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# Time Spent on Employment-Related Activities in India: A Note



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#### 1. Introduction

Recent remarks by leaders of corporate India have sparked an interesting public debate. Their general point is that if India wants to become a developed nation, people will have to work 70 hours a week or more. Assuming a six-day work week, this translates to 700 minutes per day on employment-related activities. So far, the public discussion has mostly focused on efficiency versus quantity of work. Though this is an important aspect, it is imperative to first understand how things stand on the ground by studying the available data. That is, how much time is spent on employment-related activities across states, different economic sectors, types of enterprises, rural versus urban differences, and differences across genders and social groups within the country. In addition, this note also provides evidence of the association between time spent on employment-related activities and the per capita Net State Domestic Product (NSDP) at constant prices.

This paper analyses the Time Use Survey Data (2019) conducted by Ministry of Statistics and Programme Implementation (MoSPI) of the Government of India. This is a rich dataset of 518,744 individuals across 138,799 households from across the country. The data is from six years back, which is a minor limitation since it is significant time in a fast growing, dynamic and increasingly complex economy like India. However, the richness and representativeness of this data captures systematic variations across states and sectors of the economy. It is able to capture the broad characteristics of "work culture" in terms of time spent on economic activities. The paper begins by making international comparisons where we discover that India is comparable to other emerging economies in terms of daily hours worked – which is significantly higher than the average number of hours worked in developed or rich economies. Closer analysis of the Indian data on 'Time-Use' shows that there are significant variations across states, sectors and government Vs. private enterprises within India. The results also show that major economic gains can be made by increasing the average amount of time on employment related activities, particularly in states (for example, the Northeastern states) and sectors (for example, the government sector) where people work significantly shorter hours per day relative to the rest of the country.

#### 2. Global Benchmarks

One of our main findings is that on an average, Indians spend 422 minutes per day on paid economic activities or 42 hours per week (assuming 6 day per week), which is significantly lower than the 700 minutes per day or 70 hours per week benchmark expectation being set. However, comparing across countries, as in the below Figure 1, Indians report working hours which are comparable to other fast developing countries like Vietnam, China, Malaysia, and Philippines. Most developed OECD countries report much lower working hours (33 hours per week on average for OECD group). Figure 1 below shows the annual working hours against adjusted per capita GDP for major economies of the world.

# Figure 1: Annual Working Hours Vs. GDP Per Capita

# Annual working hours vs. GDP per capita



Working hours are the annual average per worker. GDP per capita is adjusted for inflation and differences in the cost of living between countries.



**Note:** This data is expressed in international-\$<sup>1</sup> at 2017 prices, using multiple benchmark years to adjust for differences in the cost of living between countries over time.

## 3. Data & Statistical Analysis

In this note, I use data from the 2019 Time Use Survey (TUS) conducted by the Government of India's Ministry of Statistics and Programme Implementation. TUS is a nationally representative data on the population, which provides data on time spent on different activities, including employment-related activity, paid and unpaid activity, learning, socializing, leisure activities, self-care activities, religious activities among others. The classification of activities in the TUS was based on the 2016 United Nations International Classification of Activities for Time Use Statistics (ICATUS).<sup>1</sup>

<sup>1.</sup> International dollars: International dollars are a hypothetical currency that is used to make meaningful comparisons of monetary indicators of living standards. Figures expressed in international dollars are adjusted for inflation within countries over time, and for differences in the cost of living between countries. The goal of such adjustments is to provide a unit whose purchasing power is held fixed over time and across countries, such that one international dollar can buy the same quantity and quality of goods and services no matter where or when it is spent. Read more in our article: What are Purchasing Power Parity adjustments and why do we need them?

<sup>&</sup>lt;sup>1</sup> <u>https://digitallibrary.un.org/record/3937980?In=en</u>

We use the unit observations provided by the TUS for our statistical analysis and exploit the weights in the survey to make our estimates representative for the population. We limit our attention only to employment-related activities. *Our analysis is based on 404,800 individual observations, of which 76.2% are male.* The data on Time Use per person is collected for all members of the households who are 6 years and above with a total sample of 447,250 individuals. The richness of the data includes activities performed by individuals in 30 minutes intervals of 24 hours from 4:00am onwards. Our analysis considers data collected for individuals for whom it is a 'typical day' – and this includes 90.1% of the total sample or 404,800 individuals.

Data on per capita Net State Domestic Product (NSDP) at constant prices for states and all-India levels is from the Reserve Bank of India's Handbook of Statistics on Indian Economy.<sup>2</sup> For our analysis, we will limit our attention to data on people in the age group <u>15 to 59</u> years, which is the working-age population. In our statistical analysis, we will report 95% uncertainty intervals, which capture the uncertainty associated with sample size.

#### 4. Results

The results are presented in 3 subsections. The first subsection highlights the systematic variations across states, economic sectors, types of enterprises and socio-economic groups. The second subsection presents the data for the proportion of population in each state that meets the benchmark of 700 minutes per day or 70 hours per week. The third subsection presents the relationship between time spent on economic activities and the economic output of each state measured as Per Capita Net State Domestic Product at constant prices.

<sup>&</sup>lt;sup>2</sup> RBI – Handbook of Statistics on Indian Economy

## 4.1) Average time spent on paid activities (work) per day by individuals

As figure 2 shows the average amount of time spent on paid economic activities or 'working' per day in India is 422 minutes. For an average working week of 6 days, this translates into 42.2. hours per week. Most interesting aspect of this analysis is the significant variations across states. While Union Territories of Daman & Diu and Dadra & Nagar Haveli exceed 600 minutes of work per day (more than 10 hours per day), Goa and most Northeastern states report less than 360 minutes per day (less than 6 hours per day). An average person in Delhi spends 8.3 hours on work per day while an average person in Goa spends 5.5 hours and an average person in Assam spends 5.87 hours respectively.



Figure 2: Average Time Spent on Paid Activities (Work) by Individuals per Day

As would be expected, "work" means different activities across rural and urban areas of the country. So, we analyse systematic variations across rural and urban areas of each state

across India and the results are presented in Figure 3 below. While an average individual in urban India works for 469 minutes (or 7.8 hours) per day, an average individual in rural India works for 399 minutes (or 6.65 hours) per day, which is a difference of more than an hour per day. But even here, the variations across states and regions are strong with Northeastern states, Assam and Goa reporting significantly lesser time spent on work.

#### Figure 3: Average Time Spent on Paid Work across Rural Vs. Urban Areas



Average Time spent per day on Paid Activities by Individuals: Rural & Urban

Next, we explore the differences across economic sectors – primary, secondary and tertiary. Primary sector includes agriculture, fishing, forestry and mining etc. The secondary sector includes manufacturing, processing and construction etc. while the Tertiary sector includes services such as transportation, medical, education, retail etc. There are systematic differences in the working time reported across these three economic sectors and the results are presented in the Figure 4 below. *People work significantly longer hours in the tertiary and secondary sectors compared with the primary sector*. This is most likely driven by work

hours in the agriculture sector where the work clocks are distinctly different, example, an average day might look smaller for farmers but there is no 'downtime' like weekends.

Interestingly, people in Goa report low work-time in general, but this is mostly driven by their secondary and tertiary sectors' work culture. Goans report one of the highest work-time in primary sector, at 45 minutes more per day compared to all-India average. Strikingly, an average Goan working in the tertiary sector spends nearly 2.5 hours lesser on work than an average Indian. So within Goa, there are major variations in working hours across sectors. *Another remarkable feature that emerges from this analysis is that regardless of the nature of work and sectors, the Northeastern states of India report significantly shorter work-day compared to rest of the country. Within each sector of the economy, the Northeastern states – Assam, Nagaland, Manipur, Meghalaya, Mizoram, Arunachal Pradesh and Tripura – report the lowest working time per day.* 

Compared to its neighbours, Sikkim reports higher work-time in the secondary and tertiary sectors and is similar to all-India average. In the primary sector, however, Sikkim is comparable to its other Northeastern neighbours.

Another state that stands out from its neighbours is Himachal Pradesh. The reported worktime across all economic sectors – primary, secondary and tertiary – is significantly lesser in Himachal Pradesh compared to Punjab and Uttarakhand. An average person of Himachal Pradesh who works in the primary sector like farming etc. spends 2 hours less per day on work compared to other Indians in similar work. Given their similar topography, it is striking how much more work-time is reported in Uttarakhand than Himachal Pradesh – for all categories of work.

# Figure 4: Average Time Spent on Paid Work across Economic Sectors



Average Time spent per day on Paid Activities by Individuals: Economic Sectors

Details within the Time-Use Survey includes the average time spent on work by different social groups across rural and urban areas of India. We analyze these and the results are reported in Figure 5 below. There are some systematic trends that emerge such as the social group OBCs report average work time similar to the all-India average – for both rural and urban areas. People from Scheduled Tribes, on the other hand, report lower working time on average compared to all other groups – for both rural and urban areas of the country.





Average Time spent per day on Paid Activities by Individuals: Social Group

There are systematic differences in the amount of time spent on paid economic activities between men and women. The results are reported in Figure 6a for females, and Figure 6b for males across all states of India. *The first striking result is that Indian women spend considerably fewer hours on paid economic activities compared to Indian men each day. In the urban areas, women are spending 2 hours lesser than men each day, while in rural areas women spend 1.8 hours lesser than men on paid economic activities each day.* In fact, the overall results show that male-female differences are significantly more than the urban-rural differences. This is due to traditional roles, where women spend significantly more time on unpaid household activities. In fact, comparing data on leisure, we find that women who work outside the household (paid economic activities) have the least amount of leisure time compared to all other demographics.<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> https://www.livemint.com/opinion/online-views/a-call-to-action-how-indian-men-can-support-working-women-s-progress-11681235075530.html

# Figure 6a: Average Time Spent on Paid Work by Females



#### Average Time spent per day on Paid Activities by Individuals: Female







Next, we turn our focus towards types of enterprises and how working time varies across these. For this, it is important to acknowledge that there is a possibility that an individual can work simultaneously in more than one type of enterprise or perform multiple economic activity in a given day. For example, an individual could be a farmer in a day and night watchman by night. The subsequent calculations, therefore, are based on individual-enterprise or individual-economic activity level and results are presented in Figure 7 below. The data shows eight types or categories of enterprises which include private/public limited companies, government and local bodies, partnerships, autonomous bodies, co-operative societies among others.

The results show that on an average, a person working in the government spends 45 minutes less on work each day than an average Indian, and he works almost an hour less compared to a person working in a private/public limited company. In rural areas, the gap between government employees and private/public company employees is even higher. Employees in public/private limited companies spend 71 minutes more on work each day.

Within the government, employees in urban areas spend one hour more working than those in rural areas. Among private/public limited companies, urban employees work 45 minutes more than rural employees. Interestingly, employees in co-operative societies spend the least amount of time working – in both urban and rural areas – compared to all other categories of enterprises.





Average Time spent per day on Paid Activities by Individuals: Enetrprise Type

To further explore working time within the government sector, we analyze the differences across all states and UTs of India. The results are reported in Figure 7a below. There are significant rural-urban differences and cross-state differences – in terms of working hours within the government. *Government employees in rural India work one hour lesser than government employees in urban India*. Comparing states, we get interesting results. *Government employees in the urban areas of Telangana and Rajasthan work 2 more hours every day than their counterparts in Assam, Meghalaya and Kerala*.

Another interesting feature that emerges is the major differences in working time of government employees across neighboring states like Bihar and Jharkhand, Uttarakhand and Himachal Pradesh, Telangana and Andhra Pradesh etc. These are akin to natural experiments where the geographies are similar and the overall nature of the job (government

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employment) is also similar, yet there are big differences in amount of time spent on the job each day.



## Figure 7a: Average Time Spent on Work by Government Employees

Average Time spent per day on Paid Activities by Individuals: Government/Local Body

Beyond the cross-state differences in work culture within the government sector, it is equally fascinating to study the cross-state differences within the category of Private/Public limited companies of India. The results are reported in Figure 7b below. On the whole, people working in companies (whether public or private) are spending one more hour working each day, compared to government employees. This large difference is not uniform across all states. This is being driven by very large differences between government and private/public limited company workers in states like Gujarat, Karnataka, Himachal Pradesh, Uttarakhand, Punjab and Odisha.

There are major differences within some states which indicate the deeper variations in incentives and work culture that exist between government and companies. For example, within Himachal Pradesh, people working in private/public companies spend 2.6 hours more per day on work compared to their neighbors who are working in the government. Similarly in Uttarakhand, this difference is 1.7 hours per day, in Odisha the difference is 1.6 hours per day, in Gujarat the difference is 1.5 hours per day etc. - where employees in companies are working significantly longer hours per day compared to government employees within the state.

Contrary to the above finding, there is little difference between government and private/public company workers in states like Goa, Assam, Meghalaya, Mizoram, Nagaland etc. They all work significantly fewer hours compared to their counterparts elsewhere in the country.

# Figure 7b: Average Time Spent on Work in Public/Private Limited Company



Average Time spent per day on Paid Activities by Individuals: Public/Private Limited Company

Finally, there exist systematic variations in the amount of time worked per day across types of activities, example, regular work, casual work etc. The results for this are presented in the Figure 8 below. *People with regular wage/salary are working longer hours per day than others in the country*. That is, in urban areas they work half an hour longer per day. People who are engaged in self-employment and engaged in the production of goods work the least number of hours per day – approximately one hour lesser per day – compared to others. This is true for rural and urban areas. In contrast, *those in self-employment and engaged in self-employment and engaged.* 



# Figure 8: Average Time Spent on Work across Activity Status

Average Time spent per day on Paid Activities by Individuals: Activity Status

# 4.2) Proportion of people working more than 70 hours per week

Another way to look at the data is to check how many people meet the benchmark of 700 minutes per day or 70 hours per week, across states of India. The results are presented in Figure 9 below. Gujarat has the largest proportion of people (7.21%) who work for more than 70 hours per week, Bihar has the lowest proportion at 1.05%.



## Figure 9: Proportion of the State Population that is working >70 hours per week

# 4.3) Association between time spent on employment-activities and Per capita NSDP

Given the state-level variations in time spent on employment-related activities, it is important to analyze whether this has any association to the output generated at the state level. For this, we associate the average time spent working (in a state) with the per capita Net State Domestic Product (NSDP) of the state in 2019. The results are presented in the Figure 10 below.

First, we report the relationship between time spent on employment-related activities and per capita NSDP across all the states. We perform this association regarding the logarithmic value of time spent and the per capita state-level NSDP for a straightforward interpretation of the results. The results are shown in Figure 10. *For all the states and UTs, we found that a 1% higher time spent on employment-related activities was associated with 1.7% higher per capita NSDP*, and this association was significant at the conventional 95% level. *This implies that if people in a state spend 1% more time on economic activities, then the state's NSDP will rise by 1.7%.* 

#### Figure 10: Association between Working Time and Economic Output



Furthermore, we found that this relationship was not uniform across Large and small states or UTs. We ran **separate regressions** for large and small states to further explore this. Our analysis revealed an interesting pattern, as shown in Figure 11. We found that the association between time spent on employment-related activities and per capita NSDP was stronger for Large states in comparison to Small states and UTs.

- Large States: we found that a 1% higher time spent on employment-related activities was associated with a 3.7% higher per capita NSDP for large states, which was statistically significant at a 1% level.
- <u>Small states and UTs: 1% higher time spent on employment-related activities was</u> associated with 1.8% higher per capita NSDP, which was statistically significant at the conventional 5% level.

# Figure 11: Working Time and Economic Output for Large Vs. Small States



## 5. Conclusion

In light of the recent debate on what is the optimal number of working hours required for India to become a developed nation, this note quantitatively assesses the time spent on employment-related activities in the country. In this note, I analyze the variations across social, economic and demographic characteristics of the population using the nationally representative Time Use Survey conducted by the Government of India in 2019. In addition, this note documents the inter-state variation across all the states and UTs of the country. Furthermore, using regression analysis, I find that 1% more time spent on employmentrelated activities is positively associated with a higher (1.7%) per capita NSDP. This relationship is stronger and more robust for large states of India (3.7% increase in NSDP) than small states and UTs (1.8% increase in NSDP).

The overall results indicate that while India is comparable to other emerging economies of the world in terms of the number of daily working hours, it is also true that major economic gains can be made by increasing the time on employment related activities. This is particularly relevant for states (example the Northeastern states) and sectors (example the government sector) where people work significantly shorter hours per day compared to the rest of the country.