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Timor-Leste

Timor-Leste Poverty

Gender-Sensitive Poverty Mapping for Timor-Leste

Policy Note

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POV



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Executive Summary

Timor-Leste has made impressive progress over the past decade in reducing national poverty levels. Geographically, however, this progress has been highly uneven across the country. In addition, concerns exist regarding gender gaps based on broader socioeconomic dimensions, such as access to economic activities, education, health, and power and agency. In response, the Government of Timor-Leste has set a goal of eradicating extreme poverty by introducing more socially inclusive and gender-sensitive policies and programs. However, the existing sex-disaggregated statistics and consumption-based poverty estimates resulting from the 2014 Survey of Living Standards only provide district-level disaggregation. This limits the government's ability to identify and target pockets of extreme poverty and gender disparity across the country below the district level. To address this gap, the World Bank, in close collaboration with the General Directorate of Statistics Timor-Leste, has generated a new set of sex-disaggregated poverty statistics at the village (*suco*) level. This work takes a more thoughtful approach to gender-sensitive poverty analyses, beyond the usual household headship, by employing individual-level characteristics of education, health, employment, and power and agency. The analyses employ a small-area estimation (SAE) approach to link the data in the 2015 Population and Housing Census with the 2014 Survey of Living Standards and the 2016 Demographic and Health Survey. To complement these exercises, some *suco*-level sex-disaggregated maps of indicators were directly created from the available variables in the 2015 Census.

The *suco*-level poverty maps confirm an already known pattern that poverty headcount rates are much higher in western areas of the country. The maps also reveal new findings that were not previously known, namely that there is far more variation in poverty rates *within* than between districts. For example, while the Dili district-level poverty rate is 29 percent, its *suco*-level rates range from 8 to 80 percent. Analyzing poverty and gender equality by the gender of the household head, female-headed households are less likely to be poor than those headed by males. However, if poverty and gender equality are assessed using spatially disaggregated evidence of five individual-level gender indicators (education, health, labor force, and power and agency), two interesting patterns emerge. First, poorer areas have higher levels of abuse and domestic violence against women, and females are at a greater educational disadvantage, despite narrowing gaps in the literacy rate among school-aged children and school enrollment. Second, there is an inverse relationship between gender-related labor force gaps and poverty rates: the prevalence of a female labor force disadvantage is higher in more economically developed *sucos*. However, women do not appear to be disadvantaged in terms of health measures and this pattern has no correlation with poverty. Poverty does not appear to be related to women's autonomy to make decisions. The overall findings suggest the importance of using sex-disaggregated individual level analysis, beyond the male/female household headship, to better assess poverty of women and men and gender disparity.

This analysis goes beyond traditional consumption-based poverty analysis by integrating a gender dimension to better capture the standard-of-living and gender disparities in the country. These findings can be used to inform the design of policies and programs that target poverty at the *suco* level, and to improve resource allocation designed to raise the living standards of the poor, balance the targeting of poor areas and poor people, and close gender gaps in the five dimensions studied here. The poverty maps could also provide a cost-effective way to add value to existing census and survey data, and also serve as a substitute for fielding expensive new censuses or surveys.

Introduction

Timor-Leste has made significant progress in recent years in reducing poverty. Based on the 2014 Survey of Living Standards, the proportion of people living at the national poverty line declined from 50.4 percent in 2007 to 41.8 percent in 2014. Measured using the international poverty line of US\$1.90 per person per day (2011 purchasing power parity), the decline was even more rapid, from 47.2 percent in 2007 to 30.3 percent in 2014.

These impressive reductions, however, were not experienced equally across the country. In some areas people still live with high levels of extreme poverty. Although most (80 percent) of the poor are concentrated in rural areas, the largest cluster of poor people is found in Dili, the capital. Gender disparity is also evident in broader socioeconomic dimensions. For example, in 2015, 61 percent of men were employed, compared with only 44 percent of women. The maternal mortality rate in Timor-Leste is far higher than its regional peers. Domestic violence is also pervasive.

The Government of Timor-Leste has committed to eradicating extreme poverty by introducing more socially inclusive and gender-sensitive policies and programs. While this is a laudable goal, its success will depend on how effectively these policies and programs are developed and targeted. If the poor are concentrated in certain areas, spatial targeting of programs and public services to those areas is likely to be more effective than trying to target the poor individually. Yet until now there has been insufficient data to target in this way. The sex-disaggregated statistics and consumption-based poverty estimates from the 2014 Survey of Living Standards (2014 TLSLS) are representative only at the district level and therefore do not capture the detail of the heterogeneity of living standards and access to services, and how these affect men and women differently, *within* districts.

The World Bank, in close collaboration with the General Directorate of Statistics Timor-Leste, thus developed *suco* (village)-level gender-sensitive poverty maps to identify which *sucos* require greater attention in gender-sensitive poverty reduction programs. Detailed poverty maps at the *suco* level were constructed using small area estimation (SAE) techniques (see Box 1) by combining information from the 2015 Population and Housing Census (2015 Census) and the 2014 TLSLS. The 2015 Census was also used in conjunction with the 2014 TLSLS and the 2016 Demographic and Health Survey (2016 DHS) data to produce gender-disaggregated SAEs of selected indicators in the areas of labor force participation, standards of living, access to (and outcomes in) education and health services, and power and agency.¹ To complement the findings from the SAE maps, a series of additional gender-disaggregated maps was created directly using variables on living standards available in the 2015 Census. These *suco*-level gender-sensitive poverty maps improve understanding of poverty in Timor-Leste. They also highlight hotspots of gender-disaggregated deprivation in access to economic opportunities, education, health, and power and agency.

¹ Please see “Timor-Leste Gender Sensitive Poverty Maps” for technical details on the SAE technique. It is used to: i) predict consumption for each household in the Census based on consumption models derived using the TLSLS, and ii) project an index of female disadvantage calculated for each surveyed household (in the TLSLS or DHS) onto each household in the Census, to estimate poverty statistics for small geographic areas (*sucos*).

Box 1: Small Area Estimation Methodology

The small area estimation (SAE) technique is based on the Elbers, Lanjouw and Lanjouw approach, which has been widely tested and validated around the world (Elbers et. al., 2003; World Bank, 2017). The technique is conventionally employed in the current study to link the data of all households across the country in the 2015 Population and Housing Census with the 2014 Survey of Living Standards to generate *suco*-level poverty maps based on consumption measures. The SAE technique is also ‘non-traditionally’ employed to spatially disaggregate gender-related indicators on education, health, and labor force from the 2014 Timor-Leste Survey of Living Standards (TLSLS) and power and agency from the 2016 Demographic and Health Survey (DHS). The SAE method combines the best features of a census (precision) and a survey (detailed indicators). To meet the requirements for SAE methodology, the individual-level gender indicators are presented as an index of female-male gaps that indicate female disadvantage.

Education indicators. A female disadvantage index in education is measured as the difference in the proportion of female and male household members, aged five and older, who are illiterate or never attended school.

Health indicators. A female disadvantage index in health is measured as the difference between female and male household members in the number of days they were ill in the past 30 days or hospitalized in the past 12 months.

Labor Force indicators. A female disadvantage index in the labor force is calculated as the difference in the proportion of female and male household members, aged 10 and above, who are economically inactive and the number of hours of wage work, across all jobs, in the past week.

Power and Agency indicators. Two indices are created based on answers from adult females in the households who were married or living with a man at the time of the survey. The index of female Decision-Making (DM) Autonomy within the household is generated based on whether adult females can make decisions about their own health care, major purchases, and visits to friends and relatives. The index of the prevalence of Domestic Violence (DV) against females is created from smaller sample of adult females in the households who answer in privacy a module on domestic violence. The DV index is generated based on 10 types of physical abuse or domestic violence, five types of emotional abuse, three types of verbal threats and abuse, and whether adult females were afraid of their current/former partner most of the time.

Suco-level Poverty Estimates

The *suco*-level poverty estimates are presented in two ways: the estimated poverty headcount rate and the number of people in households that are predicted to be poor in each *suco* (Figures 1a and 1b). Both types of maps are used because a focus solely on poverty rates could be misleading if the population is unequally distributed geographically; there may be more poor people in an area with a lower poverty rate than there are in an area with a higher poverty rate that has a low population density. Thus, it is helpful to know both rates and numbers when designing geographically targeted interventions.

Figure 1a: Poverty Headcount Rate Estimate

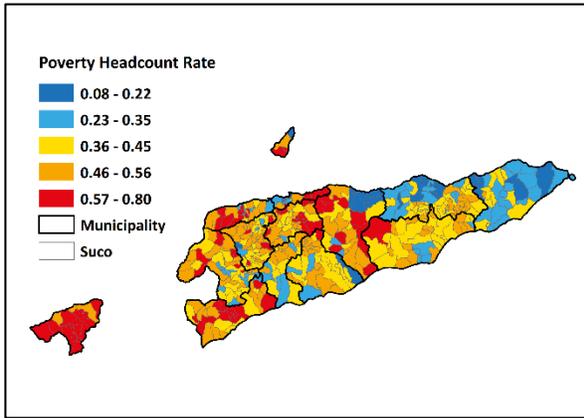


Figure 1b: Poor Population Estimate

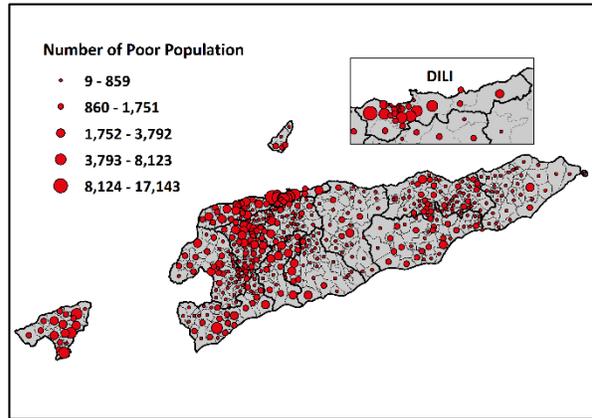


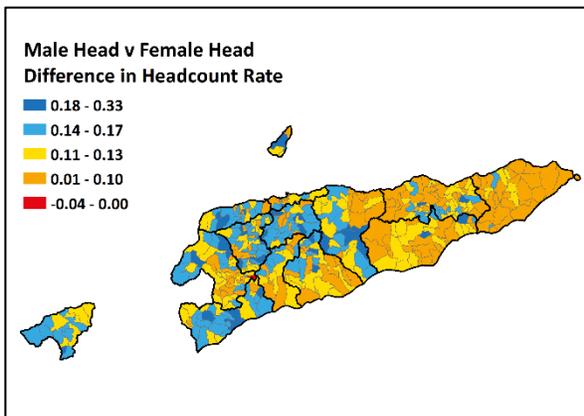
Figure 1a confirms previous findings that poverty headcount rates are much higher in western areas of the country. It also reveals new information – that there is much greater variation in poverty rates *within* than *between* districts. For example, while the Dili district-level poverty headcount rate is 29 percent, its *suco*-level rates range from 8 to 80 percent. Likewise, in Manatuto district, while the district-level poverty headcount rate is 43 percent, the *suco*-level poverty rates range from 10 to 71 percent.

Figure 1b displays the number of poor people in each *suco*. Although poverty headcount rates are low in most *sucos* in Dili due to the high population density, a large number of poor live in these *sucos* (especially in western areas of the district). A dense belt with high numbers of poor per *suco* runs from Dili through Liquiçá and Ermera, and along the western boundary of Ainaro. There are also high numbers of people in poor households in the enclave of Oecusse.

Poverty and Gender

Consumption-based Poverty Rates

Figure 2: Suco-level Mean Differences in Predicted Poverty Headcount Index in Male- vs Female-Headed Households



One of the most common observable gender-related consumption poverty indicators is the gender of the household head. In Timor-Leste, almost 16 percent of census households are female headed. The 2014 TLSLS shows that female-headed households (FHHs) are less likely to be poor than male-headed households (MHHs) (World Bank 2016). Furthermore, a comparison with the 2007 TLSLS results shows that FHHs enjoyed a faster rate of poverty reduction than MHHs. Although FHHs tend to have 1.9 fewer household members than MHHs, the poverty advantage for FHHs in 2014 appeared to be less independent of household composition given FHHs

tend to have higher female household members but smaller young-age-dependency ratio than MHHs.

While these patterns should hold, on average, across *sucos*, there may be considerable geographic variation in the difference in poverty rates between people in MHHs and those in FHHs. This spatial variation could arise from underlying variation in gender-related economic opportunities that may be more binding on FHHs than on MHHs.

Figure 2 compares the difference in poverty headcount rates for MHHs vs. FHHs. In *sucos* with a negative value (shown in red on the map), poverty rates for FHHs exceed those of MHHs. As shown in Figure 2, there is greater scope for this difference to be larger where poverty rates are higher. Consequently, most western areas of Timor-Leste showed high positive values, indicating that fewer FHHs were poor in these areas where poverty is higher. The only *suco* in which FHHs have higher poverty rates than MHHs is Cotabot, in Bobonaro district.

Non-monetary Poverty Indicators

The 2015 Census provides a range of variables on non-monetary standards of living, such as access to improved sanitation facilities and safe drinking water, which can supplement consumption-based poverty measures. These variables were used to construct *suco*-level maps of household access to basic services, including differences in access between FHHs and MHHs.

Across *sucos*, the proportion of households with access to improved sanitation and safe drinking water remains generally low, around 60 percent and 70 percent, respectively. While consumption-based poverty rates are lower among FHHs, many *sucos* reveal a gender gap (i.e., FHHs at a disadvantage) in access to improved sanitation facilities (Figure 3) and safe drinking water (Figure 4). Yet, correlating these variables with *suco*-level poverty rates suggests a tendency for gender equity in more prosperous *sucos* in these two services. The findings may reflect geographical divides in the delivery of public services on which FHHs are more dependent than MHHs.

Figure 3: Access to Improved Sanitation – Suco-level Gap Between Female- and Male-Headed Households

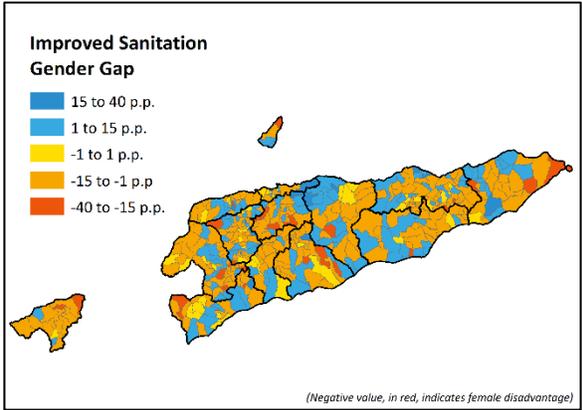
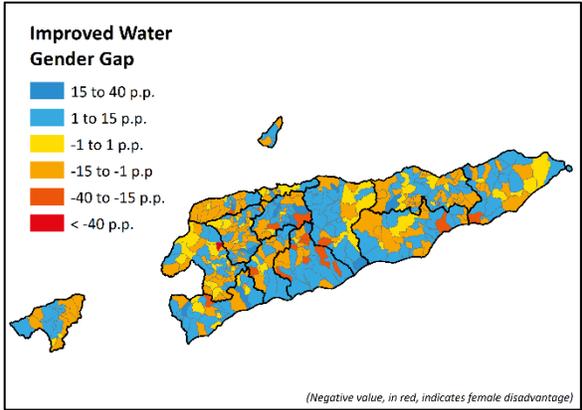


Figure 4: Access to Safe Drinking Water – Suco-level Gap Between Female- and Male-Headed Households



Sex-disaggregated Indicators

The SAEs were further employed to create spatially disaggregated gender indicators of standards of living. Considering that only 16 percent of households in Timor-Leste are female headed, the results of the

analysis based on FHHs represent the situation of a small minority of women and girls. This suggests the need to go beyond household headship to individual-level characteristics of education, health, labor force, and power and agency to better capture the much more meaningful standard-of-living and gender disparities of women and girls. Gender disparities in these five dimensions are presented as an index of female–male gaps, indicating female disadvantage. *Suco*-level sex-disaggregated education and employment indicators are also constructed directly from variables available in the Census.

Education

The index of gender gaps in education is mapped in Figure 5a, which shows that the prevalence of female disadvantage in the education index, measured based on illiteracy and non-attendance of school, is higher in poorer areas. The lowest gaps are observed in and around Dili. This pattern is confirmed in Figure 5b, which displays the proportion of the population living in households where the index indicating female disadvantage is negatively correlated with the *suco*-level poverty rate. In other words, the highest rate of education-related female disadvantage is found in poorer areas.

Figure 5a: Proportion of the Population in Households where the Index of Male–Female Education Gap Indicates Female Disadvantage

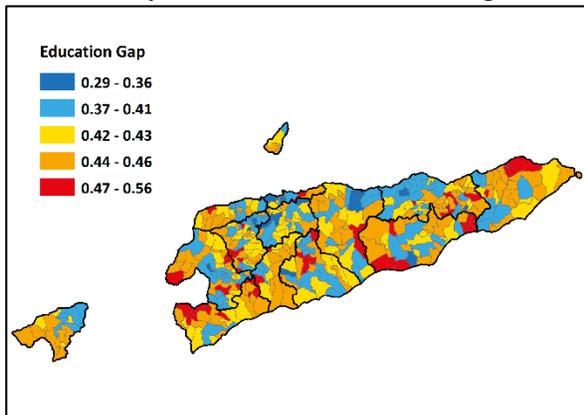
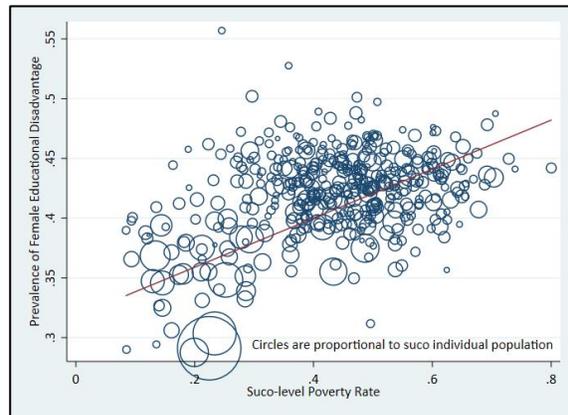


Figure 5b. Relationship between Gender Gap in Education and *Suco*-level Poverty Rate



To better understand whether the index captures past or current patterns of gender gaps, a map of the *suco*-level gap in literacy between females and males is created from Census data for two age groups – 15–40 years and 15–24 years. While the overall literacy rate for the former group is relatively high, it is very gender unequal. Figure 6 shows that males are more likely to be literate than females, and only a very small number of *sucos* have a higher literacy rate among females. This gender gap in the literacy rate, however, is much smaller for the younger generation (Figure 7), likely due to educational improvement.

Figure 6: Literacy Rate, *Suco*-level Gender Gap (15–40 years old)

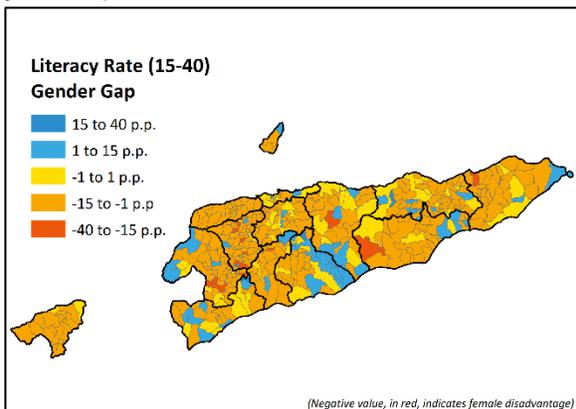


Figure 7: Literacy Rate, *Suco*-level Gender Gap (15–24 years old)

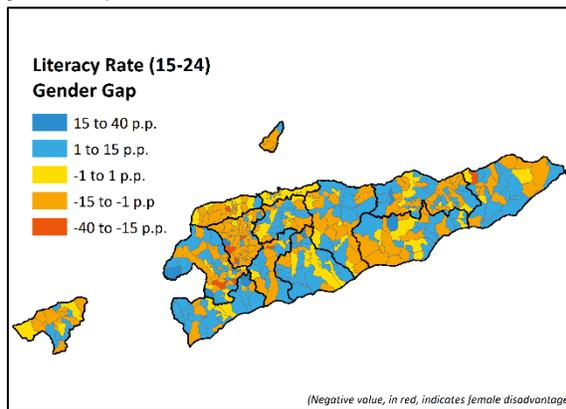
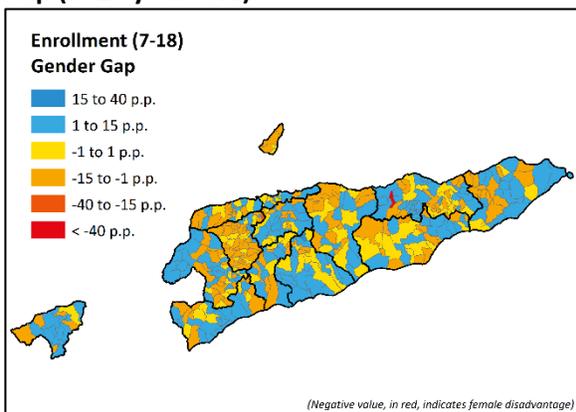


Figure 8: School Enrollment, *Suco*-level Gender Gap (7–18 years old)



Consistent with the findings on youth literacy rates, school enrolment among the school-aged population (7 to 18 years old) is also relatively high, at around 70 percent. Interestingly, females are more likely to be enrolled in education than males (Figure 8). Further disaggregation by age group shows that females have a higher enrollment rate in the primary and junior secondary school age group, while males enjoy a higher enrollment rate in senior secondary school age group.

Health

Due to limited data, the health index is constructed using self-reported variables indicating whether female-/male-headed household members have been ill or hospitalized. The findings from the composite index suggest that females, relative to males, do not appear to be disadvantaged in terms of these health measures. For example, the household-level average number of days of female illness was 94 percent of the average number of days of male illness. Females also had fewer spells of hospitalization (although these were rare for both males and females). Figure 9a suggests that there is a higher proportion of the population living in households with a female health disadvantage in Oecusse, and there are also concentrations in Baucau and Viqueque, but the patterns are more scattered than for the education index. The gender-related health index shows a weak relationship with *suco*-level poverty rate (Figure 9b), suggesting there is no clear correlation between a *suco*'s welfare and gender gaps on the health index. The findings, however, might be attributed to potential weaknesses of self-reported health status. For example, people have different levels of tolerance of illness. It has also been argued that disadvantaged populations tend to fail to perceive and report the presence of illness (Sen, A., 2002). Moreover, given the same health problems, women are less likely to use health services than men.

Labor Force

The index of gender gap in the labor force is constructed from the male–female difference within the household in having no economic activity and hours of wage work across all jobs. The findings mapped in Figure 10a show an inverse relationship between female disadvantage in the labor market and poverty rate. The gender-related labor force gaps are wider in *sucos* where households, on average, are richer and where poverty rates are lower. This is possibly because women from poorer households are more likely to participate in the labor market in order to support their family, and accordingly, their nonparticipation might be seen as welfare improving. This pattern is highlighted in Figure 10b, which confirms that the prevalence of female labor force disadvantage is most likely to be apparent in richer areas.

Figure 10a: Proportion of the Population in Households where the Index of Male–Female Labor Force Gaps Indicates Female Disadvantage

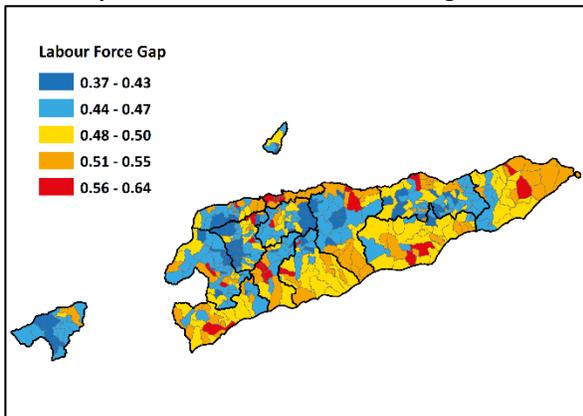
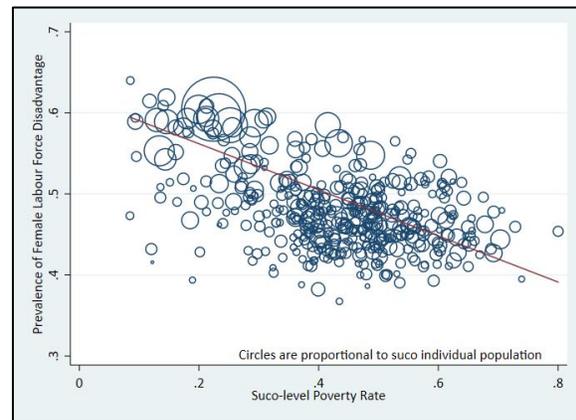


Figure 10b: Relationship between Gender Gap in Labor Force and Suco-level Poverty Rate



The findings in the index of gender gap in the labor force is consistent with the gender gap in the employment rate. Based on 2015 Census data, the employment rate in Timor-Leste is heavily dominated by males across the country. The gap between female and male employment rates at the *suco* level can be as high as 90 percentage points, such as in Tirilolo, in Lautem. Overall, the gaps tend to be higher in richer *sucos* (Figure 11). While these results are striking, it should be noted that, due to data constraints, the labor force index does not include key labor indicators reflecting the quality of employment, such as returns to labor force or employment segregation.

Figure 11: Employed Population – *Suco*-level Gap between Females and Males

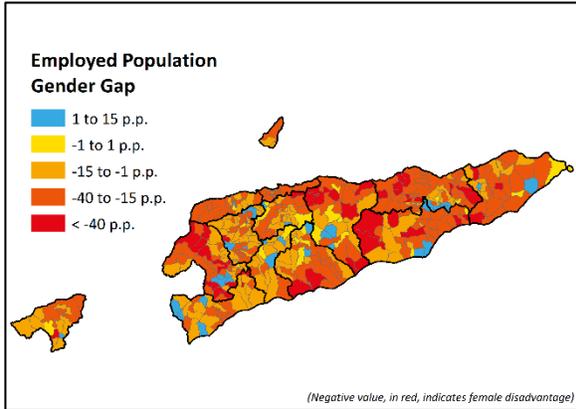
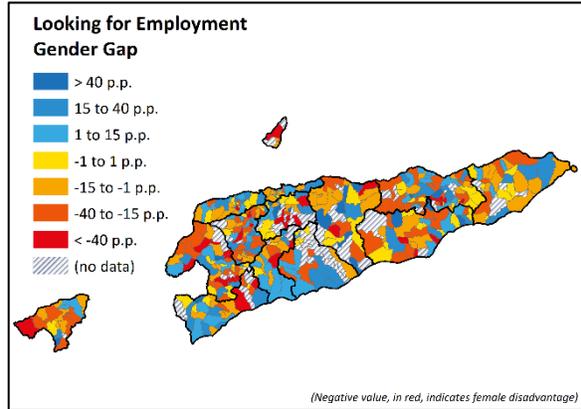


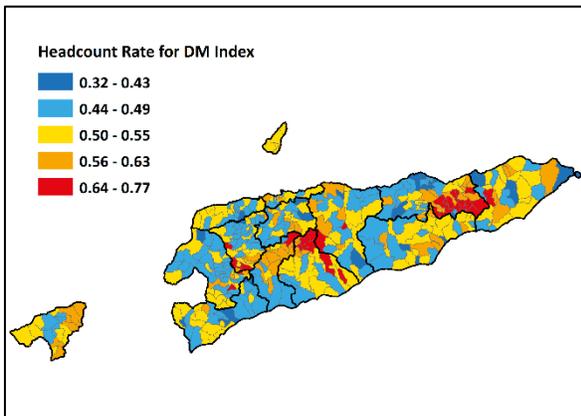
Figure 12: Unemployed Population Looking for Employment – *Suco*-level Gap between Females and Males



Among those not working, the majority are actively looking for a job. However, similar to the employment rate, these numbers are dominated by males (Figure 12). This means that females are much less likely to look for – let alone find – a job. Yet in some *sucos* more women are looking for employment than men. A high share of females looking for employment at the *suco* level could indicate that it is much harder for them to find a job than males.

Power and Agency

Figure 13: Proportion of the Population in Households where the Index of Female Decision-Making (DM) Autonomy Indicates Female Disadvantage



The indicators of power and agency are presented in two indices. The first is related to female autonomy in decision-making (DM). Figure 13 displays the results of the DM index, which suggests that locations with lower values on this index are scattered through some inland parts of the country. However, there are no apparent patterns with respect to poverty headcount rates.

The other index of power and agency is the prevalence of domestic violence (DV) against females. The data show that only 26 percent of the female respondents to the domestic violence module had no experience of any of the 19 types of abuse or domestic violence covered (mean =

2.1). The DV index is constructed based on these 19 variables. The index is most highly correlated with sexual violence (being forced to have sexual intercourse and forced with threats or in any other way to perform sexual acts) and most weakly correlated with being afraid of their partner.

Compared to the DM index, there is much clearer evidence of the prevalence of abuse and domestic violence. Figure 14a shows that western areas, and especially Oecusse, have a higher prevalence of such

problems, which corresponds to the geographic pattern of poverty headcount rates. Figure 14b confirms the significant positive correlation between the share of the population living in households with high DV index scores and the poverty headcount rate.

Figure 14a: Number of Households where the Index of Female Experience of Domestic Violence (DV) Indicates Female Disadvantage

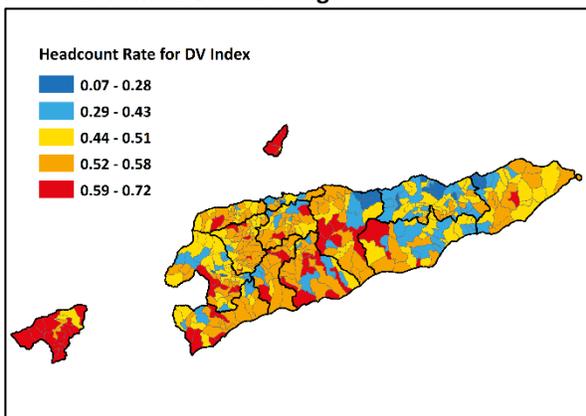


Figure 14b: Relationship between Share of Population Living in Households with High DV Index and Suco-level Poverty Rate



Policy Implications

The *suco*-level maps described in this Policy Note provide new insights into the geographic distribution and gender-based differences in poverty in Timor-Leste. They demonstrate that there is far more variation in poverty rates *within* than *between* districts. The analysis of multi-sectoral gender-disaggregated indicators (economic opportunities, education, health, and power and agency) also reveals a correlation between welfare and gender disparities.

The substantive findings from the spatially disaggregated gender-related indicators reveal that women in poorer areas are more likely to be affected by abuse and domestic violence and to have less access to education than men. However, there are also signs that recent educational improvements successfully close the gender gap in school attendance and literacy rates among younger school-aged children. This leaves outstanding challenges related to gender gaps in adult literacy and transition to senior secondary among girls. Female disadvantage in the labor force was most evident in more economically developed *sucos*. Poverty does not appear to be related to women’s autonomy to make decisions. Although the analysis found no evidence of a female disadvantage on the health indicator and no correlation with poverty, this may be due to a lack of appropriate data and hence will require further research and data to validate.

The poverty maps can inform the design of *suco*-level policies and programs, and can potentially improve resource allocation designed to raise standards of living, and balance the targeting of poor areas and poor people, while also closing gender gaps in these dimensions.

This analysis explores non-traditional applications of SAE. This potential highlights the importance of consistency and harmonization in developing future survey and census instruments so that better predictive models of gender-related indicators could be produced from the available data. Future analytic studies that explore the driving forces behind the spatial variation in poverty and gender disparity in

Timor-Leste can build on these findings. The study's approach also suggests the potential to add value to existing census and survey data collections, and may serve as a cost-effective substitute for fielding expensive new censuses or surveys.

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