durables; and household access to facilities and infrastructure. Standard errors in the estimation were clustered at the household level.

⁶ Time-related underemployment, in particular, relates to whether individuals would have wanted to work more hours in their current occupation, provided those hours were paid; this indicator has received greater attention in the international statistical community following the 19th International Conference of Labour Statistics, to better unpack key aspects of labor underutilization beyond unemployment. Also see https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_422452.pdf.

for men as compared to women (and for men, the share of overall time in paid work has stronger negative effects on contributing family work and job search). The only exception is a large negative association of the share of daily time in unpaid work that is non-flexible on whether men looked for work in the last week. We also find in **Table 5b** that non-flexibility in agriculture or non-farm employment has broader negative associations for men on their share of daily time in sleep, as well as leisure; for women, effects are limited to leisure.

Table 5. OLS regressions (individual level): effects of the share of daily non-flexible time, as well as share of time in unpaid and paid work⁽⁴⁾, on individual economic outcomes, health and satisfaction over time allocation

Table 5a. Employment outcomes

	Outcome:											
	<i>I. Among those in farm/nonfarm work: unpaid contributing family worker</i>				<i>II. Time-related underemployment: Among those employed: would have liked to work more hours, provided hours were paid (Y=1 N=0)</i>				<i>III. Looking for work in the last week (Y=1 N=0)</i>			
	Women		Men		Women		Men		Women		Men	
	B1 (1)	B2 (2)	B1 (3)	B2 (4)	B1 (5)	B2 (6)	B1 (7)	B2 (8)	B1 (9)	B2 (10)	B1 (11)	B2 (12)
(A) Full sample of men and women:												
Share of daily (non-leisure, non-sleep) time that is:												
Not flexible	0.20***	0.14**	0.10	-0.04	-0.27***	-0.17**	-0.07	-0.11	-0.21***	0.02	0.07	-0.01
In any unpaid work	-0.00	-0.01	0.02	0.02	0.06	0.07	0.00	-0.00	0.08	0.00	-0.11	-0.11
In any agr/nonfarm work	-0.01	-0.02	-0.13***	-0.10**	-0.07	-0.07	-0.01	0.01	0.03	-0.01	-0.20***	-0.18**
<i>Number of respondents</i>	2,433	2,433	2,429	2,429	2,433	2,433	2,429	2,429	3,103	3,103	2,590	2,590
<i>R-sq</i>	0.583	0.577	0.540	0.538	0.407	0.398	0.453	0.455	0.276	0.263	0.397	0.396
<i>Mean of outcome</i>	0.24	0.24	0.16	0.16	0.49	0.49	0.67	0.67	0.26	0.26	0.43	0.43
(B) Among those in any unpaid work:												
Share of daily time in unpaid work that is non-flexible	0.16**	0.11*	0.15	0.18*	-0.28***	-0.11	-0.45*	-0.26	-0.14*	0.04	-0.61***	-0.28
<i>Number of respondents</i>	2,403	2,403	1,893	1,893	2,403	2,403	1,893	1,893	3,068	3,068	2,027	2,027
<i>R-sq</i>	0.579	0.577	0.552	0.553	0.406	0.395	0.472	0.469	0.272	0.267	0.411	0.404
<i>Mean of outcome</i>	0.24	0.24	0.17	0.17	0.49	0.49	0.66	0.66	0.26	0.26	0.43	0.43
(C) Among those in any agr. or nonfarm employment:												
Share of daily time in agr/nonfarm work that is non-flexible	0.27**	0.10	0.05	-0.13***	-0.11	-0.13	-0.01	-0.07	-0.35**	0.01	0.03	-0.10
<i>Number of respondents</i>	1,606	1,606	1,796	1,796	1,606	1,606	1,796	1,796	1,802	1,802	1,864	1,864
<i>R-sq</i>	0.623	0.619	0.552	0.558	0.445	0.446	0.488	0.489	0.338	0.330	0.390	0.392
<i>Mean of outcome</i>	0.23	0.23	0.15	0.15	0.48	0.48	0.67	0.67	0.25	0.25	0.42	0.42

Notes:

(1) OLS regressions, controlling for day, EA and interview month fixed effects, along with individual and household characteristics (Appendix Table A4). Standard errors were clustered at the individual level. Data are at the individual level, for the 7 days prior to the administration of the time-use agency module. ***p<0.01, **p<0.05, *p<0.10.

(2) B1 = using specification B1 of non-flexibility of time; B2 = specification B2.

Table 5b. Share of time in sleep and leisure

	Outcome:							
	IV. Share of daily time in sleep				V. Share of daily time in leisure			
	Women		Men		Women		Men	
	B1 (1)	B2 (2)	B1 (3)	B2 (4)	B1 (5)	B2 (6)	B1 (7)	B2 (8)
(A) Full sample of men and women, share of daily (non-leisure, non-sleep) time that is:								
Not flexible	0.00	0.00	0.00	0.01	-0.02	-0.04***	0.00	0.02
In any unpaid work	-0.06***	-0.06***	-0.03**	-0.03**	-0.07***	-0.05***	-0.10***	-0.10***
In any agr/nonfarm work	-0.05***	-0.05***	-0.09***	-0.10***	-0.19***	-0.19***	-0.20***	-0.21***
<i>Number of respondents</i>	3,103	3,103	2,590	2,590	3,103	3,103	2,590	2,590
<i>R-sq</i>	0.397	0.397	0.331	0.331	0.244	0.249	0.265	0.266
<i>Mean of outcome</i>	0.34	0.34	0.33	0.33	0.20	0.20	0.26	0.26
(B) Among those in any unpaid work:								
Share of daily time in unpaid work that is non-flexible	-0.00	-0.02	0.01	-0.04	-0.01	-0.01	-0.08	-0.01
<i>Number of respondents</i>	3,068	3,068	2,027	2,027	3,068	3,068	2,027	2,027
<i>R-sq</i>	0.399	0.400	0.321	0.322	0.191	0.191	0.196	0.194
<i>Mean of outcome</i>	0.34	0.34	0.33	0.33	0.20	0.20	0.26	0.26
(C) Among those in any agr. or nonfarm employment:								
Share of daily time in agr/nonfarm work that is non-flexible	-0.03	-0.01	-0.05***	-0.05***	-0.10***	-0.09***	-0.06***	-0.09***
<i>Number of respondents</i>	1,802	1,802	1,864	1,864	1,802	1,802	1,864	1,864
<i>R-sq</i>	0.398	0.398	0.309	0.312	0.255	0.259	0.234	0.251
<i>Mean of outcome</i>	0.35	0.35	0.33	0.33	0.18	0.18	0.24	0.24

Notes:

(1) OLS regressions, controlling for day, EA and interview month fixed effects, along with individual and household characteristics (**Appendix Table A2**). Standard errors were clustered at the individual level. Data are at the individual level, for the 7 days prior to the administration of the time-use agency module. ***p<0.01, **p<0.05, *p<0.10.

(2) B1 = using specification B1 of non-flexibility of time; B2 = specification B2.

3.4 Intra-household allocations of non-flexible time, and implications for women's resources and rights

The differences in men's and women's profiles of non-flexible time, along with corresponding gender differences in how non-flexibility in time allocation is linked with other time-related outcomes in **Tables 5a and 5b**, raise questions over how these differences might also be associated with individual outcomes, including intra-household control over assets and resources. Similar to

findings at the individual level, **Figure 2** shows that when constructing the intra-household difference h^N between women and men in their respective daily shares of non-flexible time, we continue to see a large share of households over the survey period where women have a greater share of non-flexibility than men — within employed and unpaid domestic activities, for example, 45 percent of households under specification B1, and 59 percent under specification B2.

Figure 2. Intrahousehold variation: share of households by mean difference in
(women's – men's) share of daily time that is not flexible (h^N)

Among all non-leisure activities: Specification B1

Among all non-leisure activities: Specification B2

Among agriculture/non-farm and unpaid domestic activities:
Specification B1

Among agriculture/non-farm and unpaid domestic activities:
Specification B2

Notes:

- (1) Data are at the household level, for activities over the 7 days prior to the administration of the time-use agency module.
- (2) Shares of daily time exclude sleep and leisure in the denominator.

Looking specifically at the sample of women, **Table 6** shows that h^N has a similar negative association with women's employment, across looking for work, wanting additional paid hours, and a greater likelihood of being an unpaid contributing family worker. The effects are generally strengthened as well when looking at higher thresholds of h (taking $h^N > 0.25$ as an example; 0.25 was chosen as a threshold that would also allow enough sample distribution above and below the threshold). A higher $h^N > 0.25$ also has a significant negative association with women's share of time in leisure, as well as the likelihood women are underweight as measured by their BMI. Among landowners, we do see some significant, albeit weaker, negative associations of women's relative inflexibility in time with reduced probability they have rights to sell or bequeath land that they owned.⁷ On other outcomes available in the survey, however, such as women's exclusive control over their earnings⁸ and self-reported happiness, we find little association with h^N – reflecting stronger links with employment, leisure and health as metrics of wellbeing.

For all of these outcomes, on the other hand, the comparative effects of the average intrahousehold difference in share of (women's-men's) time in unpaid work h^U were not significant, except for leisure, reinforcing the importance of understanding non-flexibility, including intrahousehold distribution of non-flexible time, on key outcomes for women. Women's share of time in sleep, as well as additional outcomes on the share of time women reported being happy, were the only outcomes where h^U had significant effects beyond the difference in non-flexible time. Overall, greater inequalities between women and men in the distribution of non-flexible time reflect more

⁷ Respondents' ability to sell and bequeath land is relevant to [indicator 5.a.1 of the Sustainable Development Goals](#), and the importance of gender-disaggregated data on land rights, in addition to ownership, has also been highlighted in UNSD, 2019.

⁸ Specifically, the survey asked among those earning wage or self-employed income, whether they had exclusive control over how those earnings were used. The share of earning respondents with any control over their earnings was 86 percent, roughly evenly divided across exclusive versus joint control — and 13 percent with no control. The Malawi survey unfortunately did not have a food or nonfood consumption expenditure module, to be able to examine the findings on inflexibility across a consumption-based welfare distribution. On income, the earnings of the adult man and adult woman respondent in each HH were asked, but not of all household members to generate a household-level measure.

pronounced effects on women's employment, leisure, and health as well as (for greater inequalities in the share of unpaid work) on women's sleep, leisure and happiness. These effects trend in similar directions as the individual-level data as well.

Table 6. OLS regressions, women: association of average intrahousehold difference in share of (women's-men's) time that is non-flexible (h^N), and average intrahousehold difference in share of (women's-men's) time in unpaid work (h^U), on outcomes

	Women							
	(A) Any intra-household difference in share of daily time ($h>0$)				(B) Intra-household difference in share of daily time ($h > 0.25$)			
	$h^N>0$	$h^U>0$	R-sq	Obs.	$h^N>0.25$	$h^U>0.25$	R-sq	Obs.
<i>(1) Among those in farm/nonfarm work: unpaid contributing family worker</i>								
Specification B1	0.11***	-0.02	0.58	2433	0.11***	-0.02	0.58	2433
Specification B2	0.04	-0.004	0.57	2433	0.05**	-0.01	0.57	2433
<i>(2) Time-related underemployment: Among those employed: would have liked to work more hours, provided hours were paid (Y=1 N=0)</i>								
Specification B1	-0.04	0.01	0.39	2433	-0.16***	0.02	0.40	2433
Specification B2	-0.02	0.01	0.39	2433	-0.06	0.003	0.39	2433
<i>(3) Looking for work in the last week (Y=1 N=0)</i>								
Specification B1	-0.12***	-0.02	0.28	3103	-0.12***	0.001	0.27	3103
Specification B2	-0.02	-0.05	0.27	3103	-0.03	-0.02	0.26	3103
<i>(4) Share of daily time in sleep</i>								
Specification B1	-0.0003	-0.004	0.39	3103	-0.01	-0.01**	0.39	3103
Specification B2	0.002	-0.01	0.39	3103	-0.003	-0.01**	0.39	3103
<i>(5) Share of daily time in leisure</i>								
Specification B1	-0.002	-0.01	0.19	3103	-0.03***	-0.04***	0.23	3103
Specification B2	-0.02**	-0.01	0.20	3103	-0.04***	-0.03***	0.24	3103
<i>(6) BMI: underweight (<18.5)</i>								
Specification B1	0.02	-0.01	0.31	3103	0.04*	0.01	0.31	3103
Specification B2	0.04**	-0.01	0.31	3103	0.03	0.01	0.31	3103
<i>(7) Share of daily time respondent reported being happy</i>								
Specification B1	0.02	0.01	0.30	3103	0.02	-0.03**	0.30	3103
Specification B2	-0.01	0.01	0.30	3103	-0.01	-0.03	0.30	3103
<i>(8) Among landowners: has any land rights to sell or bequeath (Y=1 N=0)</i>								
Specification B1	-0.08**	0.05	0.56	2712	-0.04	0.04	0.56	2712
Specification B2	-0.04	0.04	0.56	2712	0.01	-0.01	0.56	2712
<i>(9) Among those earning an income: exclusive control over earnings</i>								
Specification B1	0.01	0.02	0.72	1299	-0.03	-0.01	0.72	1299
Specification B2	-0.03	0.04	0.72	1299	-0.05*	-0.01	0.72	1299

Notes:

(1) OLS regressions, controlling for day, EA and interview month fixed effects, along with individual and household characteristics (**Appendix Table A4**). Standard errors were clustered at the individual level. Data are at the individual level, for the 7 days prior to the administration of the time-use agency module. ***p<0.01, **p<0.05, *p<0.10.

(2) B1 = using specification B1 of non-flexibility of time; B2 = specification B2.

4 Conclusion

Using a new module designed to understand time-use agency in Malawi, alongside continuous smartphone-based reporting of time-use data among men and women, we add to evidence on gender inequalities in time use by showing that — apart from having higher unpaid care and domestic work burdens — women are also significantly less able than men to reallocate their time across multiple areas, including agriculture, unpaid work, transport, and leisure. The estimations also reveal frequent and significant differences in how (i) respondents' share of time that is non-flexible, and (ii) shares of time spent on unpaid and paid work are linked with different employment and wellbeing outcomes, particularly for women. For example, women who report greater inflexibility are more likely to be unpaid contributing family workers and are less likely to be underemployed (i.e., would have liked to work more hours) or looking for work. Overall time burdens in unpaid and paid work, on the other hand, do not have a separate significant effect on women's employment outcomes, when controlling for inflexibility and other demographic and socioeconomic characteristics. Intrahousehold differences in inflexibility across men and women are also substantial, and significantly associated with poorer employment outcomes for women, higher likelihood of being underweight, and weaker land rights, whereas the intrahousehold difference in the overall share of time spent in unpaid work is significantly associated with less sleep and happiness (both are significantly linked with poorer leisure outcomes).

Broadly, the findings support the idea that the ability to reallocate time captures something distinct from traditional time-use measures of the amount of time spent on different activities, and that flexibility over time use is an important component of women's agency. The findings also reveal substantial differences in the profiles of non-flexible activities across women and men, and in turn

how efforts to improve flexibility in women's unpaid domestic work could have important connections with their being able to engage in other economic (and potentially paid) activity.

Development programs that aim to address gender inequalities in time could benefit from including or adapting our tool alongside traditional time-use measures to aid in program design, monitoring, and evaluation. By understanding and shaping policy around drivers of inflexibility — such as the presence of young children in the household, which we also find to be positively linked with increased non-flexibility in unpaid work and leisure — may help open pathways for women to seek improved employment opportunities, for example. Broadly, this is an important area for future research, within the context of understanding links with employment as well as other important areas of empowerment for women.

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Appendix

Table A1. Sample coverage (share of households) across districts in Malawi

	Share of HH
Central Malawi	
Nkhotakota	0.03
Lilongwe	0.13
Dedza (urban)	0.07
Ntcheu	0.05
Lilongwe City (urban)	0.23
Southern Malawi	
Machinga	0.06
Zomba	0.05
Blantyre	0.03
Thyolo (urban)	0.07
Mulanje	0.06
Zomba City (urban)	0.02
Blantyre City (urban)	0.21
Number of households	377

Notes:

- (1) Eligible households (that had at least one adult man and woman aged 15-64) were randomly drawn from a household listing within each of 72 enumeration areas (EAs), from the nine most populous districts in Southern and Central Malawi, and split evenly across rural and urban areas.
- (2) Sampling was with probability proportional to 2018 Population and Housing Census EA-level household counts.

Figure A1. Breakdown of survey period

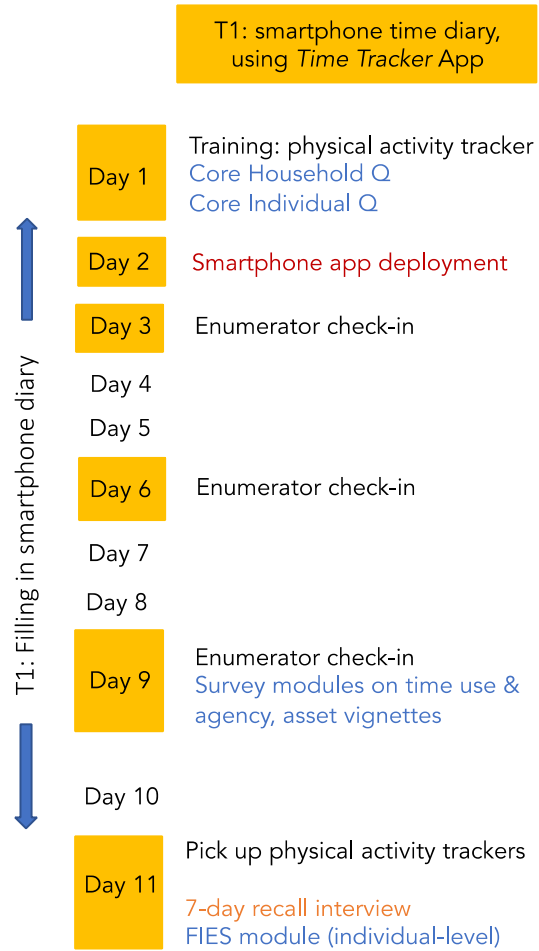
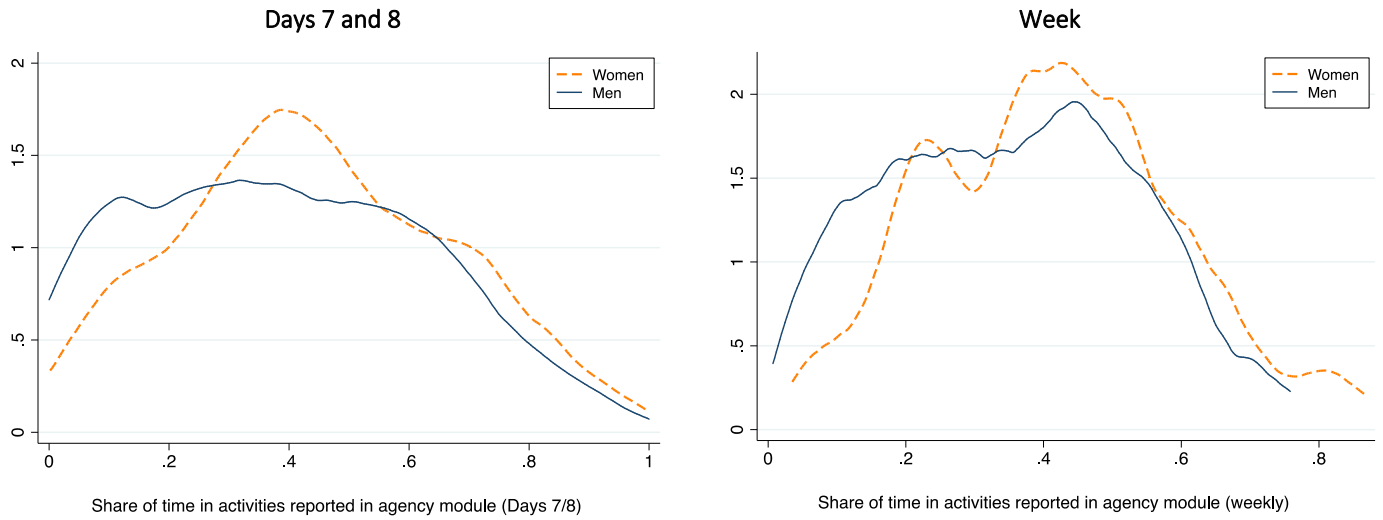


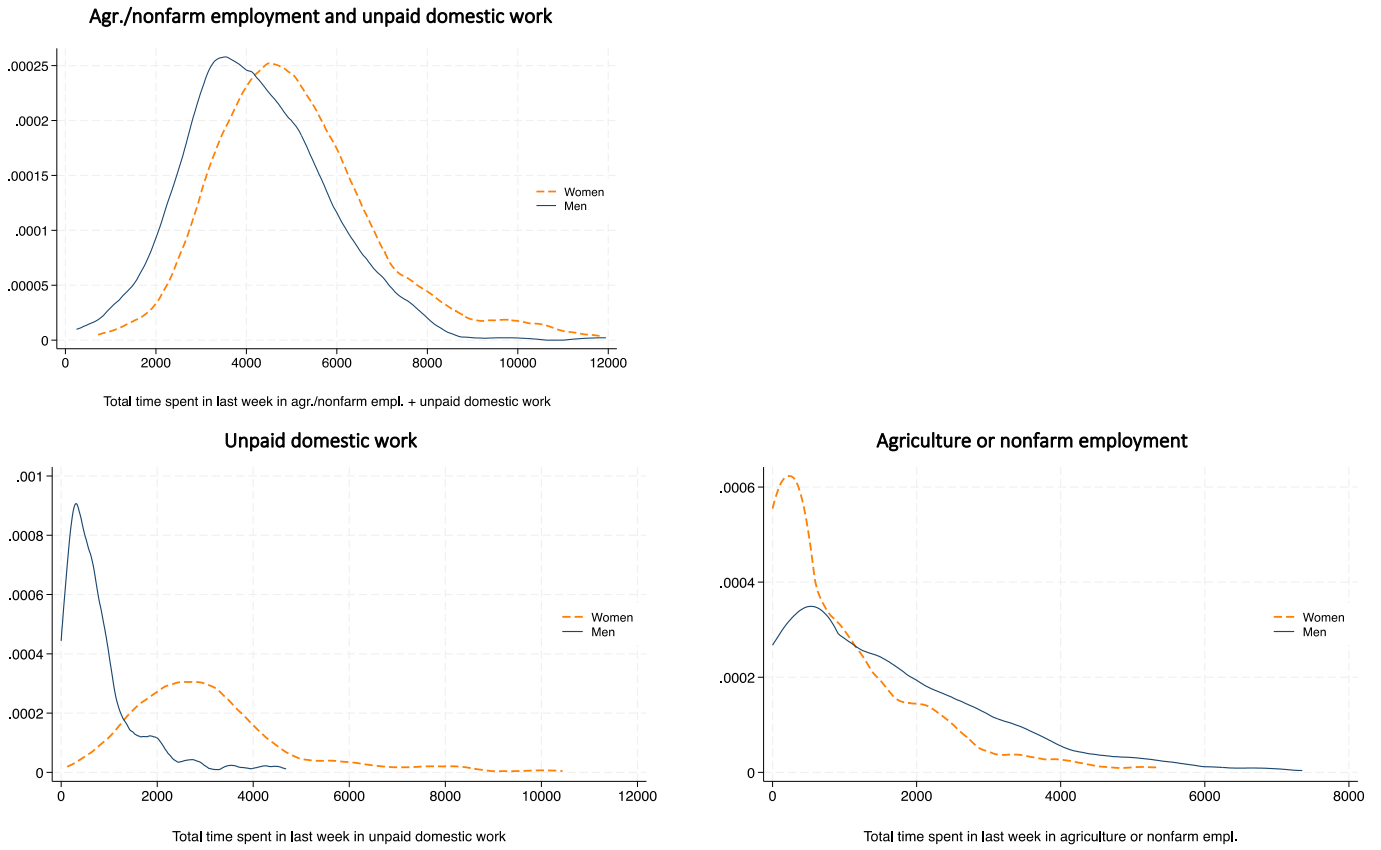
Figure A2. Kernel density estimates: share of daily non-sleep time, reported in agency module



Notes:

- (1) Data are at the individual level, over the timeframe(s) indicated in the graphs. For the left hand panel, days 7 and 8 were both included to account for as comprehensive a period for the 24-hour recall timeframe of the time-use agency module, which was administered sometime on Day 8. For the right hand panel, the timeframe covers days 3-8 of the survey period.
- (2) p-values from Kolmogorov-Smirnov test of distributional differences: 0.000
- (3) For Days 7 and 8, the mean share of time was 0.44 for women and 0.39 for men. For the week these shares were 0.41 and 0.35, respectively.

Figure A3. Kernel density estimates: total weekly time (minutes) spent by men and women in agriculture/nonfarm employment, and unpaid domestic work



Notes:

(1) For each graph, p-values from Kolmogorov-Smirnov test of distributional differences across men and women: 0.000

Table A2. Activity list used in time-use data collection

Category	Activity	Category	Activity
1. Market work: agriculture	Fishing or tending to livestock	4. Transport	Walking, not hauling heavy load
	Crops: land clearing and preparation , manual		Walking, hauling heavy load
	Crops: clearing land, with animal		Running
	Crops: planting, manual		Bicycle, not hauling heavy load
	Crops: manual watering		Bicycle, hauling heavy load
	Crops: pumping water, using pump		Motorbike, not hauling heavy load
	Crops: weeding, manual		Motorbike, hauling heavy load
	Crops: fertilizer application/pesticide, manual		Truck/tractor/ox cart/bus, not hauling heavy load
	Crops: harvesting, manual		Truck/tractor/ox cart/bus, hauling heavy load
	Crops: drying and storage		Bicycle, as passenger
	Crops: processing, manual		Motorcycle, as passenger
	Crops: processing, mechanical		5. Schooling
2. Market work: other activities	Service or office-related occupations	At school	
	Manual/ganyu labor or manufacturing	6. Leisure	Reading for leisure
	Selling goods in market		Using devices
Gathering foodstuffs, hunting	Resting/doing nothing		
3. Non-market work (for own household)	Shopping		Chatting with others inside/outside the household
	Cooking, cleaning in house		Celebrations
	Collecting fuel/firewood		Religious activities
	Collecting water		Exercise/playing games
	Stitching/knitting, weaving baskets and mats	7. Community meetings/activities	Public works projects
	Building and repairs		Local community meetings
	Maintenance of vehicles, electronics	8. Personal care/health	Personal care (bathing, dressing, etc)
	Household finances		Sick/not active: at home
	Care of elderly and sick adults		Sick/not active: in healthcare center
	Care of children	9. Sleep	Sleep
	Visit bank or office for services		10. Eating
	Discussion with survey team		

Table A3. Time-use agency questionnaire

	1		2		3	4	5	6	7
	What 2 activities, excluding sleep, did you feel most satisfied doing, during the last 24 hours?		What 2 activities, excluding sleep, did you feel least satisfied doing, during the last 24 hours?		Could you have chosen to not do [ACTIVITY] during the last 24 hours?	Could you have chosen to change the times when you did [ACTIVITY] during the last 24 hours?	Would you have liked someone else to help you with [ACTIVITY] during the last 24 hours?	Did you ask someone else to help you with [ACTIVITY] during the last 24 hours?	Did someone else help you with [ACTIVITY] during the last 24 hours?
	ACTIVITY	CODE	ACTIVITY	CODE	1 = Yes, all tasks 2 = Yes, some tasks 3 = No				
MOST SATISFYING									
MOST SATISFYING									
LEAST SATISFYING									
LEAST SATISFYING									

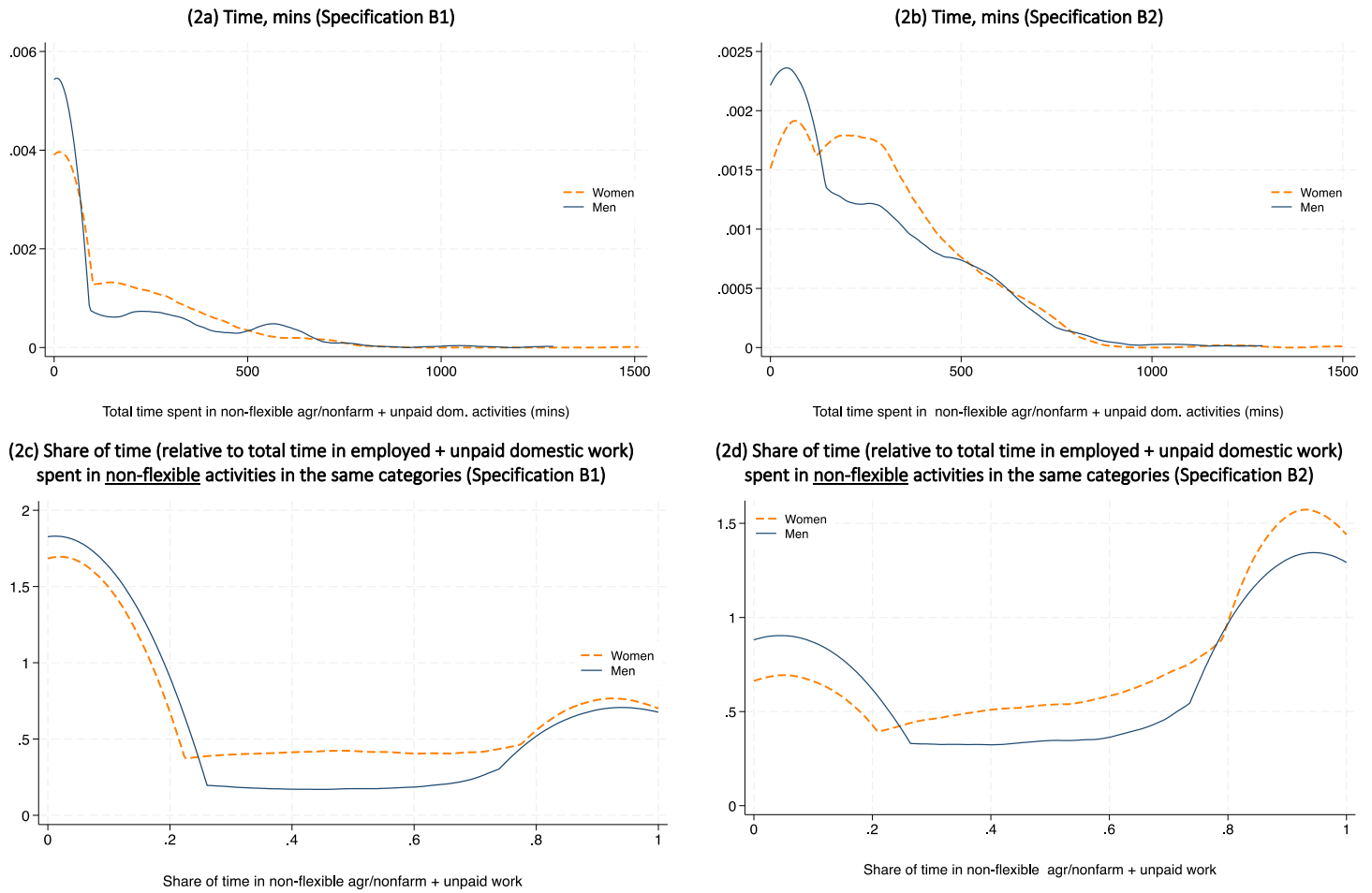
Appendix Table A4. Socioeconomic and demographic characteristics for women and men

	Men	Women		Men	Women
Demographics			Employment		
Household roster: HH head	0.66***	0.15***	Not employed	0.08***	0.23***
Household roster: spouse of HH head	0.04***	0.70***	Employed in agriculture	0.32**	0.39**
Age: 18-24	0.20**	0.27**	Employed in non-agriculture	0.60***	0.38***
Age: 25-34	0.31	0.33	Time (mins) to work (if employed)	28.1	26.5
Age: 45-54*	0.13*	0.09*	Ownership of assets		
Age: 55+	0.04	0.03	Owens land, exclusively	0.19**	0.28**
Married (monogamous), patrilineal	0.31	0.34	Owens land, jointly	0.84***	0.73***
Married (monogamous), matrilineal	0.36	0.39	Has an account: mobile money	0.70***	0.46***
Separated/divorced	0.01***	0.08***	Has an account: informal savings	0.05***	0.24***
Single	0.27***	0.11***	Has an account: formal fin. institution	0.14***	0.05***
Months resp. is away from HH in last year	0.54	0.44	Has a mobile phone	0.73***	0.64***
Education			Owens a bicycle	0.33***	0.24***
Highest level of education: primary	0.53***	0.66***	Owens a motorized vehicle	0.09	0.07
Highest level of education: secondary or above	0.40***	0.28***	Number of respondents		
Household characteristics				376	377
Number of children <12 years	1.67	1.67			
Household size	4.94	4.94			
HH has piped water	0.15	0.15			
HH has electricity	0.29	0.29			

Notes:

(1) T-tests of equality of means conducted across men/women; ***p<0.01, **p<0.05, *p<0.10.

Appendix Figure A4. Kernel density estimates: total, and share of, daily time in non-flexible unpaid domestic work and employment (Days 7 and 8)



Notes:

- (1) Data are at the individual level, for days 7 and 8. For all graphs: p-values from Kolmogorov-Smirnov test of distributional differences: 0.000
- (2) Graphs for flexible activities are in the Appendix.
- (3) Shares of time in (2c) and (2d) only have time in employment and unpaid domestic work in the denominator.