Poverty and Inequality in Maldives - 2022

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CPI	Consumer price index
DHS	Demographic and Health Survey
FAFH	Food away from home
GER	Gross enrolment rate
GDP	Gross domestic product
HDI	Human Development Index
HIES	Household Income and Expenditure Survey
HRPL	High relative poverty line
LRPL	Low relative poverty line
MBS	Maldives Bureau of Statistics
MoE	Ministry of Education
MPI	Multi-Dimensional Poverty Index
MVR	Maldivian rufiyaa
NER	Net enrolment rate
PG1	Poverty gap index
PPP	Purchasing power parity
SAR	South Asia Region (World Bank)
TVET	Technical and vocational education and training
UMIC	Upper-middle-income country
WDI	World Development Indicators

Executive Summary

Background: *The Republic of Maldives is a socio-economic outlier in South Asia, with per capita income and human development outcomes exceeding its peers in the region. The country has achieved impressive results for its people through sustained growth, despite facing unique challenges.*

1. **In the past two decades, Maldives has achieved remarkable economic progress and reductions in poverty. However, the country faces high exposure to global risks including an existential threat of rising sea levels.** Due to its reliance on international tourism and commodity imports, Maldives' economy is vulnerable to global risks. Maldives has confronted several major shocks in recent years, including the 2004 Boxing Day Tsunami and the COVID-19 pandemic. The country's new Strategic Action plan, released in 2019, recognized the need for climate change adaptation and mitigation. It laid out the rationale and policies to transition Maldives to a blue economy, by simultaneously focusing on shoreline protection, increased production of renewable energy, better waste management, and encouragement of tourism, fisheries, and agricultural activities.
2. **A unique feature of Maldives is the economic enclaves that encourage industry and international tourism.** The general population of the Maldives lives and works in administrative islands. Dedicated industrial islands are earmarked for specific economic activities such as large and small industries, agriculture, fisheries, and aquaculture. Revenue-generating international resorts are located on resort islands, where a single resort typically occupies an entire island and administers it as private property. Resort islands are usually out-of-bounds for Maldivians, except for the citizens who work in the resorts. Recent efforts to encourage the establishment of guest houses on administrative islands and mandating that at least 51 percent of a resort's workforce be Maldivian have improved employment linkages between tourism and the general population.
3. **Despite universal access to basic healthcare and education, the key welfare challenge in Maldives remains the socio-economic disparity between Male' and atolls.** As the country's national capital region, Male' has been a magnet for Maldivians and immigrants seeking jobs in services, retail and commercial trade, and to an extent, manufacturing. The public sector has been the major provider of employment across most sectors, and even these jobs have been relatively more common in Male'. The construction boom in and around Male' has also encouraged employment, although low wages and harsher working conditions in these jobs have predominantly attracted immigrants. Domestic and international demand for fish has made fisheries a key occupation, especially in the atolls. However, the incidence of self-employment is much higher in atolls, especially in fisheries and small-scale manufacturing. While access to basic healthcare and education is universal, advanced facilities like high schools and secondary healthcare facilities for residents of atolls are usually located on the main administrative island of each atoll. Challenges with access to higher education, skills development, and good jobs in atolls, coupled with congestion and high living costs in Male', have been some of the major challenges for welfare enhancement in Maldives.
4. **In this context, this Poverty Assessment uses the 2019-2020 Household Income and Expenditure Survey (HIES) to update welfare estimates for the country as well as for each atoll; it also considers three separate phone surveys to understand key demographics affected by the**

pandemic. Due to methodological changes and innovations in the administration of the survey, welfare estimates from HIES 2019 are not comparable with previous estimates. Chapter 2 of this report considers a selection of monetary and non-monetary indicators which typically correlate well with poverty and are comparable between HIES 2019 and the previous survey (HIES 2016) to understand if and why the disparity between atolls and Male' has changed. Chapter 3 analyzes recent trends in education and labor force participation, especially among youth, to understand the linkages between higher education and employability, two key correlates of welfare. Chapter 4 takes into account more recent implications on welfare by leveraging two phone surveys to characterize groups of Maldivians that have faced severe economic impacts from COVID-19.

Poverty and shared prosperity: *In Maldives, the poverty rate as measured by the international poverty line (US$5.5 PPP per person per day) is 1.7 percent, and the entire population of the poor is concentrated in atolls. At the national poverty line (71.4 Maldivian rufiyaa [MVR] per person per day), the poverty rate is 5.4 percent. About 10 percent of individuals in atolls are poor, compared to less than 1 percent of individuals in Male'. 93 percent of the country's poor live in atolls. Several atolls are characterized by poverty rates similar to or lower than the national average, and these are spread across different regions and zones. Within Male', relatively deprived households are characterized by large family size and overcrowding in a limited dwelling space, as housing costs account for a large share of basic needs. The disparity in economic opportunities and quality of life between Male' and atolls therefore remains an enduring policy challenge for the country.*

5. **At the national poverty line of 71.4 MVR or US$ 8.1 PPP per person per day (2,173 MVR per person per month), the national poverty rate in 2019/20 was 5.4 percent[1].** The poverty rate climbs to 9.5 percent among atoll residents, while in Male', the poverty rate is 0.9 percent. At the international poverty line for upper-middle-income countries, US$ 5.5 PPP per person per day, Maldives' poverty rate is 1.7 percent, driven entirely by atolls, where the poverty rate is 3.2 percent; there are no poor in Male' at the international poverty benchmark. In this Poverty Assessment, all poverty rates are benchmarked to Maldives' national poverty line unless otherwise specified.
6. **Despite low poverty numbers at the national level, Maldives remains an unequal country.** Despite the roughly 1:1 distribution of the national population between Male' and atolls, the latter contain 93 percent of the country's poor. The inequality between atolls and Male' is perhaps best signaled by the Gini Index. A Gini of 0 indicates perfect equality, and a Gini of 100 implies perfect inequality. Considering populations in Male' and atolls separately, the respective Gini Indices are 25.2 and 24.2. When pooling the populations, the country's Gini rises to 29.3, signaling that inequality between atolls and Male' is worse than inequality within either. It is noteworthy that, despite the disparity between Male' and atolls, the Gini index for Maldives compares favorably with other countries in the South Asia region.
7. **Inequality between Male' and atolls is also pronounced when considering metrics that do not rely on monetary measures.** Maldives published its first Multi-Dimensional Poverty Index (MPI) in 2020, based on the Demographic and Health Survey (DHS) 2017; unlike the poverty lines

[1] The poverty lines are derived from household expenditures and provide a monetary benchmark of impoverishment.

discussed above, the MPI considers non-monetary metrics to classify individuals as poor or non-poor. While atolls had a higher incidence of multi-dimensional poverty than Male', the differences in the underlying dimensions of deprivation are instructive. Male''s multi-dimensional poverty is driven largely by over-congestion and lack of access to healthcare. Higher multi-dimensional poverty in atolls is driven by low years of schooling, lack of access to safe drinking water, lack of access to sewer systems, and lack of access to healthcare. This Poverty Assessment show that, while these disparities have improved, access to infrastructure and opportunities in atolls remain limited.

8. **Framing Maldives' development challenge simply as "atolls versus Male'" could lead one to overlook the differences in socio-economic outcomes within atolls.** Atolls that are more remote from Male' do not necessarily have higher monetary poverty rates. Rather, there are clusters of better-off and worse-off atolls in each zone. For example, Raa and Baa are the atolls with the highest (18.9 percent) and lowest (1.7 percent) poverty rates, respectively, and are located in the Lower North Zone. Haa Alif (12.5 percent) and Haa Dhaalu (12.9 percent) have lower poverty rates than Raa and are in the Upper North Zone, further away from Male', clustered with Shaviyani (5.6 percent poverty rate). An analysis of factors that define the trajectory for better-off atolls is beyond the scope of this assessment. However, given the government's focus on creating regional hubs for economic growth, better-off atolls in each zone could work as growth engines.
9. **While poverty in Maldives is mainly driven by poverty in atolls, high living costs in Male' and the resulting deprivation may strongly affect resource-scarce households there.** The incidence of poverty under the national poverty line is low in Male', which makes it hard to observe the factors that are associated with a higher incidence of deprivation. When a regional poverty line, benchmarked to the specific distribution of expenditures in Male' is used, the relatively high share of housing costs in basic needs is a key driver of deprivation. Within Male', relatively deprived households are characterized by large family size and overcrowding in a limited dwelling space.
10. **Despite low poverty levels overall, a sizeable segment of Maldives' population remains vulnerable to sliding into poverty.** An economic shock that reduced all Maldivian households' annual budgets by 16.67 percent (equivalent to two months' average household expenditure) would double the poverty rate in both Male' and atolls and impoverish more than 11 percent of the population.

***Factors associated with poverty and deprivation**: Informal, self-employed activities in the primary or secondary sectors are associated with higher poverty, while higher education is associated with lower poverty. Inter-atoll migration is associated with lower poverty, suggesting the existence of returns to mobility even within atoll groups. Along with other factors, large families in Male' are associated with higher deprivation.*

11. **Large households, congested living, and a high ratio of children to adults increases the probability of Maldivians' being poor**. For example, a household with 10 members or more is three times more likely to be poor than a household with nine members or less. Lower educational attainment among members, especially the household head, is associated with poverty. Households whose head suffers from a chronic illness or disability are also more likely to find themselves in poverty. Wage employment is associated with a lower incidence of poverty, as is employment in the tertiary sector, which encompasses services and trading activities. Involvement in primary activities such as fisheries and agriculture or secondary activities such as

manufacturing and construction is associated with a higher incidence of poverty, as is any type of self-employment. Poverty does not vary with employment in the public or formal private sector.[2] Persons in informal employment are twice as likely to be impoverished as those in formal employment. Nationally, households that have migrated to their present location are three times less likely to be poor than households native to their location.

Economic opportunities in atolls have led to a better quality of life among the poor: *Improving economic opportunities in atolls have been pro-poor, since poverty in Maldives is largely concentrated in atolls. A rise in jobs and private transfers in atolls, along with expanded public infrastructure, have led to higher incomes and a better quality of life, especially for the poor.*

12. **Examining comparable metrics of monetary and non-monetary well-being from HIES 2016 and 2019 confirms that atolls partially converged with Male' during this period.** The amount of real income available to a typical Maldivian household increased in 2019, with larger percentage increases accruing to poorer households. This was driven by an increase in the incidence of individuals working as employees, as well as the income accrued from wages and salaries. At the same time, the incidence of households earning income only through self-employment fell, and the contribution of self-employment to average total household income declined. The incidence and levels of private transfers rose, with significant increases toward the bottom of the wealth distribution.
13. **Jobs and private transfers accounted for a larger share of a larger pie available to the average Maldivian household in 2019. This was more pronounced for the poor**, **indicating greater opportunities in atolls**. In 2016, the average annual per capita income for a household in the poorest decile was 21,019 MVR, which increased to 28,770 MVR by 2019. In 2016, wages and private transfers comprised 51 percent of annual income for the poorest decile; by 2019, these two sources contributed 63 percent of annual income. Although earnings from self-employment were higher in 2019, the contribution of self-employment to total income was 19.7 percent, down from 25.9 percent in 2016.
14. **Expansion in wage employment, particularly in primary and secondary sectors in the atolls, was accompanied by an improvement in living standards.** Over 75 percent of the country's employed population in administrative islands work in services and trading occupations, which comprise the tertiary sector; moreover, most of the employment in this sector is through wage jobs. Participation in primary (mainly fisheries) or secondary (mainly manufacturing) activities is relatively higher among poorer individuals, and self-employment is much more common in such occupations. About 2 in every 3 employed adults in atolls worked in agriculture and fisheries, manufacturing, education, trade, or administrative jobs. By 2019, employment in each of these occupations in atolls had shifted from self-employment toward wage employment, with the largest increases in wage employment seen in fisheries and trading activities. Greater availability of wage jobs in atolls has in turn allowed households to improve their quality of life, as implied by a widening of the asset base even among poorer households. These trends have been accompanied by an improvement in housing quality in atolls, with a greater incidence of piped water and sewer connections.

[2] In the Poverty Assessment, "formal private sector" refers only to activities carried out at dedicated locations and not from persons' homes or without a fixed location, to distinguish from small-scale self-employment activities.

15. **Due to concerns of safety and taste regarding rainwater and piped water, Maldivians have increased their consumption of bottled water between 2016 to 2019.** This leads to avoidable spending and greater plastic waste. Harvesting rainwater and treating it further to make it potable has been a sustainable and low cost solution in countries with lower rainfall.

The COVID-19 pandemic worsened the outlook for Maldivians who were already vulnerable and is likely to exacerbate inequality: *Individuals in self-employed occupations, especially in the primary and secondary sectors, were more likely to experience income shocks. Women were more likely than men to face deeper economic shocks, such as prolonged absences or work stoppage. Youth were at greater risk of experiencing economic shocks than mid-career professionals.*

16. **This Poverty Assessment marshals data from two phone surveys conducted in 2021 to understand which groups of Maldivians have been most affected by COVID-19**. Although the methodologies and timelines of the surveys differ, they yield qualitatively similar results, increasing confidence in the findings of each.
17. **Self-employed individuals were three times more likely than wage earners to report an income loss due to COVID-19.** Self-employment rates are higher in the primary and secondary sectors, but many self-employed in services also reported lost earnings. Although services and especially the tourism sector were hit hard by the pandemic, the effect on individuals engaged in this sector was relatively dampened, particularly among the wage-employed. Two out of three self-employed individuals in Maldives reside in atolls, and this largely drives the higher incidence of income shocks in atolls. Still, the self-employed in Male' were relatively less exposed; about 54 percent of this group experienced a shock compared to 70 percent of the self-employed in atolls.
18. **As a sector, manufacturing was most prone to disruptions, including complete suspension of activities.** While about 70 percent of all individuals employed in manufacturing and fisheries or other primary activities experienced a shock, manufacturing employed about 12 percent of all workers, compared to about 5 percent in fisheries and other primary activities. Manufacturing activities in atoll administrative islands are usually small-scale and rely on the local economy or on linkages with nearby resorts. Lockdowns and travel bans affected these activities. Moreover, while individuals employed in the resort sector may have been easier to identify and compensate, individuals relying on supplying goods to the resorts may have found it more difficult to access assistance.
19. **The overall incidence of income shocks was roughly similar for both genders, but women were more likely to experience extreme shocks such as prolonged absences or complete loss of wages or earnings.** Men were more likely to experience a reduction in wages or earnings (28.3 percent for men versus 19.5 percent for women), while women were twice as likely to stop working (3.4 percent of men versus 6.9 percent of women) and nearly three times as likely to experience a prolonged absence from work (1.8 percent of men versus 5.1 percent of women). About 36 percent of all workers in manufacturing were women, but 22 percent of them had either stopped working or were experiencing a prolonged absence, compared to about 8 percent of their male colleagues in manufacturing. Even in services, about 9 percent of women were absent or stopped work, compared to about 5 percent of men.

A foundational challenge to recovery and continued growth: *Youth unemployment has historically been higher than average unemployment in Maldives, consistent with other*

economies in the region and worldwide. Between 2016 and 2019, while youth labor force participation increased in both Male' and atolls, youth unemployment also increased in atolls. The percentage of youth who are classified as discouraged and have left the labor market also increased. An even more serious concern is that enrollment in higher education has decreased, with implications for future employability and earnings.

20. **Education is a prime determinant of employability, and Maldives has made significant strides in enhancing educational attainments among its citizens.** Rates of tertiary education in Maldives have increased among the general population and young adults. Even among the poorest 10 percent of households, the share of persons aged 18 to 36 with tertiary education increased from 7 percent in 2016 to 13 percent in 2019. Women are more likely to obtain tertiary education, and youth based in atolls are more likely to enroll in a vocational diploma course, given the relative paucity of degree-granting colleges in atolls compared to Male'. The incidence of tertiary education among young adults is positively correlated with household wealth, as is the enrollment of children in higher secondary levels.
21. **However, there is evidence that Maldives is experiencing a bottleneck in building skills among its youth, which has implications for earnings and welfare in the long run.** HIES 2019 and statistics from the Ministry of Education reveal a steep drop in gross enrollment rates between lower secondary (98.6) and higher secondary (29.6) levels. The percentage of enrolment among 16-17 year old individuals in any level of education dropped from 80.8 percent to 51.6 percent between 2016 to 2019. Previous analyses of the education sector have also highlighted challenges with graduating students, especially at higher grades. Low enrolment and low graduation rates into and out of higher secondary levels translate into a shrinking pipeline of students eligible for tertiary education. For example, 18/19-year-old individuals should ideally have graduated from grade 12 and should be choosing between enrolling in tertiary education or pursuing employment. However, the percentage of enrolment in *any* level of education (including higher secondary) dropped from 43.7 percent in 2016 to 27.9 percent in 2019 among this cohort. Among those enrolled, the share engaged in tertiary education increased from 6.4 to 14.6 percent. Even though a greater percentage of the cohort is at the age-appropriate level when they are enrolled, a lower percentage of the cohort is enrolled to start with.
22. **Opting out of education is a sensible strategy if youth join the labor market. The evidence suggests otherwise.** With jobs becoming more widely available, the opportunity cost of staying in school has increased for Maldivian youth. While individuals between the ages of 16 and 25 years in both Male' and atolls were more likely to look for a job in 2019, those in Male' tended to be successful in securing employment, while those in atolls were more likely to fail, losing out to older cohorts. The employment rate for the 16 to 25 age group in Male' increased from 46.7 percent in 2016 to 55.3 percent in 2019, while the unemployment rate rose (from 5.7 percent to 7.8 percent) for the same cohort in atolls. The share of individuals discouraged from participating in the labor market also rose during this period. Between 2016 and 2019, the percentage of young people aged 16 to 25 not participating in the labor market due to discouragement rose from 8.2 percent to 12.2 percent in atolls; the percentage citing enrollment in education as the reason for non-participation fell from 40.7 percent to 34 percent over the same period. While qualitatively similar trends are seen in Male', the incidence of discouraged individuals is three times lower in

the capital than in atolls, and the incidence of enrolled individuals is twice as high in Male' as in atolls.

23. **While higher education is associated with better employment prospects for jobs in the tertiary sector, many primary and secondary sector jobs in atolls (excluding those in resorts and industrial islands) may not require higher levels of education.** Simple regression models suggest that the probability of selection into jobs in the primary and secondary sectors is negatively correlated with higher education. This is consistent with a higher likelihood of employment in tertiary sector jobs for the better educated. Atolls have seen more jobs becoming available, but older cohorts who have been involved in these occupations are likelier to secure the new jobs. The employment rate among labor market entrants (youth aged 16 to 25) in atolls is about 17 percentage points lower than for young professionals (those aged 26 to 35 years) and for older adults (37 to 64 years).
24. **While the probability of selection into a job could be positively or negatively associated with higher education, incomes are positively correlated with higher education.** This creates a paradox, where individuals who should be in higher-secondary or tertiary grades could view education as costly and dropout to seek employment. Short-term vocational courses, which are an essential component of skills development, may have unintended negative consequences if accessed as a substitute for formal schooling. Over the long term, the earning potential of individuals who dropped out of formal education courses could remain depressed.

Recommendations: *A strategy to diversify growth and jobs, such as the regional hub strategy can localize growth and decongest Male'. Improving connectivity between hubs and adjoining atolls will be key, and such connectivity can include a mix of physical and digital options. Digital tools can also help the government gradually integrate the self-employed into financial and social protection systems, as well as provide education and counselling for youth who risk dropping out of education. Tracking cohorts who drop out of high school or colleges, as well as those who graduate, will be important to identify and track the reasons for drop out as well as the consequences on the labor market, so that mitigating interventions can be implemented.*

25. **Maldives' geographical dispersion is a major obstacle to improving shared prosperity.** Developing certain atolls as regional hubs of human capital development and economic activity is a long-term strategy adopted by the government to reduce dependence on Male' and make opportunities more accessible to residents of other atolls. Improving virtual and physical connectivity between hub atolls and other atolls in the region would be a key ingredient in the success of the regional hub strategy and could boost the country's growth trajectory. Frequent ferry connections that enable low-cost commuting for workers and students would allow populations from the catchment area to access services in the respective hubs. Digital tools such as telemedicine, distance education, and counselling would reduce the need to provide hardpoints for service delivery in most islands while still bringing services closer to people who need them.
26. **Maldives' forced shift to online education during the pandemic may be a boon, if online learning is regularized to complement in-person education, given the challenges of establishing higher secondary grades in all atolls and most islands.** Global experience in overcoming challenges in distance learning could provide lessons for the government. Furthermore, there is a need to

understand the reasons and consequences of youth dropping out of higher education, as well as the outlook for those who graduate from apprenticeship courses. Short to medium-term tracking of dropouts and graduates can yield valuable information and inform policies and incentives to reduce drop-out rates. Better administrative data on higher education would also help identify problem areas, such as courses that are more susceptible to drop-outs. Finally, counselling both youth and parents may be useful to communicate the importance of continuing education. Digital tools can provide a low-cost avenue for such outreach.

27. **A significant portion of Maldives' population is still reliant on self-employment, and such individuals are more likely to stay in atolls and work in fisheries, manufacturing, or other primary and secondary occupations in an informal capacity.** Linking such activities with resorts and nearby growth centers may help expand markets. It would be important to task institutional actors in an enclaved economy (such as resorts) to map out downstream linkages, such as individual suppliers of goods and services. Otherwise, the government will find it difficult to identify at-risk groups and provide help. Improved transportation between atolls and encouraging a digital marketplace would expand markets for such actors. The high penetration of smart devices in Maldives can be catalytic in this regard. A mix of financial tools, including mobile money and no-frills accounts, could incentivize small-business owners to conduct most of their business in a cashless mode, creating an ecosystem where informal actors progressively integrate with the financial system. This ecosystem can also be used to quickly identify and support stakeholders like small businesses during disasters.

Chapter 1: Poverty and Inequality in Maldives

Introduction

1. **Maldives consists of over 1,000 islands in the Indian Ocean, grouped into 20 atolls stretching over 900 kilometers in a north-south orientation**. The islands have low elevation above sea level, making the country particularly vulnerable to climate change. The capital, Male', is the country's dominant economic center and a magnet for Maldivians looking for better education and livelihoods. This has made Male' one of the most densely populated urban areas in the world. Maldives' lack of arable land has limited agricultural output, and the country depends on imports of staple goods and other food items to satisfy the needs of its population. Despite these challenges, the country is a positive socio-economic outlier in South Asia and among small island states. Maldives is also a major international tourist destination, and revenues from tourism have allowed the government to design comprehensive social programs to improve the quality of life for citizens. Fisheries is another crucial component of the economy, as fish constitutes a major staple of the Maldivian diet, and Maldives exports fish to European, South Asian, and East Asian markets.
2. **This chapter discusses the most recent estimates of poverty and inequality in Maldives and reports key characteristics of the country's poor.** The analysis relies on the Household Income and Expenditure Survey (HIES) 2019/20, which was administered just prior to the onset of the COVID-19 pandemic. Official statistics on poverty and inequality in Maldives have been based on the HIES series, of which earlier rounds were implemented in 2002/03, 2009/10, and 2016.
3. **Maldives' national poverty rate is low, whether benchmarked against the country's national poverty line of 71 Maldivian rufiyaa (MVR) per person per day or the international poverty line for upper-middle-income countries of US$5.5 per person per day (2011 PPP).** Prior to the COVID-19 pandemic, the national and international poverty rates in Maldives were estimated at 5.4 percent and 1.7 percent, respectively.
4. **Maldives' geography and enclave-based economy have historically encouraged growth in the national capital region of Male', whereas economic growth in atolls has been limited. This spatial pattern is also reflected in poverty rates** (Maldives Poverty Assessment, World Bank 2018). In 2019, poverty was largely concentrated in atolls, with 92 percent of the nation's poor residing there. The national poverty rate in atolls is 9.5 percent, whereas that in Male' is 0.9 percent. Across the country, higher poverty is correlated with certain demographic and socio-economic characteristics. Large household sizes, overcrowded accommodations, relatively larger numbers of children, and a household head without at least primary education increase the probability of a household's being impoverished. On the other hand, households whose heads have achieved tertiary levels of education or are wage workers exhibit lower poverty levels. The COVID-19 pandemic may have changed welfare levels and correlates; those issues are explored in chapter 4, to provide early insights into emerging challenges to welfare.

1A: Growth in Maldives

5. **Maldives has grown at a healthy pace in recent years on the back of international tourism, though COVID-19 has posed major challenges.** Maldives' government has successfully promoted tourism via its one-island-one-resort policy. From 2010 to 2019, GDP per capita grew by 54 percent (Figure 1.1).[3] However, the COVID-19 pandemic threatened to reverse years of growth, as real GDP contracted by 33.6 percent in 2020. Bans on inter-island travel and restrictions in Male' helped Maldives avoid high rates of hospitalizations and fatalities, but the economic effect of international travel bans and reduced cargo movements severely disrupted the economy. Availability of vaccines and the relative isolation of resort islands meant that Maldives was able to restart tourism when key international markets opened, and the country is expected to grow at 21.6 percent in 2021, barring further disruptions.

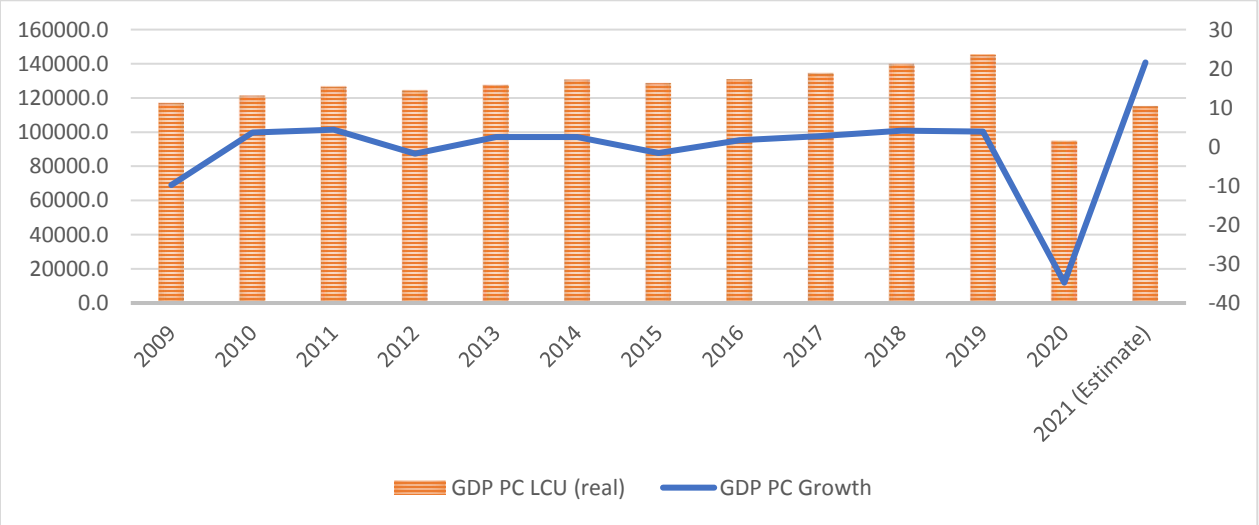

Figure 1.1: GDP per capita and GDP per capita growth, Maldives, 2009-2021

Source: Macro Poverty Outlook, World Bank Group. Note: LCU-Real Local Currency Units. GDP = Gross domestic product. Axis on the left denotes GDP PC LCU, axis on the right denotes GDP PC Growth in percentage points.

6. **The tertiary (service) sector, of which tourism comprises the largest part, has been the primary driver of growth in the economy.** Revenue from tourism has allowed the government to finance comprehensive social safety nets as well as a large public sector that has historically been the major provider of jobs. While other countries in the region have a more diversified economy and a more vibrant private sector, Maldives has functioned well as a welfare state, despite challenges such as geographical dispersion. In 2019, Maldives' Human Development Index (HDI) score was 0.740, 95th in the world and second in South Asia behind Sri Lanka. The HDI increased by a third between 1995 and 2019, driven by an increase in life expectancy at birth as well as gains in per capita income. Figure 1.2 shows that Maldives started the decade as the richest economy in

[3] Unless otherwise specified, figures and tables in this Poverty Assessment are derived from authors' calculations based on HIES 2016 and HIES 2019.

South Asia in per capita terms and extended its lead further until 2019. Subsequently, prolonged lockdowns, bans on international travel, and economic slowdowns in major markets for Maldivian tourism meant that the country's growth was also the hardest hit among its regional peers.

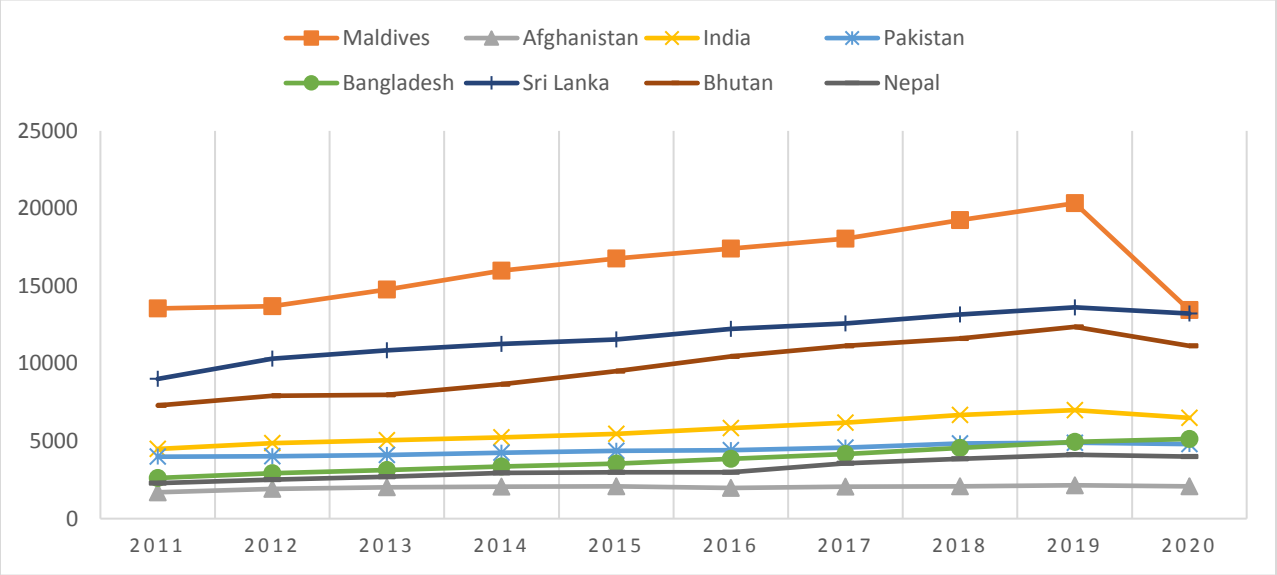

Figure 1.2: Trends in GDP per capita, South Asian countries, 2011-2020

Source: World Development Indicators (WDI). Note: GDP in PPP USD.

7. **Maldives is characterized by an enclave economy, where islands are dedicated for specific uses.** The general population of the Maldives lives and works in administrative islands. Revenue-generating international resorts are located on resort islands, often with one resort per island. To encourage exclusivity for international tourists and preserve the country's traditions, resort islands are usually out-of-bounds for Maldivians, except for the citizens who work in the resorts. Dedicated industrial islands are earmarked for specific economic activities such as large and small industries, agriculture, fisheries, and aquaculture. While these islands are more accessible to citizens, only people who work in the relevant facilities reside in these islands.
8. **While revenues from international tourism have been utilized for wealth redistribution and social protection policies, linkages between resorts and the micro-economies of nearby islands remain limited.** To overcome this, the government has adopted policies to encourage the guesthouse model for tourism, based out of administrative islands and targeted at domestic and international tourists with lower travel budgets. Resorts have been mandated to recruit at least 51 percent of their employees among Maldivian nationals. Overall, resort-based tourism services continue to contribute about 23 percent of GDP, while non-resort-based services now contribute about 3 percent to GDP, up from 1 percent in 2015 (Figure 1.3). The government has also undertaken several infrastructure projects, ranging from airports to public housing, funded by debt financing. This has gradually worsened Maldives' debt-to-GDP ratio. While the construction

sector has become progressively larger, employment in this sector has been predominantly driven by immigrants willing to work for lower wages in jobs that have less security and require workers to stay in congested living spaces in Male' and adjoining islands.

9. **Fisheries have been one of the country's key natural resources, constituting a substantial share of the typical Maldivian diet and catering to important international markets. Fisheries have also been a key source of income in atolls**. Nonetheless, returns from fisheries have remained low due to a lack of storage and processing facilities in atolls, as well as limited capacity to convert raw catch into value-added products.

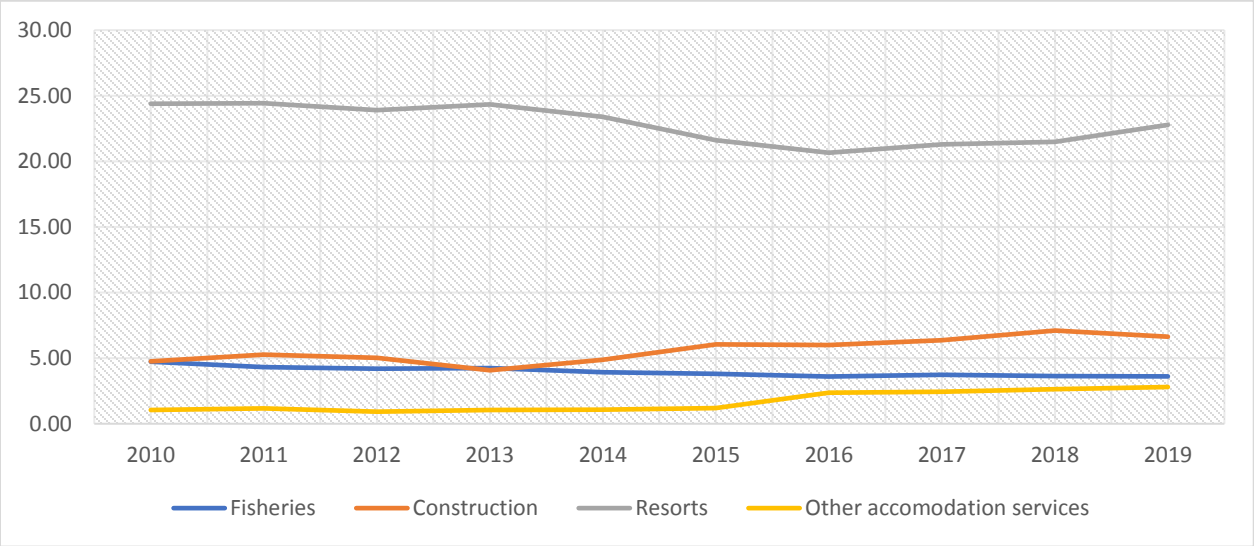

Figure 1.3: Trends in GDP shares, four key economic sectors, Maldives, 2010-2019

Source: National Bureau of Statistics (NBS). Note: These sectors combined account for more than one-third of GDP.

10. **The following section considers poverty and welfare indicators in Maldives**. Data from HIES 2019 underpins the analysis. Box 1.1 discusses background considerations on the survey fieldwork.

Box 1.1: Maldives' HIES 2019 survey: technical challenges and solutions

The sampling frame for the 2019 HIES was based on summary data and cartography from the 2014 Maldives Population and Housing Census. Fifteen households were sampled randomly from enumeration blocks (EBs), which are small operational areas defined on maps for the 2014 census enumeration. Each EB has approximately 65 households, on average. Fieldwork started in October 2019 and continued till March 2020, with a break in December 2019, since domestic travel becomes more frequent at that time due to winter vacations in schools. Rising COVID-19 cases prompted a ban on inter-island travel in Maldives and led to a suspension of survey fieldwork in early March and its cancellation in July 2020.

Noonu (N), Meemu (M), and Gnaviyani (Gn) atolls, belonging respectively to Maldives' North, Central, and South regions, were not covered by HIES 2019 because of the truncation of survey fieldwork due to COVID-19. Apart from these three atolls, Male' also suffered from a degree of underrepresentation, with about 81 percent of the planned EBs in Male' surveyed at the time of survey completion. This truncated sample presented a challenge, since there was a risk that HIES 2019 might not be representative at the national level, despite being representative for the non-missing atolls. A battery of checks was carried out, which suggested that the results remained nationally representative. The National Bureau of Statistics recalculated survey weights to adjust for the underrepresentation.

Historically, each HIES round has incorporated technical improvements. HIES 2019 was the first national survey conducted entirely on tablets, which improved real-time quality control of the microdata. HIES 2019 contained a more aggregated food item module, compared to HIES 2016, and questions to homeowners on imputed rents were framed in terms of willingness to pay. Several other changes were incorporated to reduce respondent and interviewer fatigue. The cumulative effect was that the HIES 2019 questionnaire took less time to complete, while post-survey monitoring was more concurrent.

1B: Poverty and Inequality in Maldives

11. **This report defines poverty as the deprivation in well-being characterized by households' not having sufficient resources to meet the needs of their constituent individuals.** The needs of households can be measured by comparing resource availability to a benchmark, also regarded as the poverty line. The resources available to every household are computed by considering expenditures across the broad categories of food, non-food non-durable items, housing, and durable goods. The aggregated expenditure in MVR is adjusted for inflation, location of the household in atolls or Male', and the size of the household. The following discussion presents key welfare indicators numbers estimated from HIES 2019.
12. **Maldives has historically used a set of relative poverty lines.** The national poverty line is set at half the median of per capita expenditures and is thus equivalent to different currency amounts across different surveys. Historically, this has also been regarded as the low relative poverty line (LRPL). Maldives also considers a high relative poverty line (HRPL), which is anchored to the

median of per capita expenditure. Table 1.1 estimates the national poverty line based on HIES 2019, as well as the high relative poverty line. The table also includes the internationally comparable upper-middle-income country (UMIC) poverty line, benchmarked at US$5.5 per capita per day in purchasing power parity (PPP) terms.

Poverty Line	MVR-Daily	MVR-Monthly	MVR-Annual	Poverty Rate - The Maldives	Poverty Rate – Atolls	Poverty Rate – Male'
National Poverty Line (LRPL)	71.4	2172.6	26071.5	5.4	9.5	0.9
High Poverty Line (HRPL)	142.8	4345.2	52143	43.9	67.3	18.1
USD 5.5 PPP (UMIC)	59.6	1812.8	21752	1.7	3.2	0

Table 1.1: Poverty lines and rates in Maldives, 2019

13. **Maldives has a low poverty rate, whether benchmarked against the national or international poverty line, but poverty is heavily concentrated in atolls.** By the national poverty line, poverty in atolls is 10 times as high as in Male'. The country's population is divided 52 percent to 48 percent in favor of atolls, which means a disproportionately large number of poor Maldivians reside in atolls. (See below, paragraph 16 and Table 1.3.) Under the PPP-adjusted UMIC poverty line, too, poverty in the country is concentrated solely in atolls.
14. **The distribution of poor people among Male' and atolls is relatively more equal under the high poverty line compared to the national poverty line, but the higher benchmark is arguably unrealistic.** For example, the equivalent dollar amount for the high poverty line under the market exchange rate is US$9.26 per day, higher than minimum wage rates in several states in the United States.
15. **Information on the poverty rate can be complemented with the poverty gap index (PG1), which measures the depth of impoverishment for poor individuals and is expressed as a percentage of the poverty line.** For a given poverty line, all individuals consuming above the poverty line have zero shortfall. If everyone who is impoverished spends exactly the equivalent of the poverty line amount, then the PG1 is 0 percent. Conversely, if everyone who is impoverished earned 0 income, the PG1 would be 100 percent. Male' performs much better than atolls when benchmarked against the national line, but the depth of poverty increases when the regional poverty line is placed on Male's households. Table 1.2 presents the PG1 at the level of the national poverty line of 71.4 MVR per person per day.
16. **Table 1.3 estimates the size of the poor and non-poor population in Maldives against the national poverty line**. While the population distribution between Male' and atolls is roughly similar, 92 percent of the poor population reside in atolls.

Poverty Line	PG1 – National	PG1 - Male'	PG1 – Atolls
National Poverty Line (LRPL)	0.7	0.07	1.3

Table 1.2: Poverty gap in Maldives, 2019

Note: PG1 = poverty gap index.

Poverty Line	Population Poor	Population Non-Poor	Population Poor – Male'	Population Non-Poor – Male'	Population Poor - Atolls	Population Non-Poor - Atolls
National Poverty Line (LRPL)	24,048	425,696	1,893	212,331	22,155	213,365

Table 1.3: Geographical distribution of the poor in the Maldives, 2019

Looking beyond poverty at vulnerability and inequality

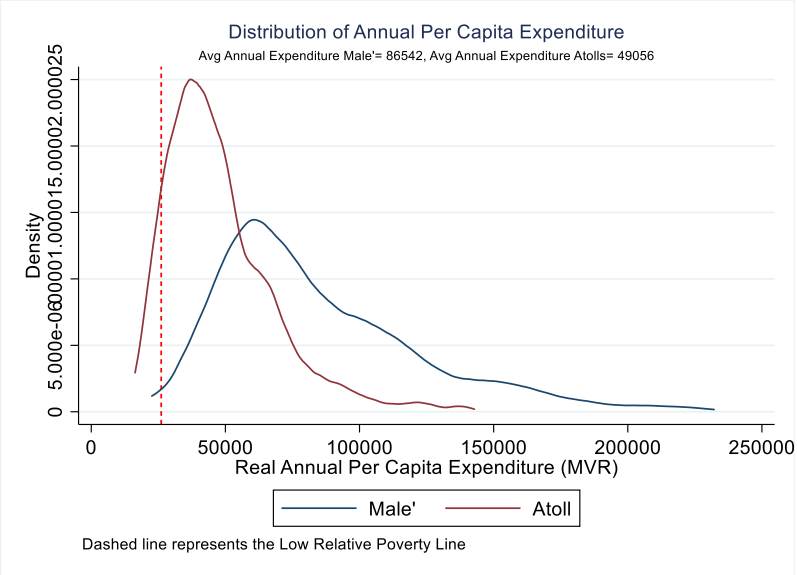

Figure 1.4: Distribution of annual per capita expenditure, Male' versus atolls

Source: Authors' calculations, HIES 2019

17. **Beyond identifying the poor, policymakers are concerned about households and individuals who are not below the poverty line but remain vulnerable to falling into poverty**. Figure 1.4 sheds light on this issue by showing the distribution of per capita expenditure in Male' and atolls. **Two crucial implications emerge from Figure 1.4. First, per capita expenditure in atolls is more clustered around the national poverty line than is the case for Male'. This means that an economic shock that reduces every Maldivian household's expenditure by a small amount would cause more households in atolls to slide into poverty**. It is useful to simulate a scenario in which each Maldivian household is hit by a shock that reduces its consumption by one or two

months of its annual budget (equivalent to 8.33 percent or 16.67 percent of annual expenditure, respectively). One can then examine how the poverty rates and gaps change due to such a shock.[4] If every household in the Maldives faced an economic shock that reduced its annual budget by two months of expenditures, about 1 in 5 households in atolls would be impoverished. While the existing poverty rate in Male' would also double under the same scenario, 92 percent of the poor in Maldives would still be concentrated in atolls (Table 1.4).

	Poverty Rate - Maldives	Poverty Rate – Atolls	Poverty Rate – Male'
National Poverty Line (LRPL) – 71.4 MVR per person per day No shock	5.4	9.5	0.9
National Poverty Line (LRPL) – 71.4 MVR per person per day Shock equals 1 month, or 8.33% of household annual budget	7.6	13.4	1.2
National Poverty Line (LRPL) – 71.4 MVR per person per day Shock equals 2 months, or 16.67% of household annual budget	11.2	19.6	1.9

Table 1.4: Effects of hypothetical economic shocks on poverty in Maldives

Source: Authors' calculations. Note: In the different scenarios, the shocks reduce households' annual expenditures by the equivalent of 0-, 1-, or 2-months' spending.

18. **A second implication of the distribution of expenditures in Figure 1.4 relates to levels of inequality.** The expenditure distribution in atolls lies to the left of that in Male' and is much less dispersed. Intuitively, this suggests that welfare in atolls is more equitably distributed relative to Male'. This leads us to consider the Gini coefficient, the standard measure of inequality. The Gini index measures the extent to which the distribution of expenditures in a society differs from perfect equality. A value of 0 represents absolute equality, with everyone consuming the same amount, while a value of 100 represents absolute inequality, where all expenditure is concentrated in one person.

Inequality Measure	National	Male'	Atolls
Gini Index	29.3	25.2	24.2

Table 1.5: Inequality in Maldives

An ongoing challenge for Maldives: Welfare disparities between atolls and Male'

19. **Maldives remains the most well-off country in South Asia, whether considering per capita GDP, international poverty rates, or the Gini Index. However, there is a substantial disparity in welfare levels between atolls and Male'**. It is common to expect a divergence in growth and welfare between economic centers and relatively more remote areas. However, Maldives'

[4] A difficulty arises because the low relative poverty line is anchored to half the median of expenditures across the country. This means that shocking every household by the same proportion would slide the distribution of expenditures as well as the poverty line by the same distance on the x-axis in Figure 1.4. This is a disadvantage of using a relative poverty line. For the purposes of the thought experiment, the benchmark for poverty is held at 71.4 MVR per person per day.

geography, the pre-eminence of Male' as the country's economic center, and the lack of backward linkages with tourism in atolls create a large wedge between the respective welfare metrics in Male' and atolls. This disparity is illustrated in Table 1.5. The distribution of expenditures is more equal in atolls than in Male', but the differences are relatively small as measured by the Gini coefficients for Male' and atolls separately. The inequality index rises when we pool expenditures from Male' and atolls together to construct the national Gini coefficient. Welfare levels in Male' are systematically higher than those in atolls; combining the two regions worsens the inequality measure, signaling wide disparities between the rich and the poor in atolls and the corresponding segments of the wealth distribution in Male'. Table 1.6 presents atoll-specific poverty rates and the share that each atoll contributed to the national population of poor people. Atolls are ordered based on their orientation along the country's north-south axis and grouped according to the regions and zones defined by the Government of Maldives in the National Spatial Plan. Box 1.2 explores factors that may influence the distribution of poverty in Maldives' atolls and the emergence of potential growth hubs.

North-South Distance within each Region	Region	Zone	Atoll	Poverty Rate – National Poverty Line	Percentage of National Poor
283.6 KM	North	Upper	Haa Aliff	12.5	9.3
			Haa Daalu	12.9	13.7
			Shaviyani	5.6	4.2
		Lower	Noonu		
			Raa	18.9	15.4
			Laviyani	2.1	0.8
			Baa	1.7	0.9
378.3 KM	Central	Upper	Kaafu	8.8	4.9
			Male'	0.9	7.8
			Aliff Aliff	14.2	4.6
			Aliff Daalu	3.1	1.3
			Waavu	2.8	0.2
		Lower	Meemu		
			Faafu	7.1	1.7
			Daalu	2.7	1
			Thaa	14.4	7.9
			Laamu	7.8	4.9
269.7 KM	South	Upper	Gaafu Aliff	9.6	4.4
			Gaafu Daalu	15.6	11.2
		Lower	Naviyani		
			Addu	5.7	5.9

Table 1.6: Atoll-specific poverty rates and share of national poor, 2019

Source: Authors' calculations. Note: Regions and Zones are based on Maldives National Spatial Plan.

Box 1.2: Understanding poverty rates in Maldives' atolls

Fully understanding poverty rates in atolls would require a comprehensive exercise bringing together historical context, administrative data, and measures of public infrastructure, economic opportunities, and historical and current investments. The initial "atolls versus Male'" story must be unpacked further, since several atolls perform well on poverty measures. In fact, distance from Male' is not associated with higher poverty. Shaviyani in Upper North and Seenu in Lower South have poverty rates that are comparable to the national rate, while some atolls closer to Male' exhibit higher poverty rates, including Raa in Lower North and Aliff Aliff in Upper Central. Each region and almost every zone has a combination of atolls with low and high poverty rates, except for Gaafu Aliff and Gaafu Daalu in Upper South.

One reason behind the lack of correlation between distance from Male' and poverty could be that investment in public infrastructure is positively correlated with the remoteness of an atoll. Figure 1.5 plots the pairwise correlation of FY 2021 budget allocations with the distance between Male' and the atoll capital. Figure 1.6 shows the correlation of budget allocations with atoll population (Figure 1.6). Both indicate a high positive correlation.

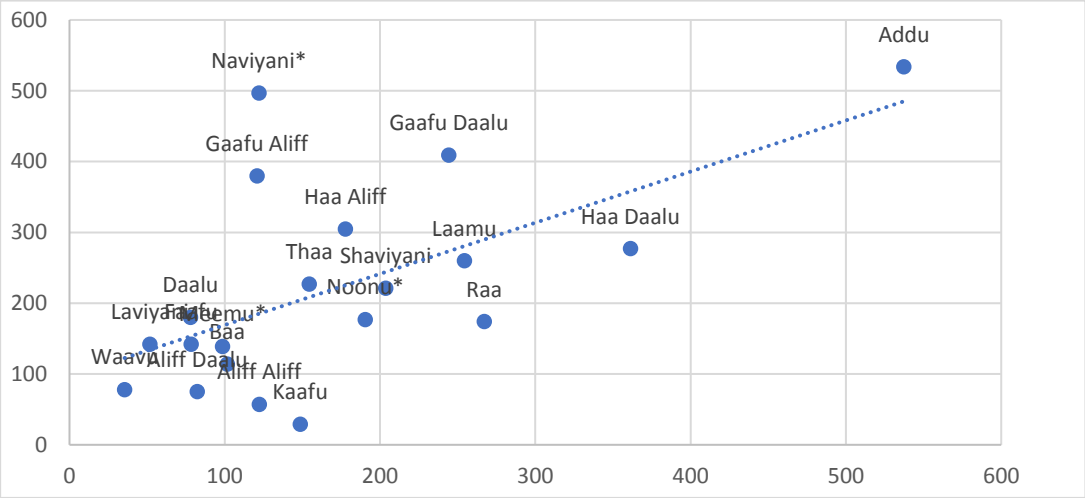

Figure 1.5: Atolls farther from Male' tend to receive greater government support

Note: Horizontal axis: Government budget allocation in FY 2021 (millions of MVR). Vertical axis: Distance from atoll capital to Male' (km). Corr Coeff-0.6.

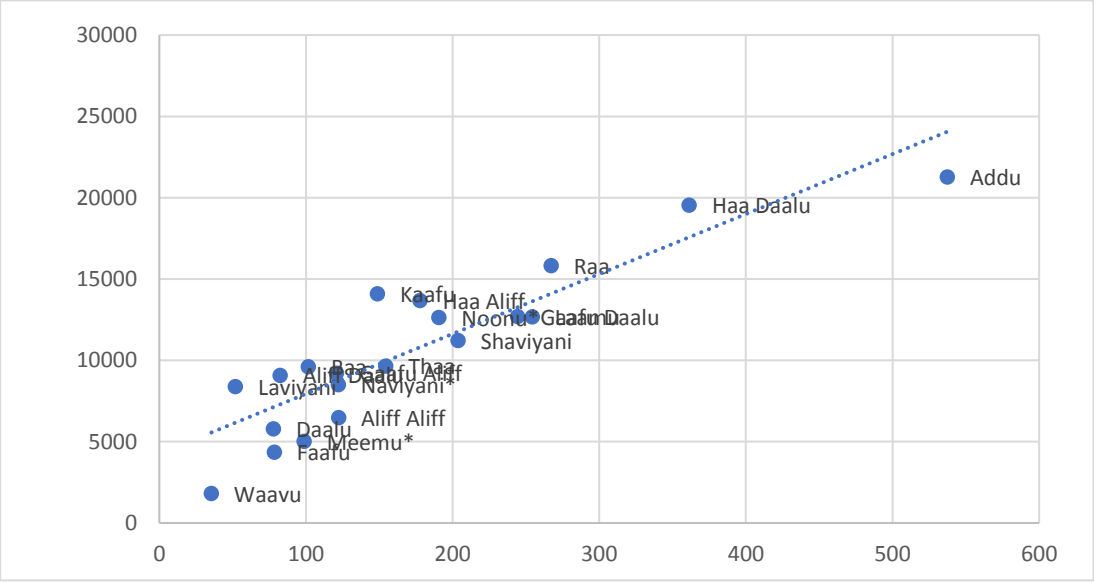

Figure 1.6: More populous atolls tend to receive greater government support

Note: Horizontal axis: Budget allocation in FY 2021 (millions of MVR). Vertical axis: Atoll populations. Corr Coeff-0.89.

The correlation between atoll poverty rates and public sector investments (or investments per capita) is weaker, although positive. While better-off atolls in each zone could act as a growth engine for atolls in that zone, transportation challenges may be a barrier. For example, analyzing public ferry connections shows that all three atolls in the Upper North zone are connected by ferries, whereas none of the four atolls in the Lower North zone share ferry links. The Upper Central zone is relatively well supplied with inter-atoll connections and ferries to Male'. In the Lower Central zone, only two out of five atolls have ferry connections between them. Private ferries may be more expensive and less frequent. This suggests that improving ferry connections between atolls could be a key ingredient in a regional hub strategy.

1C: A Profile of the Poor

20. **This section draws on HIES data to present a statistical portrait of the poor in Maldives.** It starts by explaining how deprivation in Male' and atolls can best be measured. Then it analyzes a series of household characteristics that are associated with poverty nationwide or with deprivation in specific areas. Because Maldives' national poverty line suggests a low incidence of poverty in Male', any correlation between a given household characteristic and poverty will be driven primarily by persons living in atolls.

Measuring deprivation in Male' and atolls

21. **To capture characteristics that indicate deprivation, it is useful to construct two benchmarks, one each for Male' and atolls. The deprivation benchmarks are set to 50 percent of the median annual expenditures in Male' and atolls, respectively.** These are mathematical counterparts to the national poverty line but are used to understand the correlation between the benchmarks and household characteristics in Male' and atolls separately. To maintain the distinction with poverty rates, we regard the respective percentages as deprivation rates (Table 1.7).

	MVR-Daily	MVR-Monthly	MVR-Annual	Deprivation Rate – Atolls	Deprivation Rate – Male'
Atoll Deprivation Benchmark	66.2	2013.5	24161.6	6.3	
Male' Deprivation Benchmark	120.7	3673.7	44084.9		7.0

Table 1.7: Deprivation benchmarks and deprivation rates in Male' and atolls, 2019

22. **Since national poverty is driven primarily by atolls, the difference between the national poverty line (71.4 MVR) and the deprivation benchmark for atolls (66.2 MVR) is small compared to the difference with respect to the deprivation benchmark for Male' (120.7 MVR).** Indeed, Male's benchmark is quite close to the high relative poverty line (142.8 MVR), which demonstrates the higher living costs in Male'. The following discussion considers household characteristics that are associated with higher poverty nationwide, as well as greater deprivation in atolls or Male'.

Household size and overcrowding

23. **An important component of many households' annual expenditures is the rental cost of dwelling**. Rental housing is much more common and more expensive on average in Male' than in atolls. Approximately 74 percent of households in Male' live in rented dwellings, compared to about 5.3 percent in atolls. Renters in Male' spend about 37 percent of their annual expenditure on rent, compared to about 19 percent among renters in atolls. The average household living in a rented dwelling in Male' has 5.3 members, compared to only 2.9 members in a similar household in atolls. While Male' is congested, households there that live in owned dwellings have an average size of 4.9 members. Renters in Male' are thus paying a large proportion of their annual expenditure as rent while having a larger family size, which means that they are left with

a lower proportion of resources to spend on food, non-food, and durable items. Excluding housing costs narrows the disparity in cost of living between Male' and atolls; annex 1 provides some details.

24. **Larger household sizes are usually correlated with higher poverty levels, and Maldives is no exception.** Nationally, about 5 percent of households have 10 members or more. The national poverty rate in such households is 12 percent, whereas only 3 percent of households with nine or less members are poor. The deprivation rate for households with nine or less members in atolls and Male' is about 5 percent. While the share of households with 10 or more members is smaller in Male' than in atolls, the welfare penalty for large household size is greater in Male'. The deprivation rate is 10.5 percent among households in atolls with 10 members or more but climbs to 15.9 percent for similar households in Male'.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation rate – Atolls
Household Size	10 members or more	7.7	12	5.8	15.9	9.6	10.5
	9 members or less	92.3	4	94.2	5.7	90.4	5.1

Table 1.8: Larger household size is correlated with a higher probability of being poor or deprived

25. **Households with more than one child per adult member are more than twice as likely to be poor, and such households are more likely to be found in atolls**. Often, poverty is positively correlated with the dependency ratio, which is a ratio of the number of children and seniors to the total household size. The Maldives has a young population, and about 76 percent of households in the country include no seniors. We thus consider the ratio of children (age less than 15 years) to total household size. Less than 10 percent of Maldivian households have more than one child per adult, or a child ratio exceeding 0.5. Such households are at least twice as likely to be poor or deprived (Table 1.9).

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Children / Household Size	More than 0.5	7.1	12	5.3	12.5	8.9	13.9
	0.5 or less	92.9	4.9	94.7	6.7	91.1	5.5

Table 1.9: A larger number of children is correlated with a higher probability of being poor or deprived

26. **Overcrowding, where a large family is packed into a small space, can be a strong indicator of deprivation.** Male's pre-eminence as Maldives' major urban area and commercial center has led to a high population density of over 20,000 people per square kilometer. Male''s population density ranks fifth among localities in South Asia, surpassed only by high-density cities such as Dhaka (Bangladesh), Karachi (Pakistan), Kolkata (India), and Kathmandu (Nepal). Unlike these cities however, Male' is the only large urban agglomeration in the country. Overcrowding can be measured as the ratio of the number of household members to the number of rooms in the dwelling used for sleeping. Nationally, about 10.4 percent of Maldivian households have more than three members sleeping in a single room, and such households are almost twice as likely to

be poor as households with three or fewer members per room. The incidence of overcrowded households in Male' is greater, and such households are about eight times more likely to be deprived than households that are not overcrowded (Table 1.10).

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Members / Room	More than 3	10.4	8.4	13.9	22.4	7.2	13.2
	3 or less	89.6	4.9	86.1	2.9	92.8	5.5

Table 1.10: More than three people per room is correlated with a higher probability of being poor or deprived

Household deprivation levels and characteristics of the household head

27. **The characteristics of a household head often determine the likelihood of his/her household being in poverty**. For example, in South Asia as a whole, female-headed households have a greater likelihood of being impoverished, since this usually implies that there is no adult male earner in the household. Maldives has a large percentage of female-headed households, and they are even more common in atolls. Female-headed households are associated with a slightly higher incidence of poverty in Maldives, but it seems that this is primarily driven by Male'. Female-headed households in atolls are marginally less likely to be deprived (Table 1.11).

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Gender of Head	Female	42.7	6	38.7	7.5	46.3	6.6
	Male	57.3	5	61.3	6.7	53.7	5.8

Table 1.11: Female-headed households are more likely to be deprived in Male'

28. **Domestic migration is common in the Maldives, but surprisingly it is not comprised predominantly of migration from atolls to Male'.** Two out of every three household heads in Male' are migrants, but even in atolls, about 38 percent of household heads have moved from other atolls or Male' (Table 1.12). Being a migrant is associated with slightly greater incidence of deprivation in Male', but lower deprivation in atolls and lower poverty nationally. A detailed discussion about migration patterns and purpose, along with associated poverty levels, is beyond the scope of this Poverty Assessment. However, the lower deprivation observed for people who have moved between atolls or to atolls from Male' is suggestive, as it indicates that some atolls are providing alternative locations for better livelihoods. In fact, the percentage of migrant households in better-off atolls in each zone is higher than in atolls in the same zone with worse welfare outcomes. For example, Shaviyani (Upper North), Baa (Lower North), Vaavu (Upper Central) and Dhaalu (Lower Central) have lower poverty rates and higher migrant populations. This indicates that migration to these atolls is driven by better opportunities, and thus these atolls are candidates to act as engines of growth in their respective regions.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Migration Status of Head	Migrated	52	2.7	66.8	7.1	38.3	3
	Native	48	8.1	33.2	6.9	61.7	8

Table 1.12: Migrant household heads are less likely to be deprived in atolls, but more likely to be deprived in Male'

29. **Better educational attainment is usually correlated with less poverty, and Maldives reflects this pattern** (Table 1.13). Educational attainment will be discussed in detail in chapter 3, but we note here that only 8.7 percent of Maldivian households have heads who have not completed primary education. The incidence of such households is almost three times greater in atolls compared to Male'. 22.6 percent of households across the nation have heads with tertiary education, and such households are more than three times more common in Male' than in atolls**.** Nationally, having a household head with tertiary education is associated with a poverty rate about 30 times lower than that observed when the household head has not completed primary school. The welfare penalty for being poorly educated in Male' is much larger than in atolls, while the reward of tertiary education is larger in atolls.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Education Status of Head	Below Primary	8.7	12.6	4.4	39.9	12.7	7.5
	Primary & Above	91.3	4.7	95.6	5.3	87.3	6.1
	Below Tertiary	77.4	6.9	63.1	9	90.3	6.7
	Tertiary	22.6	0.4	36.9	3	9.7	1.7

Table 1.13: Education of the household head is inversely correlated with household poverty or deprivation

30. **No strong correlation is seen between poverty rates and whether a household head is employed or unemployed.** Nationally, 66.7 percent of household heads are employed, and only 1.2 percent of heads are unemployed, while the remaining 32 percent do not participate in the labor force. Households with employed heads and unemployed heads show poverty rates of 2.4 percent and 2.6 percent, respectively. For comparison, households where the head does not participate in the labor force are associated with a poverty rate of 6.7 percent. Of note, 73 percent of household heads in Male' are employed, whereas 25.3 percent are non-participants in the labor market; in atolls, only 60.9 percent of heads are employed, and 38.3 percent do not participate.
31. **Earning household heads can be categorized as employees, self-employed, and employers, the latter being individuals who provide jobs to non-family members.** Nationally, 5.7 percent of households have heads who are employers, split between 5.4 percent in atolls and 6 percent in Male'. Such households are associated with lower poverty and deprivation. Households with heads in wage-earning jobs also perform better, with a low poverty rate of 2.4 percent. Nationally, about 28 percent of households have self-employed household heads. The incidence of poverty among such households is 5.5 percent, more than double that of households with heads in wage-earning jobs (Table 1.14).

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Employment Status of Head (Earning Heads Only)	Employee	66.7	2.4	77.7	5.8	54.2	4
	Self-Employed	27.6	5.5	16.3	10.4	40.4	5.3
	Employer	5.7	3.5	6	0	5.4	2.5

Table 1.14: Households with self-employed heads are more likely to be poor

32. **Limitations in the capabilities of the household head are associated with higher poverty rates.** The HIES survey collected information on the presence and extent of various types of disabilities and chronic diseases. About 13.2 percent of household heads face some form of disability, and 35.5 percent live with a chronic disease. While there is no significant difference in the distribution of household heads with chronic diseases between Male' and atolls, 17.2 percent of atoll-based households have a disabled head, compared to 8.9 percent in Male'. Unsurprisingly, households with disabled heads exhibit significantly higher poverty and deprivation rates. The same holds true for households where the head has a chronic disease, though the penalties are not much higher (Table 1.15).

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Limitation on Household Head	Disabled	13.2	9.6	8.9	11.3	17	8
	Chronic Disease	35.4	6.1	35.5	9.9	35.3	5.9

Table 1.15: Households whose heads have a disability or chronic disease face higher poverty risks

33. **Looking beyond the household head, it is useful to consider how the individual-level characteristics of other household members may correlate with welfare.** As noted earlier, poverty falls sharply with increasing education of the household head. Vocational and college degrees that comprise tertiary education have become more accessible in Maldives recently. Thus, it is probable that, although the household head may not be educated up to the tertiary level, some other household member is. Given the strong, negative correlation of poverty with a tertiary degree for the head, one may ask if the presence of any tertiary degree holder within the household influences poverty. We consider the ratio of such individuals to total household members and benchmark this ratio at 0.2, which indicates one member with tertiary education for every five total members, five being the average household size in Maldives. Nationally, every household that has on average one or more members with tertiary education is almost eight times less likely to be poor. The incidence of such households in Male' is about 2.5 times that of atolls. A household in Male' having less than one member with tertiary education is about three times more likely to be deprived, compared to other households in Male'. In atolls, such households are five times more likely to be deprived, which is concerning since the incidence of such households is also three times higher in atolls.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Ratio of Tertiary-Educated Members to Total Members	Less than 0.2	59.1	8.1	40.9	11.2	75.8	7.6
	0.2 and above	41.9	1.1	59.1	3.8	24.2	1.5

Table 1.16: Households with at least one tertiary-educated member are less likely to be poor

34. **Poverty rates among households with no earning members are not starkly elevated, suggesting other sources of income.** Nationally, about 9.5 percent of households do not have earning members, with 13.2 percent of households in atolls and 5.4 percent of households in Male' reporting no earners. It is striking that neither poverty rates nor deprivation rates are starkly elevated in households with no earners, suggesting that income from other sources is substantial in the Maldives (Table 1.17)[5]. One should note that individuals working in resorts or industrial islands are not recorded as household members in the HIES survey, but any remittances sent home from those locations would accrue to the household's pool of income from other sources.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Earning Members	0	9.5	10.7	5.4	7.1	13.2	9.9
	1 or more	90.5	5.1	94.6	6.1	86.8	5.9

Table 1.17: Households with no income-earning members are more likely to be poor

An individual-level poverty profile for working-age Maldivians

35. **An individual-level poverty profile can be constructed for adults of working age.** The association of poverty rates with an individual's labor force status echoes results presented earlier when considering household heads. Poverty rates do not vary significantly between employed (3.7 percent) and unemployed (3.4 percent) individuals; however, 6.5 percent of individuals who do not participate in the labor force are impoverished. Among employed individuals, the incidence of underemployment—where the individual works less than 40 hours a week—is negligible. We thus consider poverty/deprivation rates for employed adults by type of employment. More than 75 percent of employed adults are engaged in wage jobs nationally, while this falls to 68 percent in atolls. The poverty rate almost halves when an individual is in a wage-earning job, as opposed to being self-employed, and drops further for individuals who provide jobs to non-family members. The incidence of the last type of individuals is only about 3 percent overall, so the analysis here continues to focus on the first two categories.

[5] Unearned income sources may include government transfers, private transfers and property, and stock and asset holdings, for example.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Employment Type of Employed Adults	Employee	76.8	3.1	85.6	6.2	67.7	4
	Self-Employed	20.2	6.1	11.2	7.2	29.5	5.3
	Employer	3	1.6	3.2	0	2.8	1.7

Table 1.18: Individuals in wage-earning jobs are less likely to be poor

36. Working individuals can be categorized among three broad occupational sectors:
    a) The **primary sector** includes individuals who work in fisheries, agriculture, mining, and quarrying.
    b) The **secondary sector** consists of individuals who work in manufacturing, construction, electricity, and water supply.
    c) The **tertiary sector** includes individuals who work in services such as hospitality, education, health, and administration, as well as retail and wholesale trade.

Characteristic		Population Share (National)	Poverty Rate (National)	Population Share (Male')	Deprivation Rate – Male'	Population Share (Atolls)	Deprivation Rate – Atolls
Broad Sector of Employment	Primary	8.1	7.6	1.1	11	15.2	5.2
	Secondary	16.9	6.5	10.3	7.4	23.8	5
	Tertiary	75	2.6	88.6	5.9	61	3.8

Table 1.19: Employment in the primary and secondary sectors is associated with higher poverty

37. **While about 3 out of 4 employed individuals are in the tertiary sector nationally, about 40 percent of individuals in atolls are employed in the primary and secondary sectors. The poverty rates associated with the primary and secondary sectors are higher than the national poverty rate**. The deprivation rate associated with being involved in the primary or secondary sectors is high in Male', although the incidence is relatively much lower compared to atolls (Table 1.19). Essentially, employment in these two sectors does not generate sufficient revenues to cover the cost of living in Male'.
38. **The poverty rate among individuals engaged in the formal private sector or public sector employment, which together constitute over 92 percent of wage employment in the economy, is about 2.6 percent.** An individual is categorized as working in the formal private sector if he or she works as an employee or is self-employed in some dedicated fixed premises. This definition distinguishes between the private sector and the largely self-employed work force who work out of their homes or without a fixed space. The deprivation rates associated with being in public or private sector employment are similar in atolls (3.5 percent and 3.9 percent, respectively). Despite Male's prominence as Maldives' economic nerve center, employment in government jobs there is more remunerative than private sector employment. In Male', individuals in the private sector face higher levels of deprivation (7.5 percent) than do workers in the public sector (4.9 percent).
39. **As expected, employment in the formal economy is associated with lower levels of poverty (2.5 percent) compared to that in informal economy (5.1 percent).** This distinction does not

affect deprivation levels in atolls significantly; in Male', however, 8.3 percent of all individuals in informal employment are deprived, compared to 4.7 percent among those in formal employment.

40. **A high degree of correlation exists between the type of employment (employee or self-employed) and whether a person is in the public sector or private sector, as well as whether work is formal or informal.** For example, all individuals in the public sector work as employees, and only about 10 percent of all individuals working in the private sector (excluding those that do not work at dedicated premises) are self-employed. Likewise, less than 10 percent of all individuals in formal work are self-employed, whereas more than 1 out of every 3 individuals in informal work are self-employed.
41. **Tables Table** 1.18 **and Table** 1.19 **presented the sectors of employment and the types of work within those sectors that have a strong association with individual poverty in Maldives. Table 1.20 further details these associations. It focuses solely on national poverty rates by type and sector of occupation and does not consider deprivation rates in atolls and Male'**. The table omits real estate, mining and quarrying, and activities of extra-territorial organizations, since these contribute less than 0.5 percent of total employment. The analysis also excludes individuals engaged as employers in these three broad sectors, given the small number of such individuals and the low incidence of poverty among them.
42. **The first implication of Table 1.20 is that, for any sector which has non-negligible incidence of both wage workers and self-employed individuals, poverty rates among self-employed individuals are higher than among wage workers.** There are some sectors where the self-employed experience a lower poverty rate, but the associated population share is too small to generate stable estimates: for example, self-employed workers in human health and social activities.
43. **Fishing and agriculture are associated with a poverty rate higher than the national average, and this increases further for the self-employed, who make up about 2 of every 3 individuals involved in this sector.** More than 4 out of 5 individuals in manufacturing are self-employed, although the poverty rate in this group is comparable to the national average. Employment in construction is associated with higher poverty rates, and these worsen sharply for the self-employed.

	Population Share	Poverty Rate	Population Share – Employee	Poverty Rate – Employee	Population Share - Self Employed	Poverty Rate - Self Employed
Accommodation and food service activities	6.9	4.4	87.3	4.5	12.7	5.0
Activities of households as employers;	1.7	1.1	91.7	1.0	8.3	1.8
Administrative and support service activities	1.5	1.8	89.9	2.2	10.1	0.0
Agriculture, forestry, and fishing	7.9	7.7	39.6	7.0	60.4	8.5
Arts, entertainment, and recreation	1.1	0.7	68.5	1.0	31.5	0.0
Construction	3	11.5	62	8.2	38	20.5
Education	12.3	3.4	88.1	3.5	11.9	2.9
Electricity, gas, steam and air conditioning	2.8	6.1	98.9	6.2	1.1	0.0
Financial and insurance activities	1.4	0.0	100.0	0.0	0.0	
Human health and social work activities	6.2	1.9	99.8	1.9	0.2	0.0
Information and communication	1.8	1.0	99.7	1.0	0.3	0.0
Manufacturing	9.7	5.6	18.8	4.7	81.2	5.6
Other service activities	1.4	7.5	74.1	8.2	25.9	6.1
Professional, scientific, and technical	2.2	0.0	86.1	0.0	13.9	0.0
Public administration and defense	16.9	2.5	99.4	2.4	0.6	33.2
Transportation and storage	9.8	1.9	85.6	1.8	14.4	2.4
Water supply, sewerage, waste management	1.5	2.3	96.3	2.2	3.7	3.7
Wholesale and retail trade	11.8	2.8	84.3	3.3	15.7	1.7

Table 1.20: Maldives' national poverty rate decomposed by type and sector of employment, 2019

44. **An additional regression analysis was conducted to further explore the correlation of individual-level characteristics with annual household expenditures in Maldives. The results support the earlier findings of the poverty profile.** Details of the regression are presented in annex 2**.** The exercise suggests that a larger household or a household with a larger number of dependents is correlated with lower per capita expenditures. Although rental costs are a component of expenditure, living in rented dwellings is correlated with lower expenditure among otherwise similar households. Migrant individuals are associated with a higher per capita expenditure. Relative to higher secondary education, lower educational attainments are correlated with lower expenditure, while expenditure increases if the individual completes diploma or degree education. The analysis again shows a correlation of expenditure with labor force participation. Among employed adults, being an employer is associated with higher expenditures, and being employed in the primary sector is correlated with lower expenditures. Effectively, the regression coefficients obtained support the earlier findings from the poverty profile, as described above.

Summary

45. **Maldives does not have a high rate of poverty in absolute terms. When benchmarked against the poverty line for upper-middle-income countries, Maldives' national poverty rate is 1.7 percent. The country's challenge is inequality, especially between Male' and atolls**. This is most succinctly demonstrated by the Gini index. Maldives' Gini index is worse for the entire country than for Male' and atolls separately, indicating substantial disparities between the capital region and atolls. The national poverty line for the Maldives is a relative measure, and it signals this inequality while providing poverty numbers for the country. 5.4 percent of Maldivians subsist on less than 71.4 MVR a day, and about 92 percent of such individuals are in atolls. While the country's population is divided almost equally between atolls and Male', 1 out of every 10 individuals in atolls is poor, compared to only 1 in 100 in Male'. An economic shock that reduces the annual expenditure of every Maldivian household by two months of spending, or 16.7 percent, would effectively double poverty rates across the country.
46. **Welfare levels in individual atolls are not correlated to distance from Male'.** Every region and almost every zone identified in Maldives' National Spatial Plan shows a combination of relatively better-off and worse-off atolls. An atoll can be considered relatively better off if its poverty rate is similar to or lower than the national poverty rate. Such atolls have a degree of public and social infrastructure and economic advantages that can be used to anchor them as hubs for regional growth.
47. **This chapter mapped the incidence of poverty to key household characteristics. It considered two deprivation measures, one each for atolls and Male'.** These metrics are derived mathematically like the national poverty line but designed to account for the different cost of living in Male' and atolls and adjust deprivation rates accordingly.
48. **Whether one considers poverty at the national level or deprivation in atolls and Male', their correlation with certain household characteristics is qualitatively similar**. For example, a household with 10 members or more is about three times more likely to be impoverished than a household with nine members or less. A high ratio of children to household members and overcrowding are also correlated with poverty rates about two to three times higher. The gender of the household head does not have a strong correlation with welfare. Welfare increases with higher levels of education for the household head, and poverty rates in households with heads who have not completed primary education are three times higher than for other types of households. Households with heads who suffer from a disability are more likely to be impoverished, while households with migrant heads are associated with lower poverty. Even in atolls, the deprivation rates for migrant heads are much lower, indicating that there are some atolls where migration from other atolls or even Male' has led to better household welfare. Finally, no strong correlation is observed between poverty levels and whether a household head is employed or unemployed, perhaps due to the low incidence of unemployed household heads. However, households where the head is not participating in the labor market have a higher incidence of poverty. Analysis by employment sectors shows that, for household heads, being employed in the primary or secondary sectors, especially as a self-employed individual, is

associated with higher rates of poverty. In Male', deprivation rates are significantly elevated for such households.

49. **A large majority of employed individuals in Maldives are wage workers in the tertiary (service) sector**. Being self-employed in primary activities such as fishing and agriculture or secondary activities such as manufacturing and construction is associated with higher poverty rates, compared to wage work in the tertiary sector. Of note, only about 1 in 10 individuals in Male' works in the primary or secondary sectors, compared to about 4 in 10 in atolls. Chapter 4 will further leverage these insights when analyzing individual-level data from phone surveys to understand the sectors and types of work most affected by the COVID-19 pandemic.
50. **Maldives has recently adopted the Multi-Dimensional Poverty Index (MPI) to understand welfare using an alternate method of poverty measurement.** Maldives published its first MPI in 2020, based on the country's Demographic and Health Survey (DHS) 2016/17. The eight determinants of Maldives' MPI are organized in three broad categories: health, education, and living standards. None are monetary measures. Rather, they reflect indicators of human development, such as years of schooling, being obese or underweight, and access to services like healthcare, safe drinking water, and internet. Given these features, Maldives' poverty rate as gauged by the MPI is expected to differ from the monetary poverty rate estimated in this chapter. In 2017, the national poverty rate estimated via MPI was 28 percent. In Male, the MPI poverty rate was 9.6, rising to 40.3 percent in atolls. This is qualitatively similar to the results obtained when measuring monetary poverty and reflects the disparity in access to services between atolls and Male'.
51. **The MPI clarifies the contribution of each underlying factor to the poverty rate. This is instructive for understanding the distinctive drivers of poverty in Male' and atolls, similar to the poverty profile based on monetary poverty and discussed earlier in the chapter**. For Male', more than 40 percent of poverty under the MPI is driven by overcrowding and lack of access to healthcare. In atolls, poverty is driven by low years of schooling as well as lack of access to amenities such as a sewage system, health care, and drinking water. Chapter 2 will further investigate access to basic infrastructure, while Chapter 3 looks in greater detail at changing patterns of educational attainment. The measures of poverty derived from monetary and non-monetary methods alike underscore welfare disparities between Male' and atolls and imply that households in atolls are constrained by lower spending capacity and limited access to basic services.

Chapter 2: Trends in Welfare and Income Generation: Signs of Convergence between Male' and Atolls?

1. **Chapter 1 showed that poverty rates in Maldives are low, when benchmarked against the national poverty line or the international poverty line. The challenge that Maldives faces is inequality between Male' and atolls**. The goal of this chapter is to analyze monetary and non-monetary metrics of welfare, basic needs, and quality of life to examine if Maldives has made foundational gains in these areas and whether such gains have widened or narrowed the disparities between Male' and atolls. The analysis uses the HIES 2016 and 2019 surveys to examine these trends. Importantly, methodological changes between the two survey rounds make some comparisons problematic, and results must be interpreted with caution.
2. **The chapter is structured as follows**. It begins with a brief technical discussion of the changes in HIES survey methodology and how the analysis in this Poverty Assessment has adapted to them. The chapter then turns to track the evolution of selected monetary and non-monetary welfare indicators that provide a picture of how welfare evolved for Maldivians living in Male' and atolls over the period 2016 to 2019. Later sections of the chapter look at income-generating activities in Male' and atolls, how these also changed over time, and potential implications for action to promote convergence between atolls and the capital.

2A: Technical background on the HIES survey

3. **HIES 2019 introduced several changes to improve the quality of household data collection.** Perhaps the most salient innovation was to conduct the entire survey on tablets with a customized data collection software package allowing checks and balances for enumerators, supervisors, and survey headquarters.[6] HIES 2019 also reduced the number of questions and changed the sequence of the questionnaire to lighten the burden on interviewers and respondents. A detailed discussion on these changes and their implications is captured in the technical note published in conjunction with this Poverty Assessment.
4. **These changes make a straightforward comparison of poverty rates and other welfare measures between HIES 2016 and 2019 complicated.** The expenditure aggregates in both survey rounds are computed from several sub-components, some of which underwent methodological changes, such as a change in the sequence of questions or a reduction in the number of included items. However, some components were identical between the two rounds, and can signal welfare changes. Apart from such sub-components, both surveys asked many questions on non-monetary indicators that remained consistent between the two rounds and can also provide indications of welfare change. For example, improvements in a household's wealth and purchasing power are indicated by a wider base of assets or a higher frequency of purchases.

[6] Apart from the immediate effect of improving data quality, this has allowed the Maldives Bureau of Statistics to shift to an electronic data collection process for subsequent exercises such as phone surveys conducted to understand the effects of the COVID-19 pandemic on households, livelihoods, and businesses. Maldives' Population and Economic Census of 2022 will also be conducted on tablets, marking a paradigm shift in the data generation process for the country.

5. **Before comparing HIES-based metrics for a household (or individual), they must be anchored to a welfare measure that accounts for how the household performs vis-à-vis all other households in Maldives. This allows the analysis to show whether changes accrue to the better-off or worse-off households in the population**. Fortunately, one can use the distribution of expenditure aggregates from each of the two survey rounds to categorize households into better-off and worse-off subgroups. We can then observe the levels of the targeted metrics between the subgroups in 2016 and the levels observed in the same sub-groups in 2019. To understand changes among the poor and near-poor, this approach partitions the expenditure aggregates into a hybrid category of deciles and quintiles, henceforth simply referred to as expenditure categories. In both 2016 and 2019, the estimated poverty rates in the Maldives were below 10 percent. Therefore, the bottom 10 percent category in each year contains the entire poor population of Maldives for that year. Many of the figures and tables throughout the remainder of this report will present information in terms of these expenditure categories.
6. **This analysis considers only monetary and non-monetary metrics that did not change between the two survey rounds, so that comparing the associated levels is straightforward**. While the choice of such metrics could be complex, attention here is deliberately restricted to metrics that are closely related to some sub-component of monetary welfare. Any monetary metric used from 2016 is inflated to 2019 prices. The selected metrics inform the analysis throughout Chapters 2 and 3. They cover income and sources of income, educational attainments, labor supply patterns, asset accumulation, housing quality, rents, and food consumed away from home.

2B. How did Maldivians' welfare change?

7. **This section looks at welfare indicators for Maldivian households, tracking patterns of change between 2016 and 2019**. It begins by examining monetary metrics, then proceeds to non-monetary indicators.

Monetary metrics: household spending on food away from home and rent

8. **The first metric for comparison is the real monetary amount spent on food away from home (FAFH) on a per capita basis. This is a sub-component of the expenditure aggregate which underpins poverty measurement.** In both survey rounds, households were asked to recall their consumption of FAFH for the past seven days on the same list of items. Expenses on FAFH would be expected to increase with a larger household budget, due to higher markups at eateries. Figure 2.1 shows the average expenditures on FAFH, and examines if the share of budget allocated to eating out increases across categories and increases between 2016 and 2019.

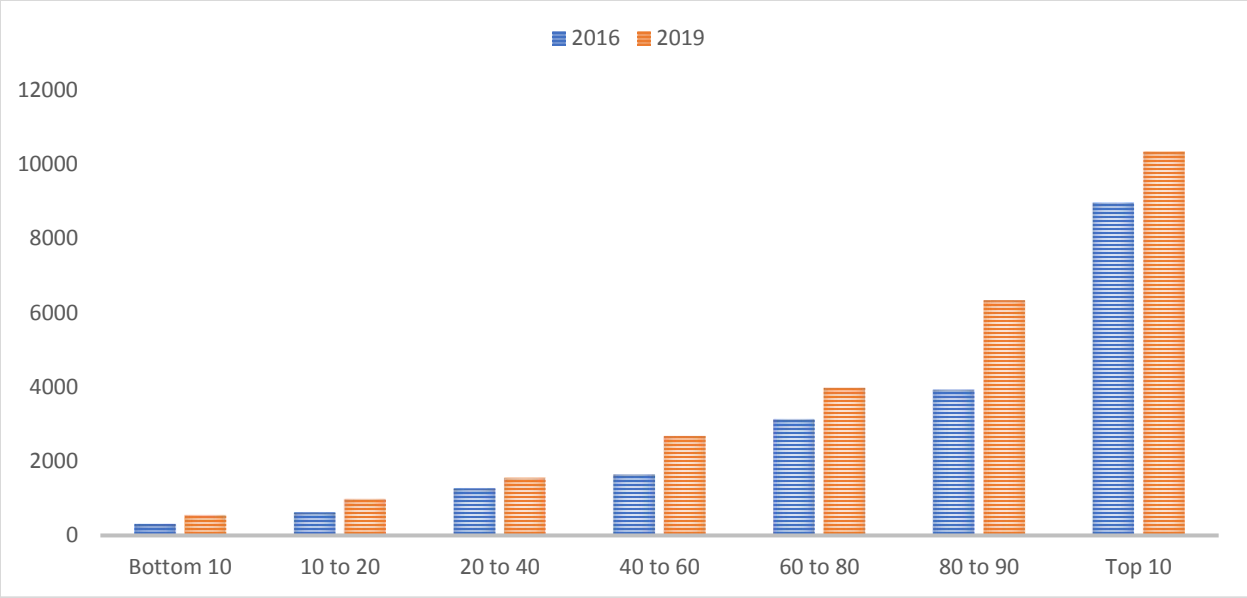

Figure 2.1: Spending on food away from home across the wealth distribution, 2016 and 2019 (MVR, 2019 prices)

Note: Figure reflects real per capita annual household expenditure on food away from home (FAFH), by household expenditure category.

9. **The per capita expenditure on FAFH rises across expenditure categories in each year, indicating that better-off households spend more on these items**. Expenses within each category have generally increased between 2016 and 2019, indicating an improvement in this welfare-improving category across the three years. Results for the distribution of expenditure in Male' and atolls are not presented here, but this trend holds and is in fact sharper in atolls.
10. **Rents paid by persons living in rental housing are a second monetary metric that remained methodologically consistent between HIES 2016 and 2019**. Chapter 1 noted that while about 20 percent of households in atolls rent, more than 90 percent of households in Male' live in rented dwellings. In 2019, renters in atolls allocated about 20 percent of their annual expenditure to rent. This figure increased to just above 35 percent for renters in Male'. Figure 2.2 anchors the rental payments made by renters in Male' to the distribution of expenditures in Male'. This focuses consideration on a subpopulation in which rents constitute more than one-third of the annual budget and renters make up a large majority. The amount of rent paid has remained roughly stable for the bottom 40 percent while increasing among the richer 60 percent of Male' renters, with sharp increases among the richer households.

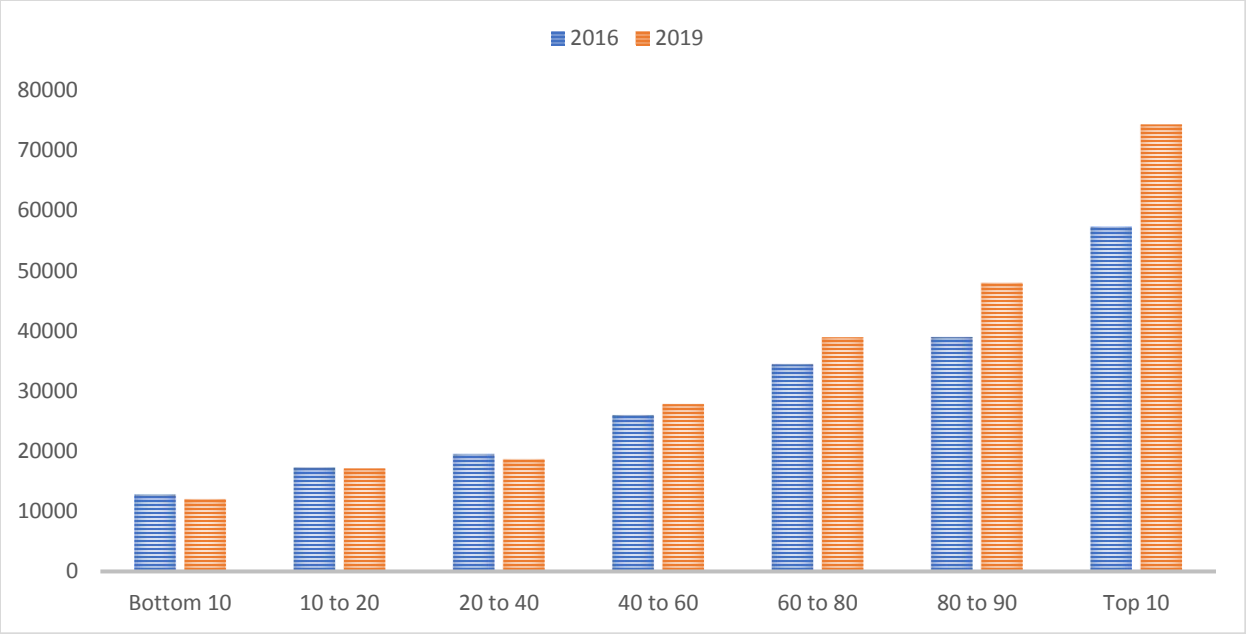

Figure 2.2: Spending on rent across wealth distribution in Male', 2016 and 2019 (MVR, 2019 prices)

Note: Figure reflects real per capita annual household expenditure on rent, by household expenditure category.

Housing quality and infrastructure access

11. **We now consider a first batch of non-monetary metrics to examine patterns of housing quality.** The entire sample of owners and renters across Male' and atolls is utilized for this discussion. Across the country, richer households are more likely to live in apartments, and this trend strengthened between 2016 and 2019. Of course, apartments are available for living in Male' predominantly, so this result may simply arise because the proportion of non-poor is larger in Male' compared to atolls. In Male', households across all categories were more likely to live in apartments in 2019. Considering households in atolls only, over 98 percent reside in standalone houses, irrespective of their expenditure category.
12. **Since Maldives is a high-income country, housing indicators that generally indicate higher levels of welfare in other countries in South Asia are not useful indicators here.** Across much of South Asia, for example, houses that utilize construction materials such as mud, wood, and thatch are associated with lower welfare levels, while those that utilize cement, plaster, and concrete suggest that households are better off. In Maldives, however**,** over 99 percent of all households live in dwellings with brick walls and floors made of tiles, cement, or parquet. When it comes to roofing, 98 percent of atoll-based households use galvanized tin sheets as the main material for the roof, whereas concrete sheets are chosen by 84 percent of households in Male'. The use of galvanized tin has fallen from 24 percent to 14 percent in Male', but the data do now show any systematic trend in substitution from tin to concrete, indicating that this is predominantly due to the type of housing (standalone houses versus apartments) and not to welfare changes. In effect, construction materials do not reliably indicate welfare changes in Maldives. Meanwhile, access to electricity is universal in Maldives, and over 99 percent of all Maldivian households have exclusive

toilet facilities; even in the poorest 10 percent of households, the incidence of dwellings without toilets decreased from 2 percent in 2016 to 0.3 percent by 2019.

13. **All households in Male' are connected to sewers, while some concerning results emerge in atolls. Despite infrastructure advances in atolls, some 10 percent of households there continue to evacuate their waste into the sea.** In atolls, households in all categories have increasingly switched from septic tanks to a sewer connection, boosting the overall percentage of households with sewer-connected toilets from 30.5 percent to 48.1 percent. Concurrently, the percentage of households with connections to a septic tank fell from 60.6 percent to 42.5 percent, with about 9 percent of households dumping their waste into the sea. This points to an expansion of public infrastructure in atolls, allowing the population to opt into sewerage connections irrespective of welfare levels. It is concerning, however, that among the richest 10 percent households, the incidence of toilets connected to the sea increased from 6.6 to 11.1 percent over the study period. Overall, about 10 percent of households in each category continued to use toilets of this kind, from 2016 through 2019.

	Bottom 10	10 to 20	20 to 40	40 to 60	60 to 80	80 to 90	Top 10	Total
2016								
Sewer	24.21	28.51	28.54	30.27	32.9	32.33	32.21	30.5
Sea	10.96	7.4	8.17	9.84	8.4	9.15	6.63	8.54
Septic	64.34	63.87	63.12	58.9	58.47	58.29	61.16	60.62
2019								
Sewer	38.91	46.17	50.84	46.93	51.44	50.92	45.48	48.12
Sea	11.55	8.22	8.08	9.36	9.67	6.5	11.09	9.23
Septic	49.11	45.62	40.87	43.47	38.89	42.58	43.27	42.51

Table 2.1: Distribution of toilet types by household expenditure category, atolls, 2016 and 2019

Note: Cells indicate the percentage of households in each expenditure category reporting presence of that toilet type.

14. **Changes in households' main source of drinking water have shifted towards improved water sources but pose environmental risks.** One would have expected that access to piped water would have increased in conjunction with sewer connections, but the percentage of households reporting piped water as a main source for drinking has increased only marginally, from 9.4 percent in 2016 to 11.8 percent by 2019. Furthermore, richer households are no more likely than poorer households to opt into piped water. Comparatively, piped water is more common in Male' (20.1 percent) than atolls (4.1 percent), although the change in atolls since 2016 is greater in relative terms. The predominant source of drinking water in Male' is bottled water, relatively unchanged at about 80 percent in both 2016 and 2019. About 90 percent of atoll-based households used rainwater as their primary drinking water source in 2016, which dropped sharply to 76 percent by 2019. Concurrently, usage of bottled water climbed from 7.5 percent to 19 percent. Shifting from rainwater to a more expensive alternative indicates welfare enhancement. However, this may be a cause for concern on multiple fronts. First, it raises the prospect of more plastic waste. Second, money spent on bottled water must be reallocated from some other item in the household's preferred consumption basket. Although households in every category have

shifted toward bottled water, the effect is particularly pronounced among the richer households in atolls.

	Bottom 10	10 to 20	20 to 40	40 to 60	60 to 80	80 to 90	Top 10	Total
2016								
Piped water	3.13	1.86	1.88	2.51	2.38	1.77	1.31	2.09
Rainwater	93.49	92.7	92.08	91.18	89.91	88.52	84.33	89.93
Bottled water	3.37	5.07	5.65	6.16	6.62	9.23	13.84	7.49
2019								
Piped water	3.81	3.14	4.68	6.61	3.89	3.13	2.35	4.1
Rainwater	88.66	85.76	85.2	76.2	73.65	71.38	63	75.94
Bottled water	6.4	10.03	9.72	16.25	21.29	25.33	33.23	19.04

Table 2.2: Drinking water sources across the wealth distribution, atolls, 2016 and 2019

Note: Cells indicate percentage of households in each expenditure category reporting use of that drinking water source.

15. **Table 2.1 and Table 2.2 confirm the rise in welfare and expansion of public infrastructure in atolls. However, this comes with the risk of environmental degradation and avoidable spending.** Public health messaging about safe drinking water may have contributed to these trends in unintended ways. It is unfortunate that the shift toward healthier sources of drinking water has not favored piped water. In atolls, while 10.5 percent of households used piped water to cook, only 4.1 percent households used it for drinking in 2019. This indicates that the shift from rainwater to bottled water due to safety concerns could be checked by increasing the incidence of piped water connections. Desalinated water may taste unpleasant and suffer from persistent negative public perceptions regarding safety, leading households to reject this option for drinking. This is perhaps best seen when considering the source of cooking water in Male'. Piped water was the preferred source for cooking in about 96 percent of Male' households in 2019, whereas only 20 percent households used it for drinking. Policies towards improving the taste and safety of desalinated water may be able to curtail the increasing dependency on bottled water.
16. **The expansion of public infrastructure in atolls is once again evident in results on waste disposal**. Irrespective of expenditure categories, the incidence of dumping or destroying in unit has reduced, and the overall percentage of households disposing of waste properly has increased from 86.8 percent to 95.1 percent. Waste in Male' is properly disposed of almost universally.
17. **Survey findings on kitchen usage underscore the correlation between overcrowding and lower welfare levels in Male'**. In atolls, over 97 percent of households have a separate room for cooking; in Male', about 96.3 percent of households have a similar arrangement overall. However, just 78.4 percent of the bottom decile in Male' had a separate kitchen in 2016, though this share increased to 88.7 percent by 2019. In every other category, the percentage of households with separate kitchen is above 95 percent. It is worth noting here that the value of housing (whether approximated via rents or imputed rents) is far larger in Male' compared to atolls. This indicates that while Male's poor had access to better housing in 2019, congestion coupled with high costs of housing remained a challenge in Male'. This reinforces a result from chapter 1, which showed that households in which more than three members sleep in one room are more likely to be poor. This is especially true in Male'.

18. **The analysis of housing cost and quality finds considerable welfare neutral improvements in access to water, sanitation and sewage services over time. However, within Male', less well-off households are more likely to find themselves in congested living arrangements with high housing costs.** Indeed, the percentage of renters in Male' increased between 2016 and 2019, and poorer households are more likely to rent. For example, about 80 percent of the poorest 10 percent of Male' residents live in rented dwellings, while this share falls to 55 percent among the richest 10 percent. Subsidized housing in adjoining islands might contribute to relieving the pressure on Male', but it would attract even more migration from atolls. The gradual increase of public infrastructure in atolls is a step in the right direction, since it could lead to more distributed migration throughout the country.

Asset accumulation

19. **Asset accumulation is arguably the subcomponent of expenditure that best approximates long-term wealth.** When computing the contribution of assets to total expenditure, we estimate the consumption flow from such goods via the user cost approach. HIES 2019 included additional durable items in its asset inventory, such as tablets, 3-wheeler pickup, and flat screen TV, some of which represented a more disaggregated version of items included in the 2016 survey. For example, while respondents were asked about mobile phones in 2016, they were asked about feature phones and smart phones in 2019[7]. The current discussion focuses on the percentage of households that report owning an asset, as well as the percentage who report purchasing a unit of the asset in the 12 months preceding the survey. Increased levels in both indicators would signal a welfare improvement over the last year. Given income levels, some assets may indicate lower welfare levels, as they become inferior goods. For example, the choice between purchasing and not purchasing a radio for entertainment is a choice for households with low income levels. In Maldives, radios may not be an asset in the household's choice set unless they are used for communication on the high seas. We thus consider pairs of assets, where one asset is a superior and expensive substitute for the other. The first set of such items includes fans and air conditioners. Both provide the same services but are distinctly different in costs, maintenance requirements, and desirability.
20. **Trends in the ownership and purchase of fans and air conditioners point to welfare gains among poorer Maldivian households in the period 2016 to 2019.** In both 2016 and 2019, the percentage of households that owned fans decreased along the expenditure continuum towards richer categories, meaning that wealthier households were less likely to rely on fans. The percentage of households that had purchased a fan in the preceding 12 months also showed a downward curve across the expenditure categories in both years. Poorer households in both years are likely to own a fan; but the frequency of purchase falls sharply among the bottom decile and quintile, indicating that the poor are not purchasing fans. Air conditioners show the opposite trend. In both years, richer households reported higher levels of ownership, relative to poorer households. However, rates of air conditioner ownership among less affluent households increased substantially over the study period. In 2016, over half of households in the richest decile reported owning an air

[7] Additional details on these issues are available in the technical note.

conditioner, compared to fewer than 1 in 4 households in the bottom decile. By 2019, over half of households in the bottom decile reported owning an air conditioner, and more than a third of these households indicated that they had purchased a unit in the 12 months preceding the survey. This is a strong indication of welfare gain, since, apart from the higher purchase costs, the operation and maintenance costs for air conditioners are also greater.

21. **Another set of assets that signal wealth accumulation with a superiority ranking includes bicycles, motorcycles, and cars**. While cars are clearly the higher status item among these, cars are distinctly less relevant in Maldives than in many other settings due to scarce and over-congested roads and short overland travel distances. Qualitatively, bicycle ownership in Maldives closely mirrors that of fans. Richer households were less likely to own bicycles in either 2016 or 2019. However, the percentage of households reporting a bicycle purchase was greater across all categories in 2019.[8] Changes in motorcycle ownership mirror those seen for air conditioners; in both survey rounds, richer households are more likely to own a motorcycle than poorer households. But households across all categories reported a higher incidence of motorcycle ownership and purchase in the last 12 months in 2019 than in 2016, with poorer households registering the fastest growth in percentage terms.[9]
22. **The analysis next considers assets that may enable increased connectivity and productivity, such as computers and phones**. **Poorer households made substantial ownership gains**. In both rounds, questions were asked about computers and laptops, while the 2019 round included questions on tablets; respondents were asked to exclude any devices that were distributed by the government and not purchased. Mobile phones were distinguished into feature phones and smartphones in 2019, while no such distinction had been made in 2016. The percentage of households owning a computer or a laptop increased across all categories, with the poorest 10 percent reporting the largest increase in purchases in the last 12 months. Tablets were separately reported only in 2019, and while the ownership of tablets increased for richer categories, poorer households were more likely to have purchased a device in the past 12 months. Mobile phones are universal in Maldives, irrespective of expenditure categories. Smartphone penetration is between 93 percent to 99 percent in all expenditure categories, and over half of households report a purchase in the last 12 months.

Encouraging welfare results—that raise additional questions

23. **The growth in ownership of assets and the frequency of recent purchases in 2019 compared to 2016 suggest that Maldivian households had become likelier to opt into superior assets despite higher purchase and maintenance costs. Gains among poorer households were especially notable**. Generally, survey results show a growth in ownership levels and frequency of purchases across other assets such as washing machines, TVs, and refrigerators. While these all point to greater welfare levels in Maldives, the results among the bottom decile and quintiles suggest that the poor have witnessed some of the highest rates of asset accumulation in percentage terms.

[8] One should note that Maldives has a young population, and bicycles could be a desirable choice of transportation for men and women under age 18, including those from wealthier backgrounds.

[9] Car ownership is not considered here for the reasons cited above, but one may note that the share of Maldivian households owning cars increased from 3.4 percent to 4.6 percent between 2016 and 2019.

24. **The results on assets, housing, and food away from home suggest a general improvement in the quality of life in Maldives, with meaningful improvements among the poor in atolls.** This has been aided by an expansion of public infrastructure in atolls, allowing more residents to benefit from facilities such as sewer systems and piped water for washing and drinking.
25. **While these results inspire optimism, policymakers need to understand what drove the changes.** In both survey rounds, respondents were asked a variety of questions on the labor supply of household members, incomes earned from livelihood activities, and income from remittances, government schemes, and other sources. Income modules remained similar between the two rounds.[10] Drawing on the data from these modules, the next section aims to understand changes in the sources and amounts of income which have allowed Maldivian households to attain a better quality of life.

2C: Income-generating activities in Male' and atolls

26. **The detailed incomes modules in HIES 2016 and 2019 allow for the construction of a comparable income aggregate**, and a version of this can be used as an alternative to the expenditure aggregate in deriving poverty levels. The technical note presents comprehensive discussions on the pros and cons of each alternative, along with details on the components of the income aggregate. The present discussion anchors aggregate incomes to the categories of expenditure to understand how better-off and worse-off households performed in income generation, along with the differences in income-earning patterns such as sources of income, type of employment, and sector of employment. The income aggregates considered throughout this section include (1) earned income from wages or self-employment and (2) unearned incomes derived from remittances, government transfers, rentals, dividends, and other sources. Figure 2.3 shows the per capita annual income in different expenditure categories in 2016 and 2019.

[10] While this makes the comparison of incomes more straightforward, it is important to consider any policy changes that may affect the reporting of income between the two rounds. While the HIES 2019 was in the field, preparations were underway to establish an individual income tax regime in Maldives in early 2020. (Due to the COVID-19 pandemic, the tax regime was ultimately not instituted.) Income is usually subject to underreporting, but respondents would have a specific and systematic reason to underreport income in 2019, especially if their incomes would be high enough to attract tax. This same ground for underreporting was not present in 2016. Subsequent discussions will show indications of this underreporting.

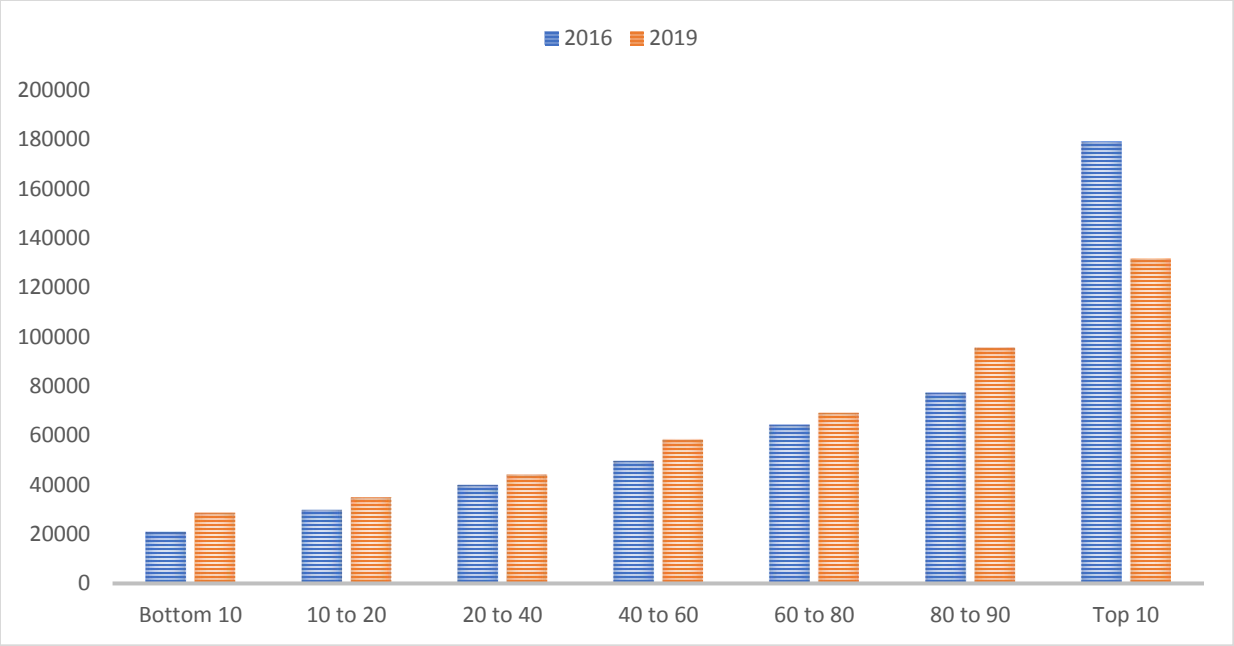

Figure 2.3: Real per capita annual income in each household expenditure category, 2016 and 2019 (2019 prices)

27. **Households in each category reported higher per capita income in 2019 than in 2016, except in the richest decile.** As explained in footnote 5, this demonstrates how policies under consideration by political authorities at a given time can affect survey responses. The Maldivian government's proposal to introduce an income tax appears to have prompted households in the richest decile to systematically underreport their income on the 2019 survey. Poorer households whose earnings did not approach the taxable level continued to report significant increases in income, relative to 2016.

Tracking changes in income sources among the poor

28. **The analysis now considers different components of earned and unearned income to understand the increases in income levels for the poor.** Chapter 1 noted that, while wage employment was the primary type of employment in Maldives in 2019, about 1 in 3 individuals in atolls were self-employed. Figure 2.4 shows the proportion of households in each expenditure category that reported incomes from wage employment and self-employment.

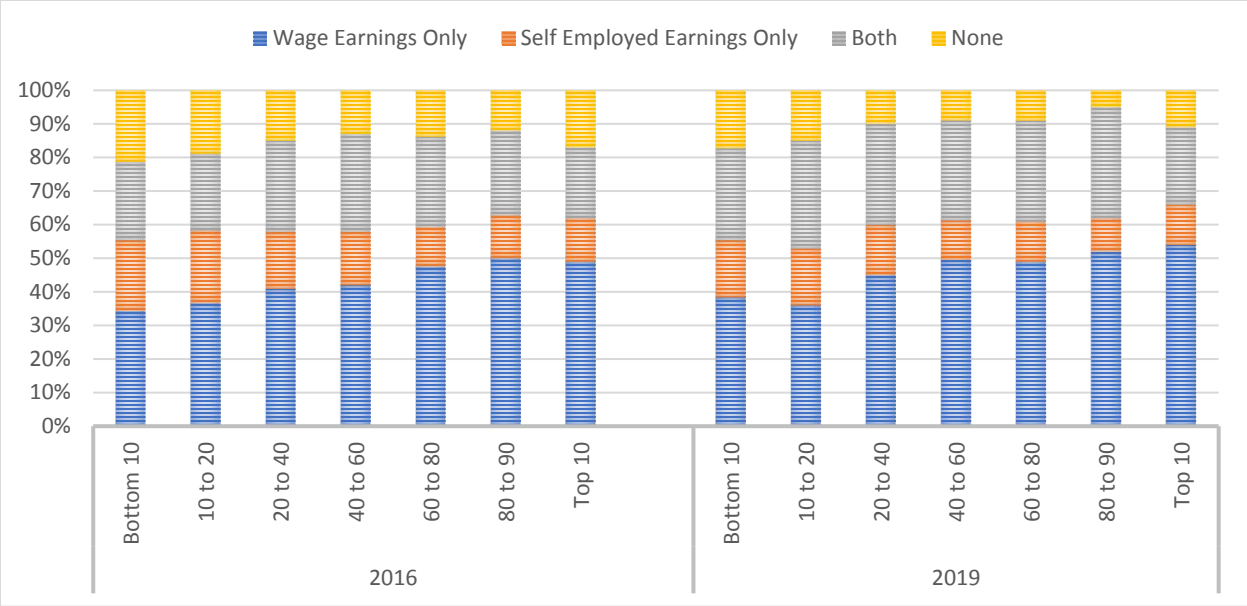

Figure 2.4: Share of households reporting different sources of earned income, by expenditure category, 2016 and 2019

29. **In each expenditure category, the percentage of households reporting no income from wages and self-employment fell between 2016 and 2019**. A reduction is also seen in the percentage of households who report income only from self-employment. At the same time, the percentage of households that earn income either from wage employment or from both wage and self-employment increased. In the bottom decile, for example, the percentage of households earning income from wages or a mixture of wages and self-employment rose from 57 percent to 65 percent. In the richest decile, the incidence of such households rose from 70 percent to 77 percent, a less sharp increase. Chapter 1 noted that poverty rates were elevated for Maldivians who were engaged in self-employment. Figure 2.4 shows that poorer households were more likely to access wage jobs in 2019 and to diversify away from generating income only from self-employment. These results hold separately for atolls, which is expected given that poorer households are disproportionately located in atolls.
30. **Family members employed in resort or industrial islands are not registered as household members in the survey. Given that accommodation and food for such employees may be subsidized by the employer or even provided free, a significant part of their income may be remitted to their family members in administrative islands, registering as private remittances**. Maldives also has a variety of social protection programs, including retirement pensions and child support. These are the major sources of unearned income in Maldives. HIES data show how their incidence changed between 2016 and 2019. Other potential sources of unearned income include rents, dividends, and properties, but these are small and concentrated among richer households (Figure 2.5).

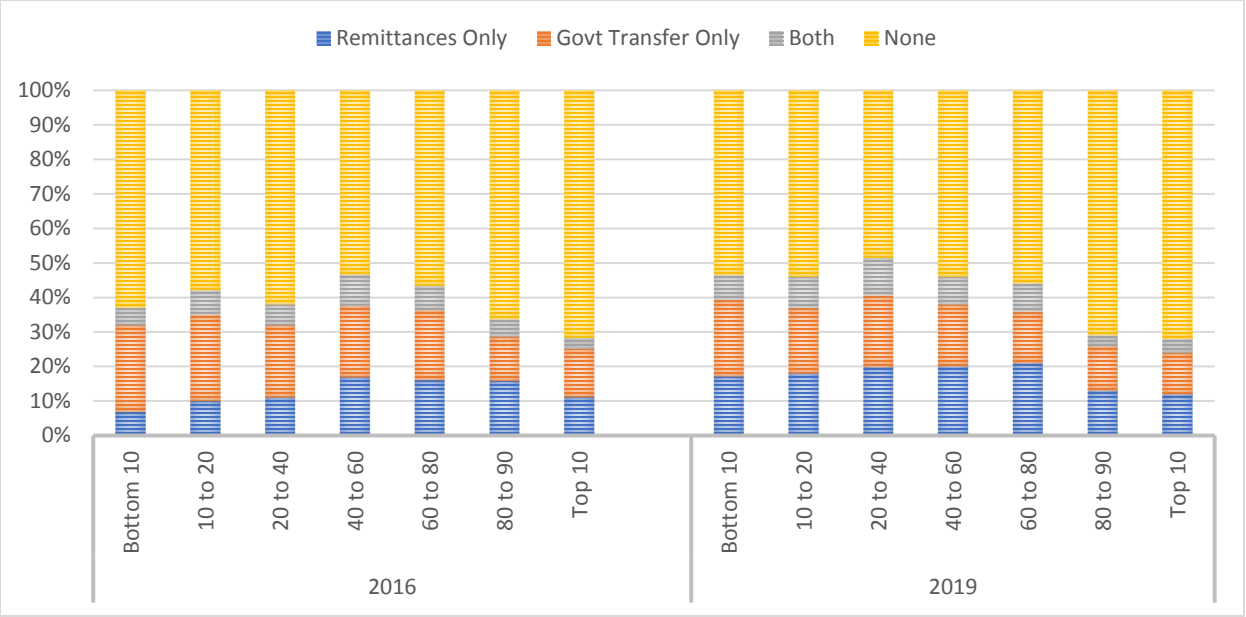

Figure 2.5: Share of households reporting different sources of unearned income, by expenditure category, 2016 and 2019

31. **The share of households that received no unearned income fell sharply between 2016 and 2019 among the bottom 40 percent, while it stayed roughly the same in the richer 60 percent**. **Thus, poorer Maldivian households were both more likely to enjoy wage jobs and to receive remittances in 2019 than they had been in 2016**. All households were slightly less likely to report income only from government transfers in 2019, irrespective of expenditure category. However, the percentage of households reporting income from remittances, or from both remittances and government transfers, increased in the bottom 40 percent. For example, 7 percent of households in the bottom decile reported remittance income in 2016, which increased to 17 percent by 2019. The preceding two figures reinforce each other. Not only were poorer households more likely to access wage jobs in 2019, they were also more likely to receive remittances, which may indicate that non-resident family members are also gainfully employed elsewhere.
32. **Next, we consider the proportion of income generated from four major sources - wages, earnings, remittances, and transfers**. Income earned from self-employment is regarded as earnings, whereas income from government transfers is simply labeled transfers. Property and other income sources are not considered in the following discussion, as they primarily accrue to the rich.
33. **Across the distribution (Figure 2.6), the percentage of total income contributed by wages and remittances has increased.** Among the poorest 10 percent, the contribution of these two sources rose from below 50 percent to almost 60 percent, while at the same time, average per capita incomes were higher in 2019 for all households not in the top decile. Poorer households thus earn a bigger share of the pie in 2019 through both wages and remittances. At the same time, the proportion of income earned from self-employment registers a secular decrease across all expenditure categories.

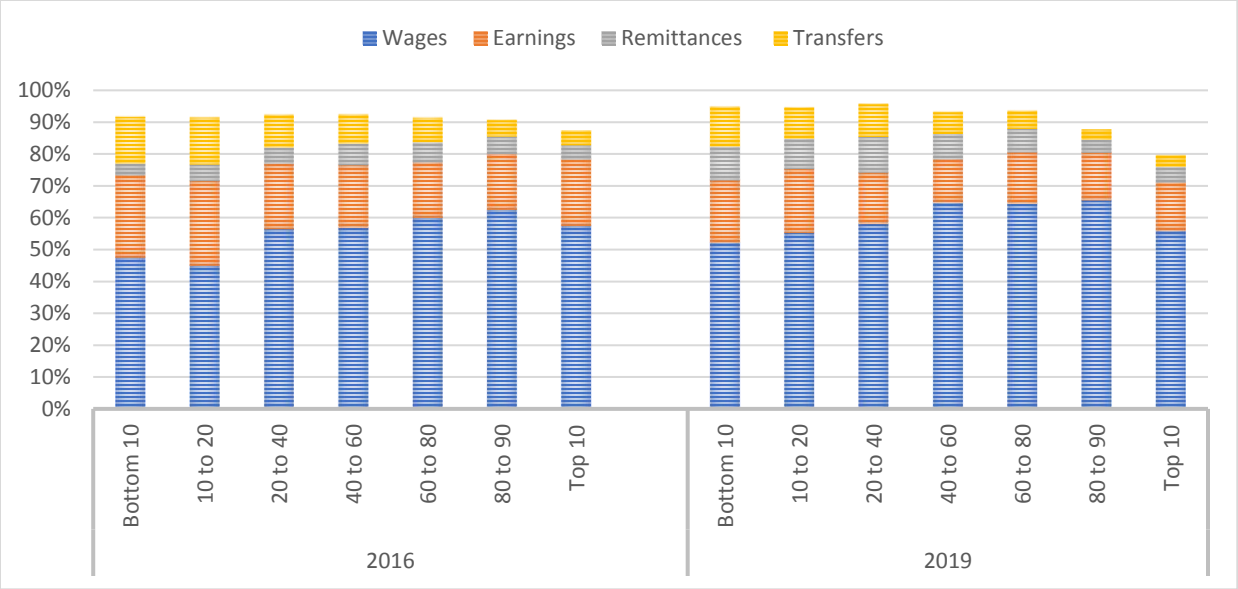

Figure 2.6: Share contributed to total household income by different income sources, 2016 and 2019

Note: Share contributed by excluded income categories can be deduced from the gap between individual column height and 100 percent.

34. **In profiling Maldives' poor, chapter 1 showed that self-employed household heads and self-employed individuals were more likely to be poor, whereas the reverse was true for those employed in wage-earning jobs**. Figure 2.6 shows that households are substituting away from self-employment toward wage-earning jobs. This suggests that the availability of jobs has improved in atolls, where the poor are predominantly located. This could have, in turn, translated into the standard of living improvements documented in the previous section.
35. **Chapter 1 noted that households with no earners constitute about 9.5 percent of all households in Maldives, and among these households, only 11 percent are impoverished.** While this is double the national poverty rate, it is not as high a rate as one might expect, given that these households have no income from wage earners or self-employed members. Upon closer investigation, about 17 percent of such households are in the richest decile, with property income constituting the majority of their total income. About 12 percent of households with no reported earners are in the poorest decile. Public and private transfers make up 86 percent of income in this group.
36. **It is possible to decompose earned and unearned income and show how contributions from each source changed between 2016 and 2019**. Table 2.3 presents the share of total income derived from each income source in 2016 and 2019 and calculates the simple annual growth rate for each income source for the overall population, as well as for households in the bottom decile. The bottom decile experienced a sharp increase in total income, although average income in the bottom decile is still less than half the average income for the entire population. Government transfers constitute a higher share of income in the bottom decile, and property income contributes a lower share, when compared to the overall population. Overall, income from self-employment has decreased, on average, although it increased in the bottom decile. Income from

wages and private transfers has driven the bottom decile's sharp increase in total income, and these sources in fact exhibit higher annual growth in this group than does total income.

	Overall Population			Poorest Decile		
	2016	**2019**	**Annual Growth Rate**	**2016**	**2019**	**Annual Growth Rate**
Wages	35666.05	40993.67	**4.98**	12073.98	17220.34	**14.21**
Self-Employment	13978.41	8884.25	**-12.15**	4984.21	5658.76	**4.51**
Remittances	2736.74	3469.79	**8.93**	651.97	2166.84	**77.45**
Government Transfers	3813.37	3370.43	**-3.87**	2849.62	2799.18	**-0.59**
Property	4224.13	6509.78	**18.04**	177.93	840.75	**124.17**
Total	61604.37	63481.36	**1.02**	21019.09	28770.1	**12.29**

Table 2.3: Sources of household income and annual growth rate of each income source, total population and poorest decile, 2016 and 2019

Changing patterns in employment

37. **We now examine how employment patterns in various sectors evolved in the period 2016 to 2019.** As in chapter 1, employment is categorized into primary, secondary, and tertiary sectors. Figure 2.7 shows that participation in the tertiary sector increases with higher welfare levels. However, in the poorest decile, participation in the tertiary sector fell between 2016 and 2019, while small increases were seen in the number of individuals engaged in the primary and secondary sectors. Participation in the primary sector was negligible for richer households in 2019.
38. **A notable trend concerns wage employment among poorer Maldivians working in the primary sector**. In 2016, less than 1 in 3 individuals in the bottom decile involved with the primary sector were wage-earning employees; however, by 2019, wage jobs accounted for about half of employment in the primary sector for the bottom decile. Individuals working in the secondary sector, which consists of activities like manufacturing and construction, were not more likely to be in wage employment than self-employment. While this is counter-intuitive, one should recall that employment in large-scale manufacturing and construction may not necessarily be picked up by the HIES, since the former is predominantly located in industrial islands, and the latter is concentrated in Male' and adjoining areas.

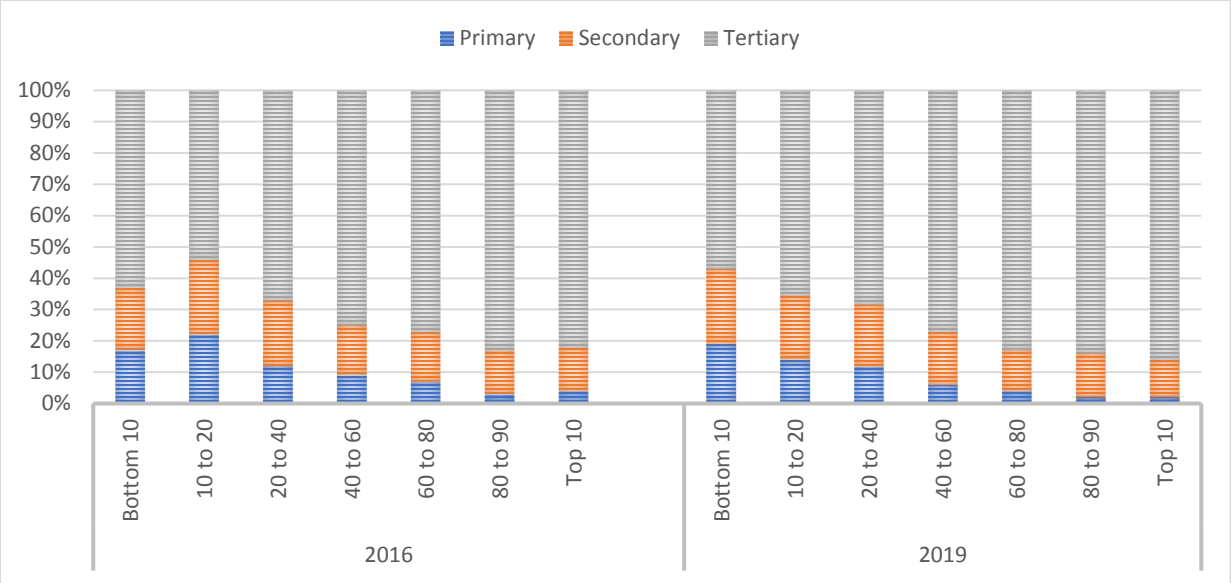

Figure 2.7: Share of employed individuals working in main economic sectors, by expenditure categories, 2016 and 2019

Note: Primary sector mainly includes agriculture and fisheries. Secondary sector mainly includes manufacturing, construction, electricity, and water supply. Tertiary sector mainly includes services.

39. **Chapter 1 and the preceding discussion show that being a wage earner, participating in the tertiary sector, or both are associated with higher incomes in Maldives**. **A next important question concerns how types of employment are evolving spatially across the country**. Accordingly, the analysis now shifts from the distributional aspects of indicators on sectoral employment and employment type to consider how types of employment have evolved across major economic sectors in atolls and Male'.

	Atolls			Male'		
	2016	2019	Change	2016	2019	Change
Accommodation and food service activities	6.33	7.06	↑ 0.73	5.28	6.72	↑ 1.44
Activities of households as employers;	1.07	1.04	↓ -0.03	1.24	2.38	↑ 1.14
Administrative and support service activities	1.27	0.82	↓ -0.45	2.93	2.08	↓ -0.85
Agriculture, forestry and fishing	17.09	14.98	↓ -2.11	1.78	0.99	↓ -0.79
Arts, entertainment and recreation	0.58	0.52	↓ -0.06	1.24	1.67	↑ 0.43
Construction	4.27	3.1	↓ -1.17	4.59	2.87	↓ -1.72
Education	14.33	14.71	↑ 0.38	10.23	9.95	↓ -0.28
Electricity, gas, steam and air conditioning	3.59	4.48	↑ 0.89	1.28	1.13	↓ -0.15
Financial and insurance activities	0.4	0.47	→ 0.07	2.05	2.25	↑ 0.2
Human health and social work activities	7.05	7.2	↑ 0.15	3.85	5.21	↑ 1.36
Information and communication	0.64	0.55	↓ -0.09	2.09	3.02	↑ 0.93
Manufacturing	14.86	15.47	↑ 0.61	5.41	4.05	↓ -1.36
Other service activities	1.13	1.97	↑ 0.84	1.22	0.78	↓ -0.44
Professional, scientific and technical	0.16	0.25	→ 0.09	4.95	4.04	↓ -0.91
Public administration and defense; comp	11.59	12.03	↑ 0.44	20.23	21.67	↑ 1.44
Transportation and storage	4.69	6.14	↑ 1.45	14.93	13.43	↓ -1.5
Water supply; sewerage, waste management	0.37	0.77	↑ 0.4	0.49	2.2	↑ 1.71
Wholesale and retail trade	10.29	8.21	↓ -2.08	16.02	15.37	↓ -0.65

Table 2.4: Participation in key economic subsectors in atolls and Male', 2016 and 2019

Note: Each cell for a specified year and sector represents the percentage of total employment in atolls and Male'.

40. **In 2019, Maldivians in atolls were participating in a more diverse set of sectors than in 2016, and primary and secondary sector employment had fallen (Table 2.4)**. Fisheries and agriculture was the single largest sector in atolls in 2016, and it also experienced the sharpest reduction in participation during the ensuing years. Participation in construction and in wholesale and retail trade also decreased. In Male', primary and secondary sector employment fell further from already-low levels (Table 2.4).
41. **The changing percentage of wage-earning workers in key sectors sheds light on the evolution of wage jobs in atolls and Male'**. Table 2.5 documents these shifts.

	Atolls			Male'		
	2016	2019	Change	2016	2019	Change
Accommodation and food service activities	84.60	83.78	-0.82	87.13	82.52	-4.61
Activities of households as employers;	53.93	72.16	18.23	93.34	100.00	6.66
Administrative and support service activities	46.69	64.98	18.29	85.26	89.62	4.36
Agriculture, forestry and fishing	22.52	36.58	14.06	50.13	53.57	3.44
Arts, entertainment and recreation	77.98	59.68	-18.30	80.23	68.35	-11.88
Construction	51.90	52.47	0.57	73.32	56.29	-17.04
Education	84.10	87.44	3.34	81.86	88.46	6.60
Electricity, gas, steam and air conditioning	97.53	99.89	2.36	100.00	95.23	-4.77
Financial and insurance activities	100.00	100.00	0.00	100.00	100.00	0.00
Human health and social work activities	98.26	99.30	1.04	100.00	100.00	0.00
Information and communication	89.41	96.09	6.68	100.00	97.65	-2.35
Manufacturing	16.29	17.19	0.90	37.14	23.09	-14.06
Other service activities	87.30	81.44	-5.86	68.00	47.98	-20.02
Professional, scientific and technical	78.06	45.24	-32.82	94.45	80.28	-14.17
Public administration and defense; comp	98.86	98.26	-0.60	100.00	100.00	0.00
Transportation and storage	80.52	77.13	-3.39	90.26	88.17	-2.09
Water supply; sewerage, waste management	90.82	89.25	-1.56	100.00	98.69	-1.31
Wholesale and retail trade	60.28	72.14	11.86	73.18	79.15	5.98

Table 2.5: Share of total wage jobs by subsectors, atolls and Male', 2016 and 2019

Note: Each cell for a specified year and sector represents the percentage of employment taken up by wage workers.

The larger employment-generating sectors—including manufacturing, agriculture and fisheries, trade, and education—all registered growth in the percentage of wage jobs, indicating an equal reduction in self-employment. Several sectors in atolls reported a reduction in employment via wage jobs over the period, but the percentage of individuals working in those sectors was relatively small to begin with.

Summary

42. **The goal of this chapter has been to understand whether Male' and atolls converged in socio-economic outcomes between 2016 and 2019. The results show evidence of such convergence, though substantial gaps persisted**. Relying on indicators that were comparable between the two HIES rounds, the analysis started with monetary and non-monetary indicators closely related to the expenditure aggregate and noted evidence of pro-poor growth. The expansion of public infrastructure in atolls has allowed poorer households (which are overwhelmingly located in

atolls) to improve their access to better sanitary facilities such as sewer connections and piped water. The results on assets and specific asset pairs suggest that poorer households have opted toward purchasing superior assets and have also purchased such items more frequently.

43. **These signals of welfare enhancement were accompanied by an increase in income.** The survey modules on income remained consistent across the 2016 and 2019 rounds, facilitating the comparison. The analysis found evidence of income growth, especially for poorer households, driven by an expansion in the availability of wage jobs for household members, as well as increased incidence of transfer incomes. This implies that non-resident family members also enjoyed better employment prospects. Alongside overall growth in income, the percentage contribution of wage income and remittances to total income increased, while both the incidence of self-employment and its contribution to total income decreased. Considering the evolution of major employment sectors for Male' and atolls separately showed that the major employment-generating sectors in atolls generally showed a higher incidence of wage employment in 2019.
44. **To summarize, atolls experienced greater availability of wage jobs in 2019, in turn allowing households to substitute away from self-employment to wage employment. This has led to an increase in total income, with households also benefiting from a larger flow of remittances**. Higher income and the stability of wage income have allowed households to invest in large durable assets with greater frequency. Cost of living for the poor, especially in Male', has been controlled to an extent, as rental costs for the bottom 40 percent did not change between 2016 and 2019. This has been accompanied by an improvement in housing quality, especially in atolls.
45. **Like the HIES results, findings from Maldives' MPI (Multi-Dimensional Poverty Index) suggest meaningful improvements in atolls, and some convergence with Male', though substantial gaps persist.** The MPI report for Maldives also considered DHS 2009 retrospectively to construct a multi-dimensional poverty index for 2009. This allows an examination of changes over time in the factors that drive the incidence of multi-dimensional poverty in the country. It is estimated that multi-dimensional poverty dropped from 70 percent in 2009 to 28 percent in 2017. Gains in schooling and better access to drinking water, sewer connections, and internet spurred this reduction, with significant improvements in atolls. Thus, two alternate data sources, HIES and DHS, point to an improvement in the quality of life in atolls. While these results are encouraging, Male' and atolls remained separated in 2019 along a variety of monetary and non-monetary indices of welfare and quality of life.

Education holds special promise as an engine for pro-poor development and closing welfare gaps. **The following chapter will explore how well this engine is working in Maldives and how its impact can be enhanced**. Previous discussions showed that a Maldivian household in which no member has tertiary education is more likely to be poor, with worse outcomes if the head has not completed primary education. Chapter 3 will further analyze the correlation between education and employment. Given the links between employment, income, and welfare detailed above, that analysis will open fresh perspectives to advance poverty reduction and shared prosperity in Maldives.

Chapter 3: Education and Employability

1. **Chapter 2 found evidence of pro-poor growth in Maldives between 2016 and 2019**. It documented a widening asset base for the poor and greater availability of jobs in atolls. The analysis showed that wage employment expanded over the period 2016 to 2019 in occupations that are more common in atolls, including primary sector activities such as fisheries and agriculture. As wage jobs have expanded, Maldivians have shifted away from self-employment, suggesting the superiority of wage employment.
2. **Education and experience drive employability and earnings**. Policies to create economic opportunities in atolls could fall short if atolls do not have a qualified work force. The Maldives Systematic Country Diagnostic (World Bank 2021) found that a skills gap exists in Maldives and is exacerbated in atolls. This has led to many youth being unable to access better jobs due to a lack of appropriate skills, while rejecting jobs with lower pay or those perceived to be inferior in relation to their education and aspirations.
3. **The current chapter tracks recent changes in educational attainment in Maldives and explores the implications for poverty reduction and efforts to further reduce welfare gaps between Male' and atolls**. The chapter asks whether economic changes and job growth between 2016 and 2019 have been accompanied by higher educational attainment among Maldivians. It examines evolving linkages between education and employability, shedding light on the complex choices young Maldivians face in weighing higher education versus early entry in the job market. And it explores the differential outcomes of these choices for youth in Male' and atolls—a key concern for public policy.

3A: Changes in Educational Outcomes for Youth

4. **As Maldives transitioned to become South Asia's richest economy in GDP per capita, the country struggled to provide quality higher education opportunities for all its citizens.** Even when Male' started providing updated syllabi for its children, community-based schools in atolls remained largely autonomous, with their own curricula. In the 1990s, the government attempted to standardize disparate course content by establishing the cluster school approach, whereby a government school would act as a hub school for a cluster of community-based schools in relative geographical proximity. Despite such innovations, educational quality lagged, and in the 2000s, the government brought community schools under public control and standardized course content and grade levels as part of its universal education policy. Still, while the supply of standardized secondary and post-secondary education expanded, quality remained elusive, marked by low pass rates at higher grades. Options for tertiary education have been limited historically but have recently started to expand, with campuses of public and private colleges opening their doors in atolls, along with vocational training institutes.
5. **Figure 3.1 shows the highest educational level attained by Maldivians over age 15, by expenditure categories, in 2016 and 2019**. This and subsequent figures categorize educational

outcomes into four broad groups: Below Primary for individuals who never completed primary school, Completed Primary, Completed Secondary, and Completed Tertiary.[11]

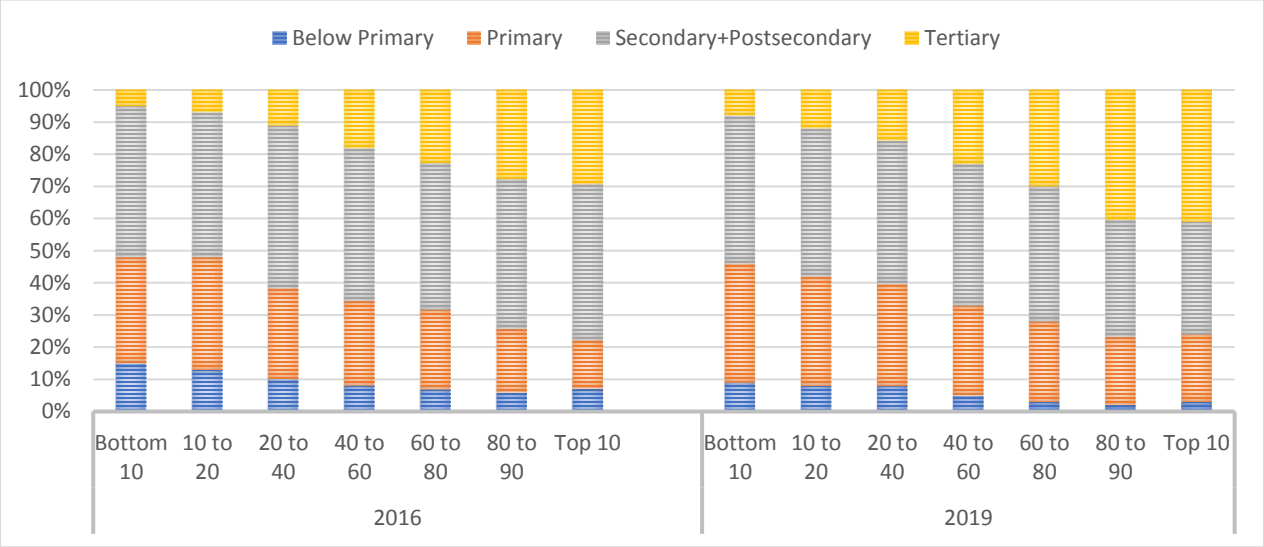

Figure 3.1: Educational attainment in Maldives, persons aged 15+, by expenditure category, 2016 and 2019

6. **As expected, wealth is correlated with higher levels of education. In 2019, people in the richest decile were about five times more likely than those in the poorest decile to enjoy tertiary education. However, between 2016 and 2019, the incidence of tertiary education increased in every category of household expenditure**. Given that opportunities for higher education in the country have become relatively more widespread only recently, one would expect to see the rise in average educational attainment mainly among younger cohorts. Figure 3.2 shows the highest educational level attained by individuals aged 18 to 36 years. Compared to the population of all adults, people in this age group are much more likely to have a secondary degree or above. In 2019, every second young adult from the richest decile had a tertiary degree. The sharpest change in percentage terms lay in the bottom deciles and quintiles, where individuals in 2019 were almost twice as likely to have a tertiary degree as in 2016. Still, more than 2 out of 3 young adults in the poorer 40 percent are educated only up to the secondary/post-secondary level.

[11] To minimize the number of categories, post-Secondary is combined with Secondary attainment.

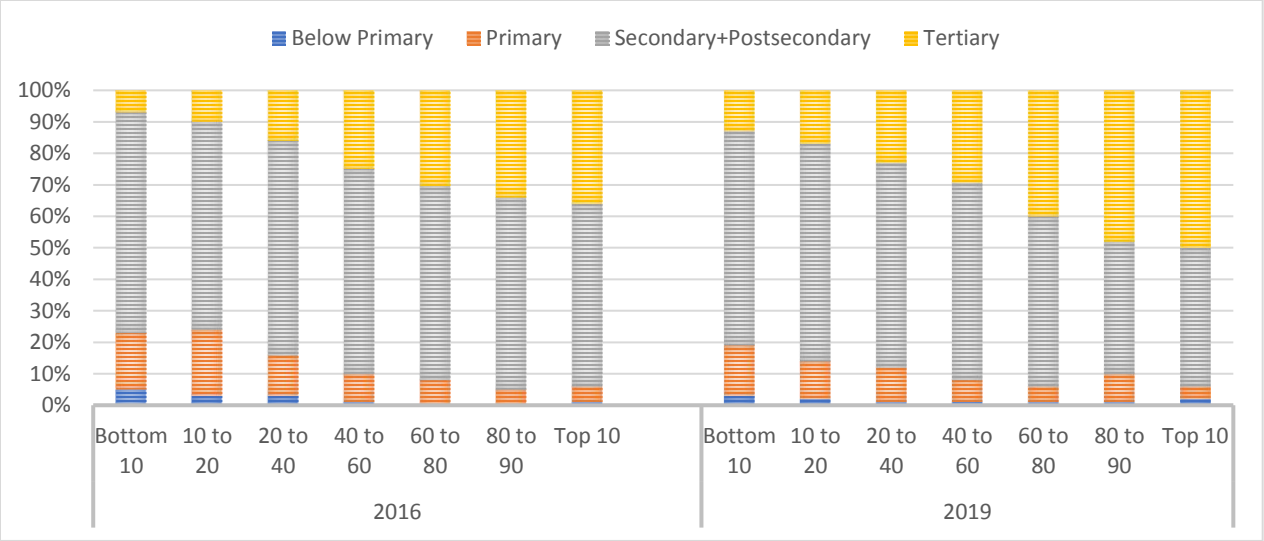

Figure 3.2: Educational attainment, persons aged 18 to 36, by expenditure category, 2016 and 2019

7. **Given the concentration of higher education facilities in Male', a dichotomy in educational attainment is expected between Male' and atolls.** Young adults in Male' across all expenditure categories showed a more decisive progression toward tertiary education, while this shift took place only in the richest decile in atolls. More than a quarter of individuals in the poorest decile in Male' have a tertiary degree, compared to under 10 percent in the poorest decile in atolls. Among households in atolls, only the richest decile has more than 1 in 3 individuals educated with a tertiary degree.
8. **Tertiary education can be divided into vocational diplomas and college degrees, and these qualifications are distributed differently among young adults in atolls and Male' (Figure 3.3).** Diplomas in Maldives are obtained through vocational or foundational courses that are comparatively short in duration. Vocational education has been a policy lever for the government, especially given the challenges of maintaining a brick-and-mortar college campus in atolls and staffing it with qualified faculty. In Male', the richest 60 percent of young adults are almost as likely to opt for degree education as for a diploma. Between 2016 and 2019, Male'-based households became increasingly more likely to opt into college education, rather than diplomas. This has driven the increased incidence of tertiary achievement. Larger shifts toward diploma education are seen among the poorest 20 percent, but the incidence of college education has increased even in this category.

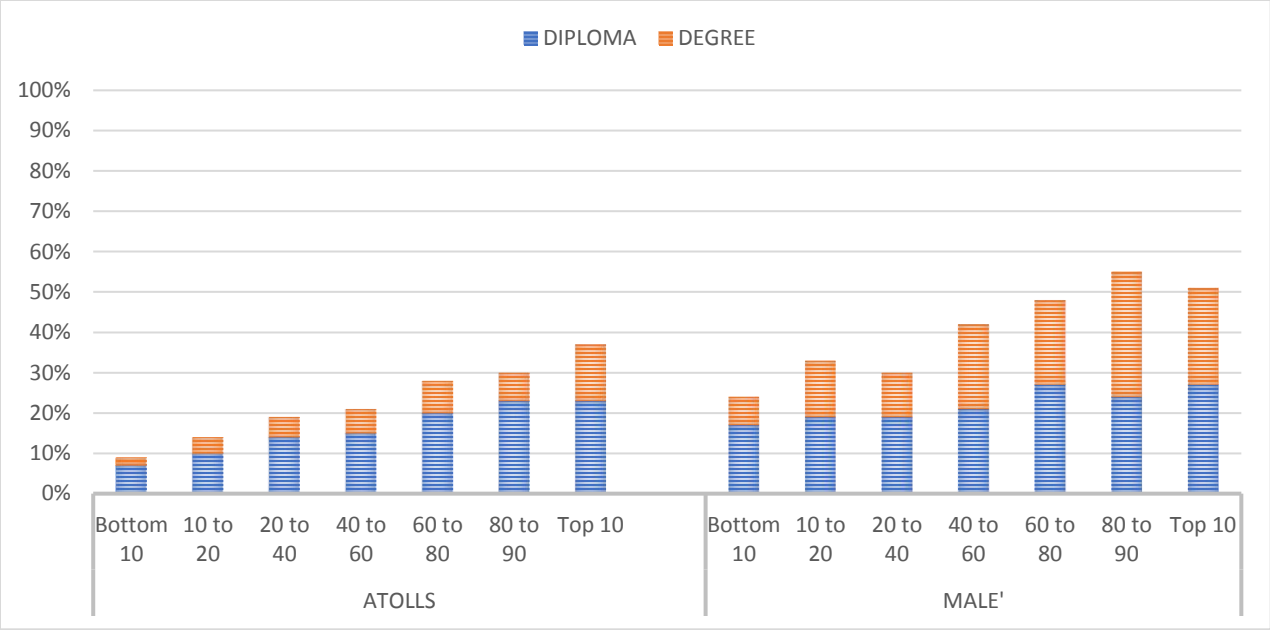

Figure 3.3: Diploma and degree education in atolls and Male', persons aged 18 to 36, by expenditure category, 2019

9. **While atolls lagged Male' in the incidence of both diploma and degree holders among young adults in 2016, the gap had narrowed by 2019 for diploma holders, especially among the richer 40 percent.** Compared to 2016, degree holders were generally twice as common in 2019 across all expenditure categories, although atoll-based individuals were much less likely to have a degree compared to Male'. Shorter diploma courses remain more easily available than degree courses in atolls. Encouraging vocational education in Maldives has allowed young individuals to opt into higher education, but it seems that costs and accessibility remained a challenge in 2019, creating a correlation between tertiary education and wealth levels in both Male' and atolls.
10. **Maldives stands out among its South Asian peers in education for women.** Maldivian women are more likely than men to be educated at secondary levels or above, and this effect strengthens across income categories. In fact, the evidence points to widening gender disparity in the pro-female direction in higher education; even in the richest quintile, the gap between the percentage of women and men with tertiary degrees has widened since 2016 (Figure 3.4). Perhaps the most encouraging implication of Figure 3.4 is that, even among poorer households, women's education is placed at a premium.

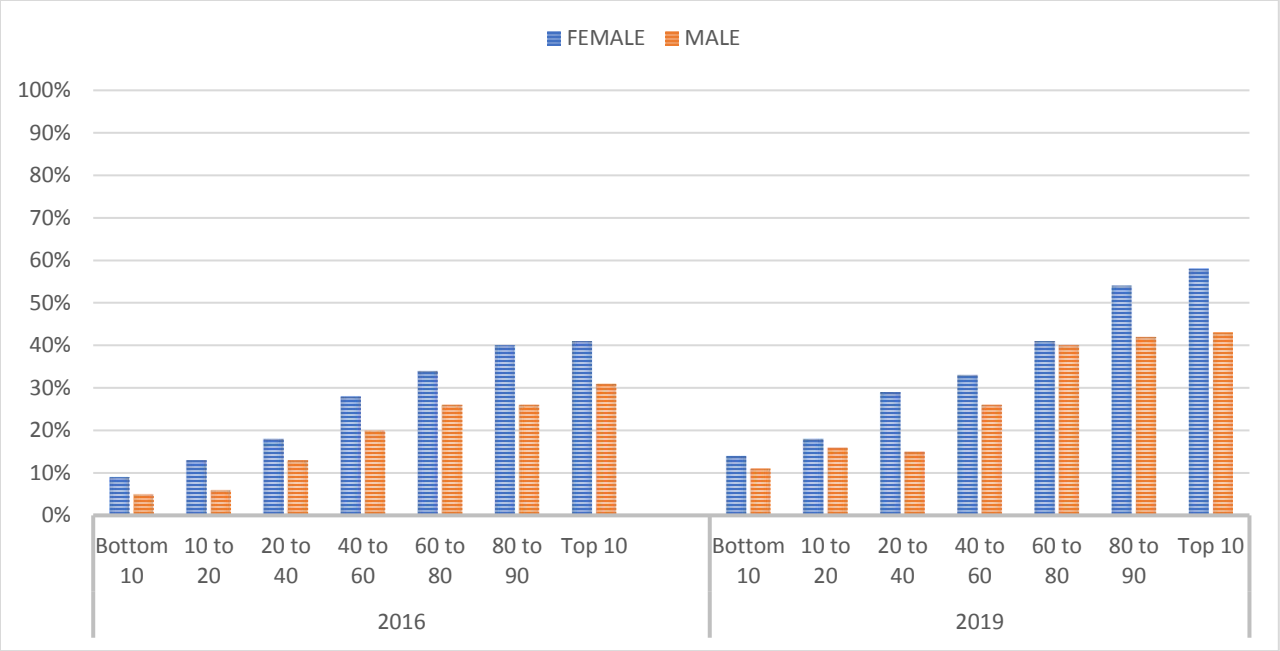

Figure 3.4: Impressive gains in women's education: tertiary education among women and men aged 18-36, by expenditure category, 2016 and 2019

11. **While progress in tertiary education between 2016 and 2019 was significant for poorer households, important shortfalls persist**. In 2019, fewer than 1 in 5 individuals aged 18 to 36 in the bottom decile or quintile had obtained a degree or diploma. About 70 percent of such individuals are educated up to the secondary/post-secondary level. This signals that either the demand for or availability of tertiary education remains constrained for such households.
12. **Having discussed tertiary education, the analysis now turns to younger people of school-going age (ages 6 to 18). The following section describes enrollment patterns in this age group from 2016 to 2019**. The analysis uses administrative data from the Ministry of Education (MoE) to understand how the supply of secondary and post-secondary education has evolved and applies survey data to examine how households have responded to this supply shift.

3B: Educational Outcomes for Children

13. **Educational attainment below the tertiary level is categorized as primary, lower secondary, and higher secondary, corresponding to the broad levels of education in Maldives**. Ideally, children between the ages of 6 and 12 years are expected to attend primary grades 1 to 7, children aged 13 to 15 years attend lower secondary grades 8 to 10, and those 16 and 17 years of age attend higher secondary grades 11 and 12.
14. **As of March 2019, Maldives had 348 functioning schools, of which 310 were in atolls.** Among these 348 schools, 213 were funded by the government, 66 were community schools, and 69 were private schools. The latter types of schools provide pre-primary education predominantly. Of the 135 community/private schools, only five offered any courses at the primary or secondary level, and only one went on to offer higher secondary courses; of the five community/private schools featuring primary or secondary level courses, four were in Male'. For all practical purposes,

government schools are the sole source of education at primary levels or above in Maldives. As of 2019, the country's 214 primary schools had 231 students enrolled on average, the 204 lower-secondary schools had 79 students on average, and 56 higher-secondary schools had 67 students on average. (The same school can offer primary, lower secondary, or all three levels of education.) Student enrolment drops drastically between primary and lower secondary levels, and this drop is observed across Male' and atolls.

15. **MoE statistics show that, in 2019, females made up about 48-49 percent of cohorts in pre-primary and secondary levels.** At the higher secondary levels, the percentage of females in the cohort increases to 55 percent nationally and to 57 percent in atoll-based schools offering higher secondary courses. This corresponds to the earlier observation that, at higher educational levels, cohorts are largely made up of women. This trend has strengthened since 2016.

Primary enrolment has risen, but stagnant secondary enrolments are cause for concern

16. **According to MoE data, enrolment at primary levels increased from 40,201 in 2011 to 49,373 in 2019. At the same time, enrolment in lower secondary fell from 22,788 to 16,167. Enrolment in the higher secondary level also declined, from 4,413 to 3,776** (Figure 3.5)**.** National assessments suggest concerning reasons behind these trends, linked at least in part to stubborn shortfalls in educational quality. In 2008, the average assessment scores of children in grade 7 in English and Mathematics were 29 and 30 (out of 100). The proportion of students successfully graduating from class 10 increased from 26 percent in 2007 to 35 percent in 2010, with girls showing a larger improvement. Still, out of every three students who sat for the class 10 exams, on average only one passed the test. The pass rate for class 12 in 2010 was also low, especially among boys (35 percent), compared to girls (43 percent). Even in 2019, 43.2 percent of students failed to pass grade 7 and were rendered ineligible to pursue lower secondary courses.

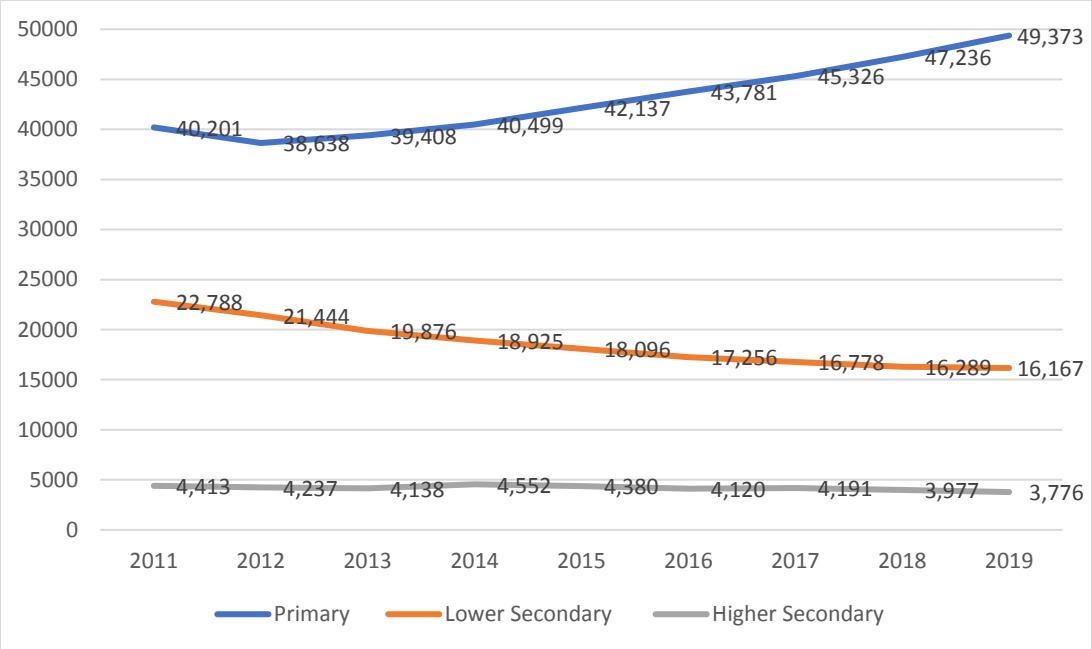

Figure 3.5: Decline in annual enrolments at lower secondary and higher secondary levels, 2011 to 2019

Source: MOE statistics.

17. **An encouraging indicator is that this bottleneck is not driven by a lack of human resources.** Between 2011 and 2019, the total number of teachers in Maldives increased from 7,070 to 10,424. During this period, the MoE was able to substitute away from a mixture of trained expats and untrained Maldivians toward a larger percentage of trained Maldivians working as teachers (Figure 3.6). The Ministry was also able to recruit more teachers for higher secondary levels, with faculty numbers increasing from 360 in 2011 to about 690 in 2019. In fact, it seems that Maldives has a problem of plenty with respect to teachers. In 2019, the national student-teacher ratio for both lower and higher secondary levels was 5:1, half that at primary levels; in atolls, there were three students for every teacher at higher secondary levels.

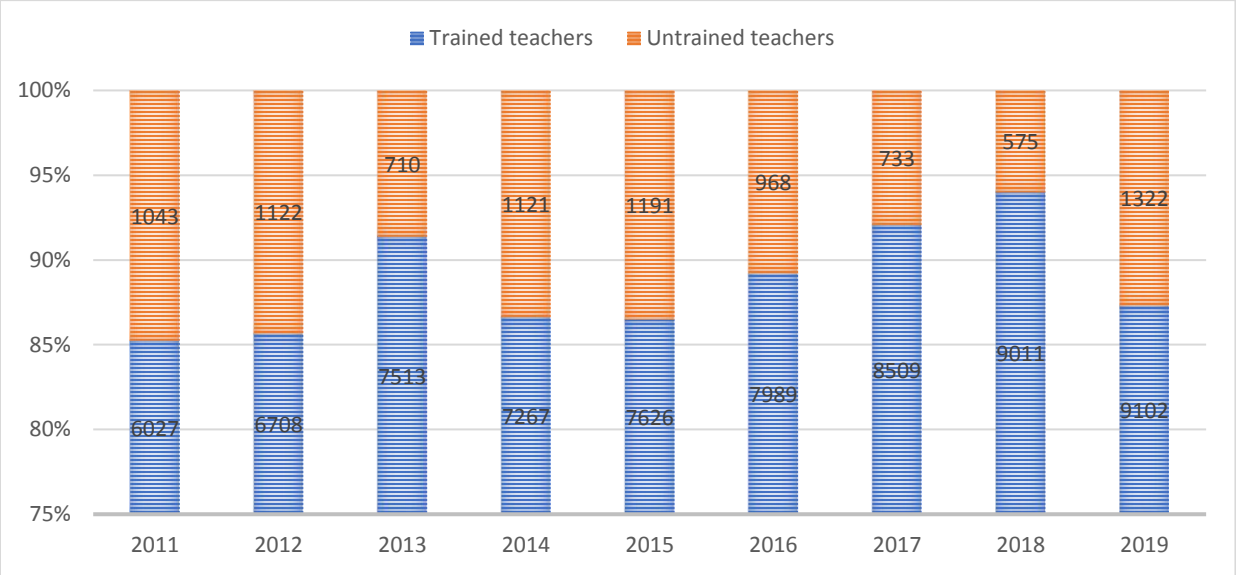

Figure 3.6: Progress in recruiting trained teachers, 2011 to 2019

Source: MOE statistics.

18. **The low ratio of students to teachers and the decline in students enrolled per school suggest that students continue to face challenges in graduating to higher levels.** Of course, a shift in the underlying eligible population may be contributing to decreasing enrolments. The most common indicators to confirm this are the gross and net enrollment rates. The gross enrolment rate (GER) for a grade is the ratio of total enrolment in that grade to the total number of individuals in the age range suitable for the grade. Note that the GER's numerator can include students who are of a different age because they are repeating a year or have enjoyed rare double promotions. The net enrolment rate (NER) accounts for this; while the denominator is the same as the GER, the numerator consists of enrolled students who are in the proper age bracket only. The analysis here considers the GER and NER as provided by the MoE data, as well as that computed from HIES.
19. **Administrative data is prone to overreporting, while survey data can be misleading, in this case due to heaping of age**. Survey respondents may approximate age to the nearest multiple of 5. For example, children aged 9 or 11 may be assigned an age of 10, while children aged 16 may be assigned an age of 15. This would affect the GER and NER for lower and higher secondary in opposite directions. Despite such concerns, the data from administrative and survey sources are

better aligned for 2019 than for 2016. For this reason and to save space, the following analysis considers GER and NER from 2019.

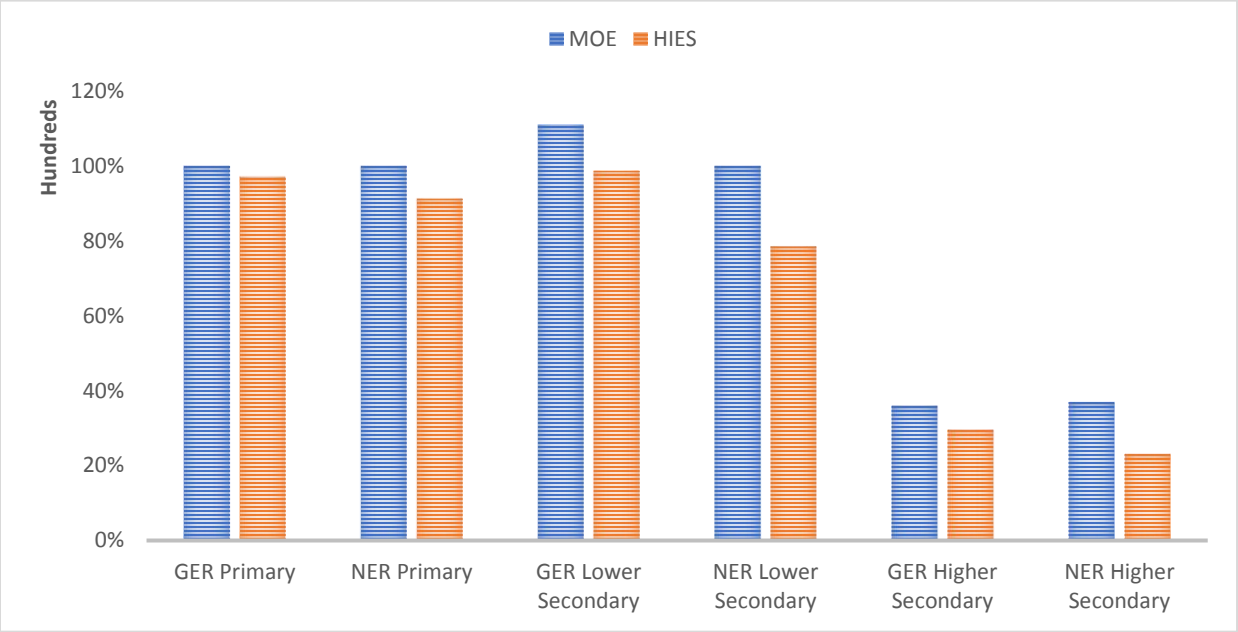

Figure 3.7: Gross and net enrolment rates, three educational levels, 2019

Source: MOE and HIES. Note: GER = gross enrolment rate. NER = net enrolment rate.

20. **In 2019, GERs in primary and lower secondary levels approached 100 percent**. The NER for a given educational level should not be higher than the GER. The expected relationship is seen for each level and each source, except for the NER for higher secondary from MoE data, which is a point higher than the corresponding GER. According to both data sources, in 2019, GERs for both primary and lower secondary levels were close to 100. Although the numbers are not presented in Figure 3.7, HIES shows that the GERs for both primary and lower secondary levels increased from 2016 to 2019.
21. **A particularly encouraging result from HIES is that NERs for both primary and lower secondary levels improved substantially over the three-year period: from 72.2 to 91.2 in primary and from 69.4 to 78.5 in lower secondary. This indicates that, in 2019, students were more successful in graduating from primary into lower secondary grades at the right age**. At these levels, universal education and better quality of education have increased enrolment levels and graduation rates. Although the tables are not presented here, computing GER and NER from HIES shows that atolls have closed the gap with Male' since 2016, helping drive the overall results.

The transition to higher secondary school poses challenges—especially but not only for poorer children

22. **Encouraging findings for primary and lower secondary enrolments contrast with concerning results at the higher secondary level.** While the numbers and trends indicated by administrative and survey data diverge at this level, both indicate a precipitous reduction in GERs between lower and higher secondary grades in 2019. A significant number of students who should be at a higher

secondary level are stuck at the lower secondary level, indicated by the large gap in GER (98.6) and NER (78.5) for lower secondary grades in the 2019 HIES. Low enrolment in higher secondary grades combined with a low graduation rate out of lower secondary classes implies that, in 2019, about 2 out of every 3 children who should be attending higher secondary classes were not doing so.

23. **Higher secondary enrolments are marked by substantial socioeconomic disparities. In 2019, the GER of a household in the richest decile was almost four times that of a household in the poorest decile at the higher secondary level.** Enrolment rates can be recalibrated to the household level to investigate a connection with the household's wealth status. In 2016, wealthier households had a higher percentage of enrolment for both primary and lower secondary levels. But this correlation washes away by 2019, a testament to the provision and uptake of universal education, especially in atolls. However, a strong correlation between enrolment in higher secondary levels and wealth category persisted in 2019 (Figure 3.8).

Year	Bottom 10	10 to 20	20 to 40	40 to 60	60 to 80	80 to 90	Top 10	
2016	26.01	32.03	26.91	49.15	54.9	48.25	42.8	GER HS
2019	11.97	23.07	22.76	16.43	28.58	32.94	51.31	GER HS
	**			***	***			
Levels of significance: *** At 99%; ** At 95%; * At 90% - Category wise weighted regression of GER HS on year								

Figure 3.8: Socioeconomic disparities in enrolments: how higher secondary enrolment rates varied by household expenditure category, 2016 and 2019

Source: HIES 2019 Note: GER HS = Gross enrolment rate for higher secondary school.

24. **In addition to equity concerns, the more troublesome aspect is that the GER in higher secondary fell between 2016 and 2019 for most expenditure categories.** These results persist if we consider atolls and Male' separately, but atolls show a sharper reduction in GER on average across almost all categories of wealth. This indicates issues with access to higher secondary education in atolls. While there are 50 schools in atolls providing higher secondary courses, their distribution is far from proportional to the pipeline of students. For example, both Vaavu and Alif Dhaalu have 0 schools at the higher secondary level. In 2019, Vaavu had 61 lower secondary students, while Alif Dhaalu had 372 students in lower secondary, indicating that upon successful graduation a large cohort from the latter atoll will have to look for higher secondary courses elsewhere. There are four other atolls with one higher secondary level school each, and enrolments at lower secondary levels in these settings range between 330 and 490 students. With limited inter-atoll ferry connections, it is problematic for successful graduates to continue their education in another atoll.

A concerning pattern for the education system and the wider economy

25. **Despite Maldives' impressive recent progress in expanding access to education, shortfalls in upper-level enrolments raise concerns**. Maldives' education system has addressed its earlier challenges with graduating students between primary and lower secondary, while increasing the number of qualified Maldivian teachers. However**,** the precipitous drop in GER and an even smaller NER for the higher secondary level do not bode well for the country's education system

or its economy, especially because these metrics have worsened since 2016. These patterns have two major implications.

26. **First, Maldives is at risk of having idle investments at higher secondary levels, with progressively lower returns, if the education system is not able to produce high-quality students who can graduate from lower secondary levels.** Graduation rates do appear to have improved in 2019 at the lower secondary level, as indicated by the relatively smaller gap in GER and NER. The low student-teacher ratio at higher secondary levels implies that the education system can perhaps redeploy teachers to lower secondary courses without compromising the quality of education to students in higher secondary grades.
27. **The second implication concerns the broader economy.** The pipeline of students graduating into tertiary education will shrink if higher secondary levels are faced with challenges of dropout and low graduation rates. Given the correlation of tertiary education with greater welfare, gains in poverty reduction can stagnate if the country is unable to graduate more students into and out of the tertiary level. The disparity in GER at the higher secondary level by wealth and atolls suggests a problem in accessing higher secondary education that goes beyond the familiar challenges regarding quality. Given that this disparity does not exist for primary and lower secondary levels, it is possible that the poor are less likely to study at the higher secondary level due to high opportunity costs of continuing education. Subsequent stages of the analysis will further clarify this issue.

Transitions in education: understanding young people's choices

28. **The analysis focuses next on youth who should have recently graduated from lower secondary or higher secondary classes and are faced with the choice of either continuing their education or looking for jobs.** Individuals between the ages of 16 and 19 can be divided into two bands of two-year cohorts each. The younger band consists of individuals aged 16 to 17 years and who should ideally be at higher secondary levels, if they continue to be enrolled. The second band, youth aged 18 to 19 years, consists of individuals who should be enrolled in degree education or in diplomas but face a greater opportunity cost in choosing to pursue education rather than joining the labor market. We look at the percentage of enrolment among these two cohorts and the level of education if they continued to be enrolled.
29. **Between 2016 and 2019, the percentage of enrolled 16/17-year-olds dropped from 80.8 percent to 51.6 percent**. For those that were enrolled in 2019, about 95 percent were in lower or higher secondary courses. An additional 3.8 percent were enrolled in tertiary education, essentially diploma courses for young adults coming out of lower secondary. Among 18/19-year-olds, the percentage of current enrolment dropped from 43.7 percent to 27.9 percent. Among those enrolled, the share of individuals in lower or higher secondary courses fell from 90.4 percent in 2016 to 82.6 percent in 2019. Concurrently, the share of this group engaged in tertiary education increased from 6.4 percent to 14.6 percent.
30. **These trends have both positive and negative implications for higher education in Maldives. The increase in enrolment at the tertiary level (and the reduction in enrolment at secondary levels) for 18/19-year-olds is in line with the narrowing gap between GER and NER at higher and lower secondary levels. The bad news is that the pool of young people eligible for graduation into and out of tertiary education is shrinking, due to dropouts.** Given the results in chapter 2, which suggested a wider availability of jobs, this may signal a rational decision where individuals choose to join the labor market instead of continuing education for several more years to complete a

degree. It is expected that jobs in Male' would be more competitive and would thus incentivize completion of degree education. In atolls, jobs have become more widely available but perhaps do not need similarly high levels of qualification, which disincentivizes pursuing education.

31. **To gain a clearer understanding of these dynamics, the following section explores young people's labor force participation**. Indicators on labor force participation can yield insight into whether quitting education has led to a greater incidence of labor supply among young Maldivians.

3C: Labor Force Participation Among Youth: Opportunities and Risks

32. **Between 2016 and 2019, the employment rate for all Maldivian adults aged 16 years and older increased from 54.9 percent to 57.9 percent.** The rate of unemployment remained roughly unchanged at about 3.3 percent in both years. The percentage of the population out of the labor force fell from 41.7 percent to 38.8 percent over the same period. The change was driven primarily by Male', where the employment rate increased from 56.4 percent to 61.4 percent, and unemployment was just above 4 percent. In atolls, the employment rate changed marginally, from 53.7 percent to 54.7 percent, and the unemployment rate remained unchanged at 2.6 percent. When considering these metrics across the categories of household expenditure, the unemployment rate remains low and relatively stable with increasing wealth. The rate of employment increases with wealth, while the rate of non-participation in the labor market falls (Table 3.1).

Year	Bottom 10	10 to 20	20 to 40	40 to 60	60 to 80	80 to 90	Top 10	
2016	44.2	50.08	53.55	54.07	56.72	60.59	59.82	Rate of Employment
	3.31	1.84	3.17	3.42	4.01	3.56	2.92	Rate of Unemployment
	52.49	48.08	43.28	42.52	39.28	35.85	37.27	Rate of Non-Participation
2019	44.68	52.47	53.9	58.82	61	63.09	63.31	Rate of Employment
	3.4	1.94	2.83	5.41	2.78	2.34	1.9	Rate of Unemployment
	51.92	45.59	43.27	35.77	36.23	34.58	34.79	Rate of Non-Participation

Table 3.1: Labor force participation across the wealth distribution, 2016 and 2019

Note: Table shows rates of employment, unemployment, and labor force non-participation for households in the various expenditure categories.

33. **It is useful to analyze rates of labor supply among adults by age cohort.** Here, Maldives' working-age adult population is divided into three cohorts: labor market entrants (ages 16 to 25), young professionals (ages 26 to 36), and older adults (ages 37 to 64). Among the three broad cohorts, young professionals have the largest incidence of labor force participation as well as the highest employment rate. Between 2016 and 2019, the employment rate in this category increased from 65.9 percent to 67.5 percent, along with a marginal change in unemployment from 2.2 percent to

2.7 percent. Older adults experienced a larger change in employment rate in percentage terms, from 60 percent to 62 percent, whereas their unemployment rate essentially stayed unchanged at 1.6 percent. Older adults had very similar employment and unemployment rates in Male' and atolls, but the employment rate for young professionals in Male' is 73.8 percent, compared to 61.7 percent in atolls. The labor force participation metrics for these two cohorts across welfare categories mirror the overall trend in each cohort; richer individuals are more likely to be employed, whereas the incidence of non-participation is higher among poorer individuals. In the poorest decile, about 53 percent of young professionals or older adults are employed. In the richest decile, this share increases to 82 percent for young professionals and 65 percent for older adults. Labor market entrants saw substantial changes in all three metrics of participation. The employment rate among labor market entrants increased from 45.5 percent to 50.4 percent, the largest change in percentage terms, while labor market entrants' unemployment rate increased marginally, from 7.3 percent to 8.5 percent. Additionally, non-participation fell from 47.1 percent in 2016 to 41.2 percent in 2019. This is in line with the previous section, which suggested that the youngest cohorts of working age are opting out of education.

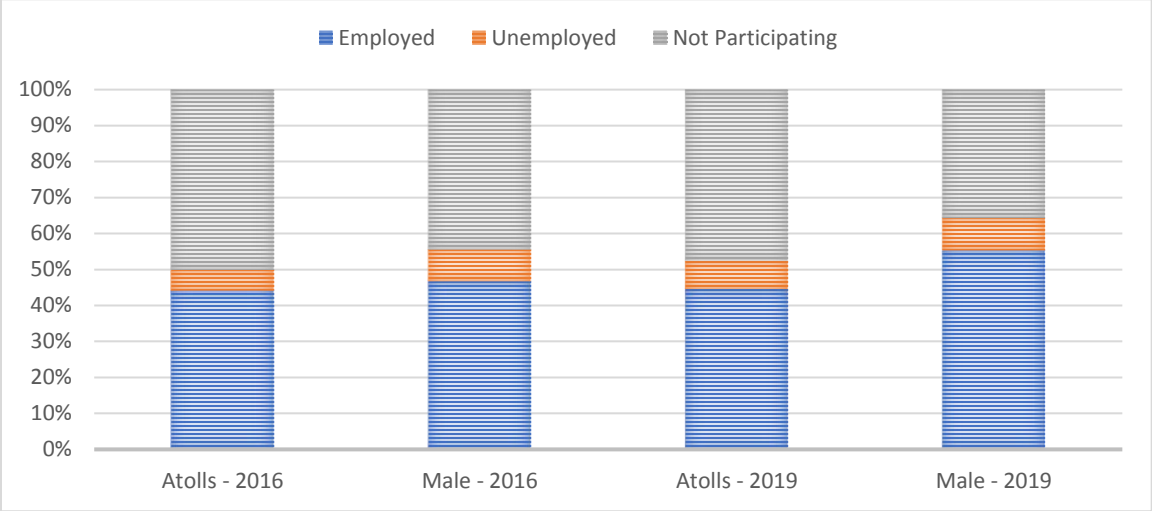

Figure 3.9: Labor force participation among labor market entrants (ages 16 to 25), 2016 and 2019

Labor market entrants faced rising unemployment risks

34. **While the increase in employment among labor market entrants is driven by Male' (46.8 percent in 2016 to 55.3 percent in 2019), the increase in unemployment is driven by atolls (5.7 percent to 7.8 percent).** The reduction in the incidence of non-participation among labor market entrants in atolls (from 50.2 percent to 47.6 percent) has been accompanied by an almost equal increase in the unemployment rate. This is qualitatively opposite to the trend in Male', where a reduction in non-participation has coincided with an increase in the employment rate. We see an echo of this result when examining labor force participation among labor market entrants by welfare levels. While individuals across all categories were more likely to be participating in the labor market in 2019, poorer individuals were more likely to experience unemployment, while richer individuals enjoy a higher employment rate.
35. **The employment rate among labor market entrants in atolls is about 17 percentage points lower than among young professionals and older adults, indicating that the availability of jobs**

in atolls has largely benefitted older cohorts. While we expect that unemployment will be higher among individuals who are seeking jobs but lack experience, the stagnant employment rate among labor market entrants in atolls and the correlation with welfare levels give cause for concern. Earlier portions of this chapter noted that the GER for higher secondary education increased with wealth and that younger cohorts (ages 16-17 and 18-19) in atolls are less likely to stay enrolled in any education. This could indicate the beginning of a vicious cycle in atolls, whereby poorer individuals drop out of school early to participate in the labor market but are unsuccessful, as the market benefits older cohorts. Opting out of education prevents younger cohorts from picking up skills to succeed in the market, thereby worsening their long-term outlook.

36. **Among all adults, labor force participation is considerably higher among men than women, with higher employment and unemployment rates among men.** Between 2016 and 2019, the employment rate for women increased from 39.4 percent to 42.8 percent, while that for men increased from 70.3 percent to 72.7 percent. The employment rate among female young professionals increased from 47.6 percent to 51.2 percent, while that among males remained static at about 89 percent. The change for female labor market entrants is sharper, with the employment rate climbing from 38.6 percent to 45.7 percent, whereas the rate for males increased from 53 percent to 55.4 percent. Women in this cohort are most likely to have benefitted from better higher education, since they are more likely to stay enrolled and have a better graduation rate. Like previous findings, the increase in employment rates for both male and female labor market entrants is driven by Male', while the increase in unemployment rate is particular to atolls.

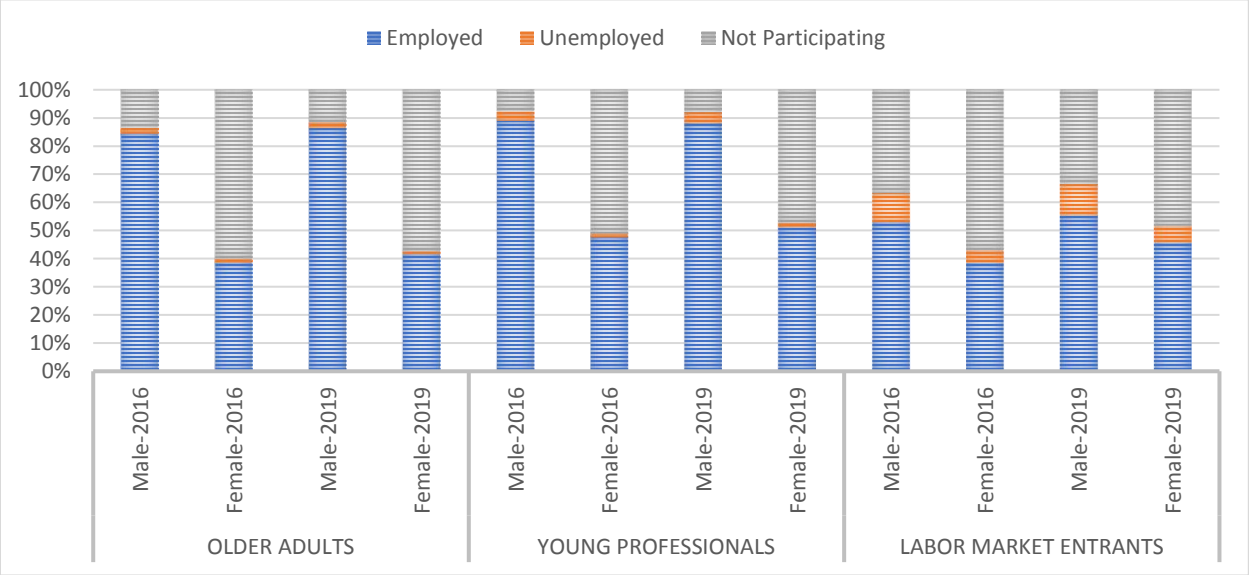

Figure 3.10: Labor force participation by gender across three cohorts, 2016 and 2019

37. **The metrics of labor force participation and enrolment patterns in higher education suggest that youth in atolls are opting out of school and joining the labor market early.** While this is true across the country, these individuals are more likely to secure jobs in Male' and more likely to be unemployed in atolls, despite the rising employment rate for older cohorts in atolls. The gender disparity in labor supply has narrowed, driven mainly by younger females in Male'. Given that any

individual employed in the resort/industrial islands will not be recorded as part of the household, and that a larger number of households in atolls reported a higher incidence of inbound transfers in 2019, labor force participation rates in atolls (and Male') might well be a lower bound of the actual rates that remain unobserved due to the enclave structure of Maldives' economy.

Fewer young Maldivians are citing education as their reason for not participating in labor markets

38. **Both the 2016 and 2019 surveys asked labor force non-participants their reasons for not participating**. The reasons given can be divided into broad categories. The first is education, which includes those who are currently enrolled, intend to enroll, or have received an admission offer and are waiting to start. The second broad category is housework, which includes pregnancy and childbirth, a major reason for non-participation among women. The third category includes individuals who suffer from health issues and disabilities. The fourth category of reasons for non-participation includes "discouraged" individuals, such as those who have previously looked for jobs unsuccessfully or do not think there are good opportunities in their place of residence. The fifth category includes individuals who are not interested in working or earning income, or who are unaware of how to look for jobs; we categorize these individuals as "disinterested." The sixth category includes other reasons.
39. **Among adults who are not participating in the job market, the percentage reporting pursuit of education as the reason fell from 23.2 percent to 16.6 percent between 2016 and 2019.** The percentage of individuals mentioning health issues increased from 20.9 percent to 27 percent, whereas the percentage of individuals choosing non-participation due to housework or disinterest remained roughly similar (about 38 percent and 5.2 percent, respectively). The increase in the incidence of health conditions preventing work is concerning, but further analyses on this is beyond the scope of this report.
40. **The percentage of discouraged individuals almost doubled, from 2.5 percent in 2016 to 4.8 percent in 2019.** Qualitatively, the overall trends described are echoed in Male' and atolls separately. As expected, a higher percentage of individuals in atolls were discouraged in 2019 (6.1 percent compared to 3 percent in Male'), and a lower percentage reported education as their reason for opting out (12.6 percent compared to 22 percent in Male'). Additionally, about 29 percent of adults in atolls mentioned health issues as the main reason for non-participation in 2019, compared to 24 percent in Male'. Similar results emerge when analyzing by gender.
41. **Both older adults and young professionals showed a small reduction in the non-participation rate, along with a small increase in the employment rate**. This pattern holds across gender, Male'/atolls, and even welfare categories. About 30 percent of young professionals do not participate, and among them, 72 percent opt out for housework, and a further 8 percent opt out for health reasons. Among older adults, who have an overall non-participation rate of 36 percent, a third opt out for health, and 46 percent opt out for housework. For both these groups, about 4.3 to 4.8 percent of non-participants were discouraged in 2019, some 3 percentage points higher than in 2016.

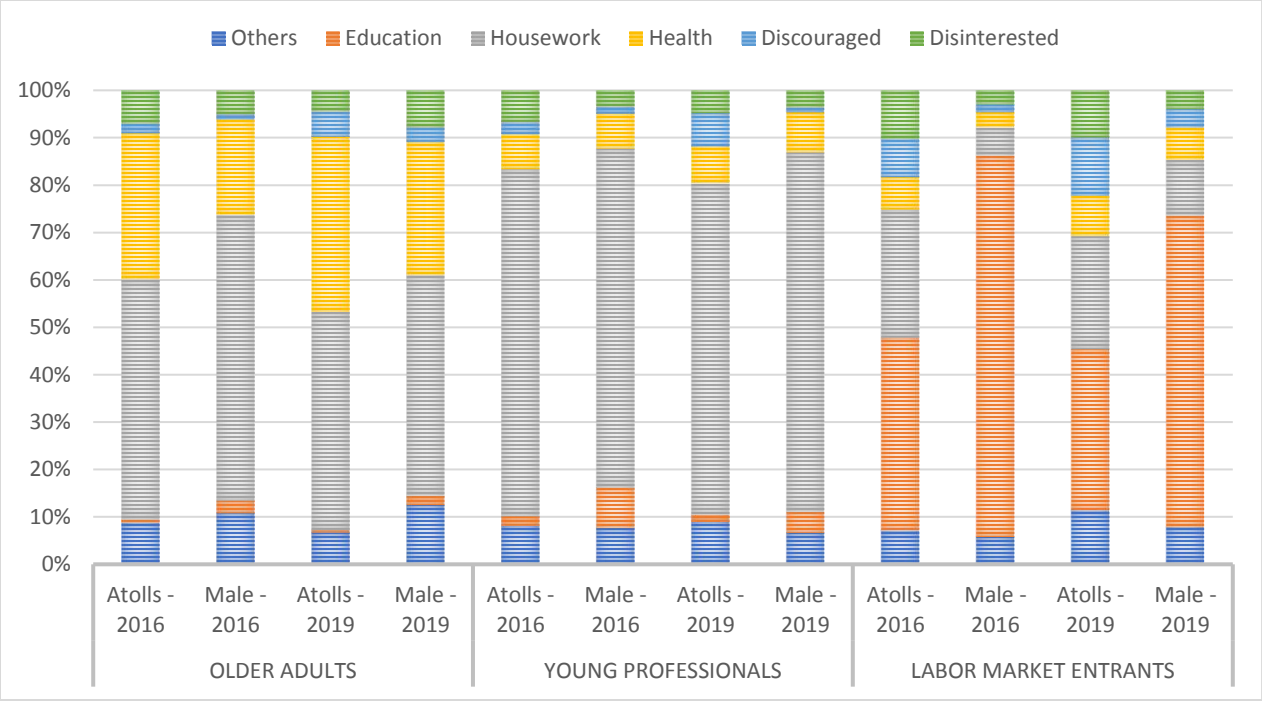

Figure 3.11: Reasons for non-participation in labor markets across three cohorts, atolls and Male', 2016 and 2019

42. **About 41.2 percent of youth aged 16-25 years do not participate in the labor market in 2019, and the importance of education as a reason for non-participation fell from 60.2 percent in 2016 to 48.9 percent in 2019.** This result is sharper in Male', where 65.8 percent stayed out of the labor market for education in 2019, compared to 80.4 percent in 2016. A reduction is also seen in atolls, with the incidence of education as the reason for non-participation falling from 40.7 percent to 34 percent. Furthermore, the proportion of discouraged individuals increased from 4.9 percent to 8.3 percent overall - driven primarily by atolls, where the proportion of discouraged individuals rose from 8.2 percent to 12.2 percent. Male' also experienced an increase in this figure, from 1.6 percent to 3.9 percent, although the incidence among labor market entrants remains low. About 3.9 percent of labor market entrants in Male' are disinterested in working, compared to 9.9 percent in atolls; the percentage of disinterested individuals remained roughly similar in 2016 and 2019. Effectively, about 22 percent of labor market entrants who did not participate in the labor market in atolls were discouraged or disinterested in working, compared to 7.7 percent in Male'. Results based on gender mimic the overall trends qualitatively.

Futures at risk: a youth jobs challenge, especially in atolls

43. **Maldives seems to be facing a challenge in building skills and providing quality wage jobs for youth, even though jobs have become more widespread in atolls and Male'.** While labor force participation increased among labor market entrants in 2019, the gains in employment rate are driven by Male', while the increases in unemployment are driven by atolls. Additionally, the incidence of discouraged individuals is elevated among labor market entrants in atolls. While the stagnant employment rate for labor market entrants in atolls may not be a concern if the overall employment rate continues to improve, the country's pipeline of students entering tertiary education is drying up, due to low enrolment and graduation rates at the higher secondary level.

44. **To further clarify this challenge and the options for response, the following short section marshals additional evidence on the three broad sectors of Maldives' economy**. It assesses how opportunities for jobs and self-employment are evolving in the country and how these trends may relate to the choices young Maldivians face in weighing the costs and benefits of more education. The analysis highlights associations between educational attainment and type of employment, shedding light on how education may influence wage job prospects, particularly in economic sectors of relevance for atoll youth.

3D: Jobs versus Education? Youth in Atolls at a Crossroads

45. **The tertiary or service sector accounts for about 75 percent of Maldivian GDP**. **Thus, returns to education in the service sector, along with the availability of employment opportunities, are likely to be a major determinant in individuals' decisions between pursuing education versus entering the labor market**. The dominance of the service sector as the country's growth engine can be seen in the sectors of engagement among the employed in Maldives. In 2019, 75 percent of employed individuals were in services, an almost 3 percentage point increase from 2016. Concurrently, the contribution of agriculture, fisheries, and other primary activities to total employment fell from 10.1 percent to 8.1 percent, whereas the contribution of the secondary sector stayed roughly unchanged at 17 percent. Qualitatively similar shifts are seen in atolls and Male', but the contribution of the tertiary sector is greater in Male', accounting for close to 90 percent of all employment. Considering the three age cohorts separately, younger cohorts are more likely to be engaged in the tertiary sector. 67.1 percent of employed older adults work in the tertiary sector, and this share increases to 79.2 percent among young professionals and 87 percent among labor market entrants.
46. **The tertiary sector is the economy's wage job engine.** In 2019, about 88 percent of all those who worked in the tertiary sector were engaged as wage workers; about 44 percent of employees in the secondary sector were wage workers. The incidence of wage work among workers in the primary sector also increased sharply over the period, from 25 percent in 2016 to 38 percent in 2019. Given that almost all primary sector employment is atoll-based, this is a source of more jobs in atolls, as discussed in chapter 2.
47. **Figure 3.12 shows the rising incidence of wage employment irrespective of sector and across all age cohorts in atolls.** Concurrent with increased incomes between 2016 and 2019, the incidence of wage jobs in atolls indicates that, when jobs are available, individuals are more likely to opt into jobs rather than self-employment.

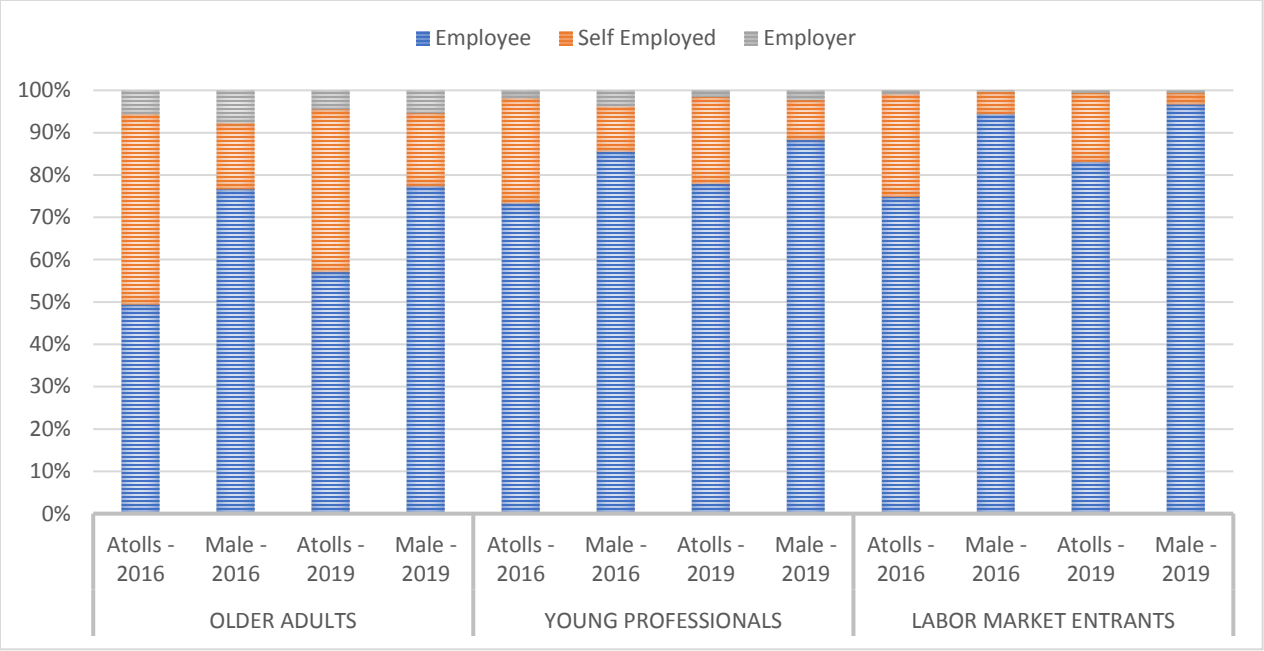

Figure 3.12: Type of employment in Male' and atolls across three cohorts, 2016 and 2019

Education and wage jobs across sectors: opportunities and risks for atoll youth

48. **A simple regression model can be used to examine how the probability of wage work changes with major correlates. The results suggest that, in 2019, tertiary education decreased the likelihood of being wage-employed in the primary sector by over 6 percent.** In fact, education above primary levels is associated with lower participation in the primary sector. We see qualitatively similar but weaker results for the correlation between education and participation in the secondary sector**.** (Details of the regression are presented in annex 3.)
49. **Essentially, this means that continued investment in education reduces the likelihood of securing a job in primary or secondary sectors, although it increases the likelihood of securing a job in the tertiary sector.** It is possible that higher education leads to over-qualification for jobs in both primary and secondary sectors, since the wage offer may be sub-par. Another factor at play could be that the availability of jobs in these sectors in atolls are attracting workers who were earlier self-employed, which leads to the labor market entrants getting crowded out.
50. **The primary and secondary sectors are more predominant in atolls, where the availability of higher education itself remains limited**. Low graduation rates at the higher secondary levels complicate matters further, since they increase the income foregone from another year of education that may also not be completed successfully.
51. **Young people in atolls confront a complex landscape of educational and income-earning opportunities and constraints.** Jobs in the tertiary sector have a strong positive correlation with earned income, while jobs in the secondary sector have a positive but weaker correlation. Younger cohorts earn less, but within each cohort, income rises with age, demonstrating the value of experience. Furthermore, higher education had a significant positive correlation with earned income in 2019. Effectively, income is a function of experience, education, type of employment, and sector of employment.

52. **Putting all this information together reveals a situation in which young people, particularly in atolls, may be opting out of education prematurely to access jobs that do not require higher qualifications, but also offer lower monetary returns**. For jobs in the primary sector, additional education appears to provide few advantages for atoll youth. Indeed, if it leads to perceived over-qualification, more education may be a handicap. Both in terms of individuals' lifetime earnings and of the country's economic dynamism, it would be desirable for many of these young people to forego seeking employment in the short term and invest in additional education. However, poorer households may view this as a luxury they cannot afford.

Summary

53. **The key message of this chapter is that wage jobs are attractive, especially to younger adults; however, the lure of jobs can lead young people to quit formal education too soon.** Ultimately, young people's choice to leave school and seek jobs may result in foregone income, since higher education is associated with higher earnings across all sectors of employment.
54. **This pattern raises policy concerns.** Maldives and especially its atolls saw growth in jobs and employment rates from 2016 to 2019, enabling pro-poor growth in monetary welfare. While these are reasons for optimism about Maldives' labor market and economic trajectory, policy makers may need to hedge against the confluence of factors that prompt young people to opt out of higher education in search of immediate employment.
55. **Maldives' geographical dispersion poses challenges for access to schooling, especially higher education. Technology may help provide solutions**. Building and staffing brick and mortar schools to provide higher secondary classes in all atolls and most administrative islands would be prohibitively costly. Commuting to schools in a hub location is also a challenge, given the time and cost of ferrying students to a central hub in each atoll. Online classes can be an important strategy to partially address these challenges. A key advantage is the high penetration of mobile devices, internet, and electricity connections in Maldives, which allows such content to be widely accessible. The low student-teacher ratio at higher secondary levels is another advantage, as it allows for personalized attention, made even more crucial in a virtual setting. Of course, online courses have a plethora of challenges. The pandemic has forced countries all over the world to adapt to online education, and policy makers could learn from a variety of international initiatives to troubleshoot bottlenecks relevant for Maldives.
56. **A factor unintentionally peeling students off from formal education may be foundational courses, vocational diplomas or informal education.** For example, the Maldives' National Apprenticeship Program was introduced in 2019 and provides on-the-job training for six months, with a monthly stipend of at least 3,000 MVR. The program offers a certificate for the trade in which training was provided, which in turn is accepted by Maldives' TVET (technical and vocational education and training) authority. While applicants need to be at least 18 years old to apply, they are only required to complete lower secondary education for several trades. This disincentivizes formal education at higher grades and could create a glut of semi-skilled workers. It will be important to undertake a tracking survey that follows both applicants and graduates of apprenticeship programs. The data obtained can show whether program applicants have foregone formal education in anticipation of a spot in the apprenticeship program, and whether graduates continue to be employed in good jobs over the medium term.

57. **Instituting a system to counsel students and parents at the lower and higher secondary levels might be a low-cost solution to encourage students to stay enrolled**, especially while the graduation rates are low. This could provide the education system with the time it needs to upskill younger students so that they are successful at higher levels. Utilizing the network of entities providing apprenticeships may be a method to deliver appropriate counselling as well as a degree of oversight if formal education is administered online. Such a hub-and-spokes model of education, combining formal and vocational elements and administered through a network of empaneled entities, may be an approach worth considering, especially since these entities have been empaneled by the Ministry of Higher Education already.

Chapter 4: COVID-19 and Economic Disruption: Protecting Maldives' Welfare Gains

1. **Over the past two years, COVID-19 has posed new risks to welfare across the world, and Maldives is no exception.** The novel coronavirus and the accompanying lockdown measures caused substantial disruptions to economic activity in Maldives. Lockdowns around the country forced businesses to scale back operations and furlough workers; as a result, many Maldivians faced large losses of income. Some groups, such as public sector employees, were insulated from severe income cuts. Other groups, such as the hospitality sector and allied industries, endured larger losses. Often, the hardest-hit groups were the most vulnerable before the pandemic, and those already most tenuously connected to the labor market. The government distributed an income support allowance, but receipt of the allowance was linked to income verification. People in salaried jobs who could prove their loss of income through wage slips found it easier to enroll in the program, while self-employed workers found it harder to validate the amount of earnings lost.[12]
2. **This chapter examines the incidence of income loss associated with COVID-19 for different groups of workers across Maldives and considers the implications of the crisis for Maldives' efforts to further reduce poverty and redress inequalities**. Data from telephone surveys provides insight into the consequences faced by Maldivian workers at three different stages of the pandemic: the end of 2020, after income support allowances were distributed; March-April 2021, when vaccines were first made available and the economy had started to recover, prior to the surge of the COVID-19 Delta variant; and late 2021/early 2022, when the economy started a second recovery after the Delta surge. The data enables an initial assessment of the implications of the pandemic for Maldives' recent gains in reducing poverty and inequality. Several of the groups most affected by the pandemic had relatively higher rates of poverty and vulnerability prior to the pandemic, compared to the national average; these people may have been pushed deeper into poverty.
3. **The main findings of the analysis are that self-employed workers were over three times as likely as wage workers to suffer some form of pandemic-related income loss**, **while women were twice as likely as men to suffer a permanent income loss**. Workers' income losses were also highly dependent on their sector of employment. Location, however, is less predictive once differences in types of jobs and main sectors of employment are accounted for.
4. **The analysis incorporates data from two sources.** The first is the SAR COVID-19 Panel Survey, conducted between December 2020 and February 2021 by the World Bank Poverty Global Practice for South Asia, with advice from the Maldives Bureau of Statistics (MBS). The second is the HIES COVID assessment survey, administered by the MBS in two rounds. The first round was conducted in March and April 2021; the second round was conducted in December 2021 and January 2022. Annex 4 presents technical background on the surveys. The subsequent sections of this chapter summarize their respective results.

[12] Ministry of Economic Development, "The Impact of COVID-19 Pandemic on Employment in the Maldives."

4A: Results from the SAR COVID Survey

5. **This section presents main findings from the SAR COVID Panel Survey**. The survey was administered by phone between December 2020 and February 2021 and included 1,540 respondents, essentially working-age adults, selected through random digit dialing. It yielded insights on the pandemic's differential impacts on employment status and incomes, especially by workers' gender, geographical location (Male' versus atolls), sector of activity, and employment type (wage worker or self-employed).
6. **As of the period December 2020 to February 2021, women in Maldives were likelier than men to have experienced more severe/permanent forms of income loss in the wake of COVID-19.** Men and women faced income shocks at a roughly similar rate across the country: 39.8 percent of men and 32.7 percent of women faced an income shock. But this number does not capture the difference in severity of shocks experienced by the two groups. Figure 4.1 clarifies the gendered differences in impact by showing not only the overall rate of income shocks among men and women, but also the rates of each specific type of income shock[13]. The figure shows that, while men were more likely to experience a reduction in wages or earnings (28.3 percent of men versus 19.5 percent for women), women were twice as likely to stop working (3.4 percent of men versus 6.9 percent of women) and nearly three times as likely to experience a prolonged absence from work (1.8 percent of men versus 5.1 percent of women). Women were also over twice as likely to experience more than one type of shock.

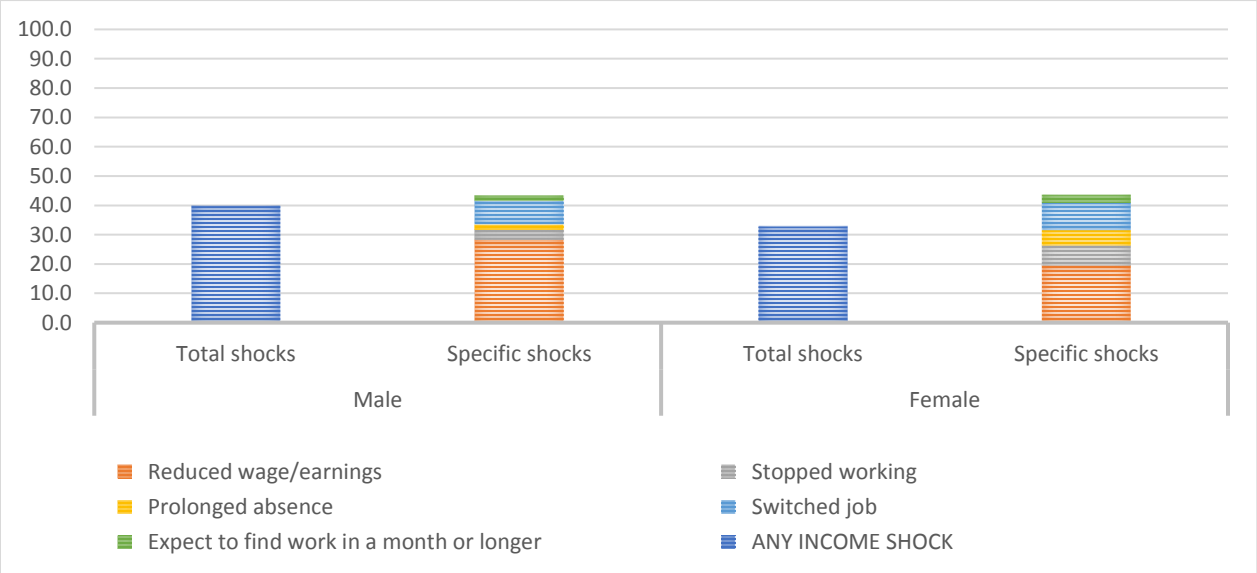

Figure 4.1: Post-COVID-19 income loss channels by gender, February 2021

Source: Authors' calculations based on SAR COVID survey. Note: Multicolored "stacked" bars add up to a higher total because some workers experienced multiple shocks.

7. **These gendered impacts were underpinned by the systematic differences in the types of work that men and women do in Maldives.** In the primary and secondary sectors, there are at least twice as many men as women, while in the services sector, the gender split is more balanced.

[13] The multicolored bars representing individual shock types are taller than the solid purple bars reflecting the overall shock rate, because some people reported multiple shocks.

About 84 percent of all workers in Maldives are employed in the services sector. Figure 4.2 looks at income losses by gender and sector. (Very few women work in agriculture, so data are insufficient to draw conclusions for that subgroup.) The data are presented as in Figure 4.1, with the larger stacked bar reflecting that some people experienced multiple shocks.

8. **Women in manufacturing were badly affected, relative to their male colleagues, while women in services fared better.** Women in manufacturing were as likely to face wage or earnings cuts as men in manufacturing, but the earnings loss for women in the sector was more likely to take the form of a job loss, prolonged absence, or a switch to a job with lower earnings. In services, the distinction was less pronounced but still present: women were more likely than men to stop working (4.7 percent of women versus 3 percent of men) and far more likely to be absent from work (4.2 percent of women versus 1.9 percent of men).

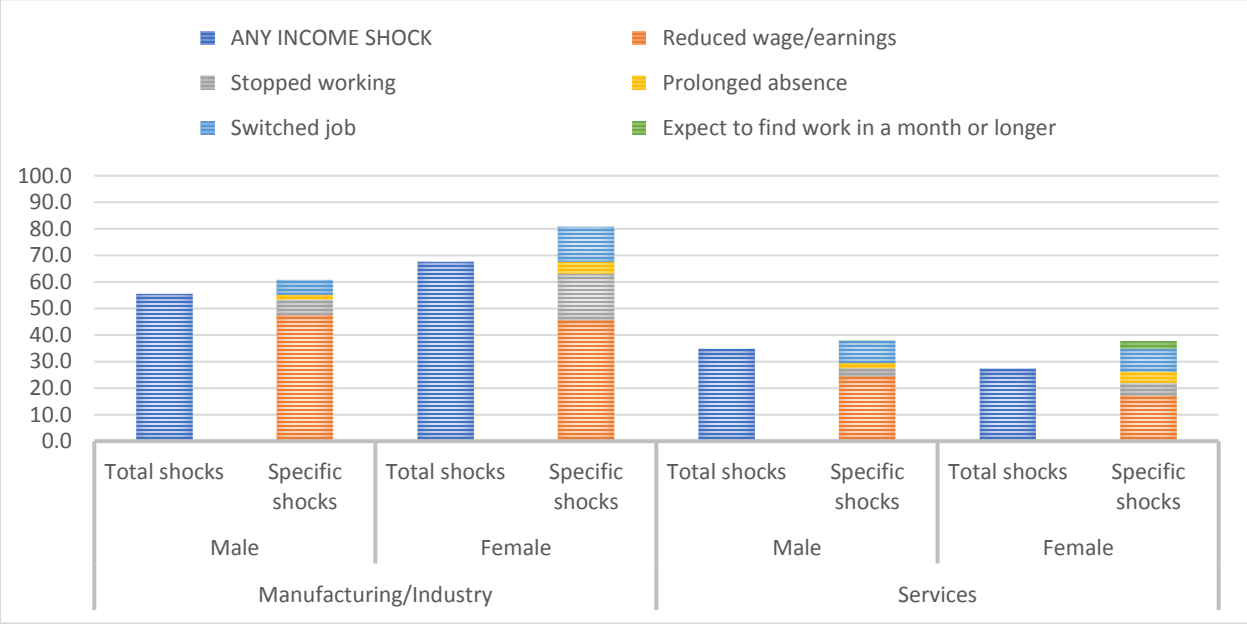

Figure 4.2: Types of COVID-19 income shocks by gender and sector, February 2021

Source: Authors' calculations based on SAR COVID survey. Note: Multicolored "stacked" bars add up to a higher total because some workers experienced multiple shocks.

9. **Using more disaggregated sector definitions,[14] manufacturing continues to show higher income shocks and higher rates of the worst outcomes among women**.[15] Trade, the only sector with an almost equal gender ratio, saw almost no men and very few women stop working. In services, men and women experienced shocks at similar rates and quit work at similar rates, but men were more likely to have a prolonged absence from work. Hospitality, whose workforce is about 75 percent male, had worse outcomes for men across the board, except for reduced earnings. Education was the most female-dominated industry (75 percent of the workforce is female). While men in education were more likely than women to stop working, women were far more

[14] Each category accounts for at least 4 percent of the workforce, and slightly less than half fall into the "other services" category. We do not report trends by gender in construction and agriculture, since these sectors employ very few women. For additional details, see annex 4.

[15] The narrower definition excludes construction, electricity and power, and water supply and waste management.

likely to be temporarily absent. Results for the education and hospitality sectors are presented in Figure 4.3.

Figure 4.3: Types of income shock in the education and hospitality sectors, by gender, February 2021

Source: Authors' calculations based on SAR COVID survey. Note: Multicolored "stacked" bars add up to a higher total because some workers experienced multiple shocks.

10. **Some sectors had a larger gender gap in the incidence of shocks than others**. The difference between the ratio of men and women experiencing shocks can be thought of as a gender gap. Figure 4.4 shows the income shock rates by gender in each sector subgroup.[16] The fishing and manufacturing sectors had high shock rates; manufacturing also had a 10 percentage point gap between men and women. Hospitality was surprisingly (given the nature of the pandemic) less vulnerable than the fishing or manufacturing sectors. Within hospitality, there was only a very small gap between men's and women's shock rates, but because employment in hospitality was about three-quarters male, this had less consequence for women as a group. Education and services had the lowest shock rates, but education had a large gender gap: women in education were more than twice as likely to experience a shock as men. This is especially notable because of how many women were employed in that sector: three-fourths of workers in education are female, and over one-fifth of all women were employed in education.

[16] In this and all subsequent charts, we omit subgroups if they make up less than 2 percent of the population, due to data limitations.

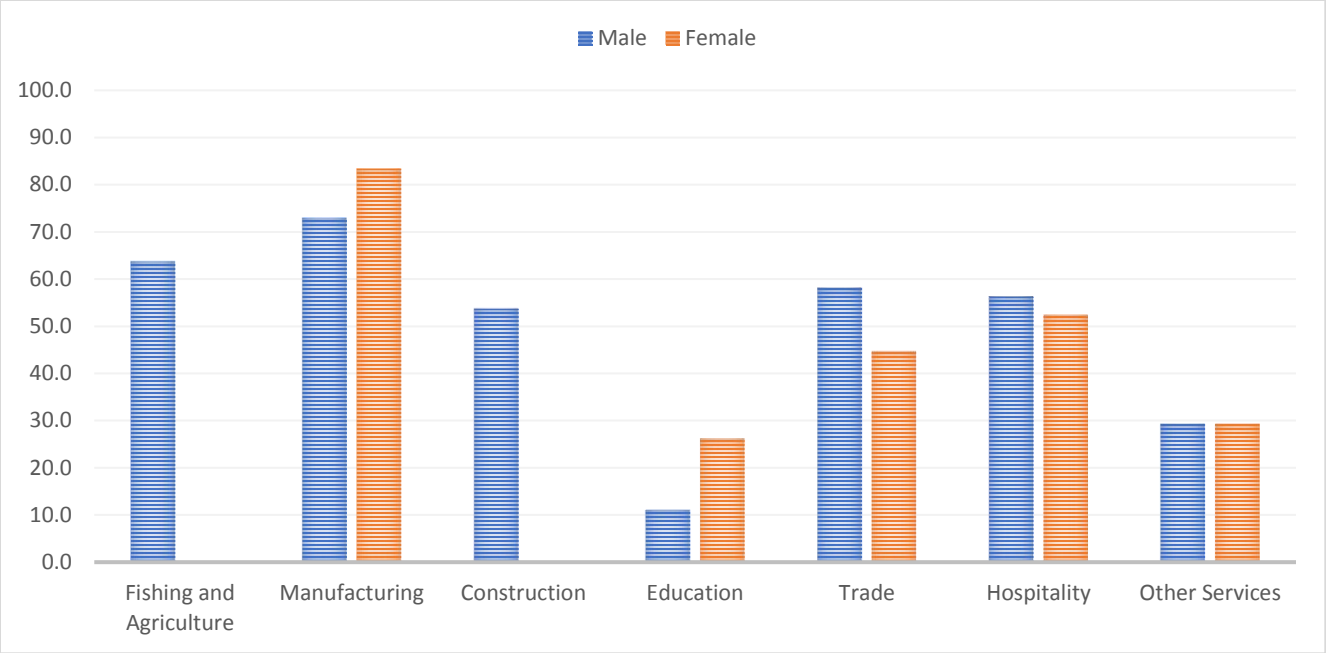

Figure 4.4: Income shock rates by gender and sector, February 2021

Source: Authors' calculations based on SAR COVID survey. Note: Columns indicate percentage of workers in the respective categories reporting some form of income shock.

11. **Age seems to have different effects on worker vulnerability depending on gender**. For women, exposure to an income shock increased as a function of age. Women in their teens and early 20s, who are generally at the beginning of their careers, were the least likely to experience a shock. By contrast, males in the youngest cohort were most likely to face income shocks. This is an especially concerning finding: economic disruptions early in one's career can have long-lasting implications. Small sample sizes among this group limit the ability to disentangle the effects of other factors (such as sector of employment). From HIES, we can infer somewhat more information about this population: young men aged 15 to 19 are 11 percentage points more likely to be self-employed than working men older than 19. Men aged 15 to 19 are also 20 percentage points and 5 percentage points more likely to be engaged in hospitality and fisheries/agriculture, respectively. These are all high-exposure factors, but they are not enough on their own to explain the unusually elevated income-shock rate in young men.

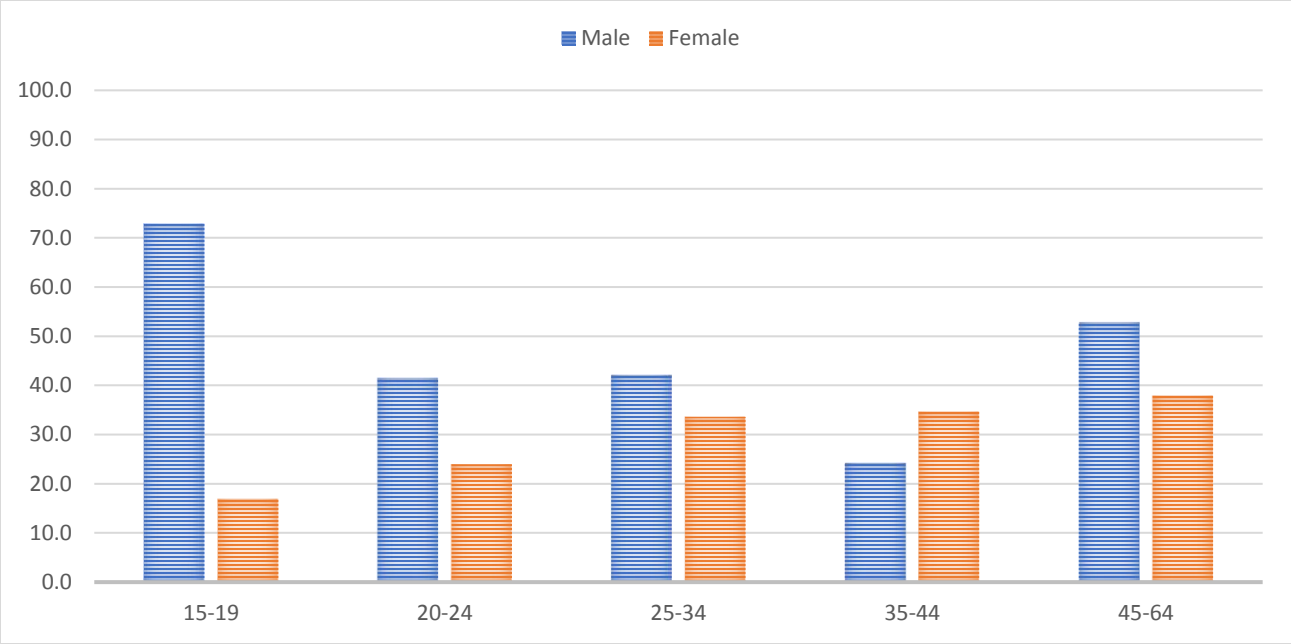

Figure 4.5: Income shocks by age group and gender, February 2021

Source: Authors' calculations based on SAR COVID survey. Note: Horizontal axis indicates age groups in years.

Shock rate differences by geography: atolls suffered the worst effects

12. **Atolls experienced much higher shock rates than did Male'**. The income shock rate for workers in Male' was 27.7 percent, while for workers in atolls it was 45.5 percent. As discussed in chapter 2, the atolls have narrowed the income gap with Male' in recent years. It is worrying that the atolls endured a larger impact from COVID-19. This finding implies that the pandemic may have threatened Maldives' progress in reducing atoll-Male' inequality.
13. **This substantial disparity in income shocks between Male' and atolls is largely explained by the types of work available in these respective areas**. The income shock rate was nearly identical for Male'-based and atoll-based wage workers, at around 20 percent. For self-employed workers, atoll-dwellers had a shock rate of 70 percent, while Male'-dwellers experienced a rate of 54 percent. The majority of Male' residents were wage workers, while in the atolls, workers were more evenly split between self-employment and wage labor. As discussed in detail below, self-employment was the single largest predictor of being exposed to an income shock. Thus, the relative mix of self-employed workers and wage workers can explain much of the difference observed across regions. Two-thirds of Maldives' self-employed workers live in the atolls.

Figure 4.6: Income shock rate by region and worker type, February 2021. Note: wage workers are those workers with a contract and a formal salary; self-workers are all other kinds of work (business owner, informal laborer, etc.)

Source: Authors' calculations based on SAR COVID survey.

14. **Another factor fueling high shock rates in the atolls is the prevalence of manufacturing and fisheries in these areas**. Both sectors had high income shock rates, and they are overwhelmingly located in the atolls; jobs in Male' are almost entirely in services. However, manufacturing in the atolls had a 68 percent shock rate, substantially higher than the rate for manufacturing workers in Male' (41 percent). Services in the atolls also performed worse, with a 39 percent shock rate to Male's 27 percent. But in services, the difference appears to be partly explained by the relative availability of wage employment in Male' versus the atolls.

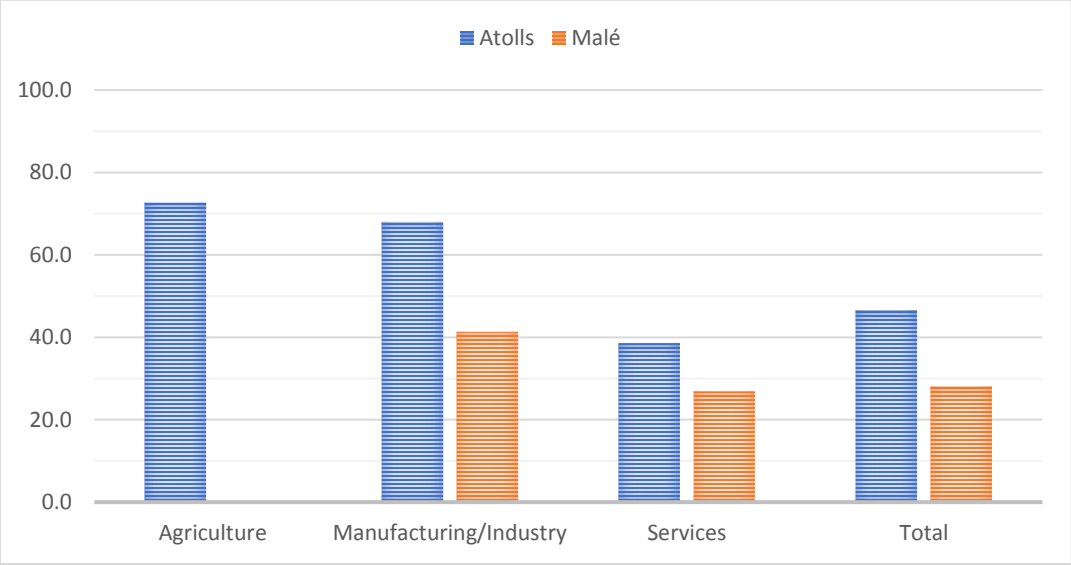

Figure 4.7: Income shocks by sector and region, February 2021

Source: Authors' calculations based on SAR COVID survey.

Key takeaways from the SAR COVID survey

15. **Self-employment was the greatest risk factor for experiencing an income shock**. 64.5 percent of self-employed workers faced an income shock, compared to 20.4 percent of wage workers. Any subgroup that was self-employed had more income shocks than its peers. Within services, self-employed workers had a shock rate three times as high as wage workers. Nearly all wage workers are employed in services, but the low shock rates for wage workers are not explained only by factors internal to the service sector. In manufacturing and industry, the shock rates for self-employed workers are more than twice that of wage workers.[17]

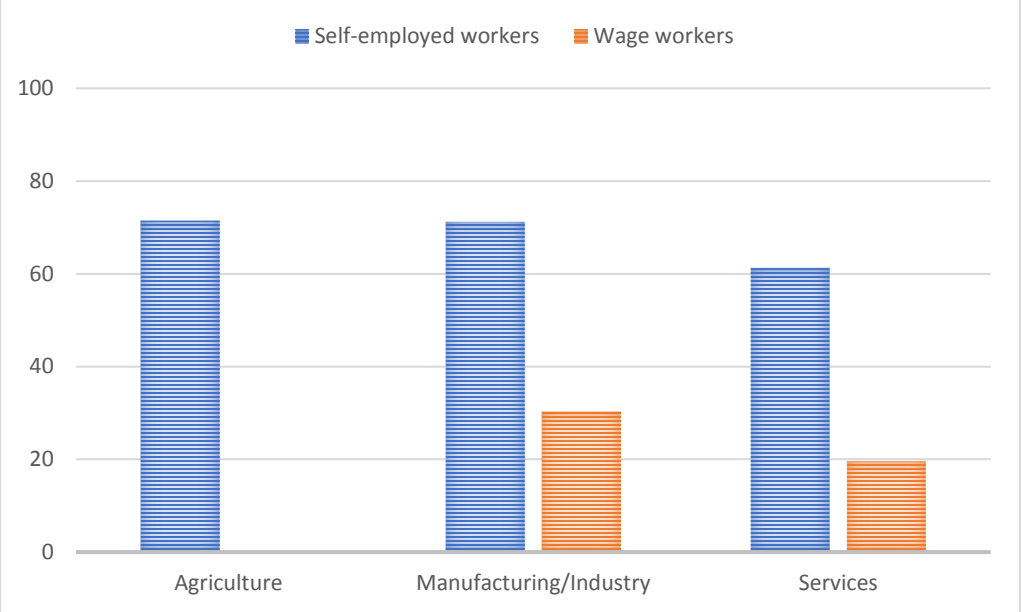

Figure 4.8: Income shocks by worker type and sector, February 2021

Source: Authors' calculations based on SAR COVID survey.

16. **All sectors showed much lower shock rates for wage workers than for the self-employed**. The smallest gap (though still substantial, at 30 percentage points) was in hospitality. Regardless of contract type, hospitality workers could not be insulated from the lost business when resorts shut during lockdowns, for example. Surprisingly, however, hospitality was not the worst-affected industry overall; it was the worst industry for wage workers, but manufacturing was the worst industry both for self-employed workers and overall. Despite the large downturn in international tourism in 2020, hospitality only ranks in the middle range of sectors by income shock rate. Wage workers in the trade sector had the lowest shock rates out of all subgroups. The industry with the lowest shock rates overall was education, which also had the highest ratio of wage to self-employed workers. Education also had a large gap in shock rates between men and women; thus women in education experienced fewer shocks than workers in other sectors, but more shocks than their male peers in education.
17. **Table 4.1 shows all possible interactions of the four factors of sector, gender, location, and worker type associated with COVID-19-related income shocks in the period December 2020 to**

[17] Because so few people are employed in agriculture/fisheries as wage workers, it is impossible to draw reliable conclusions about this group.

February 2021. Some subgroups contained no observations in the sample and thus do not appear. Others appear but have so few observations that we should not attempt to interpret them. Such cells are highlighted in gray.

	Self-employed workers				Wage workers			
	Male		Female		Male		Female	
	Percent of total	Income shock rate	Percent of total	Income shock rate	Percent of total	Income shock rate	Percent of total	Income shock rate
Agriculture								
Atolls	2.4	69.7	0.8	92.6	0.4	46.7	0.2	69.3
Malé	0.6	48.4						
Manufacturing/Industry								
Atolls	3.2	78.8	2.7	85.9	1.6	23	0.5	26.2
Malé	1.5	45.6	0.8	34	1.3	45.6	0.2	0
Services								
Atolls	8	64.9	5.9	61.1	10.7	22.8	9	15
Malé	5.4	57	3.5	59.4	24.2	23.5	17.3	14.2

Table 4.1: COVID-19 income shocks as of February 2021: interactions between sector, gender, location, and worker type

Source: Authors' calculations based on SAR COVID survey.

18. **The key takeaway from this analysis is that self-employment remains the most significant predictor of income disruption**. Almost every possible partition of the data shows that the self-employed subgroup had higher shock rates than the comparable wage subgroup. The only exception is for manufacturing workers in Male', who had a relatively high rate of income shock whether they were self-employed or wage-employed. Women in manufacturing have experienced especially high income shock rates. Although among waged service workers, the atolls and Male' have similar shock rates, both regions have a large gender gap. Among self-employed men working in services, those in Male' had better outcomes than those in atolls. However, being self-employed in services in Male' is associated with higher shocks than being self-employed in the 2 other sectors in Male', although we should note that the size of such employment is small.

4B: Results from the HIES COVID Survey

19. **This section presents results from the HIES COVID phone survey, implemented in two rounds from March-April 2021 and December 2021-January 2022. The analysis focuses on individuals who were working shortly before the onset of the pandemic and examines how their situation had changed by March-April 2021 (just prior to the surge of the COVID-19 Delta variant), and then again in late 2021**. The key variable of interest is the work stoppage rate, which is the percentage of individuals who were working in the seven days prior to the administration of HIES 2019 but not working in the same timeframe prior to the administration of the HIES COVID survey. As discussed below, the results are qualitatively similar to those from the SAR survey. About 1 in

10 individuals who did not work in the seven days preceding HIES 2019 were working during the week before the HIES COVID survey. The present analysis focuses only on the set of individuals who were working prior to the onset of COVID-19 and looks at their work stoppage rate. In HIES, employers are a third category of working individuals. But very few workers (less than 5 percent) are employers. The present analysis focuses only on individuals who are self-employed or earn wages.

HIES COVID Survey: Round 1

20. **Compared to wage workers, work stoppage was almost three times higher among the self-employed, with especially severe impacts on women.** When results are broken down by gender, the gender gap is also worse for the self-employed. Among wage workers, women were 5 percentage points more likely than men to have stopped working. However, women in self-employment were about 15 percentage points more likely to have stopped working than self-employed men. Women were also more likely to take up self-employment than men, and hence women in the workforce were more likely to be in the high-exposure category of labor.

Figure 4.9: Work stoppage by gender and worker type, April 2021

Source: Authors' calculations based on HIES COVID survey.

21. **The sectoral breakdown is similar in the HIES and SAR COVID surveys**. Fishing and agriculture and manufacturing had work stoppage rates 10 and 30 percentage points higher than services, respectively. In services, women were twice as likely as men to stop working. Both men and women in manufacturing had high work stoppage rates, compared to services and fishing and agriculture. About 2 in 3 individuals employed in manufacturing were women; while men had a higher work stoppage rate in manufacturing, the absolute number of women who stopped working was higher.

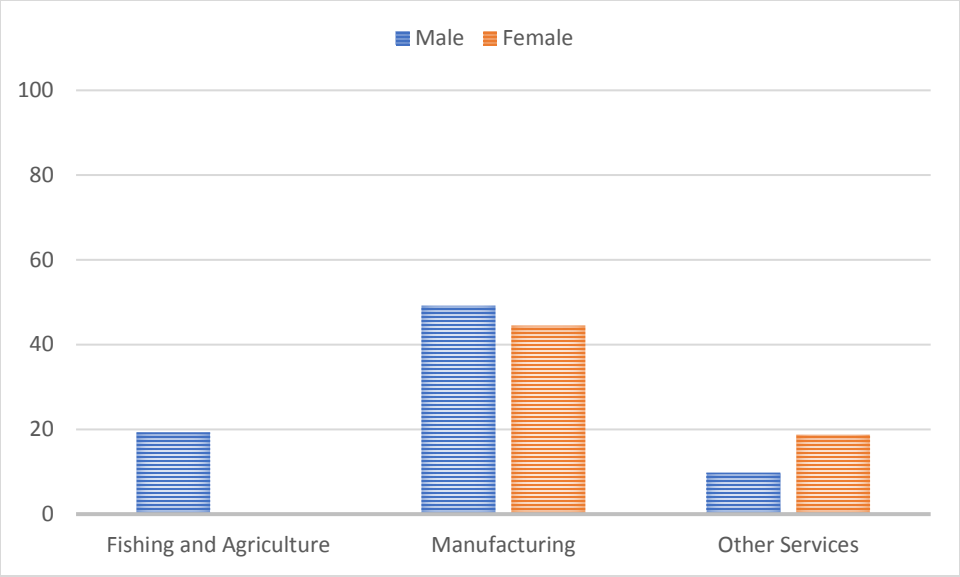

Figure 4.10: Work stoppage by sector and gender, April 2021

Source: Authors' calculations based on HIES COVID survey.

22. **Interactions among all four main variables of interest are difficult to interpret, since most of the subgroups have too few data points**. **Still, self-employment tends to lead to worse outcomes for all groups**, except in fishing, where (male) wage workers do about the same as self-employed workers. Women in manufacturing are almost entirely self-employed and based in atolls. They also had a high work-stoppage rate. Male self-employed service workers in both Male' and atolls stopped working at a rate of about 25 percent; male wage workers, however, stopped work less often in Male' than atolls.

	Self-employed				Wage workers			
	Male'		Atolls		Male'		Atolls	
	Percent of total	Work stoppage rate	Percent of total	Work stoppage rate	Percent of total	Work stoppage rate	Percent of total	Work stoppage rate
Fishing and Agriculture								
Male			3.2	22.4			2.8	19.2
Female			0.8	57.1			0.1	100
Manufacturing								
Male			0.9	37.5	1.5	75	0.7	16.7
Female	1.5	25	5.6	50			0.2	25
Services								
Male	1.9	40	2.3	26.2	24.4	6.3	16.3	10.1
Female	1.9	40	1.9	38.2	16	16.7	13.2	15.7

Table 4.2: COVID-19 work stoppage as of April 2021: interactions between sector, gender, location, and worker type

Source: Authors' calculations based on HIES COVID survey.

23. **Younger adults were most likely to report not working, followed by adults aged 65 or older**. This is similar to the results from the SAR survey, which found high income shock rates for youth. In fact, it should be noted that health concerns could be affecting the decision not to work among the oldest cohort, yet we still see a significantly higher stoppage rate among the youngest cohort. Of note, younger women were more likely not to have worked than their older counterparts, which is qualitatively opposite to the finding from the SAR survey.

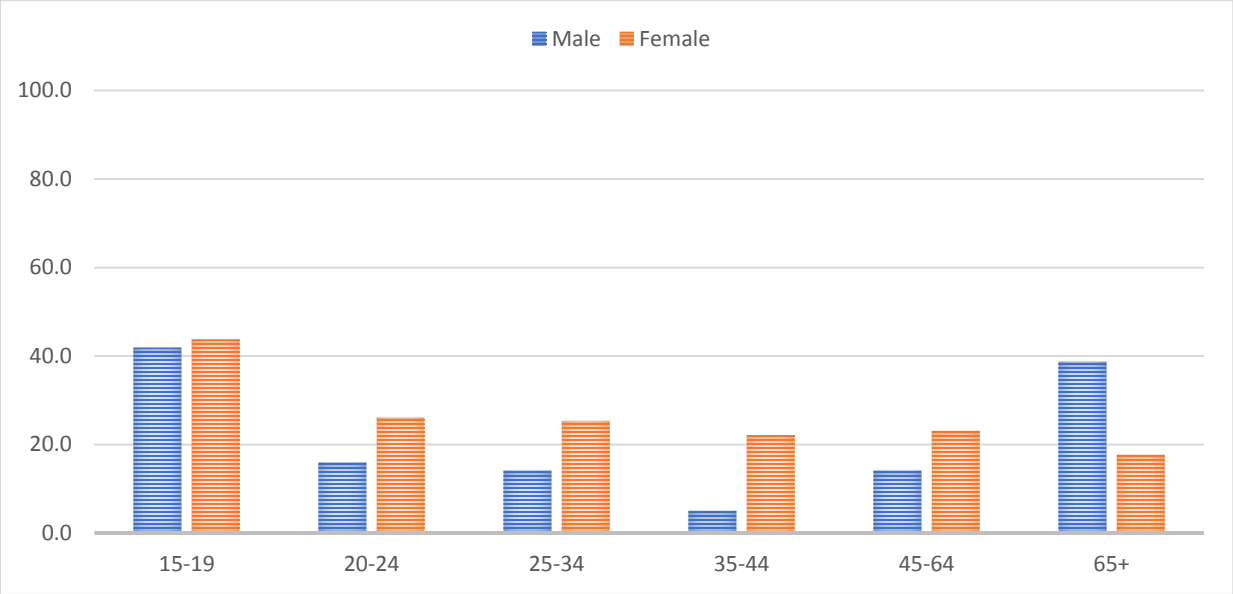

Figure 4.11: Work stoppage rates by age group and gender, April 2021

Source: Authors' calculations based on HIES COVID survey.

HIES COVID Survey: Round 2

24. **Across the entire sample, the work stoppage rate declined slightly from 18 percent in round 1 to 14.5 percent in round 2**. **All sectors saw a decline in work stoppage relative to round 1; manufacturing had the largest decline by far, from 46 to 32 percent.** This sector, however, only makes up 10 percent of the total workforce; services, which is the largest sector, had a smaller decline in work stoppage, which explains why the national level of change is similarly small.

	Fishing and Agriculture		Manufacturing		Other Services	
	Proportion	Work stoppage rate	Proportion	Work stoppage rate	Proportion	Work stoppage rate
Round 1	7.60%	24.30%	10.10%	45.90%	82.40%	13.40%
Round 2		21.70%		31.70%		11.70%

Table 4.3: Change in work stoppage rate in different HIES survey rounds, by sector. April 2021 and December 2021

Source: Authors' calculations based on HIES COVID survey.

25. **Women made up 53 percent of those who experienced a work stoppage.** The work stoppage rate increased slightly for women between round 1 and 2, from 25 percent to 27.6 percent, whereas it declined from 14.4 percent to 12.5 percent among men. The small decline in work stoppage rates among men was driven by the manufacturing sector, whereas work stoppage rates among men in services remained unchanged. Among women, declining work stoppage rates in manufacturing led to a convergence with men. However, women in services saw a large *increase* in work stoppage in round 2. Note that this group of workers is the largest group among female workers. The number of women in fishing and agriculture is too small to draw conclusions from.

	Female		Male	
	Proportion	Work stoppage rate	Proportion	Work stoppage rate
Fishing and Agriculture				
Round 1	1.00%	56.30%	6.70%	20.00%
Round 2		50.00%		23.80%
Manufacturing				
Round 1	7.80%	44.60%	3.30%	52.80%
Round 2		36.40%		37.70%
Other Services				
Round 1	32.00%	18.80%	49.10%	10.80%
Round 2		24.40%		9.10%

Table 4.4: Change in work stoppage rate in different HIES survey rounds, by gender and sector. April 2021 and December 2021

Source: Authors' calculations based on HIES COVID survey.

26. **Self-employed workers experienced a modest 5.5 percentage point decline in work stoppage; they accounted for almost all of the national decline in work stoppage. Among self-employed workers, nearly all the decline comes from men, who halved their work stoppage rate.** Wage workers had a nearly identical work stoppage rate in both rounds. Women of all worker types had a slightly increased work stoppage rate. Employers, though making up a very small portion of the workforce, registered a massive jump in work stoppage.

	Sex					
	Female		Male		Total	
	Proportion	Work stoppage rate	Proportion	Work stoppage rate	Proportion	Work stoppage rate
Worker type						
Self-employed						
Round 1	11.70%	42.10%	8.10%	30.90%	19.80%	37.50%
Round 2		43.70%		15.10%		32.00%
Wage workers						
Round 1	28.90%	17.40%	46.30%	12.10%	75.10%	14.10%
Round 2		20.20%		10.10%		14.00%
Employers						
Round 1	0.30%	50.00%	4.80%	6.60%	5.00%	8.80%
Round 2		75.00%		30.20%		32.50%

Table 4.5: Change in work stoppage rate in different HIES survey rounds, by gender and worker contract type. April 2021 and December 2021

Source: Authors' calculations based on HIES COVID survey.

Summary

27. **Despite differences in methodology, the two surveys analyzed in this chapter suggest qualitatively similar results. The most important predictor of negative economic outcomes during the pandemic was self-employment.** The effect was more pronounced in the SAR survey, where several possible negative labor outcomes were considered, than in HIES, which only looked at short-term work stoppages. The SAR survey was also conducted during late 2020, when domestic and international travel bans were in place, and lockdowns and curfews were relatively more frequent. Self-employment also explains much of the gap in income shocks or work stoppages between atolls and Male', since about half of the workers in atolls are self-employed, while wage workers represent a large majority of workers in Male'. This left the atolls more exposed to negative outcomes in general.
28. **Manufacturing was a vulnerable sector. It is mainly concentrated in the atolls and tends to employ more women than other sectors.** Women in manufacturing were especially vulnerable. Even in this sector, wage workers in the atolls had relatively low shock rates, but they were a minority of manufacturing workers there.
29. **The service sector encompasses many different industries (e.g., education, hospitality, trade, and others), making generalization difficult. However, in every service subsector, self-employment left people more exposed than their wage-employed peers.** A major reason why workers in services were broadly better protected than those in other sectors may be the

predominance of wage employment in the service sector. Most service subsectors had (male-biased) gender gaps.

30. **A key takeaway is that the pandemic has worsened the outlook for groups that were already more vulnerable in Maldives prior to COVID-19.** Chapter 1 showed that, pre-pandemic, the self-employed were twice as likely to be poor as the wage employed. It also discussed that employment in primary or secondary activities such as fishing, manufacturing, and construction was associated with poverty rates about 2 to 3 times higher than employment in services. Thus, the pandemic has exacerbated difficulties for groups that were already comparatively vulnerable in Maldivian society.
31. **The pandemic has had worse effects on labor force participation among women than among men, and this has been a general trend across all sectors, types of employment, and locations.** One of the worst-affected sub-groups is women who are self-employed in manufacturing. Further analyses are needed to track recovery in this key demographic. Both surveys were conducted when the economy had started to recover, but that rebound was tenuous due to limited vaccine supplies and the oncoming surge of the Delta variant.
32. **Going by the partial metric of work stoppage among individuals who were working prior to the pandemic, recovery is incomplete**. National declines in work stoppage have been driven almost entirely by small declines among self-employed men. Women make up more than half of those who have not recovered work to pre-pandemic levels and have faced slower recovery. A detailed discussion of results from the 2 rounds of the HIES COVID survey will be published by the Maldivian Bureau of Statistics later this year.
33. **Finally, the pandemic has probably worsened the outlook for young adults.** Chapter 3 showed that, by 2019, enrollment in higher secondary and tertiary education among youth of eligible age was lower compared to 2016. The younger cohorts, especially in atolls, were more likely to be unemployed and discouraged prior to the pandemic. The above results show that, even among younger Maldivians who were working at the time of HIES 2019, work stoppage rates are considerably higher in early 2021, compared to any other cohort. More information is needed to determine if this phenomenon is temporary. Importantly, these results reinforce the concerns regarding a vicious cycle outlined in Chapter 3; Maldives may be creating a glut of low-skilled youth who face worsening long-term prospects with respect to employability.
34. **These results do not tarnish the remarkable progress Maldives has made in bettering living conditions, especially in atolls. They highlight the importance of sustained action to protect and expand the country's gains**. Policy makers and development actors can encourage investments in human development and growth engines in regional hubs, while improving regional and local connectivity. These efforts hold promise to create a strengthened digital ecosystem that will benefit all stakeholders: for example, by enabling students who live far from a higher secondary school to access educational content, and female small business owners to capture orders from resorts or regional shopping plazas, rewarding entrepreneurship and bringing new opportunities in reach.

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Annex 1: Price adjustments

The cost of living is higher in Male' than in atolls primarily due to rents. The following brief analysis considers the movement of the consumer price index (CPI) on food and beverages over a 26-month period from August 2019 to November 2021. The solid line in Figure A1.1 denotes the trend for Maldives, while the short-dash and long-dash lines denote trends for Male' and atolls, respectively. The national CPI ranged around 101 to 105 in this duration, and the prices in Male' and atolls remained clustered around the national CPI.

Figure A1.1: CPI changes from August 2019 to November 2021 in Maldives, Male', and atolls

Source: National Bureau of Statistics.

Apart from the official CPI, one may also use the HIES to compute price indices for each atoll. We compute a spatial Paasche price index based on the information available from the survey, namely data on food purchases, which allow for the computation of unit values. In case a household does not purchase a particular item, the unit value is imputed from the next-highest entity, which would be (in order): the enumeration area, island, atoll, region, and country. More than 94 percent of unit values across all items are computed or imputed at the level of the household or enumeration area.

Atoll	2019
Male'	1.02
Aliff Aliff	1.02
Aliff Daalu	0.96
Baa	0.94
Daalu	0.98
Faafu	1
Gaafu Aliff	1.06
Gaafu Daalu	1.04
Haa Aliff	0.95
Haa Daalu	0.95
Kaafu	1.02
Laamu	1
Laviyani	0.97
Raa	0.97
Addu	1.02
Shaviyani	0.95
Thaa	1.02
Vaavu	0.97

Table A1.1: Spatial Price Index (based on food items)

Annex 2: Additional analysis supporting the profile of the poor

This analysis considers the correlation of individual-level characteristics with logged annual expenditures in a regression setting. We examine two models, one for all adults and the other for working adults only. In the model including all adults, we consider their respective labor force participation status as a covariate, while in the model with working adults, we include covariates such as type of employment and the broad sector of employment.

	All Adults		Employed Adults Only	
	Coefficient	1 - Level of Significance	Coefficient	1 - Level of Significance
HH Size	-0.0142	0.005	-0.0169	0.002
Dependents (Age<15 OR Age>64)	-0.0460	0.000	-0.0466	0.000
Age of Individual	0.0030	0.000	0.0028	0.000
Gender of Individual	0.0221	0.003	0.0193	0.074
Migration Status of Individual	0.0436	0.002	0.0397	0.012
Rented Dwelling	-0.2474	0.000	-0.2810	0.000
Education – Up to Pre School	-0.1699	0.047	-0.1379	0.005
Education – Up to Primary	-0.1257	0.000	-0.1120	0.000
Education – Up to Lower Secondary	-0.0777	0.000	-0.0562	0.027
Education – Up to Diploma	0.0148	0.513	0.0421	0.134
Education – Up to Degree	0.0864	0.001	0.1100	0.000
Education – Never Attended School	-0.1751	0.000	-0.1331	0.001
Employed	0.0295	0.002		
Unemployed	-0.0564	0.039		
Employer (Provides Jobs to Non-Family Members)			0.1551	0.000
Employed in Self Employment Activity			0.0046	0.792
Employed in Primary Sector (Fishing, Agri, Mining)			-0.0372	0.095
Employed in Secondary Sector (Manufacturing, Construction, etc.)			-0.0041	0.808
Observations	15704		9221	

Notes:
SEs clustered at HH level. R squared exceeds 45% in either specification.
Coefficients on atolls not shown to save space, but the coefficients are always negative and significant.
Major omitted categories: Education – Up to Higher Secondary; Residing in Male'; Not participating in Labor Force (for all adults); Employed in Wage earning job (for employed adults); Employed in Tertiary Sector (for employed adults)

Table A2.1: Correlation of annual per capita expenditure with key covariates

Results suggest that a larger household or a household with larger number of dependents is correlated with lower per capita expenditures. Although rental costs are a component of expenditure, living in rented dwellings is correlated with lower expenditure. Migrant individuals are associated with a higher per capita expenditure. Relative to higher secondary education, lower educational attainments are correlated with lower expenditure, while expenditure increases if the individual completes diploma or degree education. We also note a correlation of expenditure with labor force participation. Among employed adults, being an employer is associated with higher expenditures, and being employed in the primary sector is

correlated with lower expenditures. Effectively, the regression coefficients confirm earlier findings from the poverty profile.

Annex 3: A regression analysis exploring educational attainment and access to wage jobs

This annex presents details on the regression analysis discussed in chapter 3. A simple regression model was used to examine how the probability of working as an employee change with major correlates. We use the entire working-age population that work as wage employees for the initial analysis. As correlates we use atoll level dummies, household attributes such as size, total income per capita, dependency ratio, and individual characteristics such as age, gender, migration status, and others. Finally, we also use individuals' highest educational attainment, broken into categories such as never attended, below primary, primary, secondary, lower secondary, higher secondary, diploma, and degrees. We use a linear probability regression to fit the model and generate the predicted probabilities of being either an employee or self-employed in 2016 and 2019 separately, given the correlate variables.

A problem with the linear probability regression is that its predicted probability estimates may be larger than 1 or smaller than 0. Despite this difficulty, we adopt this model to interpret the direction of correlation and the statistical significance. An easy metric to understand the fit of the model is to examine the error rate. For example, erroneous predictions are made for those individuals who are employees but receive a prediction less than 0.5 or are not employees but receive a prediction greater than 0.5. In the results below, the column "Coef" provides the magnitude and direction of the correlation, while the column "P>t" indicates the reliability of "Coef". As a rule of thumb, if "P>t" is 0.05 or less, we can consider the "Coef" reliable.

2016				2019		
Employee	Coef.	P>t		Employee	Coef.	P>t
HH Size	0.007555	0.008		HH Size	0.009081	0
Dependents	-0.00704	0.204		Dependents	-0.01413	0.004
Log of Per Capita Expenditure	-0.05164	0.001		Log of Per Capita Expenditure	-0.03502	0.034
Age	-0.00512	0		Age	-0.00506	0
Female	-0.12688	0		Female	-0.07818	0
Migrate	0.030022	0.023		Migrate	0.010519	0.393
Can Converse in English	-0.01538	0.517		Can Converse in English	0.012621	0.555
Primary Sector	-0.22524	0		Primary Sector	-0.08206	0.004
Tertiary Sector	0.345712	0		Tertiary Sector	0.363054	0
Below Primary	-0.01076	0.872		Below Primary	0.295044	0.069
Primary	-0.06976	0.008		Primary	-0.07504	0.024
Lower Secondary	-0.01623	0.606		Lower Secondary	-0.02387	0.516
Higher Secondary	-0.00949	0.806		Higher Secondary	-0.00915	0.824
Diploma	0.050336	0.142		Diploma	-0.00972	0.808
Degree	0.089162	0.01		Degree	0.023988	0.535
Error Rate (Predicted as Employee when not OR predicted as Non-employee when Employee: 21.9%				Error Rate (Predicted as Employee when not OR predicted as Non-employee when Employee: 18.1%		

Table A3.1: Correlation between being an employee and key individual characteristics

The direction of correlation is sensible in either year for key variables. For example, the probability of being an employee increases in the tertiary sector and decreases in the primary sector, although we can see that the coefficient on the primary sector is less negative in 2019. This is in line with the increase in the incidence of wage jobs in the primary sector in 2019. Younger individuals in the working-age population are more likely to have jobs, and males are more likely to have jobs. Once again, the coefficient on female is less negative, in line with earlier findings that the incidence of young females with wage jobs increased in 2019. Interestingly, while a migrant was more likely to be an employee in 2016, he/she is not any more or less likely to be so in 2019, other things remaining equal. While the probability of being an employee increases with household size, it decreases if the number of dependents increase; this indicates that when an individual has a greater number of dependents, looking for a job is costly, and he/she opts into self-employment. The coefficients on education suggest a shift between 2016 and 2019**.** In 2016, low educational attainment was associated with a lower probability of being an employee. A tertiary education increased the probability of being an employee, especially if the individual had a degree. In 2019, tertiary education no longer increased the probability of being an employee.

We now check if correlations between wage employment and education in the three broad sectors are different from the overall correlations examined above. To do this, we classify employees into the three broad sectors and consider similar correlation models. We also interact age with cohort (older adults, young professionals, and labor market entrants) to see if there are differential effects of age conditional on belonging to a cohort. Higher education has very different effects on being an employee in each sector. In 2019, tertiary education decreased the likelihood of being wage-employed in the primary sector by over 6 percent. In fact, education above primary levels was associated with lower participation in the primary sector. We see qualitatively similar but weaker results on the correlation between education and participation in the secondary sector. This completely reverses for tertiary sectors. In 2019, a degree education increases the likelihood of being an employee in the tertiary sector by 22 percent; even a higher secondary degree increases the likelihood of employment by 18 percent**.** In contrast, a primary degree or lower reduces the chances of such an engagement in the tertiary sector.

	PRIMARY SECTOR 2019		SECONDARY SECTOR 2019		TERTIARY SECTOR 2019	
EMPLOYEE	Coef.	P>t	Coef.	P>t	Coef.	P>t
Age – Labor market entrants	-0.00113	0.133	-0.00048	0.74	-0.00244	0.339
Age – YP	-0.00089	0.128	2.89E-05	0.976	-0.00395	0.026
Age - Older Adults	-0.00077	0.061	-0.00081	0.219	-0.00367	0.002
Gender	-0.04881	0	-0.07772	0	0.080097	0
Migrate	0.004245	0.329	-0.00728	0.411	0.013154	0.366
Can Converse in English	-0.00838	0.424	-0.00738	0.608	0.062212	0.01
Below Primary	-0.01111	0.843	0.515799	0.034	-0.38669	0
Primary	-0.02769	0.104	-0.01902	0.285	-0.04183	0.259
Lower Secondary	-0.05558	0.002	-0.01048	0.634	0.07472	0.069
Higher Secondary	-0.06894	0	-0.06498	0.008	0.181499	0
Diploma	-0.06568	0	-0.0247	0.277	0.144903	0.001
Degree	-0.0617	0.001	-0.05161	0.022	0.219974	0

Table A3.2: Correlation between being an employee and key individual characteristics across three economic sectors, 2019

Essentially, this means that continued investment in education reduces the likelihood of securing a job in primary or secondary sectors, although it increases the likelihood of securing a job in the tertiary sector. It is possible that higher education leads to over qualification for jobs in both primary and secondary sectors, since the wage offer may be sub-par. Older cohorts who were not as highly educated but worked as self-employed are more likely to win job offers as the type of employment shifts toward wage employment in the primary sector.

However, the correlation between higher education and the probability of being wage employed is only a part of the linkage between welfare and human capital. We have seen that wage income is correlated with higher levels of welfare in chapter 2, but we have also noted that tertiary education is correlated with welfare in chapter 1. We now construct a model to explain individual earnings after controlling for household and individual-level characteristics.

2016				2019		
LOG Annual Earned Income	Coef.	P>t		LOG Annual Earned Income	Coef.	P>t
Log of Other Earned Income	0.135723	0		Log of Other Earned Income	0.019217	0
HH Size	0.014414	0.56		HH Size	-0.00144	0.919
Dependents	-0.02392	0.533		Dependents	0.036615	0.196
Log of Per Capita Expenditure	0.342735	0.011		Log of Per Capita Expenditure	0.316221	0
Age – Labor market entrants	**0.135911**	**0.002**		**Age – Labor market entrants**	**0.147692**	**0.004**
Age – YP	**0.028167**	**0.239**		**Age – YP**	**0.020608**	**0.05**
Age - Older Adults	**-0.01283**	**0.195**		**Age - Older Adults**	**0.000171**	**0.968**
Labor market entrants	**-4.10251**	**0**		**Labor market entrants**	**-3.94575**	**0.001**
YP	**-1.49109**	**0.087**		**YP**	**-0.74083**	**0.039**
Employed Primary	**-0.80385**	**0.225**		**Employed Primary**	**0.19978**	**0.329**
Employed Secondary	**1.07709**	**0.014**		**Employed Secondary**	**0.364446**	**0.033**
Employed Tertiary	**1.084309**	**0.01**		**Employed Tertiary**	**0.454749**	**0.001**
Self Employed Primary	0.621383	0.153		Self Employed Primary	-0.08892	0.623
Self Employed Secondary	-0.57741	0.186		Self Employed Secondary	-1.01576	0
Self Employed Tertiary	-0.35904	0.441		Self Employed Tertiary	-0.45588	0.022
Female	-0.68163	0		Female	-0.46943	0
Migrate	0.121775	0.184		Migrate	0.100211	0.095
Can Converse in English	0.09049	0.478		Can Converse in English	0.229483	0.001
Below Primary	**-0.67255**	**0.274**		**Below Primary**	**0.144733**	**0.809**
Primary	**-0.15327**	**0.39**		**Primary**	**0.099884**	**0.351**
Lower Secondary	**-0.14226**	**0.483**		**Lower Secondary**	**0.103267**	**0.385**
Higher Secondary	**0.049744**	**0.852**		**Higher Secondary**	**0.237295**	**0.219**
Diploma	**0.086065**	**0.699**		**Diploma**	**0.305395**	**0.021**
Degree	**0.187745**	**0.5**		**Degree**	**0.523374**	**0**

Table A3.3: Correlation of annual income with key individual characteristics, type of employment, and sector, 2016 and 2019

Jobs in the tertiary sector have a strong positive correlation with earned income, while jobs in the secondary sector have a weaker correlation, albeit positive. Younger cohorts earn less, but within each cohort, income rises with age demonstrating the value of experience. Furthermore, higher education has

a significant positive correlation with earned income in 2019. Effectively, income is a function of experience, education, type of employment, and sector of employment.

Unfortunately, the probability of selection into jobs in primary and secondary sectors is negatively correlated with higher education, perhaps due to the type of work and remuneration on offer. These sectors are also more predominant in atolls, where the availability of higher education itself stays limited. The low graduation rates at the higher secondary levels make matters worse, since it increases the income foregone from another year of education that is also not completed successfully. This might be creating a low-level equilibrium where individuals are opting out of education too soon to access jobs that do not require higher qualifications, but also offer less monetary returns. The high-level equilibrium is more desirable but requires individuals to forego additional years of income by investing in education. Poorer households may view that as a luxury and opt-out, thereby reinforcing the equilibria.

Annex 4: COVID-19 phone surveys

Overview

The South Asia (SAR) unit of the World Bank's Poverty Global Practice conducted a series of multi-country, multi-topic telephone surveys in late 2020 and early 2021. In all countries including Maldives, random-digit dialing (RDD) was used to scout and interview eligible respondents, who were essentially adults of working age. Respondents were not necessarily the heads of their households. The topics included labor market participation, access to basic services, coping strategies, access to government benefits, and food insecurity. While most of the questions pertained to the household, respondents were asked to answer labor market questions for themselves only.

For the HIES COVID survey, the Maldives Bureau of Statistics (MBS) conducted two rounds of phone surveys in April and December 2021. The sample for these surveys was selected randomly from households who were interviewed for HIES 2019, which created a panel dataset. The HIES COVID dataset refreshes the member roster in each of the phone surveys and probes about work participation in the previous seven days. Along with work participation, this survey also covers topics such as income generation, access to services, and food insecurity.

This report uses only information on work participation from these two surveys. This allows us to highlight the relationship between self-employment and economic insecurity for the purposes of the poverty assessment, while reserving additional survey findings for a later analysis that looks beyond poverty per se.

Additional technical background on the surveys

As noted, the first set of results discussed in chapter 4 stem from the SAR COVID-19 Panel Survey, conducted by the Poverty Global Practice for South Asia, World Bank, with advice from MBS. The survey was administered by phone from December 2020 to February 2021. Respondents were selected through random digit dialing of Maldivian phone numbers. 1,540 respondents were included in the survey. The labor module is made up of individual-level indicators.[18] The survey is representative at the national level,

[18] Note that the modules on safety nets, coping, and food security are household-level questions.

but at the atoll level there are too few responses to make strong inferences. The only spatial distinction examined in chapter 4 is between Male' and the other atolls.

Chapter 4 also draws upon results from the HIES-COVID assessment survey, conducted by the MBS in March and April 2021. This survey was administered to a sub-sample of households that had participated in the HIES 2019. It reached 589 households, which comprised of 3,487 individuals; questions were asked at both the household and individual level. The survey was a relatively short one; among other indicators, it was designed to obtain basic labor market information without causing fatigue. We could identify respondents who were working in the seven days prior to the administration of the survey and compare their responses to the same question on HIES 2019, which then allowed us to create a rate of "work stoppage" for these individuals.

The reference time frame for this survey was different from that of the SAR survey, and it was distributed at a different moment in time, and hence a different stage of the pandemic. The income losses documented by the surveys are not identical: SAR was able to detect people who had been out of work for a long period of time, while HIES could detect people who had been out of work in the preceding seven days. Most importantly, the sampling procedures for the two surveys were different. Despite this, the main findings are relatively consistent, though we cannot construct exactly the same set of indicators from both surveys.

There was 14% attrition from the original sample: of the 589 households who responded to the first round survey, 506 households were successfully polled in the second round. The households that dropped out were not significantly more likely to be Male'-based in HIES-2019, have a female household head, or have different incomes pre-COVID. This assures us that attrition was likely not driven by self-selection.

Timeline of key COVID-19 events in Maldives

The following timeline situates the implementation of the COVID-19 surveys in the broader context of COVID-19 in Maldives:

- First COVID-19 case detected in Maldives (2 imported cases, tourist resort) on 7 March 2020
- State of public health emergency declared on 12 March 2020
- Country borders closed on 27 March 2020
- First case of community transmission confirmed in Male' on 15 April 2020
- A 24-hour lockdown in the Greater Male' Area enforced on 15 April 2020
- Businesses, offices, shops, and restaurants re-opened on 1 July 2020
- Country borders reopened on 15 July 2020; tourist resorts, safari vessels resumed operations
- Guesthouses resumed operations on 15 October 2020
- **SAR COVID survey administered between December 2020 and February 2021**
- Roll-out of vaccines on 1 February 2021
- **HIES COVID rapid assessment (panel data) implemented by MBS in March 2021**
- Lockdown enforced on 26 May 2021 in the Greater Male' area
- Businesses, offices, shops, restaurants, re-opened on 4 July 2021

Sample Characteristics

HIES 2019 was conducted between October 2019 and March 2020 and offers a comprehensive snapshot of Maldivian households in the period leading up to the pandemic. It is representative at the national level

and the atoll level. Thus, we can use HIES 2019 as the baseline for comparing time-invariant demographic features of our samples for both the SAR COVID survey and the HIES COVID rapid assessment. Key results are reported in Table A4.1.

Characteristics	HIES 2019	HIES COVID	SAR
Age (adults only), average	38.7	39.2	38.6
Age (adults only), median	35	37	35
Age group (adults only)			
15-19	9.9%	10.1%	5.2%
20-24	9.8%	9.3%	14.0%
25-39	39.4%	37.1%	39.1%
40-64	33.2%	35.6%	34.3%
65+	7.7%	7.9%	7.4%
Education level completed			
Primary	26.2%	26.3%	21.4%
Secondary	43.79%	45.5%	44.3%
Diploma/certificate	15.2%	16.1%	28.6%*
Degree	10.3%	8.4%	-*
Never attended	4.6%	3.7%	5.7%
Household Size	5.2	5.3	6.4
Percent female	53.5%	54.8%	49.7%
Dependency ratio (total number of dependents / number of working age)	0.53	0.56	1.63
Renters	38.1%	38.3%	43.4%
* The SAR survey did not distinguish tertiary degrees between diplomas and degrees the same way that HIES did. Instead, for this survey, we report the corresponding number for anyone with a post-secondary degree			

Table A0.1: Balance statistics from HIES and SAR COVID surveys

For every variable, all three samples are very close, especially HIES 2019 and HIES COVID. The median age varies by two years, and the distribution of ages is also similar. The proportions of the sample at each level of educational attainment were consistent. The dependency ratio was higher for HIES COVID than HIES 2019, but the average household size was nearly the same; SAR had a slightly larger average household size and a larger dependency ratio. The HIES surveys had a slightly more female-skewed gender ratio, but the difference was modest. The three main economic sectors encompassed the same shares of the working population in all three samples. The share of renters in the country is also similar, around ~40 percent. The share of wage workers was higher in HIES than SAR, but the order of magnitude is similar (~75 percent versus 65 percent)

Variables of Interest

In SAR,[19] our universe of interest is the population of Maldivians who were economically active in 2020. A respondent was "economically active" if they had worked for pay for at least one hour since January 2020 or were in the labor force. The purpose of this definition is to focus the analysis on people who would

[19] HIES includes respondent information from 2019, which can be used to determine which respondents *weren't* working pre-pandemic and were *newly* working in 2020. This allows us to identify groups that entered the labor force during the pandemic, possibly due to economic distress and the need to supplement household income. SAR does not include equivalent information, so we can only use SAR to discuss persons who were part of the labor force pre-pandemic.

likely be working under normal economic conditions had the pandemic not happened. As of March 2020, among the economically active population, we find that:

- 24.6 percent faced a reduction in wages (or in earnings for self-employed workers)
- 8.6 percent switched jobs and were not earning more in the new job
- 4.8 percent were no longer working (had lost their job or voluntarily stopped economic activity)
- 3.2 percent had a prolonged absence from their job
- 2.1 percent had been out of work and didn't expect to find work within a month.

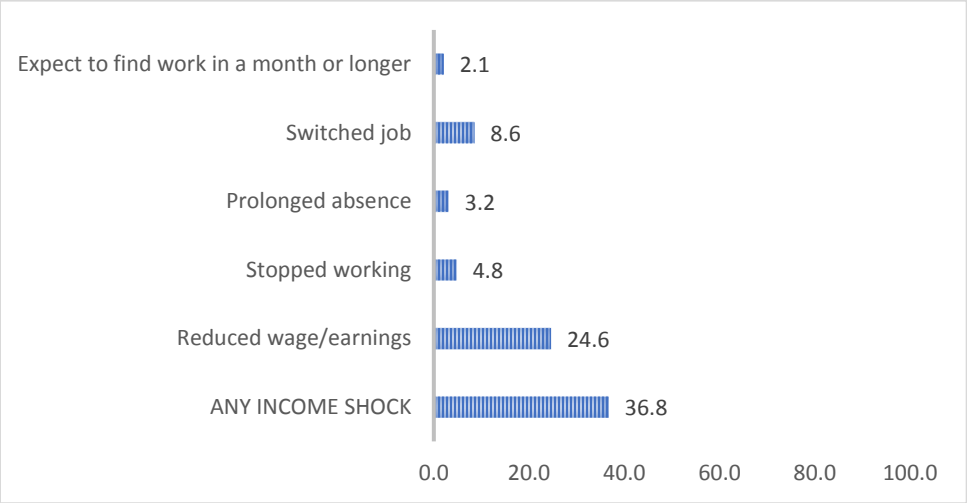

Figure A0.1: Percentage of workers experiencing different forms of income shock, February 2021

Source: Authors' calculations based on SAR COVID survey.

The most common kind of economic disruption was reduced wages/earnings. Other kinds of disruption were relatively uncommon in the entire population. For ease of analysis, therefore, we focus our analysis on the composite variable **income shocks**. For the purposes of the analysis, an "income shock" is defined as having experienced any one of the above forms of economic disruption.

Using this definition, by late 2020/early 2021, about 37 percent of Maldivian workers had experienced some form of economic disruption. This rate varies across sectors, worker contract types, and location, as discussed in detail in chapter 4. The analysis of gender patterns in income shocks revisits multiple types of shocks to explore interesting variations.

Indicators stemming from the HIES COVID survey are constructed to take advantage of the fact that we have data from the same individuals at different points in time. The HIES COVID survey was administered to participants of the last 2019 HIES round. This allows us to treat the HIES results as a panel survey. HIES 2019 recorded which respondents were working or in the labor force. Using this information, we can identify people in the HIES COVID sample who reported working before the pandemic but were no longer working in the week preceding administration of the HIES COVID survey.

For HIES COVID, the main variable of interest is **work stoppage**. As noted, this variable reflects whether the respondent had been working in the seven days prior to the administration of HIES 2019 but was no longer working in the seven days prior to HIES COVID. This covers people who may have had shorter

absences from work because of the most recent lockdown in Male' City. Note that a work stoppage can include cases of being fired/laid off, being temporarily absent, being furloughed, or quitting and dropping out of the labor force. We do not have more information about the nature of the work stoppage experienced by each respondent, so we cannot distinguish between more severe outcomes and more temporary ones. Broadly, however, this variable reveals workforce patterns similar to those observed in the SAR survey.

Subgroups of Interest

The analysis of COVID-19 survey results for this report differentiates workers based on four main criteria: gender, location, sector, and worker contract type**.** Gender is self-explanatory. Location refers to the respondent's geographical location in either Male' or any atoll during the time of the survey. Sector can be defined in two different ways. In the first, broader definition, there are three sectors: fishing and agriculture (also called the primary sector); manufacturing and industry (secondary sector); and all other services, including retail and wholesale trade (tertiary). The second sectoral categorization uses a finer grid for differentiation and includes: fishing and agriculture; manufacturing; construction; education; trade; hospitality; and other services. Finally, contract type describes whether a worker is self-employed or earns wages or salaries.