

Gender-Based Measurement of Time Poverty and Assessment of Its Determinants in the Context of an Increasing Number of Female-Headed Households in Nepal

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Abstract

Male out-migration from rural areas to cities and abroad not only increased the number of female households head in Nepal but also shifted household and farm responsibilities to women. This study conducted from April to June 2018 measures time use poverty through a gender perspective, and analyze its determinants. For this study, a purposive and simple random sampling technique was used to collect information from Gorkha and Chitwan districts. Time-use data were collected through a field survey with 120 households representing 60 households from each district by using a semi-structured questionnaire. Foster-Greer-Thorbecke (FGT) methodology used to assess time poverty depicted that 79.16% of women and 26.38% of men's household heads were time use poor. The rural households are more time use poor as compared with urban households. If the gender of the household head is female, time-poverty increased by 87.9%. Besides household head gender, livestock holding, migration, and location are the significant variables affecting the time poverty of household heads. Based on the findings, some social and economic policies can help in devising gender-equitable patterns of socio-economic development. It is important to consider the time used by women at different activities to illustrate the importance of women. The findings of this study are expected to help in understanding the issue of time-use poverty in Nepal and other developing countries.

Keywords: Time poverty, Out-migration, Household, Gender, Time-use

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I. Introduction

Traditional poverty measures do not consider inequalities across households concerning their time resources. Inequality and poverty have a direct and indirect impact on each other through their relationship with economic growth (Naschold, 2002). Inequality takes many forms, including inequality of income, unequal access to and control of property and resources, unequal access to civil and political rights, and unequal access to social, cultural, and economic rights. There are inherent gender dimensions to all these forms of inequality. Gender-differentiated time-use is one form of inequality that has received much less analysis but has major adverse implications (Abdourahman, 2010). In poverty analysis, few studies consider time as a limited resource and discuss the relevance of time inequalities.

Claire's first research on poverty conceptualizes poverty both in terms of time and money input (Vickery, 1977). Later, Bardasi and Wodon (2006) present an individual-level study that considered the differences in time poverty between men and women in Guinea. Different authors describe time poverty in different ways. An individual is time-poor if he/she works long hours and is also monetarily poor or falls into monetary poverty if he/she reduces his / her working hours below the time poverty line (Wodon and Bardasi, 2010). Time poverty is when there is no discretionary time, and perhaps not even enough necessary time available to a person, and choices need to be made over allocation of time between essential activities (Kalenkoski and Hamrick, 2014 and ADB, 2015). Like time-poverty, authors had been using a different hour of working for defining time-poverty line. Vickery (1977) uses the time poverty line of 70.5 hours/week. Bardasi and Wodon (2010) used a poverty line of 70.5 hours/week or 10 hours/day. It was set at 12 hours/day during the study of gender differences in time poverty in rural Mozambique (Arora, 2015). Generally, time use surveys provide information on time poverty. Time-use surveys are basically of two types: stand-alone surveys, and non-independent or modular, surveys (ILO and UNDP, 2018). Stand-alone time-use surveys collect extensive information without missing out on any details on the use of time by a reference population. Modular time use surveys are usually attached to a large or national household surveys, such as living standard measurement studies, labor force survey, or the national income and expenditure survey. Nepal began small-scale surveys of time-use in the 1970s (and continued through the 1980s and to 1992 and 1993–94) (ILO and UNDP, 2018).

Nepal living standards survey-III 2010/11 household questionnaire include jobs and time use for all household members 5 years and older in section 10 (CBS, 2017).

In Nepal, the decade long (1996 to 2006) armed conflicts and higher outmigration of men-folks from rural areas of Nepal are the main cause of the increasing women labor force (Ghale, 2008). Due to male out-migration, female members of the households were bearing more responsibilities than they used to do before. This is happening within the male-dominant farming system, which not only adds to the workload of women, but is also inappropriate and unfriendly to them. Not only farming, but socio-demographic figures have changed due to male outmigration. Female-headed households increased from 14.8% in 2001 to 25.7% in 2011 (CBS, 2011) and 31.3% in 2016 (World Bank, 2016). According to Bhadra and Shah (2007), more female-headed households fall below the poverty line, compared to male-headed households and, are worse off according to a variety of measures of welfare (DeGraff and Bilsborrow, 1993 and Negesse, et al., 2020). And the main reasons for this poverty are gender discrimination in access to, and control of, productive resources and other economic and political opportunities. Despite concerted policy efforts, poverty and inequality-including their gender forms-remain a challenge for development (Zacharias, Antonopoulos, & Masterson, 2012; Abdourahman, 2010). The present study attempts to investigate gender differentiated time use, time poverty and their possible determinants. The specific objective of the study are given below:

To assess the gender-based time use for different activities,

To assess the time-poverty of household heads,

To analyze different factors affecting the time-poverty.

II. Methods

This section presents the different component of research methodologies such as study site, sampling procedure, data management, analysis, and interpretation of data.

2.1 Study site and data collection

Gorkha and Chitwan district were selected for the study as they represent all three geographical variations and migration patterns of the nation (Figure 1). Gorkha, mid-hill to high hill area, is relatively rural with poor access in comparison with Chitwan district which is plain and had better access to the market.

In the study, both the primary and secondary data were collected from various sources by using different techniques. The general technique includes field survey, review of the previous study, group discussion, and interview. Primary data were collected from a field survey of 120 households comprising 60 households from each district using a semi-structured questionnaire. Time-use data were collected during the field survey. Pretesting had been undertaken to minimize errors. Secondary data were collected from various published material such as books, journals, research article, the publication from government offices of respected site, reports of various UN agencies, GO/NGOs and INGOs, publications of DADO/DLSO/DDC, National Agriculture Research Council (NARC), Central Bureau of Statistics (CBS), and Co-operatives. From two districts, two local bodies Gorkha Municipality and Bharatpur Metropolitan city were randomly selected. From both local bodies, two wards were selected through simple random samplings. The field survey was conducted in Gorkha 7 and 8; and Bharatpur 8 and 18. Villages were selected after consultation with the ward chairman. Each ward comprises 30 responding households. Data were properly coded, verified, and tabulated in SPSS.

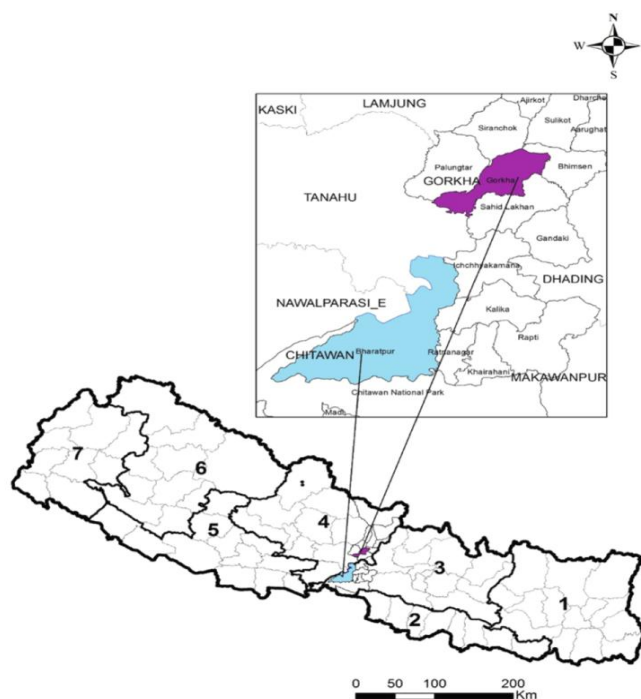


Figure 1 : Map of Nepal showing study site

2.2 Data analysis and interpretation

Statistics on time use are important for designing policies for inclusive growth. The Foster-Greer-Thorbecke (FGT) methodology was used to examine of time poverty of the household head and logit model was used to assess the various determinants of time-poverty.

2.2.1 The Foster-Greer-Thorbecke (FGT) methodology

This methodology to determine time poverty was applied first by Wodon and Bardasi (2010) and then by Arora (2015).

a) **Headcount index:** The proportion of population that is time poor. In other words, the proportion of population that falls above the time poverty line.

b) **Poverty gap:** This measures the depth of the poverty by estimating how far the time poor are from the poverty line.

c) **Squared poverty gap:** This indicator helps measure the severity of poverty and inequality among the poor. It places a higher weight on those who are further away above the time poverty line.

Using the poverty line, a person is termed as time-poor if $X_{wh,i} - \alpha > 0$ where $X_{wh,i}$ is a person i 's number of working hours in a day. The total number of time-poor is, N_{tp} , which is all the people whose working hours exceed the poverty line. The proportion of those who are time poor or the poverty headcount index is given by:

$$P_o = \frac{N_{tp}}{N}$$

The poverty gap is calculated as following:

$$P_s = \frac{1}{N} \sum_{X_{wh,i} \geq \alpha} \left[\frac{X_{wh,i} - \alpha}{\alpha} \right]^\beta$$

Where $\beta = 1$. P_s gives the mean distance between population and the time poverty line, therefore, for the non-time poor this distance is zero. When it takes the value of 2, we get squared poverty gap (P^2_s), that measure the severity of poverty by giving more weight to those who are very time poor.

2.2.2 Logit model

In the analysis of household head time poverty, the primary goal is to estimate household head's probability of time poverty, given the values of explanatory variables (Table 1). There are two requirements when developing such a probability function:

a) that as X_i , the value of the explanatory variables changes, the estimated probability always lies in the 0-1 interval, and

b) that the relationship between P_i and X_i is nonlinear, that is, one which approaches zero at slower and slower rates as X_i gets small and approaches one at slower and slower rates as X_i gets large.

The focus of this document is on situations in which the outcome variable is dichotomous. In our setting, an outcome might be the presence/absence of time poverty. This study employed a statistical model (Logit Model) which was appropriate, as it took only one of two possible values: The binary values, occurrence, or non-occurrence of poverty, of the most important data, were collected for the study. Using this model, the factors (X -independent variables) affecting the time poverty (Y), and the results (Y -dependent variables) could be measured. The formula for the analysis was as follows:

$$Y_i = B_0 + B_1TCA + B_2LH + B_3CBF + B_4EAS + B_5SHH + B_6AgHHH + B_7GHHH + B_8FTYP + B_9OHHH + B_{10}MIGS + B_{11}ADR + B_{12}TRN + u_i$$

Table 1. Explanation of explanatory variables used in Logit model

Variables	Code	Types	Remarks
Total cultivated area	TCA	Continuous	Total cultivated area (ha)
Livestock holding	LH	Continuous	Livestock holding (TLU)
Children below 15 years	CBF	Continuous	No. of children below 15 years
Elder above 60 years	EAS	Continuous	No. of elder above 60 years
Schooling of HHH	SHHH	Continuous	Years of schooling of HU head
Age of HHH	AgHHH	Continuous	Age of household head
Gender HHH	GHHH	Dummy	1=Female; 0=male
Family type	FTYP	Dummy	1=Nuclear; 0=Otherwise
Occupation of HHH	OHHH	Dummy	1=Agriculture; 0=Otherwise
Migration status	MIGS	Dummy	1 = Migration; 0=Otherwise
Location/Address	ADR	Dummy	1=Chitwan(urban); 0=Otherwise

III. Results and discussions

The section deals with household characteristics, time use of household head and determinants of time-poverty.

3.1 Household characteristics

Household characteristics of the study area were found to be progressively changing due to male migration. It was noticed from the study that 40 % of the households were headed by women. Two categories of households are known based on women's headship. De jure female-headed households which establish women as legal and customary heads in the absence of a male partner permanently. This category includes households headed by widows, unmarried, separated or divorced women. De facto female-headed households refer to either the situation where the reported head of the household is the woman whose husband is also present, or where the reported head is the woman in the absence of the husband. In the study area, de jure female-headed household were 25% (demise of husband 19%, Divorce and missing 4%, disability of husband 2%) and De facto were 75% (migrated male members 56%, traditional practice 19%). Male out-migration for employment was an important factor affecting the structure of the household population. Household size, household head age, population involvement in agriculture is found significantly lower in female-headed households (Table 2). This shows that there is less availability of labor force for female-headed households.

Table 2. Household characteristics of the sample household by gender class

Household characteristics	Gender class		Total	Difference	t-value
	Female	Male			
Household size	4.78	6.07	5.43	-1.29**	-3.22
Age of HHH	45.43	54.76	51.03	-9.33***	-3.91
Population engagement in agriculture/HH	2.00	2.60	2.30	0.30**	-2.32
Population migration/HH	0.67	0.70	0.68	-0.03	0.10
Average cultivated land/HH	0.42	0.60	0.53	-0.18	-1.30

Notes: Figures in parentheses indicate percentage. *** indicates significant at 1% level

3.2 Time use of household head

The allocation of time between different paid and unpaid, and market and nonmarket work is influenced by numerous factors, including social and cultural norms, and gender division of labor (ADB, 2015). Time budgets are time-use patterns that people usually get used to every day. (Kim, 2014). In the study, the time-use for workload had been categorized as reproductive/domestic, productive, and social. The domestic roles included cooking, childcare/education, washing/cleaning, and firewood collection. The productive role included crop production, livestock production, and marketing. The social roles included community activities. The average working of household head was found to be 67.93 hours/week (female 86.50 hours/week, male 55.52 hours/week). The time use for domestic, productive, and social activities were 29.08 hours/week (Female=43.18, male 19.68 hours/week), 34.38 hours/day (female 39.82 hours/week, male 30.76 hours/week), and 4.46 hours/week (female 3.50, male 5.10 hours/week), respectively. The time use by females household head for domestic/reproductive role and productive was found significantly higher at a 1% level of significance. In contrast, time spent by males for social activities was found significantly higher at a 5% level of significance (Table 3).

Table 3. Distribution of time use for different activities (hours/week) of respondent household in the study area

S.N.	Activities	Gender of HHH		Total	Difference	t-value
		Female	Male			
1	Cooking	18.66	2.72	9.10	15.94***	16.532
2	Childcare/education	15.02	10.01	12.01	5.01***	4.939
3	Washing/cleaning	8.09	4.61	6.00	3.47***	4.028
4	Firewood	1.40	2.33	1.96	-0.93	-0.896
A	Domestic(1+2+3+4)	43.18	19.68	29.08	23.49***	9.67
5	Crop production	25.37	16.65	20.14	8.72***	5.509
6	Livestock production	9.04	10.30	9.8	-1.26	-0.998
7	Marketing	5.41	4.00	4.56	1.40*	1.959
B	Productive(5+6+7)	39.82	30.76	34.38	9.06***	3.49
8	Community activities	3.50	5.10	4.46	-1.60**	-2.585
C	Social(8)	3.50	5.10	4.46	-1.60**	-2.58
Total	(A+B+C)	86.50	55.52	67.93	30.95***	7.26

Note: ***, ** and * indicate significant at 1%, 5% and 10% levels, respectively

Based on BCEA standards, the ordinary hours of work allowed for an employee as 45 hours per week (BCEA, 1997), 74.1% (Female 97.9% and male 58.3%) household heads had been found working more than 45 hours per week (Table 4). Women work longer hours than men, with more hours allocated to unpaid work such as subsistence production (including collection of water and firewood); household chores; and care of children, the elderly, and the sick. Time spent on this unpaid work minimizes the time available for women and girls to engage in paid work, thereby limiting their contribution to the economic welfare of their families. It also leaves them with little or no time to study or participate in social or political activities that could help improve their status and future prospects (ADB, 2015). The workload was found even higher for those women who were engaged in off-farm activities. Even the manager of the cooperative stated that in addition to playing a managerial role in a cooperative, she had to perform most of the domestic role of the HH activities. It was found rarely difficult to shift the domestic workload to the male partner. There was even more additional workload for those women who were independent/job holders and engaged in off-farm activities. Even, she had a significant influencing role in co-operative but she had to even consult or take approval from her family for household-level decision making.

Table 4. Status of overload in the study area by gender class

Gender/total	Freq. of HH	Obs>45hrs/week	Min	Max
Male	72	42(58.3)	7	129.5
Female	48	47(97.9)	42	126
Total	120	89(74.1)	7	129.5

Note: Figures in parentheses indicate percentage

3.3 Time poverty and its determinants

Individuals can be money poor, time-poor, or both. While income is the most widely used poverty indicator, broader indexes have been proposed and measured, including non-monetary aspects of deprivation (Harvey & Mukhopadhyay, 2007). As one such measure, our study focuses on the element of deprivation arising from the time deficit of household heads. To examine the incidence of time poverty Foster-Greer-Thorbecke (FGT) methodology was used. The time poverty line of 70.5 hrs/week (Bardasi and Wodon, 2010) was used to determine the time poverty of the household head of the study area. The difference in poverty headcount index, poverty gap, and poverty gap squared between female and male-headed households are significant at 1%, 1%, and 5%, respectively (Table 5). This showed that female are more time poor than male household head. Logit model was used to determine different socio-economics factors affecting the time-poverty of household heads (Table 6). Among these ten socio-economic factors, four of them significantly affect the time-poverty of the household heads. These four socio-economic variables are described below:

- a) **Gender of household head:** With the marginal effect at 0.879, this implies that if the gender of HHH is female, the chance of time poverty increased by 87.9%, compared to the male HHH. The gender of HHH is a significant variable affecting the time-poverty of HHH at 1% level of significance.
- b) **Occupation of household head:** With the marginal effect at 0.550, this implies that if the occupation of HHH is agriculture, the chance of time poverty increased by 55.0%, compared to the other occupation. Occupation of the household head is a significant variable affecting the time-poverty of HHH at 1% level of significance.
- c) **Total livestock holdings:** With the marginal effect at 0.176, this implies that if there is 1 LSU increased in livestock holding, the chance of time poverty increased by 17.6%. Livestock holding is the significant variable affecting the time poverty of HHH at 1% level of significance.
- d) **Location fixed effect/Address:** With the marginal effect at 0.639, this implies that if the location of the household is Gorkha, comparatively rural than Chitwan, the chance of time poverty increased by 63.9%. Location fixed effect is the significant variable affecting the time-poverty of HHH at 1% level of significance. In comparison to urban households, rural households are poorer in terms of time consumption. Notably, women are poorer in rural areas compared to men because women have to engage in both home activities and socio-economic activities. Similar result of higher incidence of time poverty in rural household than urban is found in Punjab, India (Abdul, Maria, & Khan, 2016).

Table 5. Time poverty of the household head of the study area

Time poverty	Female (%)	Male (%)	Total (%)	Difference	t-value
Poverty head count index	79.16	26.38	47.50	52.7***	6.57
Poverty gap	22.70	0.00	3.63	22.70***	6.73
Poverty gap squared	12.10	0.00	0.00	12.10**	-2.05

Note: *** and ** indicate significant at 1% and 5% levels, respectively

Table 6. Logit model of time poverty (poverty head count index) with different socio economic factors

Explanatory variable	Coefficient	Std. Err	z-value	P > z	dy/dx
Total cultivated area	1.222	1.134	1.080	0.281	0.247
Household head (1=female)	5.613***	1.399	4.010	0.000	0.879***
Occupation of HHH (1=Ag)	8.014	5.289	1.520	0.130	0.550***

Age of HHH	-0.037	0.037	-1.000	0.319	-0.007
Years of schooling of HH head	0.003	0.097	0.030	0.979	0.001
Family type (1=nuclear)	-0.554	0.813	-0.680	0.496	-0.112
Livestock holding (TLU)	0.869**	0.290	2.990	0.003	0.176**
Migration status (1=migrated)	1.377*	0.778	1.770	0.077	0.281
Children below 15 years	0.233	0.396	0.590	0.556	0.047
Age above 60 years	-0.648	0.565	-1.150	0.251	-0.131
Address(1=Chitwan)	-3.567***	1.216	-2.930	0.003	-0.639***
Training(1=Yes)	-0.027	0.697	-0.040	0.969	-0.005
Constant	-9.647	6.153	-1.570	0.117	
Log likelihood	-30.281				
Number of observation	120				
LR chi2 (12)	105.49				
Prob> chi2	0.000				
Pseudo R2	0.6353				

Notes: ***, ** and * indicate significant at 1%, 5% and 10% levels, respectively. dy/dx resembles Marginal effects (mfx) after Logit model

3.4 Location fixed effect on workload and time-poverty

Most of the households were working more than an ordinary hour of working in both Chitwan and Gorkha districts. But, the severity of the problem is much more in Gorkha than Chitwan. The time poverty line showed that about 3/4 female-headed households of Chitwan and almost all female-headed households of Gorkha were time-poor. So, it can be implied that there was much overload and time poverty in a rural area where there was limited access to technology and, the female in rural area are the most effected one. It was also found that migration, gender of household head, and location are the determining factors influencing the time-poverty of household head (Figure 2).

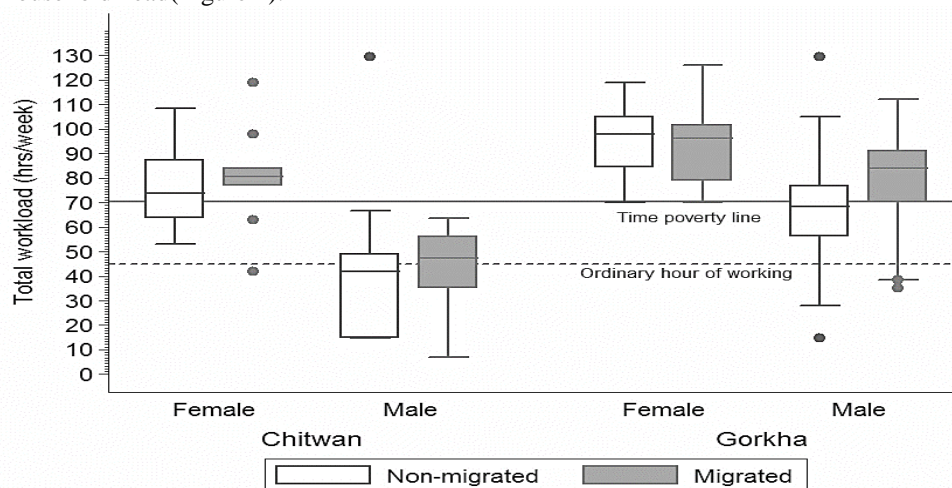


Figure 2 : Location fixed effect on workload and time-poverty

IV. Conclusion and Recommendation

Male out-migration from rural area to city and abroad not only shift in household and farm responsibilities to women but also facilitate increase in female headed households in Nepal. As compared to male head of household, there were much workload for female head of household. The time use statistics indicate there were much overloads for females (97.9%) than male (58.3%) head of household. Time poverty increased by 87.9% if the household head are female. In addition to gender of household head, livestock holdings, status of migration, and geographical location also significantly affected the household heads' time poverty. The higher workload and time-poverty for female household heads was because of the higher involvement of females for cooking, childcare, and agricultural activities. Based on the findings, some social and economic policies can help in devising gender-equitable patterns of socio-economic development. In this context of higher incidence of time poverty in the rural female-headed household, research and development works should be focused on labor-saving technology, inputs, practices, and services that were currently available, and explore the type and nature of constraints faced by women in terms of accessing and adopting the solution.

References

- [1]. Abdourahman, O. I. (2010). Time Poverty: A Contributor to Women's Poverty? (C. Lufumpa, & B. Kiregyera, Eds.) African Statistical Journal, 11, 16-37.
- [2]. Abdul, S., Maria, M., & Khan, A. U. (2016). Time use poverty and gender inequality: empirical evidences from Punjab. Qual Quant, 50(1), 421-438. doi:10.1007/s11135-014-0156-y

- [3]. ADB. (2015). Balancing the burden? Desk review of women's time poverty and infrastructure in Asia and the Pacific. Mandaluyong City: Asian Development Bank. Retrieved from <https://www.adb.org/sites/default/files/publication/177465/sdcc>
- [4]. AICC. (2017). KriSi Diary. Hariharbhavawan, Lilitpur: Ministry of Agriculture Development, Government of Nepal.
- [5]. Arora, D. (2015). Gender Difference in Time-Poverty in Rural Mozambique. *Review of Social Economy*, 196-221.
- [6]. BCEA. (1997). Basic Condition of Employment of Act. Cape Town, South Africa.
- [7]. Bhadra, C., & Shah, M. T. (2007). Nepal: Country Gender Profile. Kathmandu: JICA. Retrieved from https://www.jica.go.jp/activities/issues/gender/reports/ku57pq00002hdv3w-att/nep_2007_en.pdf
- [8]. CBS. (2011). National Population and Housing Census. Kathmandu: National Planning Commission.
- [9]. CBS. (2017). ANNUAL HOUSEHOLD SURVEY 2016/17. Kathmandu: Government of Nepal, National Planning Commission, Central Bureau of Statistics.
- [10]. CBS. (2017). Nepal-Living Standards Survey 2010-2011, Third Round. Kathmandu. Retrieved from <https://microdata.worldbank.org/index.php/catalog/1000>
- [11]. DeGraff, D. S., & Bilsborrow, R. E. (1993). Female-headed households and family welfare in rural Ecuador. *Journal of Population Economics*, 6(4), 317-336. doi:10.1007/BF00599041
- [12]. Harun, M. E. (2014). Womens workload and their role in agricultural production in Ambo district, Ethiopia. *Journal of Development and Agricultural Economics*, 6(8), 356-362. doi:<https://doi.org/10.5897/JDAE2013.0546>
- [13]. Harvey, A. S., & Mukhopadhyay, A. K. (2007). When Twenty-Four Hours is not Enough: Time Poverty of Working Parents. *Social Indicators Research*, 82(1), 57-77. doi:10.1007/s11205-006-9002-5
- [14]. ILO and UNDP. (2018). Time-use surveys and statistics in Asia and the Pacific. Thailand: ILO and UNDP.
- [15]. Kalenkoski, C. M., & Hamrick, K. C. (2014). Time Poverty Thresholds in the USA. In *Encyclopedia of Quality of Life and Well-Being Research* (pp. 6650--6653). Dordrecht: Springer Netherlands. doi:10.1007/978-94-007-0753-5_3704
- [16]. Kim, S. (2014). Time Budget(s). In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 6645--6647). doi:10.1007/978-94-007-0753-5_3015
- [17]. MoF. (2019). Economic Survey 2018. Kathmandu: Government of Nepal, Ministry of Finance, Singh Durbar. Retrieved from https://mof.gov.np/uploads/document/file/compiled_20economic_20Survey_english_207-25_20191111101758.pdf
- [18]. Naschold, F. (2002). Inequality Briefing. Why inequality matters for poverty, 1-6. (L. Turner, Ed.) London, England. Retrieved from <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3876.pdf>
- [19]. Negesse, A., Jara, D., Habtamu, T., Dessie, G., Getaneh, T., Mulugeta, H., . . . Negesse, Y. (2020). The impact of being of the female gender for household head on the prevalence of food insecurity in Ethiopia: a systematic-review and meta-analysis. *Public Health Reviews*, 41(1). doi:10.1186/s40985-020-00131-8
- [20]. Vickery, C. (1977). The Time-Poor: A New Look at Poverty. *The Journal of Human Resources*, 12, 27-48. doi:10.2307/145597
- [21]. Wodon, Q., & Bardasi, E. (2010). Working Long Hours and Having No Choice: Time Poverty in Guinea. *Feminist Economics*, 16(3), 45-78. doi:10.1080/13545701.2010.508574
- [22]. World Bank. (2016). *Feminization of Agriculture in the Context of Rural Transformations: What is the Evidence?* Washington: World Bank Group. Retrieved 5 26, 2020, from <http://documents.worldbank.org/curated/en/790991487093210959/Feminization-of-agriculture-in-the-context-of-rural-transformations-what-is-the-evidence>
- [23]. Zacharias, A., Antonopoulos, R., & Masterson, T. (2012). Why time deficits matter: Executive summary. Levy Economics Institute of Bard College. Retrieved from http://www.levyinstitute.org/pubs/rpr_08_12_sum.pdf

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