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MV: Poverty Program
Poverty and Inequality in the Maldives

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POV

POVERTY AND INEQUALITY

INTRODUCTION

Around the world, countries use a wide variety of poverty measurement methodologies. Given the multitude of concepts, the purpose of this chapter is to summarize key elements of poverty measurement in the Maldives and to provide an overview of welfare of Maldivians. One of the main objectives of the Household Income and Expenditures Survey (HIES) is to provide information on welfare and living standards and their distribution over households. Of particular importance is the measurement and tracking of welfare amongst the poorest segments of the population, and HIES survey data provide the principal means for estimating the extent and severity of poverty in the Maldives.

A common method used to measure poverty is based on levels of consumption—a person is considered poor if his or her consumption level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". What is necessary to satisfy basic needs varies across time and countries. Therefore, poverty lines vary in time and across countries, and each country uses lines which are appropriate to its level of development, societal norms and values.

Poverty is not easy to define and different definitions exist. A broader approach refers to poverty as a state in which individuals' capabilities are unacceptably low as viewed by society (Sen, 1992). Sen's approach defines capability by considering not only what people have in material possessions but also what people do or are capable of doing. A narrow approach of poverty refers to the lack of command over basic consumption needs (e.g. too little food energy intake; too little leisure). Poverty is certainly a complex and multidimensional phenomenon which makes it difficult to measure. This note therefore aims at briefly laying out the methodological framework of measuring poverty in the Maldives using a relative poverty line and presents findings of applying the poverty concepts in the context of the Maldives.

For the purpose of this note, poverty is the pronounced deprivation in well-being (World Bank, 2000) defined as whether households or individuals have enough resources or abilities to meet their needs (Ravallion, 2016). Poverty is also multidimensional in nature and can include low incomes and the inability to acquire the basic goods and services necessary for survival with dignity but also low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice, and insufficient capacity and opportunity to better one's life.

MEASURING POVERTY IN THE MALDIVES

Measuring poverty is a complex undertaking that requires in-depth knowledge, resources and time. Despite improvements in technology, the collection of information from households as well as multifaceted analysis is a challenging process. Despite these challenges, measuring poverty with a robust poverty measure is essential to benchmark welfare and monitor progress as well as to contribute to the improvement in people's welfare through policy making.

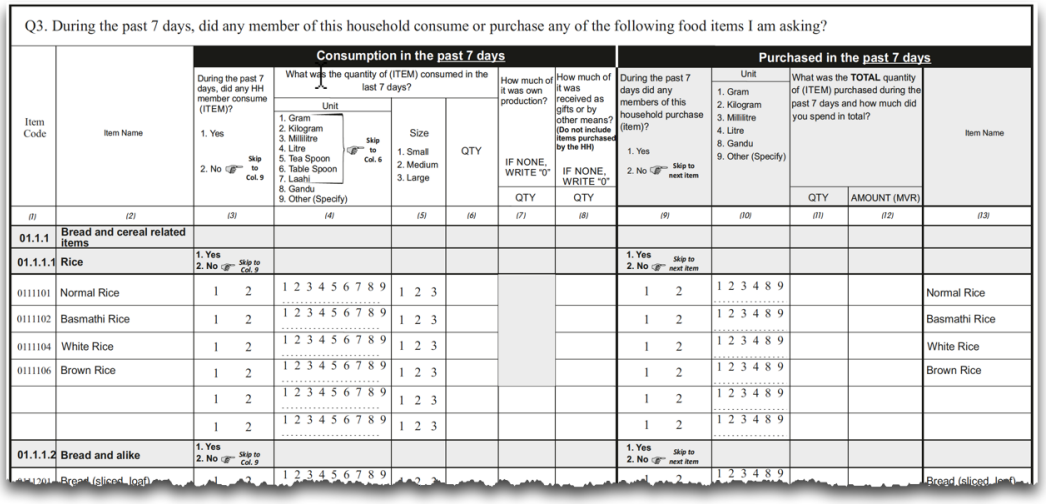
The measure of welfare adopted to assess population living standards is based on household consumption expenditures. An individual is considered as poor if their level of consumption expenditures is not sufficient to satisfy basic needs, or in other words, if their consumption expenditure falls below the minimum threshold identified by the poverty line. In line with past years, the official poverty line for Maldives is estimated following a relative approach of poverty and is set using the HIES 2016. For more details on the poverty methodology, please refer to Annex on methodology.

The main welfare measure, the consumption aggregate, was constructed by adding up expenditures of four expenditure components: (i) food expenditures; (ii) non-food, non-durable expenditures; (iii) expenditures on durables; and (iv) expenditures on housing. All expenditure items are aggregated at the household level and the resulting nominal consumption aggregate is adjusted for (i) differences in purchasing power due to differences in price levels across the Maldives (spatial deflation), using a survey-based Paasche index and (ii) within-the-year inflation, using a monthly CPI covering the survey period to produce a real consumption aggregate. Given data challenges, a decision was made of setting the poverty line as Maldives has set it in the past, using a relative poverty line.

EXPENDITURES ON FOOD

Food consumption is obtained as the total value of *consumed* food items and food consumed outside the home, such as at restaurants, cafés etc. In the survey instrument, each household reports whether they consumed any given food item in the reference period of the past 7 days (question 3) and if so, how much of it they consumed (question 6). Households thus do not report the monetary value for consumption, instead, they report whether they *purchased* any given item (question 9), how much of it (question 11), and its value in Maldivian Rufiyaa (MVR) (question 12). Therefore, the "consumption" part must be supplemented using information from the "purchased" part, to obtain an estimate of the value of consumption, our preferred indicator of food expenditure (Figure 1).

Figure 1: Survey instrument for food consumption and purchased



Q3. During the past 7 days, did any member of this household consume or purchase any of the following food items I am asking?

Item Code	Item Name	Consumption in the past 7 days: During the past 7 days, did any HH member consume (ITEM)? 1. Yes 2. No (Skip to Col. 9)	What was the quantity of (ITEM) consumed in the last 7 days? Unit: 1. Gram 2. Kilogram 3. Millilitre 4. Litre 5. Tea Spoon 6. Table Spoon 7. Laahi 8. Gandu 9. Other (Specify) (Skip to Col. 6)	Size: 1. Small 2. Medium 3. Large	QTY	How much of it was own production? IF NONE, WRITE "0" QTY	How much of it was received as gifts or by other means? (Do not include items purchased by the HH) IF NONE, WRITE "0" QTY	Purchased in the past 7 days: During the past 7 days did any members of this household purchase (item)? 1. Yes 2. No (Skip to next item)	Unit: 1. Gram 2. Kilogram 3. Millilitre 4. Litre 8. Gandu 9. Other (Specify)	What was the TOTAL quantity of (ITEM) purchased during the past 7 days and how much did you spend in total? QTY	AMOUNT (MVR)	Item Name
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
01.1.1	Bread and cereal related items											
01.1.1.1	Rice	1. Yes 2. No (Skip to Col. 9)						1. Yes 2. No (Skip to next item)				
0111101	Normal Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			Normal Rice
0111102	Basmathi Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			Basmathi Rice
0111104	White Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			White Rice
0111106	Brown Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			Brown Rice
		1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			
		1 2	1 2 3 4 5 6 7 8 9	1 2 3				1 2	1 2 3 4 8 9			
01.1.1.2	Bread and alike	1. Yes 2. No (Skip to Col. 9)						1. Yes 2. No (Skip to next item)				
[illegible]	Bread (sliced, loaf)	[illegible]	1 2 3 4 5 6 7 8 9	[illegible]				[illegible]	1 2 3 4 8 9			Bread (sliced, loaf)

Source: HIES 2016 questionnaire, Form 7.

The estimate of the value of consumed items was produced by undertaking three steps: (i) converting both consumed and purchased quantities into a common, standard measurement unit, namely grams; (ii) estimating unit values for each food item and household, as the ratio of the expenditure for any given (purchased) item and the corresponding standardized quantity in grams; and (iii) using these unit values to price all consumed quantities in grams.

EXPENDITURES ON NON-FOOD NON-DURABLES

The non-food component of the consumption aggregate includes a set of goods which are widely heterogeneous (e.g., soap, cleaning supplies, newspapers, personal care items, clothing, footwear, kitchen equipment, etc.). These items are often collected for different reference periods, for example, from consumption in the last 30 days, past 3 months to the last year. Expenditures therefore have to be brought to the same reference period. The most difficult challenge is what set of "non-food" items to include in the overall consumption aggregate. In general, "lumpy" and relatively infrequent expenditures associated with events like marriage celebrations, dowries, births, and funerals should ideally be "smoothed" or spread over several years. Deaton and Zaidi (2002) recommend excluding them from the consumption aggregate and we followed this recommendation. We thus excluded expenditures on health[1] and funeral items.

EXPENDITURES ON HOUSING

Housing is defined as the value of the flow of services that a household receives from occupying a dwelling rather than the expenditure of purchasing the dwelling itself. Purchasing a house is a very large and rare expenditure, thus, it should never be included in the welfare aggregate (Deaton and Zaidi, 2002). To measure the flow instead of the stock, payments in rent seem to be a more appropriate choice. However, many households own their dwelling and values on rent are not observed for households that own a dwelling. Furthermore, not all tenants pay the market price for their dwellings, as they may enjoy subsidized arrangements, live for free in a dwelling provided by their employer or by a family member. One way to value the flow of services from dwellings in the welfare aggregate is to estimate the implicit rent a household would pay if he had to rent a dwelling similar in size and quality by means of some imputation method. Another method is based on gathering data on owners' (and non-market tenants) estimates of a fictitious market rental price of a household's owned dwelling. For example, homeowners can be asked to estimate how much they think they would pay if they had to rent their home.

In the case of Maldives, we use a combination of the two approaches mentioned above. The HIES 2016 survey instrument collects information on paid rent for those households that rent their dwelling (Question 29: "How much is the monthly rent?") and the rental equivalent for households that own their dwelling (Question 28: "How much would you expect to receive each month for this house if you rented it

[1] The motivation for excluding health-related expenditures is that they are considered a "regrettable necessity": an individual who falls ill is likely to spend a substantial amount of money which if added will increase total expenditures and therefore their level of welfare when in fact, the opposite may be the case. Furthermore, it is challenging to acquire complete information on financing of health expenditures as people may have insurance.

out to someone?"). One challenge we face is that there is no reliable rental market outside of Male'—where the 95 percent of households own their dwelling, compared to 36 percent in Male'—which does not allow for households to either report rent or hinders the knowledge about expected rent. This is the case in many countries around the world, where rural areas practically do not have a rental market. In Maldives, however, we find an additional complication, namely, the existence of guesthouses on many islands of the Atolls which distort the expected rent values. We thus observe substantial variations in self-reported values of expected rents across Atolls with numerous Atolls showing unreasonably overreported values. We consequently use the reported value of actual rent for those households renting their dwelling in Male', where data was deemed to be reliable. For households, that do not pay rent, either because they own the dwelling or because they occupy it for free, we use the self-reported expected rent. In the Atolls, however, we use a hedonic housing regression model to predict monthly rents based on dwelling characteristics for households, using actual rent as our independent variable. A hedonic regression model is estimated by predicting the value of the dwelling based on the characteristics of the dwelling as it relates the housing price to factors such as size, location, construction materials, etc.

EXPENDITURES ON DURABLE GOODS

Consumer durables play a key role in determining households' well-being and the consumption of durable goods or assets such as automobiles, fridges, televisions, cellular phones, etc., should be included as part of the welfare measure. The main measurement challenge concerning the inclusion of durables is that their life-span typically exceeds the time-period for which the consumption aggregate is constructed and that they "deliver useful services to a consumer through repeated use over an extended period of time" Diewert (2009, p. 447). As a consequence, the purchase market price of a durable good is not an adequate pricing concept to estimate the value of the benefits from using the durable good. As a matter of fact, the purchase market price corresponds to the value of the durable good for its entire economic life, while only a fraction of the market value reflects the value of the benefits delivered by the durable good during the survey year. Therefore, it is recommended to only include the flow of the service that these goods yield rather than their total expenditure. To calculate the *consumption flow from durable goods,* measures of depreciation and estimates on the current value have to be taken into consideration.

ADJUSTMENTS TO THE CONSUMPTION AGGREGATE

Once we estimated all the components of the nominal consumption aggregate aggregated at the household level, we undertook three adjustments to the nominal consumption aggregate to obtain the real living standard at the individual level. The first adjustment is to account for differences in the cost of living across time. Prices usually vary across different time periods over the course of data collection of the survey due to inflation. Adjustments are necessary to avoid misleading comparisons between households' nominal consumption expenditures which are due to data collection during different time periods. To adjust for inflation, we used the official monthly food and non-food CPI for the survey reference period to adjust for differences of data collection in different survey months.

The second adjustment is to account for differences in the cost of living across space. Prices usually vary across different regions in a country and these differences in prices may mislead comparisons between

households' nominal consumption expenditures (Gibson, 2007). Monetary welfare indicators must therefore be adjusted for differences in purchasing power due to differences in price levels across the Atolls. To address the spatial variation in prices, we applied a Paasche price index, constructed considering food prices.

The third adjustment refers to the adjustments for differences in household composition (i.e. difference in the number of household members across households) by dividing the household welfare aggregate by the household size to capture the welfare measure at the individual rather than at the household level.

COMPARABILITY ACROSS SURVEY YEARS

The Maldives National Bureau of Statistics (NBS) undertook the most recent HIES in 2016 with a completely revised survey and questionnaire design which includes important survey improvements to bring the HIES up to international standards, particularly in the measurement of poverty. However, these improvements (the most important of which are summarized in Table 1) also hinder comparability with past survey years and thus no comparable trends in poverty can be constructed.

Table 1: Differences in components of the consumption aggregate across survey years

COMPONENT OF CONSUMPTION AGGREGATE	HIES 2002-03	HIES 2009-10	HIES 2016
FOOD EXPENDITURE	▪ Food *purchased* (205 food and beverage items) ▪ Own production ▪ Gifts received excluded	▪ Food *purchased* (235 food and beverage items) ▪ Own production ▪ Gift received included	▪ Food *consumed* (not purchased, 195 food and beverage items) ▪ Own production ▪ Gifts received included
NON-FOOD NON-DURABLE EXPENDITURE	Includes a variety of consumption items such as tobacco, clothing, education, energy and health, travel abroad. Includes lumpy expenditures on weddings.	Includes a variety of consumption items such as tobacco, clothing, education, energy, travel abroad for leisure and health. Excludes lumpy expenditures, housing constructions, fine, debts.	Includes a variety of consumption items such as such as tobacco, clothing, education, energy, travel abroad for leisure. Excludes lumpy expenditures, housing construction, debt, and health.
EXPENDITURE ON DURABLES	Included	Excluded	Included
EXPENDITURE ON RENT	Actual rent paid	Excluded	Included
CONSUMPTION EXPENDITURES COLLECTED VIA	Diary	Diary	Recall
DATA COLLECTION PERIOD	During 4 months in a 12 months period.	6 months	3 months

Source: Authors' elaboration based on HIES 2002-03, 2009-10, and 2016.

It is important to note that the detailed consumption expenditure module, which allows for direct estimation of poverty, introduced important improvements in the methodology, which hinder comparability to the HIES 2002-03 and 2009-10. These comprise of five important changes: (i) In the interest of increased transparency, and in line with international good practice, consumption of food items

was collected via 7-day recall, rather than a food diary method, which was implemented in past rounds of HIES; (ii) data collection was undertaking for 3 months, rather than 12 months as in past survey rounds; (iii) health expenditures and lumpy expenditures are excluded from the consumption aggregate in 2016; (iv) consumer durables are included and measured via a consumption flow of durables approach in 2016; (v) rent, an important component of consumption in the Maldives, is included in 2016.

POVERTY LINES

Poverty lines in the Maldives are estimated using a relative approach. The relative poverty line is defined in respect to the median expenditure of the entire population. This means that relative poverty is redefined every time new data becomes available as the median income changes. As the measure to which poverty is compared to (e.g., mean on median income) is revised upwards, so is the poverty line. For example, if everyone's consumption doubles, it is hard to argue that poverty levels remain constant as the relative approach would indicate (Ravallion, 2016). Setting relative poverty lines is therefore more akin to a way to measure inequality in a society rather than poverty itself which defines a minimum level of needs that are physically and socially essential.

The relative poverty line represents the level of per capita consumption at which the members of a household can be expected to meet their "basic needs" in terms of both food and non-food consumption. In Maldives, the poverty line is set relative to the median income of all Maldivians. Someone who earns less than 50 percent of the median income is considered to live in poverty because he or she is not able to consume goods and services that the rest of society can consume and is therefore excluded from social life. This line was defined as part of the first ever study on poverty, conducted in 1998. The "Vulnerability and Poverty Assessment in Maldives 1998 (VPA 1998)" set the first relative poverty line for the country. The question as to where to set the relative poverty line was considered complex even at that time. Since relative poverty line was commonly used by other countries and a common relative poverty line was set at half the median per capita income, a similar approach was applied in the Maldives to determine the poverty line. To complement this "low poverty line", NBS also defines a "high poverty line" at the median of expenditures. This chapter further reports on the international poverty for upper middle-income countries, which is set at $5.50 per person per day[2], which was converted from 2011 US Dollars to MVR by using the Purchasing Power Parities (PPP)[3] conversion factor and CPI.

[2] As differences in the cost of living across the world evolve, the global poverty line has to be periodically updated to reflect these changes and in 2017, the World Bank adopted international poverty lines by income class (Joliffe and Prydz, 2016): (i) the low income International Poverty Line, set at $ 1.90/per day; (ii) the lower middle-income International Poverty Line, set at $3.20/day; and (iii) the upper middle-income International Poverty Line, set at $5.50/day. The introduction of the middle-income lines serves two purposes. First, it accounts, in a simple manner, for the fact that achieving the same set of capabilities may require a different set of goods and services in different countries—and, specifically, a costlier set in richer countries. Second, it allows for cross-country comparisons and benchmarking both within and across developing regions, something that a growing number of countries is interested in and was not possible before, using regional lines.

[3] A purchasing power parity (PPP) is a price index very similar in content and estimation to the consumer price index, or CPI. Whereas the CPI shows price changes over time, a PPP provides a measure of price level differences across countries. A PPP could also be thought of as an alternative currency exchange rate, but based on actual prices. The

The relative low poverty line in the Maldives using HIES 2016 is set at 74 MVR per person per day and the relative high poverty line is set at 148 MVR per person per day. The international upper middle-income line is 70 MVR per person per day, similar to the low poverty line.

ECONOMIC CONTEXT

Over the past 30 years, Maldives has successfully built on its extraordinary natural assets to promote growth and socio-economic development. Maldives shares many of the Small Island Developing States development challenges, such as: a small domestic market; a narrow and fragile resource base; a shortage of skilled manpower; difficult inter-island transport and communication; high cost of social and economic infrastructure provision; and heavy dependence on external trade and vulnerability to external shocks and natural disasters. However, in the case of Maldives, these challenges are compounded by its high geographic dispersion of 199 inhabited islands grouped in 26 atolls with a local population of 344,000[4], spread over roughly 90,000 square kilometers. Maldives' unique archipelagic coral island provides the country with an extremely rich and diverse marine ecological system. With more territorial sea than land, marine resources have played a vital role shaping the contours of economic development, with nature-based tourism being the key driver of economic growth (tourism accounts for about a third of the country's GDP) and fisheries an important sector of employment for the local population (World Bank, 2015).

High GDP growth is mainly driven by public investments, tourism and non-tradable tourism-related activities. In the early 1980s, Maldives was one of the world's 20 poorest countries. Thirty years later, its inhabitants enjoy the same levels of GDP per capita and human development outcomes as a middle-income country. Endowed with extraordinary natural assets Maldives developed a high-end tourism sector, which has resulted in a very high pace of economic growth over the past three decades. Gross Domestic Product (GDP) per capita increased from $268 in 1980 to $ 9,875 in 2016 (Figure 2). The development of the tourism sector in Maldives has created sizable revenues, which have been used to support job creation in the public sector, to finance the provision of public services and expand access to primary health and education facilities beyond the capital area Male'. However, as a result of an enclave-based tourism model, linkages between resorts and the local economy are limited. Furthermore, despite rapidly growing jobs, most of the jobs in tourism are not seized by the local population and employment of Maldivian women in the tourism industry is particularly low. Fisheries remains an important sector in Maldives as it traditionally provides employment, particularly for Maldivian males outside Male', exports, and food security.

CPI though, is easier to understand because it is based on the national currency, which remains the same over time. The PPP conversion factor in 2011 for the Maldives is MVR 10.7 for every 1 US Dollar.

[4] Ministry of Finance and Treasury, National Bureau of Statistics (2014), results of the 2014 Population and Housing Census. Based on the same source, foreigners working in Maldives account for additional 63,637 individuals, leading to a total of about 407,000 individuals.

Figure 2. GDP and GDP per capita

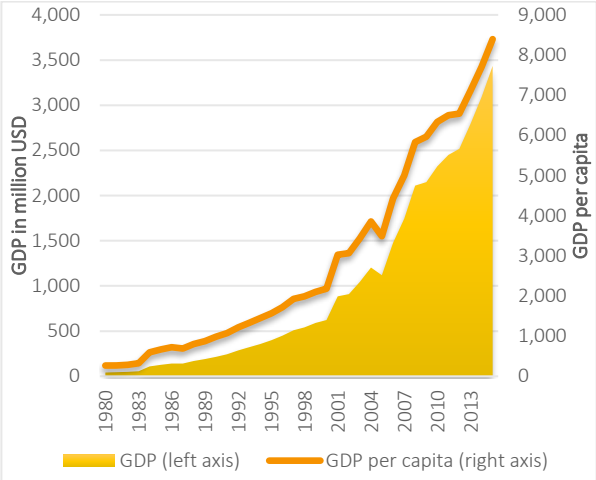
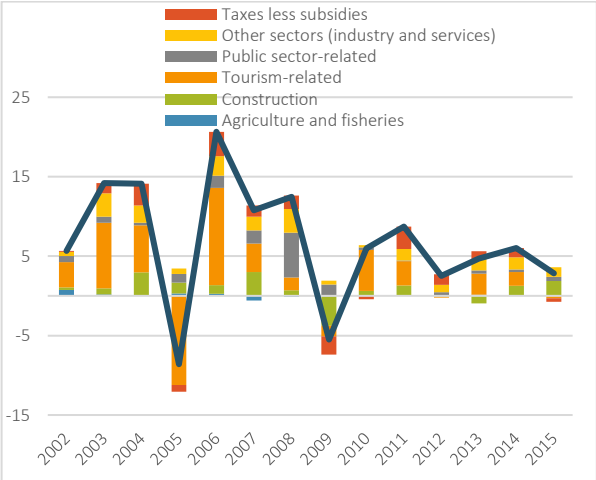


Figure 3. Sectoral contribution to GDP growth



Source: World Development Indicators Database.

More recently, construction and tourism are the main drivers of growth. Construction was the main driver of growth, growing at an average of 19 percent in 2015-16, driven by large housing and investment projects. After peaking at 10.1 percent growth in 2013, the tourism sector slowed down between 2014 and 2016, due to a slowdown in tourist arrivals especially from China and Russia. Tourism bed night growth started to recover in 2016 and reached 10.6 percent in 2017.

RESULTS ON POVERTY AND INEQUALITY

Once the welfare measure and a poverty line are constructed, it is essential to construct summary statistics on the extent of poverty and inequality. Often, indices are constructed that summarize the information and provide an overall picture of poverty. A non-exhaustive number of poverty indices, focusing on the Foster Greer and Thorbecke (FGT) class indicators, which are widely used by countries and the international community to measure poverty, are briefly discussed below.

Due to their simplicity in application and interpretation, the FGT indices are discussed in this section. Advantages of the FGT indices are the possibility of breaking-down the indices into their components and the ability to use them to evaluate policies for poverty reduction. However, their disadvantage is that interdependence matters—one's poverty status may depend not only on their own shortfall to the poverty line but also on someone else's shortfall vis-a-vis the shortfall of others (e.g. their relative position to others).

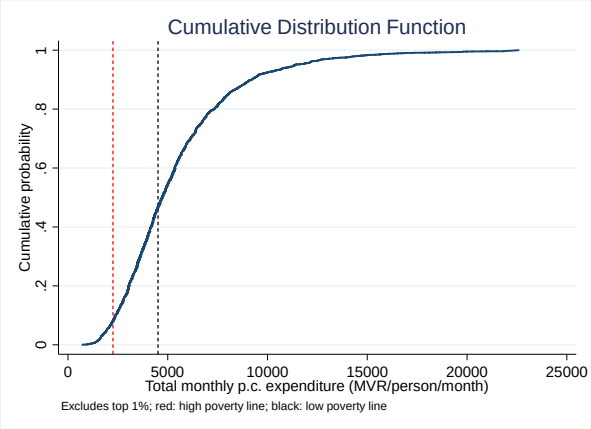
POVERTY

The most commonly used measure to display poverty incidence is the poverty headcount rate. The headcount rate identifies the share of population that lives below the poverty line and is measured by simply comparing consumption of each household or individual to the poverty line. The poverty headcount rate in the Maldives is 8.2 percent using the low poverty line (half the median of total expenditures) and 46.5 percent using the high poverty line (median total expenditures) (Table 2). This

large difference in headcount rates indicates that over 38 percent of Maldivians are bunched between the 25th and 50th percentile of total expenditures.

Figure 4 displays the cumulative distribution function (CDF) of the total per capita monthly expenditures. We observe, that the CDF of expenditures is very steep which indicates that a large part of the population lives within a relatively small range of total expenditures. About 8.2 percent of Maldivians consume less than 2,257 MVR per month (or MVR 74 per day) and almost half of all Maldivians (46.5 percent) consume less than 4,514 MVR per month (or MVR 148 per day). The steep cumulative distribution function is a cause of concern as it indicates that many Maldivians are bunched between the low and high poverty line and are thus vulnerable to fall into poverty if their household situation changes. Results on the international poverty line of upper middle-income countries are similar to results using the low poverty line, with an incidence of poverty of 6.6 percent.

Figure 4. Cumulative Distribution Function of total p.c. monthly expenditures



Source: Authors' own estimation based on HIES 2016 data.

The poverty headcount rate only shows the proportion of the population that lives below and above a certain threshold but it is not able to show changes that occur near the threshold. We therefore complement the poverty headcount rate with the poverty gap index. The poverty gap index measures the depth of poverty by determining the gap between the actual state of an individual and the poverty line. It indicates the average shortfall of expenditure of the poor as a percentage of the poverty line relative to the poverty line with non-poor considered to have 0 shortfall. It thus measures the amount of money that would have to be given to an individual or household so it is not considered poor. We observe that the poverty gap index, using the low poverty line is relatively low at 1.6 percent but the gap becomes larger using the high poverty line (Table 2).

Another interpretation of the poverty gap index is that it provides a measure of the aggregate size of the monetary transfer required to bring the poor out of poverty, assuming perfect targeting were possible. Assuming a national population of 378,294 in 2016, and using the poverty line of 2,257 MVR per capita per month, a poverty gap index of 1.6 percent of the poverty line, implies that an average transfer of 37 MVR per person per month would be needed to eliminate poverty (and the total budget needed would be 1.15 million MVR per month, targeted to the poor). This gap grows using the high poverty line where

the average poor person would have to consume an additional 13.9 percent of the poverty line, or 626 MVR per month, to be considered non-poor.

Table 2: Poverty indices, by poverty line

POVERTY LINE	POVERTY RATE	POVERTY GAP
HALF THE MEDIAN OF TOTAL EXPENDITURES	8.2%	1.6%
MEDIAN OF TOTAL EXPENDITURES	46.5%	13.9%
UPPER MIDDLE-INCOME	6.6%	1.3%

Source: Authors' own estimation based on HIES 2016 data

We observe large differences in expenditures in Male' and the Atolls. Figure 5 shows the distribution of total expenditure for the entire country. We observe that, on average, Maldivians consume 5,634 MVR per month. However, Figure 6 shows the distribution of expenditures in Male' (blue distribution curve) compared to Atolls (red distribution curve) and we see that the distribution in Male' is shifted to the right, indicating higher levels of consumption. Furthermore, the distribution in the Atolls is much narrower, indicating that more people consume around the average consumption level compared to Male'. The tail of the distribution in Male' is also much further to the right which indicates that a small proportion of Maldivians in Male' consumes a lot.

Figure 5. Distribution of total p.c. monthly expenditures, Maldives

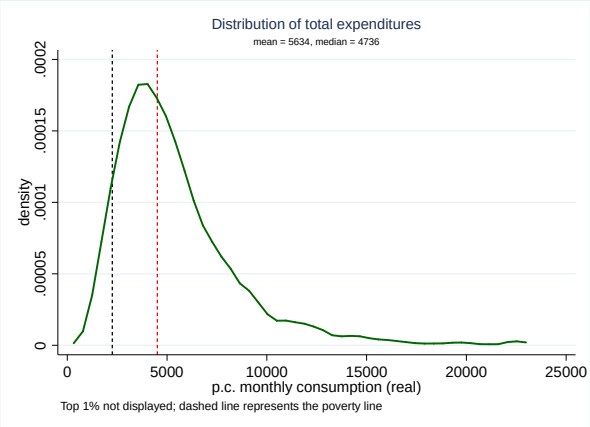
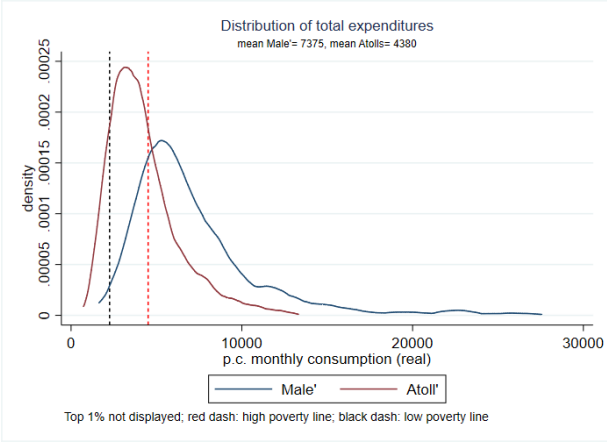


Figure 6. Distribution of total p.c. monthly expenditures, Male' and Atolls



Source: Authors' own estimation based on HIES 2016 data.

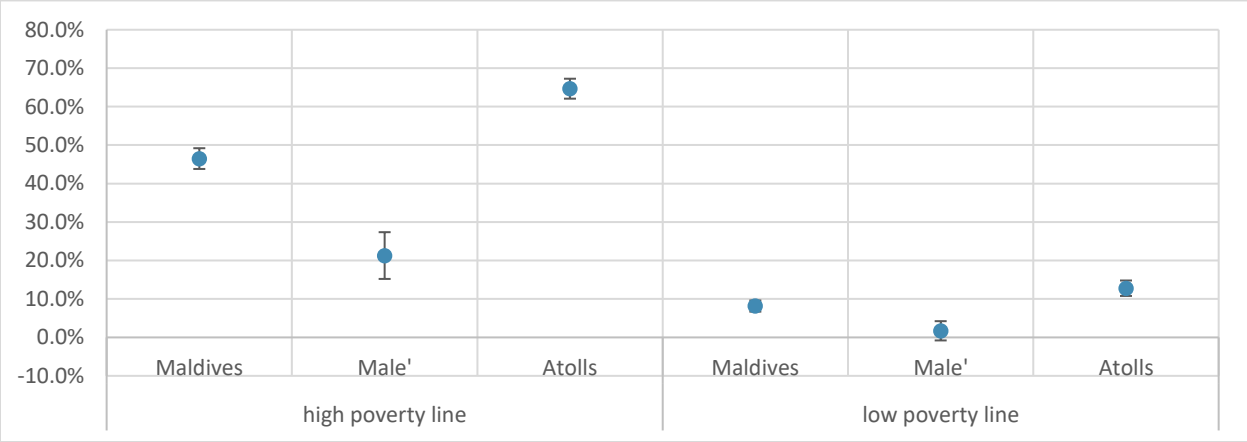
Poverty is unequally distributed across the Maldives with higher poverty rates in the Atolls outside of Male' (Table 3). The mean consumption in Male' is around 7,400 MVR per month but in the Atolls, it is substantially lower, at around 4,400 MVR per month. Subsequently, using the low poverty line of half the median of total expenditures, 1.7 percent of the population in Male' is considered poor but 12.8 percent of the Atoll population is poor. Even with the high poverty line of the median of total expenditures, 21.3 percent of Maldivians in Male' are poor and a striking 64.7 percent of the Atoll population is considered to be poor. Figure 7 displays the poverty rates and their respective confidence intervals.

Table 3. Poverty rates, Male' vs. Atolls

POVERTY LINE	TOTAL	MALE'	ATOLLS
LOW POVERTY LINE (HALF THE MEDIAN OF TOTAL EXPENDITURES)	8.2%	1.7%	12.8%
HIGH POVERTY LINE (MEDIAN OF TOTAL EXPENDITURES)	46.5%	21.3%	64.7%
UPPER MIDDLE-INCOME	6.6%	1.5%	10.4%

Source: Authors' own estimation based on HIES 2016 data

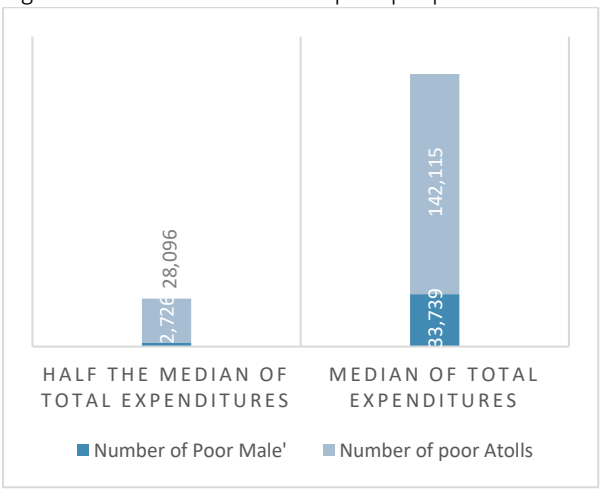
Figure 7. Poverty rates and confidence intervals, Male' vs. Atolls



Source: Authors' own estimation based on HIES 2016 data

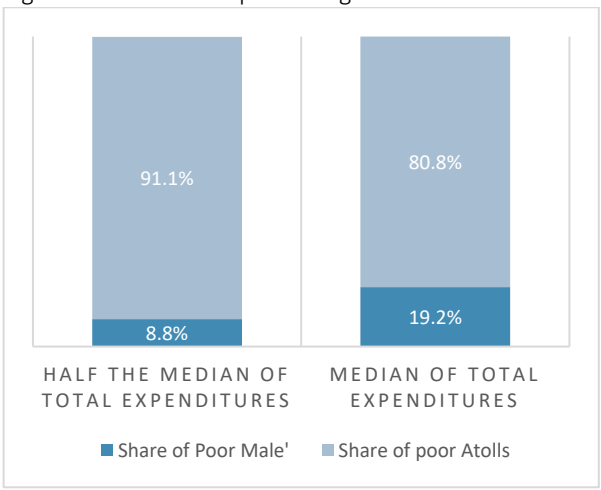
Despite the fact that 58 percent of Maldivians live in Atolls other than Male', the large majority—91.1 percent under the low poverty line—of all the poor live in the Atolls (Figure 9). The number of poor according to the low poverty line in the Atolls is seven times as high as in Male'—over 28,300 Maldivians are poor in the Atolls, compared to over 2,700 in Male'. According to the high poverty line, under which 46.5 percent of Maldivians are poor, the number of poor in the Atolls stands at over 142,100 compared to about 33,700 in Male' (Figure 8).

Figure 8. Estimated number of poor people



Source: Authors' own estimation based on HIES 2016 data.

Figure 9. Share of the poor living in Male' and Atolls

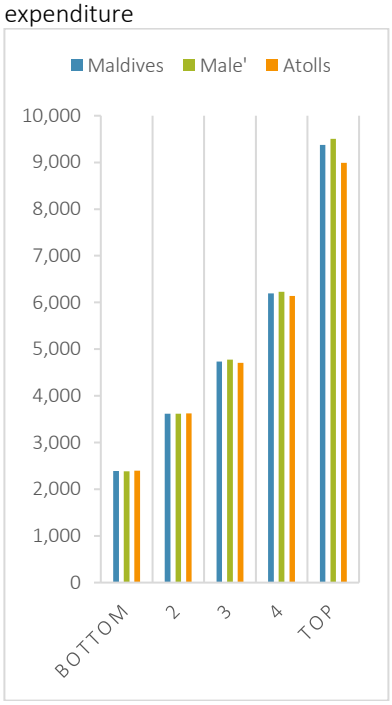


Source: Authors' own estimation based on HIES 2016 data.

INEQUALITY

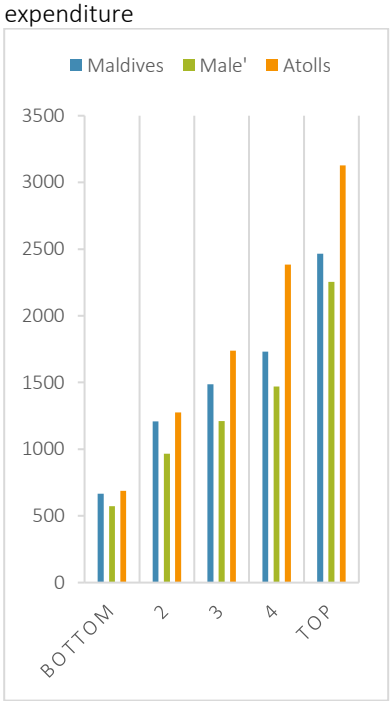
Welfare is unevenly distributed in the Maldives. Figure 10 plots the median per capita expenditures in 2016 by quintiles (dividing the expenditure distribution into five equally sized groups, sorted in ascending order of per capita expenditures), and shows that there is large variation in welfare in each quintile. In the Maldives, per capita median expenditure in the top quintile is four times higher than in the bottom quintile. The largest difference between the top and bottom quintile is observed in food expenditures in the Atolls (Figure 11), where the top quintile consumes 4.6 times more food compared to the bottom quintile.

Figure 10. Median per capita expenditure



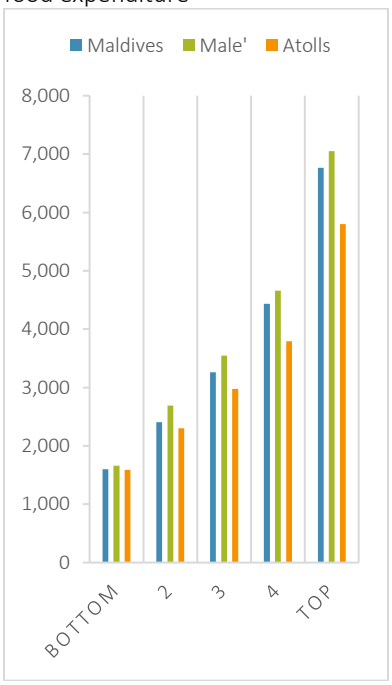
Source: Authors' own estimation based on HIES 2016 data.

Figure 11. Median per capita food expenditure



Source: Authors' own estimation based on HIES 2016 data.

Figure 12. Median per capita non-food expenditure

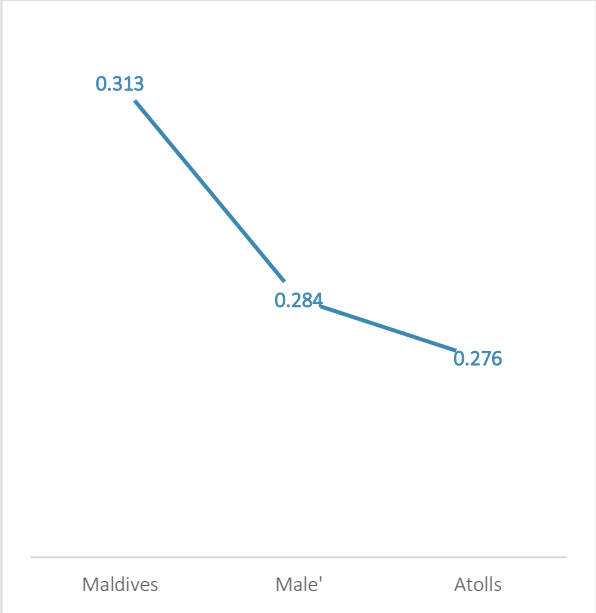


Source: Authors' own estimation based on HIES 2016 data.

These distributional facts imply that while the intensity of poverty is high, particularly for the high poverty line, inequality is also relatively high. Figure 13 plots expenditure inequality as measured by the Gini coefficient. The Gini index measures the extent to which the distribution of consumption among individuals or households differs from a perfectly equal one. A value of 0 represents absolute equality with everybody consuming the same amount, a value of 1 absolute inequality, where all consumption is concentrated in one person. Regional comparison shows that Maldives' Gini coefficient of 31.3 seems to be mostly in line with other countries in the region. India's Gini is 35.2 (2011), Sri Lanka's is higher at 39.2 (2012), Pakistan at 30.7 (2013), Bangladesh at 32.1 (2010) and Nepal at 32.8 (2010).

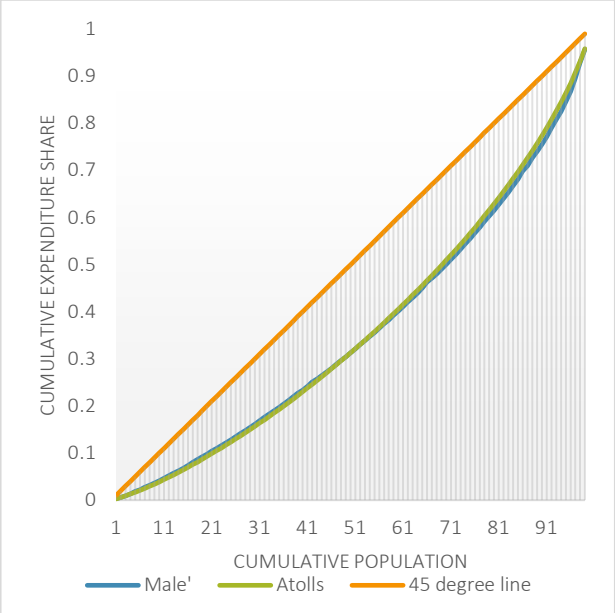
Figure 14 shows the Lorenz curve, the expenditure shares for the complete continuum—from poorest 0 percent to the richest 100 percent for the country. The curve shows that inequality in Male' (blue line) is lower for the bottom half of the population while it is higher for the top half of the population compared to the Atolls. If consumption were equally distributed across everyone in the Maldives, we would have perfect equality, which is represented by the 45-degree line.

Figure 13. Expenditure inequality (Gini coefficient)



Source: Authors' own estimation based on HIES 2016 data.

Figure 14. Lorenz curve, Male' and Atolls



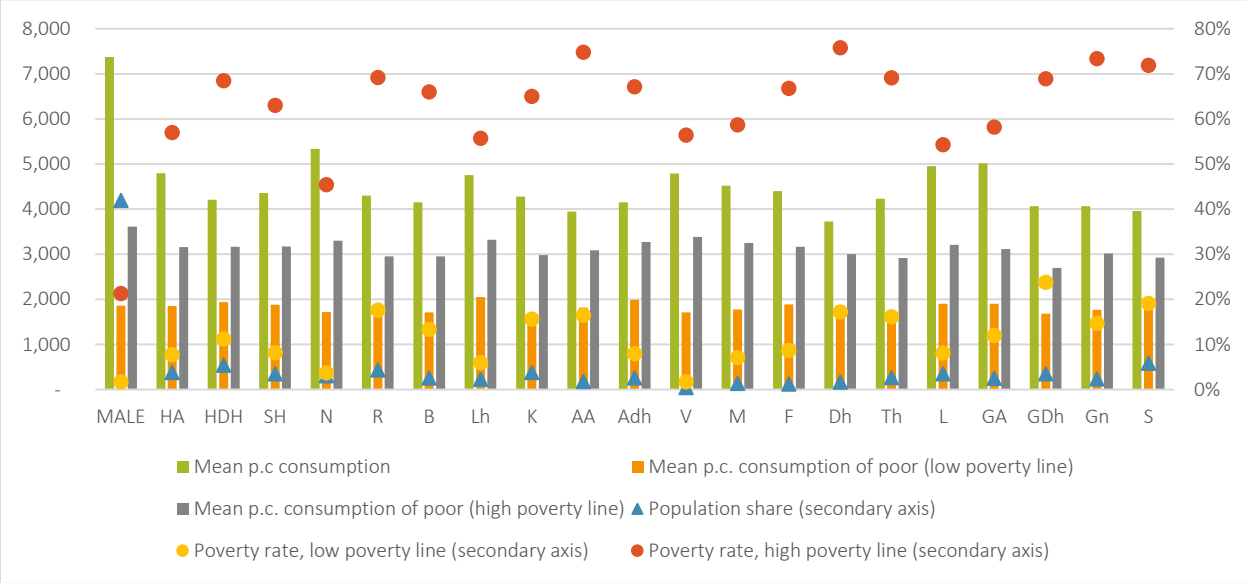
Source: Authors' own estimation based on HIES 2016 data.

REGIONAL TRENDS

Poverty varies quite significantly across the Atolls of the Maldives[5]. Figure 15 displays the average per capita consumption in each of the Atolls (green bar) as well as the per capita consumption of the poor population in the respective Atolls (orange and grey bars for low and high poverty lines respectively). The largest share of the population (41.9 percent) lives in Male' (green triangle) while no other Atoll has more than 6 percent of the population share. Poverty rates in Male' are lower than across other Atolls. Using the high poverty line, Male's poverty rate is 21.3 percent (red dot) while that of other Atolls is substantially higher. The second lowest poverty rate can be found in Atoll N where 45.4 percent of the population consumes less than the median total expenditures in the Maldives. DH, AA, AA, Gn and S Atolls have the highest poverty rates—over 70 percent of the population in these atolls consume less than then median of total expenditures. The ranking of Atolls according to poverty changes somewhat when considering the low poverty line. Male' is still the least poor Atoll according to the low poverty line but the poorest Atoll is GDh, where almost 24 percent of the population consume less than half the median of total expenditure and on average only 1,680 MVR per person per month (orange bar).

[5] The HIES 2016, for the first time, is representative at the Atoll level.

Figure 15. Per capita consumption, population share, and poverty rates, by Atoll



Source: Authors' own estimation based on HIES 2016 data.

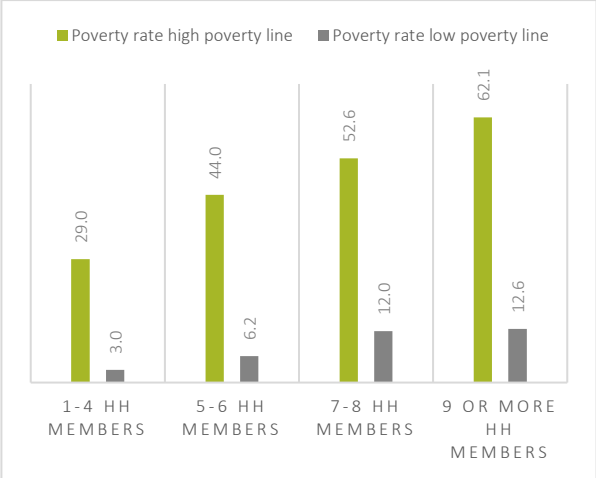
WHO ARE THE POOR MALDIVIANS?

Household and individual demographic and socio-economic characteristics are important correlates of poverty. This section provides some descriptive statistics on the key correlates of poverty in the Maldives, while describing the prevalence of these characteristics among the poor and the population as a whole.

DEMOGRAPHIC CHARACTERISTICS

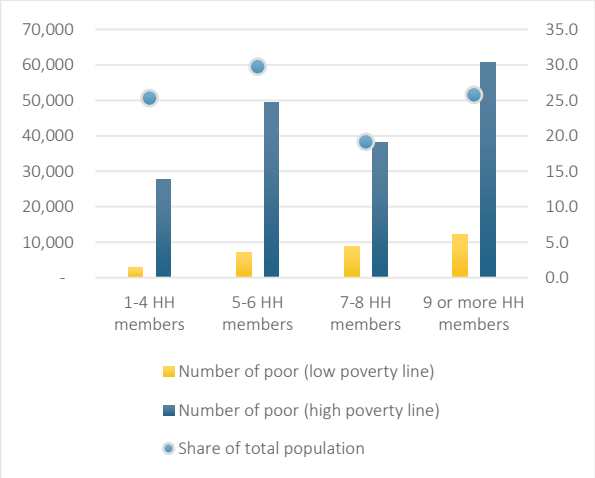
Demographic characteristics are strongly correlated with poverty headcount rates. First, poverty rates increase steadily with household size (Figure 16) for both, the low and high poverty line. While only 3 percent of households with one to four household members live below the high poverty line, 12.6 percent of households with 9 or more members are poor. Furthermore, smaller households with 1 to 4 members as well as larger household with 9 or more members make up about a quarter of the total population respectively (Figure 17). The highest number of poor lives in large households of 9 members or more. Poverty also rises with increasing dependency. Figure 18 plots the share of the population living below the low and high poverty line by dependency ratios. The bulk of dependency is accounted for by children under the age of 14 (roughly 25 percent of the population are below the age of 14 and less than 5 percent above 64). As with household size, poverty increases with increasing dependency ratios. Households without any dependents are better off with poverty rates of about 3 percent while households with high dependency ratios—where over half of the household members are dependents—are poorer with poverty rates of over 11 percent.

Figure 16. Poverty rates by household size



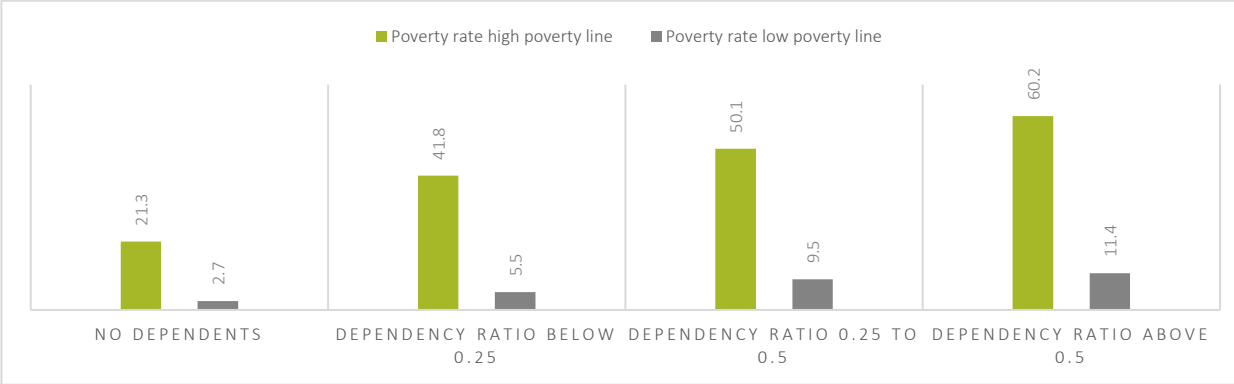
Source: Authors' own estimation based on HIES 2016 data.

Figure 17. Population share and poor population by household size



Source: Authors' own estimation based on HIES 2016 data.

Figure 18. Poverty headcount rates, by dependency ratios



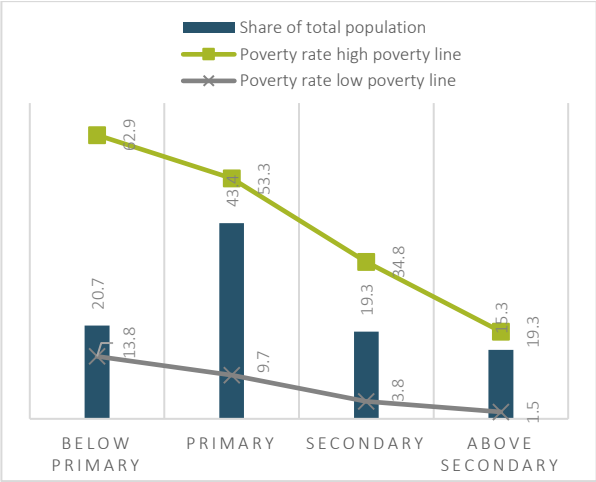
Source: Authors' own estimation based on HIES 2016 data.
Note: The dependency ratio is defined as the number of children aged 0-14 and elderly aged 65 and above over the population in the most productive ages (15-64)

EDUCATION AND LABOR MARKET OUTCOMES

Education (or the lack thereof) is another important correlate of poverty in the Maldives. Poverty rates decrease sharply with increasing educational attainment of household heads (Figure 19). The lack of education is both highly correlated with poverty as well as highly prevalent. Approximately 64 percent of the population belongs to households where the head of household has below primary or only primary education. These households account for about 80 percent of the poor (using the high and low poverty line), facing a poverty rate of 14 and 10 percent respectively using the low poverty line. While poverty does fall with increasing education of the head of household, households where heads have more than secondary education account for only 15 percent of the population. Finally, having an educated household head does not completely eliminate the risk of poverty, almost 2 percent of households living in households where the household head has above secondary education are poor (using the high poverty line). We also observe that not only the education level of the household head matters, Maldivians living in households with a higher share of highly educated household members tend to be less poor and poverty rates decrease

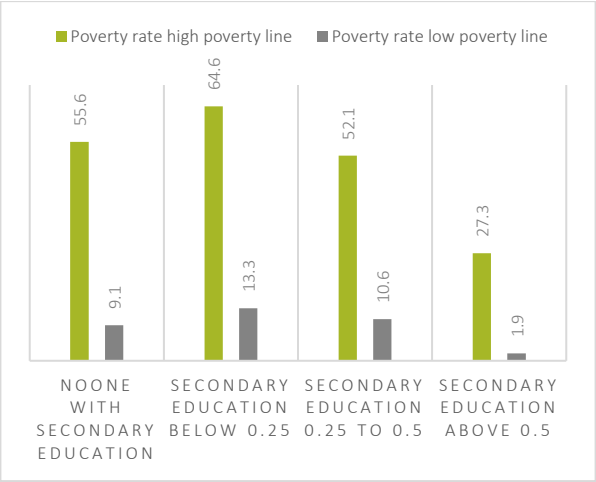
to 2 percent for households where more than half of all household members have a secondary education or above (Figure 20).

Figure 19. Poverty rates and share in population, by education level of head of household



Source: Authors' own estimation based on HIES 2016 data.

Figure 20. Poverty rates, by education level of household members



Source: Authors' own estimation based on HIES 2016 data.

There is a lack of a strong link between employment status and poverty rates which likely reflects the lack of productive employment opportunities for household heads. Overall, 63.4 percent of the population belongs to households whose heads are employed and only 1.4 percent to households whose heads are unemployed (Table 4). Poverty rates in households whose heads are unemployed are higher at 8.8 percent while poverty rates in households whose heads are employed are about 25 percent lower at 6.6 percent. Despite higher poverty rates, the large majority of the poor population belongs to households whose household head is employed, due to the large population share. Poverty rates are also relatively high at around 11 percent for households whose heads are inactive (either in the potential labor force[6] or inactive). In other words, the employment status of the head of the household does not sharply differentiate poor households from non-poor households. While poverty rates are lowest among households with heads who are employed, they remain relatively high irrespective of the employment status of the head.

Table 4. Poverty rates, share in population, by employment status of head of household

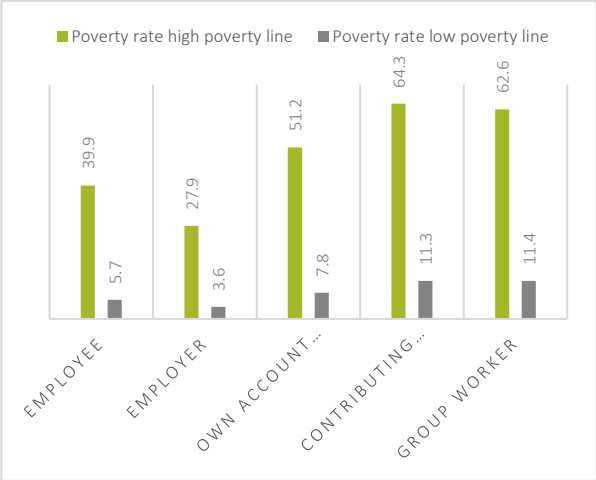
EMPLOYMENT STATUS OF HEAD OF HOUSEHOLD	POVERTY RATE (LOW POVERTY LINE)	POVERTY RATE (HIGH POVERTY LINE)	SHARE OF POOR POPULATION (LOW POVERTY LINE)	SHARE OF POOR POPULATION (HIGH POVERTY LINE)	SHARE OF TOTAL POPULATION
EMPLOYED	6.6	43.7	51.0	59.5	63.4
UNEMPLOYED	8.8	41.8	1.5	1.2	1.4
POTENTIAL LABOR FORCE	11.5	54.3	8.8	7.3	6.3
INACTIVE	10.8	50.2	35.7	29.3	27.2

Source: Authors' own estimation based on HIES 2016 data.

[6] Potential labor force is defined as all persons 15 years and above who, during the reference period, were neither in employment nor in unemployment but who were considered as either (a) unavailable jobseekers (seeking employment but not currently available) or (b) available potential jobseekers (currently available for employment but did not carry out activities to seek employment).

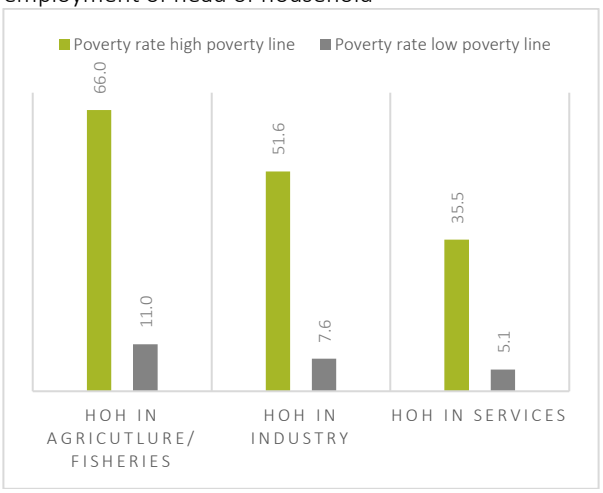
Poverty varies by the type of employment that household heads are engaged in with more vulnerable types of employment showing higher poverty rates. Figure 21 plots poverty rates by the type of job held by employed household heads. The largest proportion of the population (63 percent) belongs to households where the head of household is an employee (salaried worker). Poverty rates are among the lowest at 5.7 percent using the low poverty line. Only employers have lower poverty rates of 3.6 percent, yet, only 8 percent of Maldivians belong to household whose household head is an employer (owner with employees). Maldivians living in households whose head is an own-account worker—the second largest group with over a fifth of the population—have poverty rates of almost 8 percent with only contributing family workers and group workers (those working in cooperatives—members form an informal group who distribute the income which they generate among the members) having higher poverty rates of 11.3 and 11.4 percent respectively.

Figure 21. Poverty rates, by type of job of employed head of household



Source: Authors' own estimation based on HIES 2016 data.

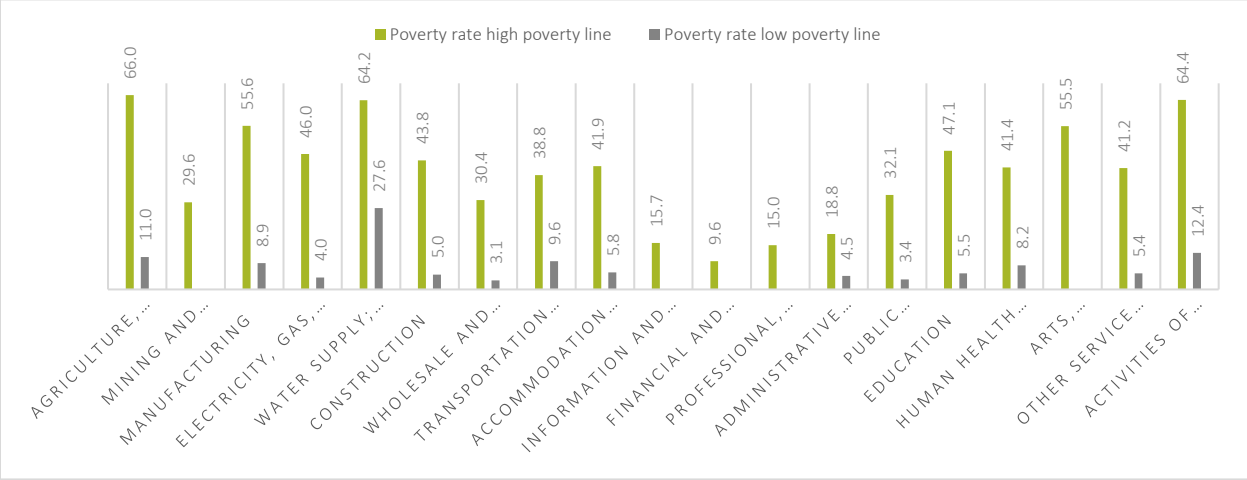
Figure 22. Poverty rates, by broad sector of employment of head of household



Source: Authors' own estimation based on HIES 2016 data.

Another strong correlate of poverty is the sector of employment of the household head. Maldivians living in households whose head works in fisheries, are poorer than those living in households whose head works in industry or services (Figure 22). While employment of the household head in fisheries is associated with higher poverty rates (11 percent), only about 13 percent of Maldivians live in such households. Other sectors are characterized by a larger population share, particularly services, with 63 percent of the population living in households whose head is employed in the service sector but lower poverty rates. Industry accounts for almost a quarter of the total population with employed heads of household, with a poverty rate of 7.6 percent; and the services sector, with 63 percent of the total population with employed heads, has poverty rates of 5.1 percent. Figure 23 displays the detailed sectoral classifications using International Standard of Industrial Classification (ISIC) 2008.

Figure 23. Poverty rates, by detailed sectoral employment of employed head of household (ISIC 2008)

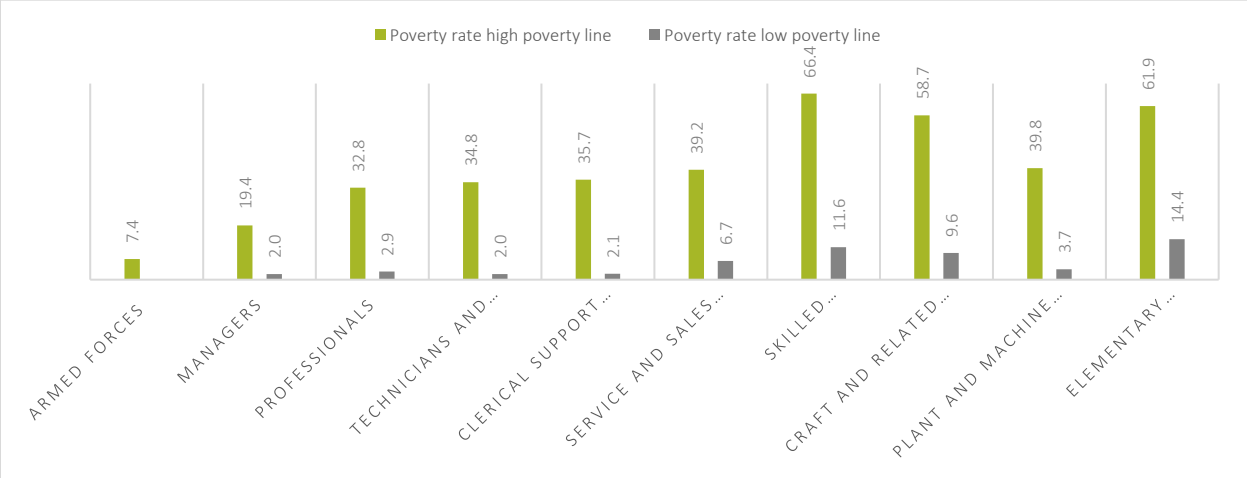


Source: Authors' own estimation based on HIES 2016 data.

Note: Some categories are omitted due to small sample sizes.

Figure 24 plots poverty rates by occupation of employed head of household. We observe that Maldivians living in households with heads who work in elementary occupations or skilled fisheries have the highest poverty rates of 14.4 and 11.6 percent respectively, accounting for about a quarter of the Maldivian population. On the other hand, poverty incidence is lowest among households whose household head works as manager (2.0 percent), technician (2.0 percent), or clerical support worker (2.1 percent).

Figure 24. Poverty rates, by occupation of employed head of household



Source: Authors' own estimation based on HIES 2016 data.

GENDER DIFFERENCES

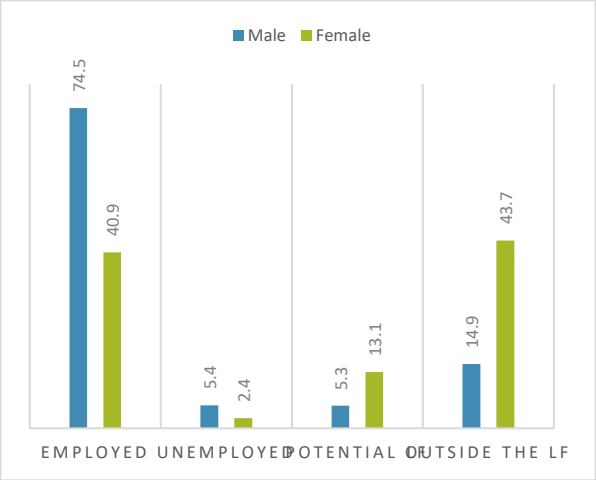
Gender norms and stereotypes constrain the opportunities of both women and men, girls and boys, through different pathways. Most inequalities based on gender norms have historically put females at a disadvantage. In the Maldives, we also observe inequalities across households based on gender of the household head. About 39 percent of Maldivians households are female headed and poverty rates of female headed households are slightly higher than for male headed households. Households headed by females have poverty rates of 8.8 percent while those headed by males have poverty rates of 7.8 percent

(Figure 25). These higher poverty rates are most likely associated with differences in labor market characteristics of females. For example, only 43.2 percent of Maldivian women aged 15 to 64 are engaged in the labor market compared to 79.8 percent of Maldivian men. Of those, a higher percentage of men is employed—74.5 percent of men but only 40.9 percent of women are employed—but also unemployed (Figure 26). In addition, a larger proportion of females is outside the labor force (44 compared to 15 percent) or in the potential labor force (13 compared to 5 percent).

Figure 25. Poverty rates, by gender of household head

Source: Authors' own estimation based on HIES 2016 data.
Note: Population of 15-64-year olds.

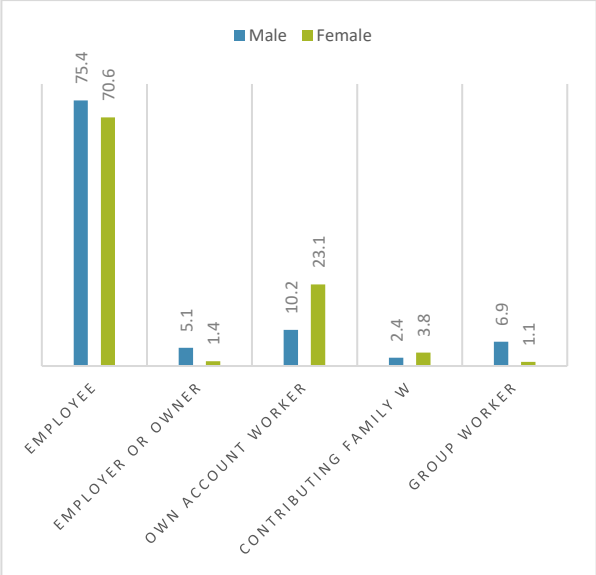
Figure 26. Employment status, by gender



Source: Authors' own estimation based on HIES 2016 data.
Note: Population of 15-64-year olds.

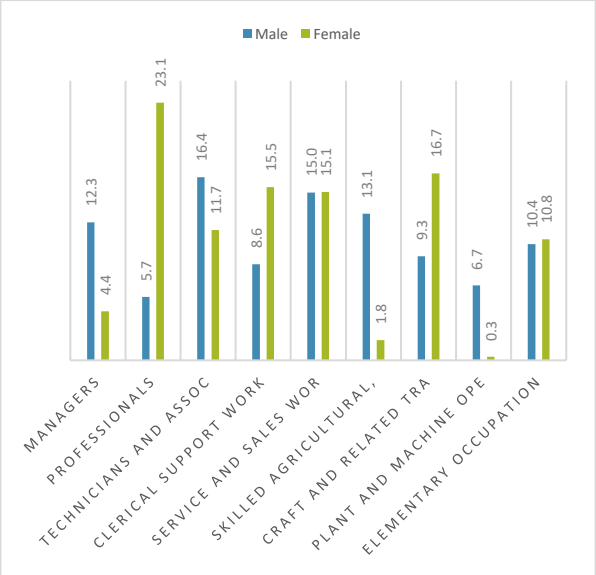
Of females who are employed, fewer, compared to males, are salaried employees but a larger number is engaged in own-account work (Figure 27). About 71 percent of all women are employees compared to 75 percent of males. Furthermore, fewer women are employers or business owners (1 compared to 5 percent of men) but a larger proportion are own-account workers and contributing family members, which are typically considered more vulnerable forms of employment. We also observe that the largest proportion of females are professionals (almost one quarter of all females) but relatively fewer are managers, compared to their male counterparts (Figure 28). Females are also more likely to be employed as clerical support workers (16 compared to 9 percent) and craft and trade related occupations (17 compared to 9 percent). The type of industry that males and females are employed in also differs. A large majority of employed females is employed in the service sector (almost 80 percent compared to 69 percent of males) while fewer are employed in agriculture (2 compared to 14 percent of males).

Figure 27. Type of job of employed individual, by gender



Source: Authors' own estimation based on HIES 2016 data.
Note: Population of 15-64-year olds.

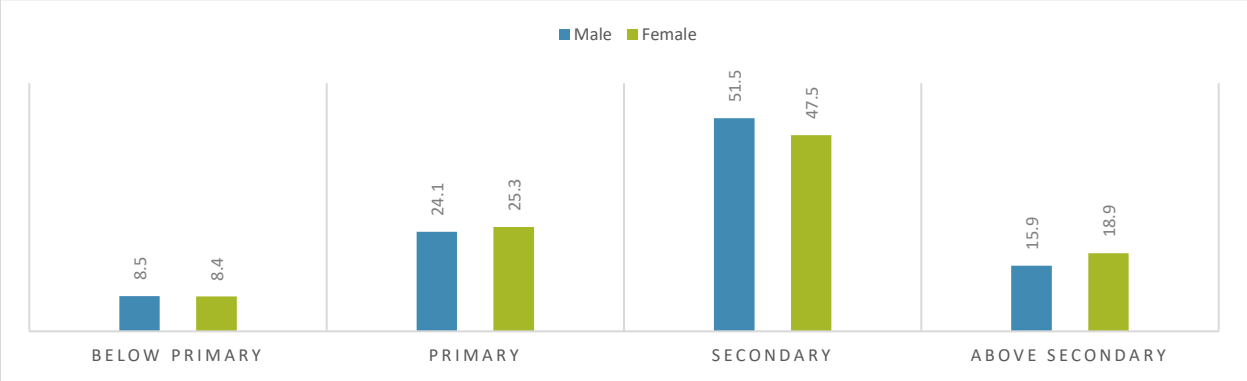
Figure 28. Occupation of employed individual, by gender



Source: Authors' own estimation based on HIES 2016 data.
Note: Population of 15-64-year olds.

Fewer differences can be observed in educational attainment of women compared to men (Figure 29). Rates of primary education or below of women and men are similar, yet, slight differences can be observed in secondary education and above. Fewer women have secondary education—48 compared to 52 percent of men—but a larger proportion—19 percent compared to 16 percent of men—have above secondary education.

Figure 29. Education level, by gender



Source: Authors' own estimation based on HIES 2016 data.
Note: Population of 15-64-year olds.

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