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Profile and Determinants of the Middle-Income Class in the Philippines

*Jose Ramon G. Albert, Angelo Gabrielle F. Santos,
and Jana Flor V. Vizmanos*



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CONTACT US:

RESEARCH INFORMATION DEPARTMENT
Philippine Institute for Development Studies

18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, Quezon City, Philippines

publications@mail.pids.gov.ph
(+632) 372-1291/(+632) 372-1292

<https://www.pids.gov.ph>

Profile and Determinants of the Middle-Income Class
in the Philippines

Jose Ramon G. Albert
Angelo Gabrielle F. Santos
Jana Flor V. Vizmanos

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Abstract

The middle-income class plays a crucial role in socio-economic development and in achieving long-term aspirations articulated in *Ambisyon 2040*, which envisages a predominantly “middle class” society where no one is poor. However, there is no standard definition for the middle income class that can be used as a tool to monitor progress towards this long-term aspiration. This paper defines the middle-income class as those whose per capita incomes are within two- and twelve- times the (official) poverty line. Descriptive analyses show that the middle income households are largely found in urban areas, that their members who are of working age tend to be employed in stable jobs, and that they place high value on investing on human capital. The determinants of middle-income status are identified using a multinomial logistic model. Results of the empirical estimation are generally consistent with the findings of the descriptive analyses. The paper also provides policy discussions on unintended consequences arising from the growth of the middle-income and on the need for policy action to address the concerns. The study also performs a simulation exercise to assess whether the long-term goal of a predominantly “middle class” society can be achieved using the thresholds for defining the middle-income class.

Keywords: middle-income class, income distribution, economic development, poverty, human capital, inequality, median voter

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Profile and determinants of the middle-income class in the Philippines

Jose Ramon G. Albert, Angelo Gabrielle F. Santos, and Jana Flor V. Vizmanos¹

1. Introduction

By 2022, the Philippines envisions to “graduate” into upper middle-income status, joining Brazil, China, Russia, Malaysia, Thailand, among others. During the late 1970s, the Philippines entered lower middle-income status, and remained so. As of 2016, Philippine per capita GNI (Atlas method) stands at \$3,580, which is slightly below the range for upper middle-income economies (GNI per capita of \$3,956-\$12,235). Meanwhile, China has progressed to lower middle-income status in the late 1990s, and with its unprecedented economic growth since the post-1978 period (Cheremukhin *et al.* 2015), has achieved upper middle-income status in 2010. But to achieve the set goal of becoming upper middle income, the Philippines needs to expand its economy by half, and ensure that more Filipinos accumulate wealth. While macro-economic fundamentals in the Philippines are currently strong and the trajectory of economic performance has been quite robust in the last decade, the country can still achieve more, especially in making economic growth inclusive (Albert *et al.* 2015a).

AmBisyon Natin 2040 embodies the future aspiration of Filipinos – to enjoy a stable and comfortable lifestyle. Such is characterized by having a medium-sized home, having enough earnings to support everyday needs, owning at least one car/vehicle, having the capacity to provide their children college education; and going on local trips for vacation (NEDA 2015). These are the “middle-class” aspirations. The AmBisyon 2040 articulates that the Philippines should be predominantly “middle-class” by 2040, but in order to achieve this vision, it is important for policymakers to monitor the country’s progress in achieving this goal.

Henceforth, in this paper we tend to use the term middle class and middle-income class terms interchangeably, although the term middle class is more general, and may extend to non-monetary aspects such as profession and social values (. The middle class plays a critical role in development. Countries that have a larger share of the middle class tend to grow faster, conditioned on ethnic similarity (Easterly 2001). Even when they comprise large portion of wage employment, those in the middle class also are emerging “new entrepreneurs” (with access to credit) that create employment and productivity growth for the rest of society (Acemoglu & Zilibotti 1997). With better educational attainment and savings, middle class persons are viewed as a source of vital inputs for the entrepreneurial class; with their “middle class values”, they hold critical roles in higher value-added sectors, particularly in services, that require essential technical skills (Doepke & Zilibotti 2005; 2007). Since middle class consumers are willing to pay for better quality products and services, their demands encourage greater investments in production and marketing, and raising general income levels (Murphy, Shleifer & Vishney 1989). The middle class is also considered key to enhancing human capital resource as they make large investments on education and healthcare (Albert *et al.* 2015b). Lastly, the middle class is also crucial to improvements in public services, not only as a major

¹ First author is senior research fellow, second author is research associate/consultant, while third author is research assistant of the Philippine Institute for Development Studies (PIDS). Views expressed are the authors’ own.

source of public money via taxes, but more so as powerful agents of political and social change (Huntington, 1991).

Given the important role of the middle class in various spheres of socio-economic development and in the country's long-term vision, it is crucial to define the middle class. This paper defines the middle-income class and builds on this definition. Section 2 reviews the literature on various definitions of the middle class, vis a vis that used in this study. Section 3 describes the country's income distribution over time from 2006 to 2015, and profiles the middle-income class (relative to other classes) in terms of geographic location, occupation, family composition, asset ownership, and expenditure behavior using data from the merged Family Income and Expenditure Survey and Labor Force Survey (FIES-LFS) 2015 and Form 5 of Census of Population and Housing (CPH) 2010. Section 4 complements the descriptive analysis in the previous section by analyzing the determinants of middle-income status using a multinomial logistic model. Section 5 explores the unintended consequence of a growing middle-income class. Section 6 presents simulation results on the number of years for the lower class of the income distribution to transition to middle class, and assesses empirically whether the long-term goal of a predominantly middle class society can be achieved. And finally, section 7 concludes and discusses policy implications of the study.

2. Review of Related Literature

Just as there is no universally accepted definition of poverty and correspondingly setting of poverty lines (Jolliffe and Prydz 2016), there is also no standard definition for the middle class. Sociologists define the middle class in terms of non-monetary measures, such as level of education, or profession (Birdsall, 2010). In the Philippines, market researchers also cluster households into five socio economic classifications based on the quality of consumers (i.e., employment and educational characteristics of the household), household assets, amenities, and facilities (Bersales *et al.* 2013). Much of the economic literature, on the other hand, uses monetary measures (e.g., income or consumption) to define, the middle class, more specifically, the middle-income class. The rich information sourced from household surveys makes analyzing the behavior and characteristics of the middle-income class convenient.

A distinction can be made about definitions of the middle (income) class in the economic literature as these definitions pertain to the choice of thresholds. Some definitions involve absolute thresholds that have fixed real values over time and space, while others use relative thresholds that increases with average income (or consumption).

In other words, defining the middle-income class in absolute terms uses a specific income (or consumption) range valued at purchasing power parity (PPP) so that the thresholds represent the same purchasing power year after year to allow for inter-temporal comparisons (and cross-country comparisons if the same thresholds are used to compare countries). Banerjee and Duflo (2008), for instance, defined the middle-income as those living between \$2 and \$4 or \$6 and \$10 PPP per day. Ravallion (2009) defined the middle class as those who earn between \$2 and \$13 a day in PPP terms, wherein the lower bound is the median poverty line of 70 national poverty lines, while the upper bound is the poverty line in the United States. A report of the Asian Development Bank uses the same \$2 lower bound but extends the upper bound to \$20 a day in PPP terms (ADB 2010). Meanwhile, Milanovic and Yitzhaki (2002) defined the middle

class as those earning between \$12 and \$50 a day (in 2005 PPP), which are the mean incomes of Brazil and Italy.

Relative definitions of the middle-income class use thresholds based on the average (or median) income. Birdsall *et al.* (2000) defined the middle class as those whose per capita income lies between 75% and 125% of the median per capita income. In the Philippines, this definition covers those earning between the 3rd and 6th deciles. Easterly (2001) defines the middle class as those in the 2nd and 8th deciles, a wider range compared to Birdsall *et al.* (2000) when compared to the Philippine context.

In the Philippine context, Virola *et al.* (2013) defined the middle class by way of a cluster analysis on (per capita) income data sourced from the Family Income and Expenditure Survey (FIES) 2012, conducted by the Philippine Statistics Authority (PSA). Based on this statistical approach, the middle class consists of those with annual per capita incomes (in 2012) ranging from about PHP 64,312 to PHP 787,572.

Albert *et al.* (2015) divided the income distribution into seven income groups, or three broad income classes, including the middle class, based on multiples of the country's official poverty lines (**Table 1**). The middle class pertain to those with annual per capita incomes between two- and fifteen- times the official poverty lines – equivalent to a monthly indicative family income ranging between PHP 15,780 to PHP 118,350 (for a family of 5) in 2012 prices. Households whose annual per capita incomes are below twice the poverty line are called low-income households, while those with incomes more than 15 times the poverty line are called high-income households. Further disaggregation of the income groups is shown in Table 1 below.

Table 1: Indicative range of monthly family incomes (for a family of 5) in 2012

Income Cluster	Definition: Per capita income	Indicative Range of Monthly Family Incomes (for a Family Size of 5 members) in 2012
1. Poor	less than official poverty threshold	Less than PHP 7890 per month
2. Low income (but not poor)	between the poverty line and twice the poverty line	Between PHP 7890 to PHP 15780 per month
3. Lower middle income	between twice the poverty line and four times the poverty line	Between PHP 15780 to PHP 31560 per month
4. Middle middle income	between four times the poverty line and ten times the poverty line	Between PHP 31,560 to PHP 78,900 per month
5. Upper middle income	between ten times the poverty line and fifteen times the poverty line	Between PHP78,900 to PHP 118,350 per month
6. Upper income (but not rich)	between fifteen times the poverty line and twenty times the poverty line	Between PHP118,350 to PHP 157,800
7. Rich	at least equal to twenty times the poverty line	At least PHP 157,800

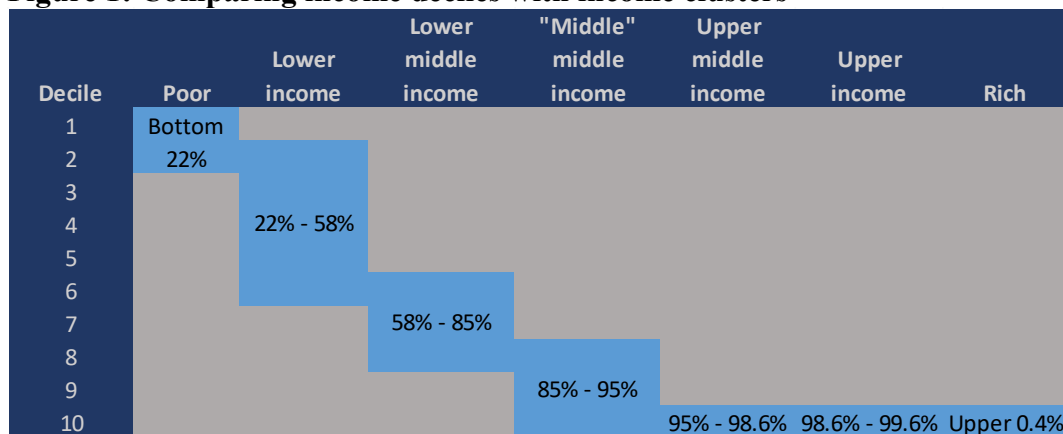
Source: Albert *et al.* (2015)

This range of thresholds for the middle class corresponds to \$3.2 to \$24 per person-day (**Figure 1**). The lower bound multiple (of 2) is justifiable since \$2 (in 1993 PPP), the commonly used threshold of several studies that define the middle class in an absolute sense (e.g., Ravallion 2009; Banerjee and Duflo 2008; ADB 2010), is twice the old international poverty line (of \$1 in 1993 PPP). The upper bound multiple of 15 is a compromise between the upper bounds used by ADB (\$20) and Ravallion (\$13), when referenced to the old international poverty line.

The indicative monthly income range for the middle class for 2015 is PhP 18,200 – PhP 109,200. This middle-income class definition covers families such as (a) those with at least 1 member who is a government worker in SG 7 (Administrative Assistant) - SG 27 Director III level ; (b) those with at least 2 members who are minimum wage earners in NCR; (c) those with at least one member who is a call agent; (d) those with at least 3 members who are minimum wage earners in Bulacan working in non-plantation agriculture.

With the average official poverty lines being estimated to be slightly more than the international poverty lines in 1993, and 2011 PPP prices (Ravallion, Datt and Walle 1991; Joliffe and Pyrdz 2016), the official poverty lines are similarly found to be more than the global poverty line (of \$1.25 in 2004 PPP). Thus, using a \$2 lower threshold for the middle class, as is done in Ravallion (2009) or ADB (2010), may not work well for Philippine data. We can also note that the lower bound for the middle class used in Albert *et al.* (2015) is also about two and a half times the global poverty line of \$1.25 in 2005 PPP. The upper bound threshold for the middle-class definition is noticeable higher than that used by the ADB in 2005 PPP prices (see **Table 2**). Further, in 2015, this entire range for the middle class, as per definition of Albert *et al.* (2015), covers households between the 58th to the 98th income percentiles (see **Figure 1**)

Figure 1: Comparing income deciles with income clusters



Source: Authors' calculations

Table 2: Comparison of middle-income definitions (in US\$ 2005 PPP)

Absolute definition	Middle income
Milanovic and Yitzhaki (2002)	\$12 - \$50
Banerjee and Duflo (2008)	\$2 - \$10
Ravallion (2009)	\$2 - \$13
ADB (2010)	\$2 - \$20
Albert <i>et al.</i> (2015)	\$3.6 - \$24
This discussion paper	\$3.6 - \$19.2

Source: Authors' calculations

With the lower threshold for the middle-class definition of Albert *et al.* (2015) being empirically sensible, but the upper threshold quite high, this study thus slightly revises the thresholds used to group the income distribution into seven clusters, and subsequently define the middle-income class. In particular, the “middle middle” income cluster is revised to pertain to those with per capita income between four- and seven- times the poverty line, the upper middle income as those earning between seven- and twelve- times the poverty line, the upper income but not rich as those earning between twelve- and twenty- times the poverty line, and the rich as those with per capita incomes higher than twenty-times the poverty (**Table 3**). In contrast to Albert *et al.* (2015), which defined the middle class as those earning between two- and fifteen- times the poverty line, this paper tweaks this definition and instead uses the middle class as those with per capita income between two- and twelve- times the poverty line. In 2017, this is equivalent to a monthly indicative income between PhP 19,040 and PhP 114,240. The lower income class comprises those with per capita incomes below twice the poverty line, while the upper income class has per capita incomes in excess of twelve times the poverty line.

Table 3: Indicative range of monthly family incomes (for a family of 5) in 2015 and 2017

Income Cluster	Definition: Per capita income	Indicative Range of Monthly Family Incomes (for a Family Size of 5 members)	
		at 2015 prices	at 2017 prices
1. Poor	less than official poverty threshold	Less than PHP 9,100	Less than PHP 9,520
2. Low income (but not poor)	between the poverty line and twice the poverty line	Between PHP 9,100 to PHP 18,200	Between PHP 9,520 to PHP 19,040
3. Lower middle income	between two- and four- times the poverty line	Between PHP 18,200 to PHP 36,400	Between PHP 19,040 to PHP 38,080
4. Middle middle income class	between four- and seven- times the poverty line	Between PHP 36,400 to PHP 63,700	Between PHP 38,080 to PHP 66,640
5. Upper middle income	between seven- and twelve- times the poverty line	Between PHP 63,700 to PHP 109,200	Between PHP 66,640 to PHP 114,240

6. Upper income (but not rich)	between twelve- and twenty times the poverty line	Between PHP 109,200 to PHP 182,000	Between PHP 114,240 to PHP 190,400
7. Rich	at least equal to twenty times the poverty line	At least PHP 182,000	At least PHP 190,400

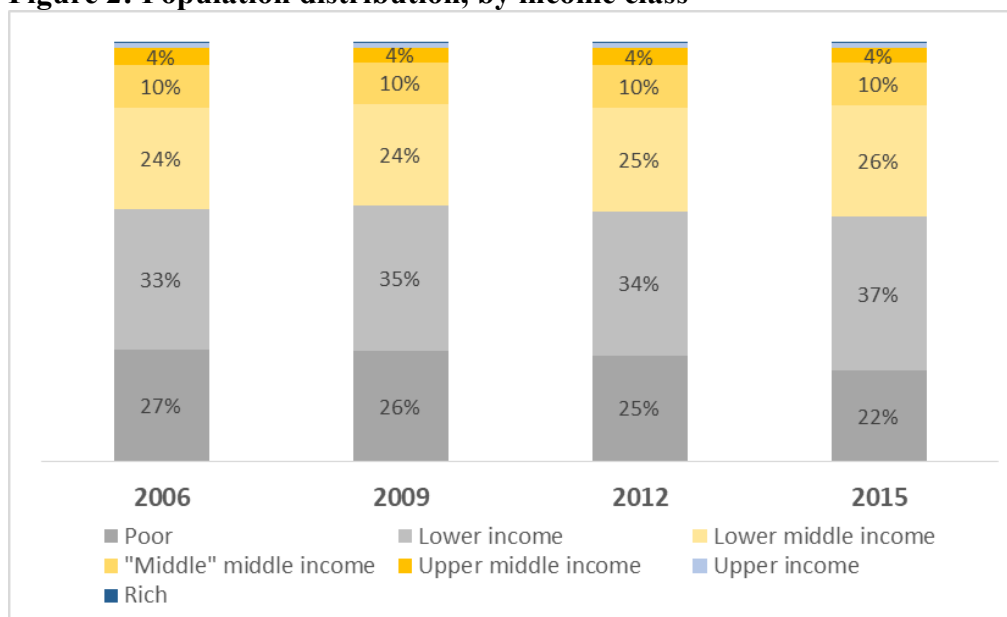
Source: Authors' calculations

3. Profile of the Middle Class

Making use of the slightly revised definition of the middle class based on Albert *et al.* (2015), we observe that a large proportion of Filipinos belong to the middle class in 2015. Close to 40% of the entire population (See **Annex 1, Table 4**) belong to the middle-income class. But a majority (58%) proportion of the Philippine population still belongs to the low-income class. Since the low-income class tend to have larger families, they cover a much larger share of the population. Looking at shares at the household level, the low-income class constitutes a smaller share (compared to share to population) of 53% while the middle-income class constitutes a bigger share of 45%. Likewise, the upper income has a larger share at the household level (2.1%) than at the population level (1.4%). .

Trends show a growing size of the middle income over time. From 2006 – 2015, the share of the middle-income households grew by 2.6 ppts as low-income households transition specifically to lower middle income status (**Figure 2**). Share of the “middle” middle income households grew only by 0.4 ppts while the share of the upper middle-income households declined by 0.2 ppts. In terms of magnitude, the middle income also grew the fastest at an annualized rate close to 3%, while low income and high income grew at a rate less than 2%. Among the income clusters, lower middle income grew the fastest at an annualized rate of 3.3%.

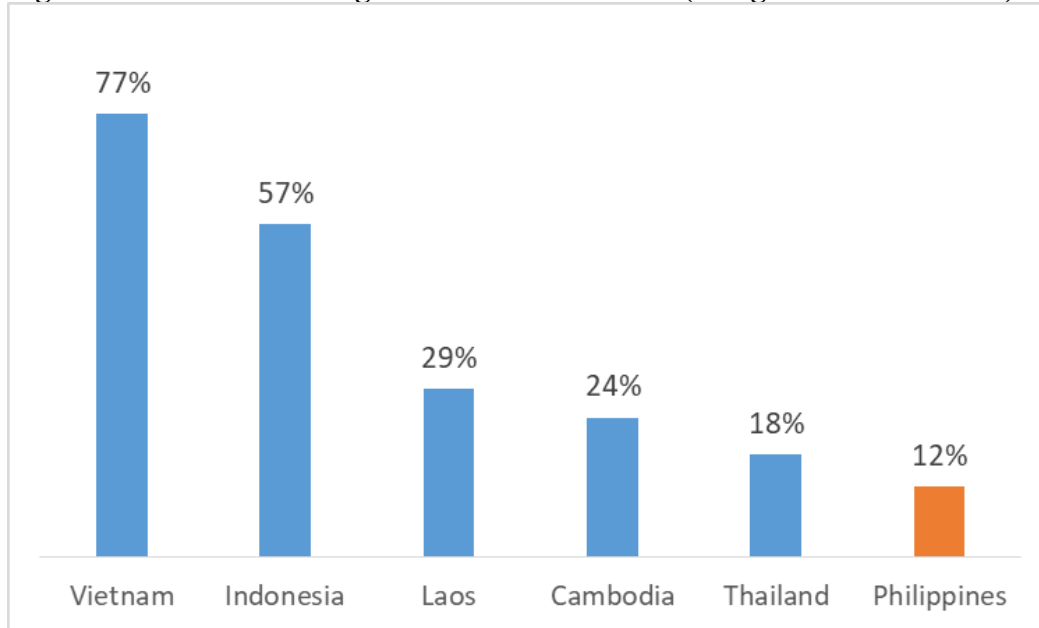
Figure 2: Population distribution, by income class



Source: FIES 2015

But the rate of growth is quite low compared to regional comparators. Using a different definition of the middle income (\$2-\$20 in 2005 PPP) but quite similar to the definition used here, Chun (2010) showed that the Philippines experienced a slow expansion of the middle income, in terms of magnitude (**Figure 3**). From 1990 – 2018, the middle-income population expanded (in terms of absolute percentage growth) by only 12%. In contrast, Southeast Asian neighbors experienced a much faster growth (see Figure 1) while starting out at a more disadvantaged position than the Philippines (Chun, 2010).

Figure 3: Middle-income growth from 1990-2008 (using \$2-\$20 definition)

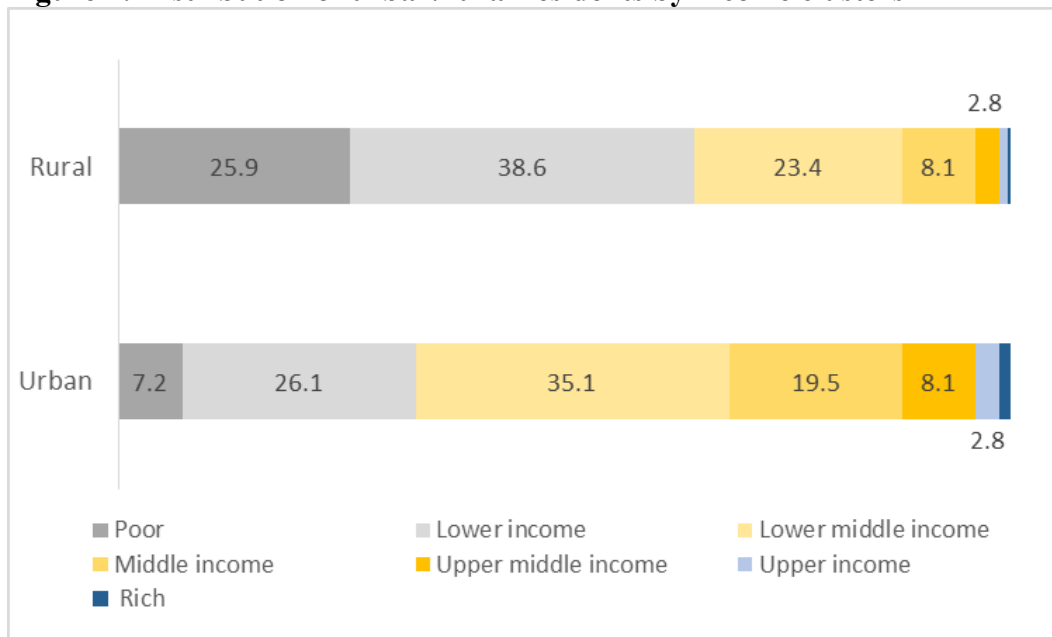


Source: Chun, 2010

Place of residence

A large proportion of urban residents belong to the middle-income class (**Figure 4**). Around three-fifths (59%) of urban residents are middle-income, a third (35%) is low income, and only 1 in 20 are high income. Among rural households, only a third (35%) is middle-income, the bulk, i.e., more than three-fifths (63%), is low-income, and the remaining 1.5% are high income.

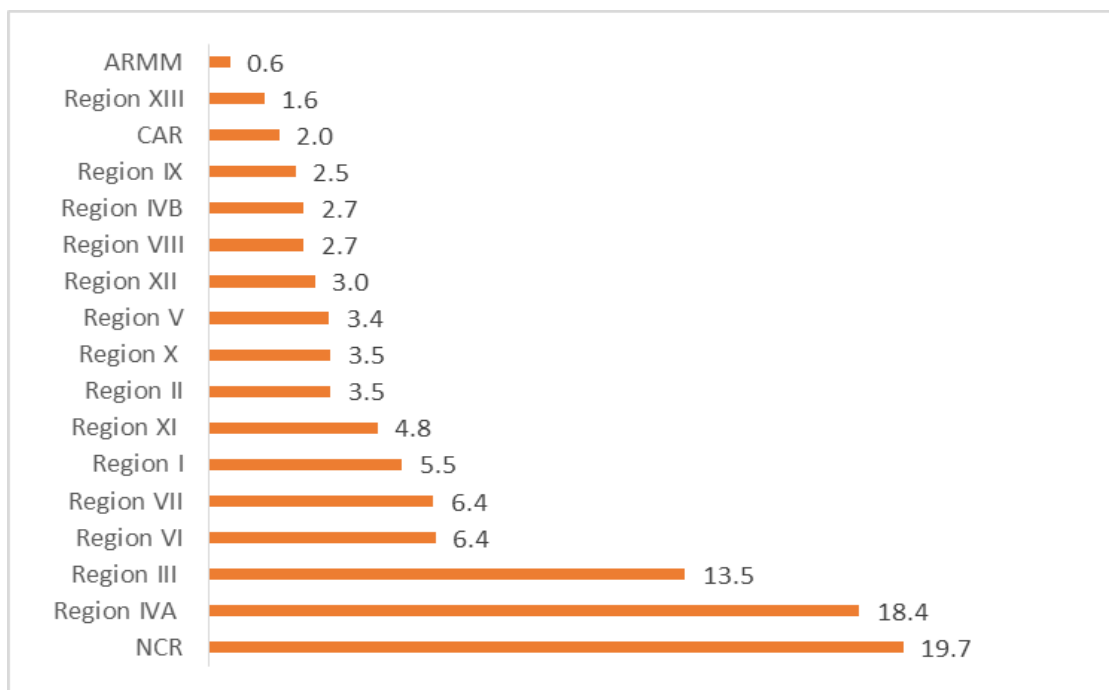
Figure 4: Distribution of urban/rural residents by income clusters



Source: FIES 2015

More than half of the middle-income class live in or near Metro Manila (**Figure 5**). Among the regions, the National Capital Region (NCR) and nearby regions (Region 3 and Region 4A) are where middle class dominantly reside. These areas have wide access to commercial and manufacturing establishments, which are also where most of the middle-class work. In contrast, less than one percent of the middle class reside in ARMM.

Figure 5: Distribution of the middle-income class, by regions



Source: Merged FIES-LFS 2015

Occupation

The middle class tends to work outside of the agriculture sector (**Table 4**). As income rises, households are less dependent on agriculture. Only 11% of the middle class are dependent on agriculture, with most of them belonging to the lower middle-income cluster. In contrast, two fifth (39%) of the lower-income workers are in agriculture, and only 6% of the high-income workers are dependent on agriculture. A quarter of the middle class works in wholesale and retail trade, with jobs such as vegetable vendors or *sari-sari* store owners. A fifth (17%) of the middle class are engaged in transport, communication, and storage, with many working as tricycle and jeep drivers or bus conductors. About 3 out of 30 (16%) middle-class workers have jobs in government, as clerks or public-school teachers.

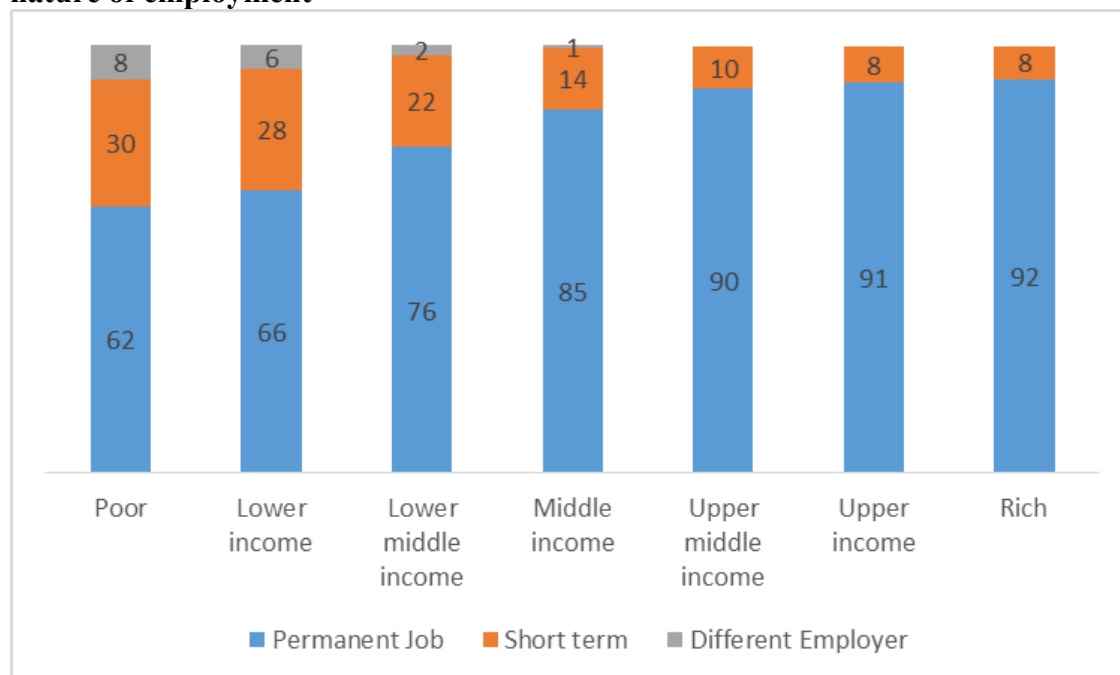
Table 4: Distribution (in %) of middle-income and other income classes, by major industry group

Classification of Major Industry Group	Low income	Middle income	High income	Total
Wholesale and Retail Trade	17.31	25.54	24.51	21.05
Transport, Communication and Storage	11.99	16.7	12.64	14.07
Government Services	4.72	15.88	28.27	10.03
Agriculture	39.27	11.56	5.7	26.52
Manufacturing	7.67	10.8	6.33	9.02
Construction	9.58	7.11	2.56	8.38
Private services	1.35	6.55	11.01	3.8
Finance	0.37	2.35	4.9	1.31
Fisheries	5.53	1.39	0.15	3.62
Dwellings and Real Estate	0.1	1.02	3.09	0.56
Electricity, Gas and Water	0.22	0.61	0.52	0.4
Mining	0.82	0.35	0.25	0.61
Forestry	1.06	0.14	0.04	0.64
All classifications	100.0	100.0	100.0	100.0

Source: Merged FIES-LFS 2015

Many of the middle-income class workers do not have vulnerable jobs: 61% of the middle income are in salaried work, compared to 50% for the low-income and 59% for the high-income (Table 5). A bigger share of workers among the low-income class are engaged in entrepreneurial activities. This contrasts the view of the middle class as “new entrepreneurs” (Acemoglu & Zilibotti 1997; Doepke & Zilibotti 2005; 2007). Also, as income rises, the greater chance one has a permanent job: 80% of middle-income workers have permanent jobs, in contrast to only 65% for the low-income (**Figure 6**).

Figure 6: Share (in percent) of middle-income clusters and other income clusters, by nature of employment



Source: Merged FIES-LFS 2015

Table 5: Share (in %) of middle-income and other income classes, by type of work

Type of work	Low income	Middle income	High income	Total
Private Household	6.0	2.9	1.2	4.5
Private Establishment	47.7	50.5	36.5	48.7
Gov't/Gov't Corporation	4.2	13.7	24.7	8.8
Self Employed	29.5	23.1	17.1	26.4
Employer	2.4	4.3	12.0	3.4
With pay (Family owned Business)	0.2	0.5	2.3	0.4
Without Pay (Family owned Business)	10.0	5.1	6.2	7.8
All types of work	100.0	100.0	100.0	100.0

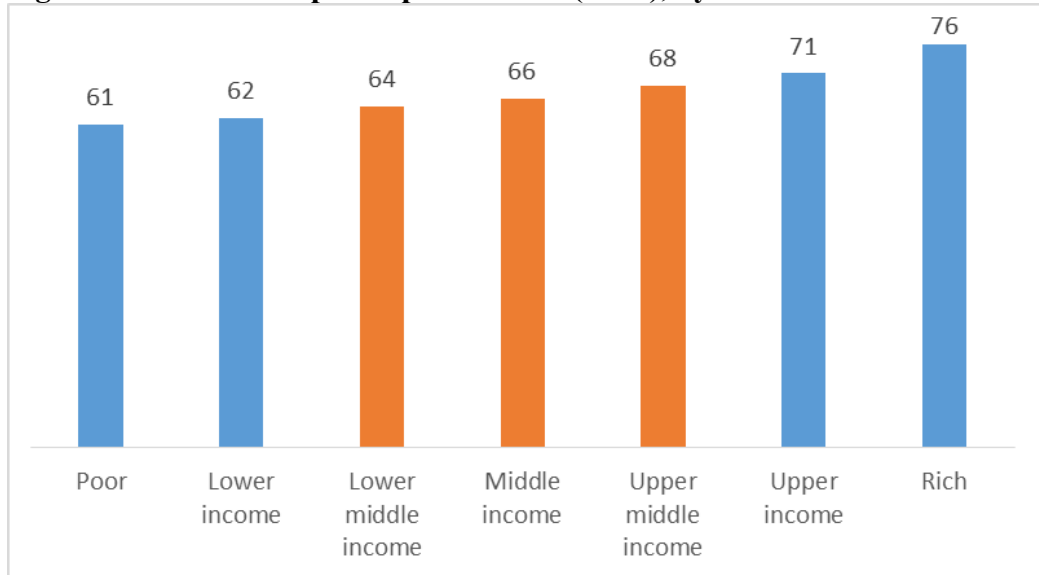
Source: Merged FIES-LFS 2015

Employment and labor force participation

Low- and middle-income classes tend to join the labor force and be employed at the same rate, but the middle class tends to work longer and is more likely to have spouses participating in the labor force (**Figures 7-8**). Labor force participation and employment rates for low-and middle-income classes are 61% and 94%, respectively. But the working middle-income class spends 6 hours longer time at work, 45 hours per week compared to the 39 hours of the low-

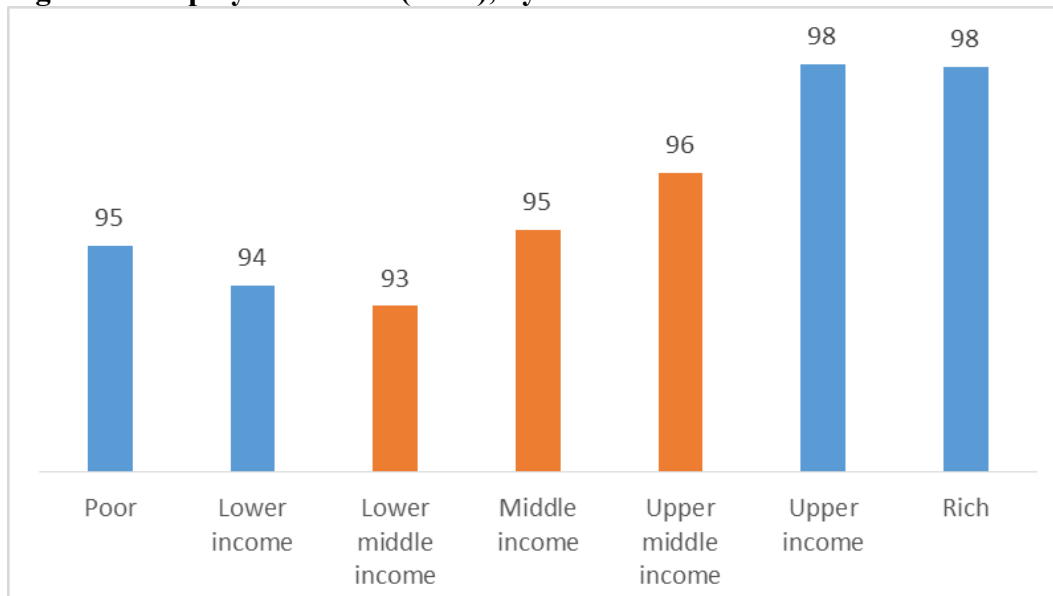
income class (**Figure 9**). Middle-income class wives are also more willing to work (59%) than low-income counterparts (52%).

Figure 7: Labor force participation rates (in %), by income cluster



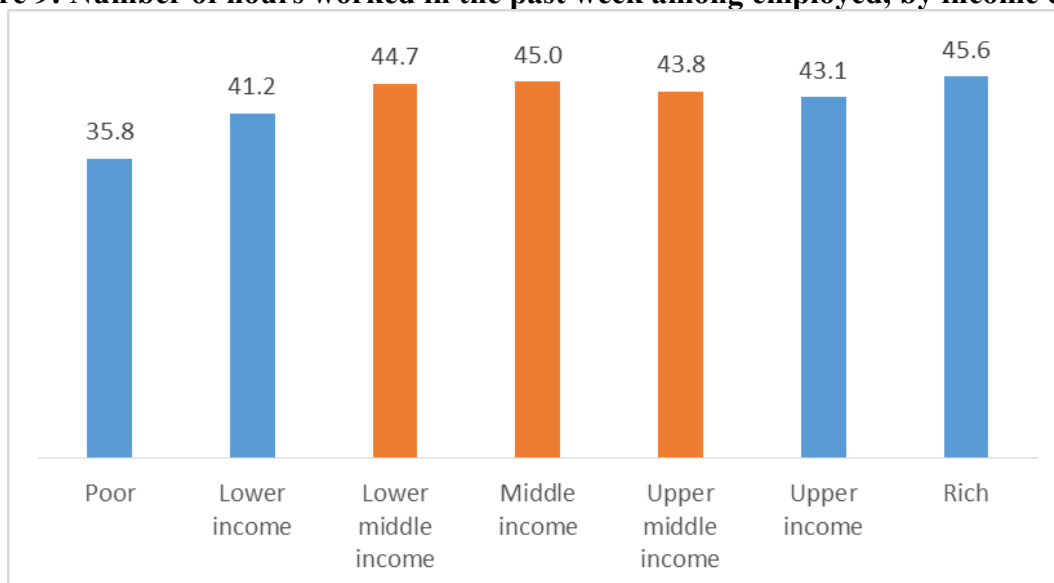
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Figure 8: Employment rates (in %), by income cluster



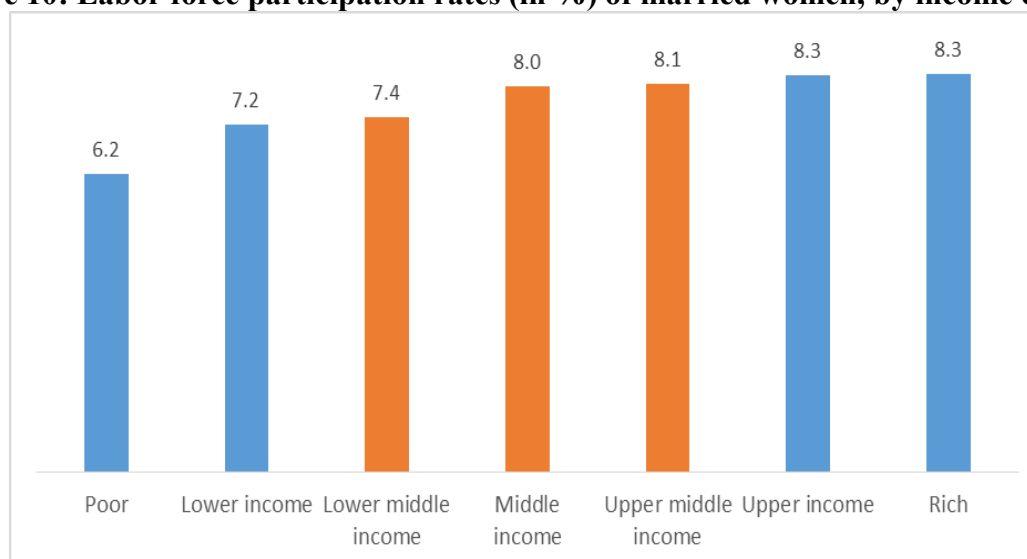
Source: Merged FIES-LFS 2015

Figure 9: Number of hours worked in the past week among employed, by income cluster



Source: Merged FIES-LFS 2015

Figure 10: Labor force participation rates (in %) of married women, by income clusters



Source: Merged FIES-LFS 2015

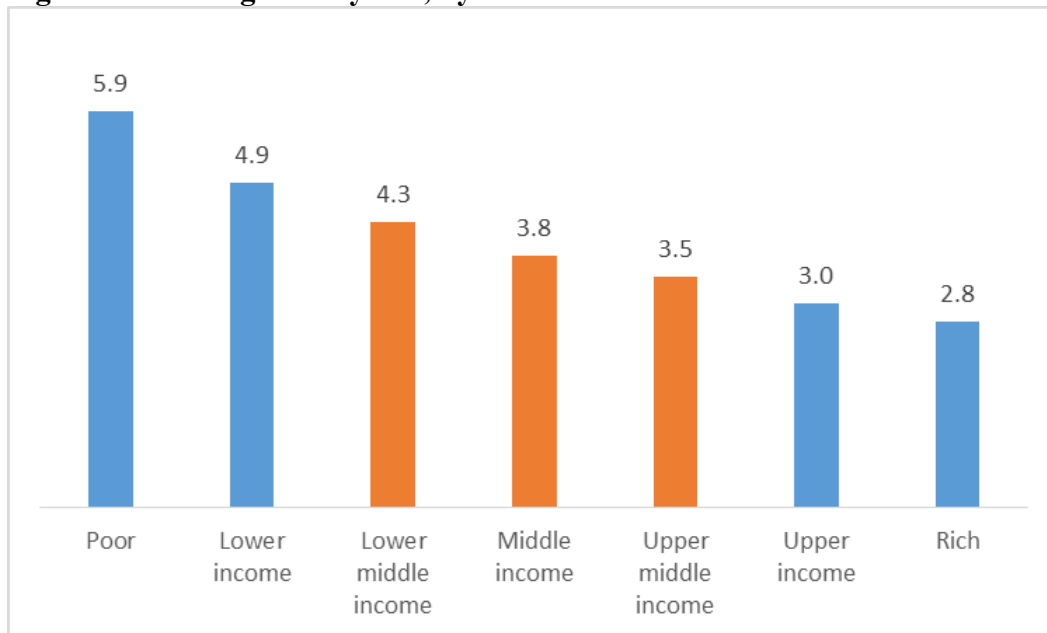
Age and fertility decisions

The middle-income population is older, tends to be part of smaller-sized families (with fewer children) than those from the low-income class (**Figures 11-13**). Similarly, dependency ratio² among the low-income (76%) is much higher than for the middle- (37%) and high-income (14%) classes (**Figure 14**). It can be observed that fertility decisions are associated with income

² Dependency ratio here is measured by dividing the number of children aged 0 – 14 with number of members aged 15 – 65.

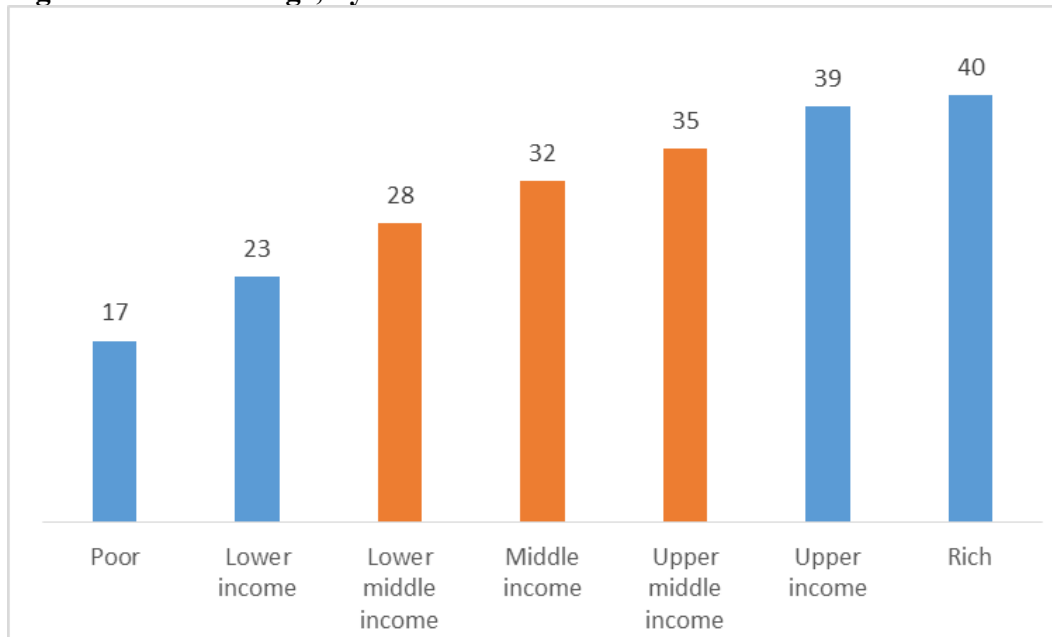
levels: households with higher incomes tend to have smaller family size, higher median age, and lesser children. Moreover, fertility decisions and time poverty may explain why women in Asia and the Pacific who are from low-income families tend to stay home and not join the labor force as they have to spend more time taking care of younger children (UN Women and ADB 2018). Also, low-income households tend to have many children and send them to work at an early age as they are also not capable of investing on their own children (Becker, 1991).

Figure 11: Average family size, by income clusters



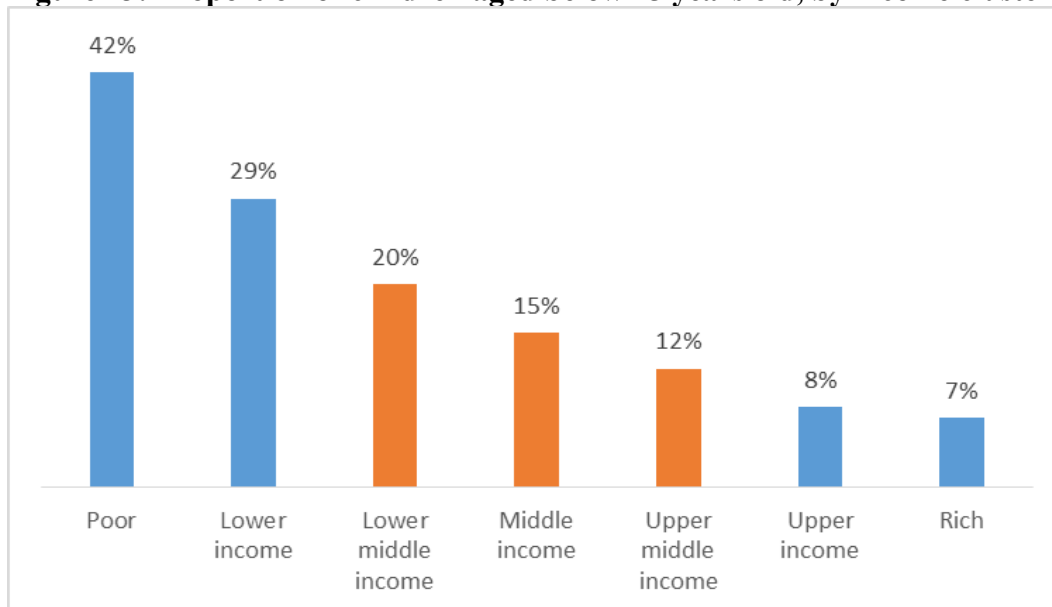
Source: Merged FIES-LFS 2015

Figure 12: Median age, by income clusters



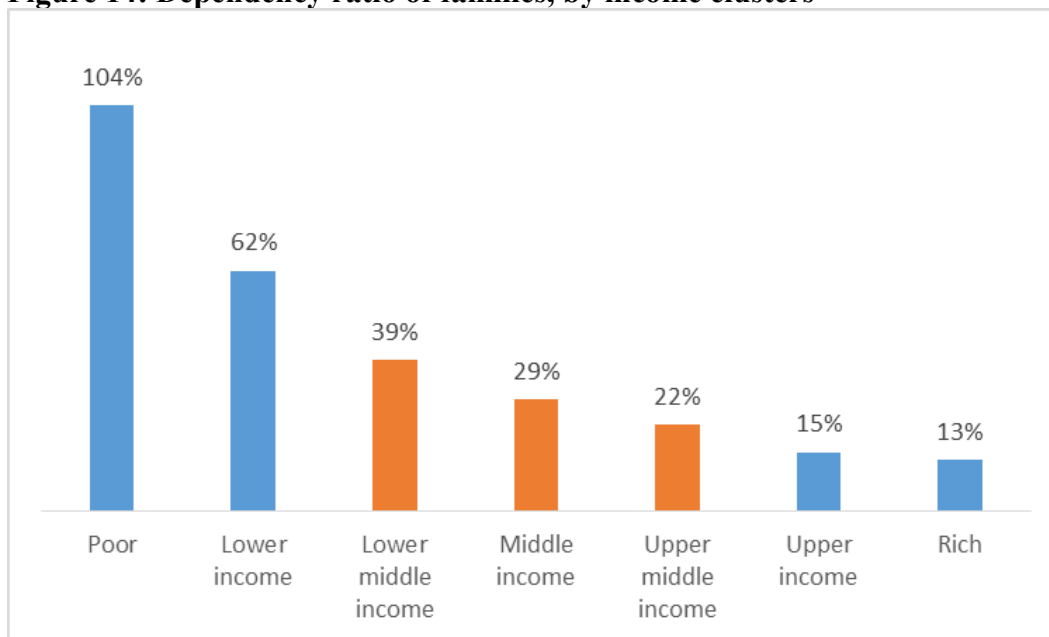
Source: Merged FIES-LFS 2015

Figure 13: Proportion of children aged below 15 years old, by income clusters



Source: Merged FIES-LFS 2015

Figure 14: Dependency ratio of families, by income clusters



Source: Merged FIES-LFS 2015

Education attainment

Educational attainment is positively related with higher income levels. The discrepancy in the proportion of persons aged 24 and above with college education across each income class is quite high. Close to one-thirds of persons aged 24 and over from middle-income families received college education, much higher than that for the low-income (6%), but also much lower compared to those from high-income families (63%). The higher educational attainment of those from the middle-income (compared to the low-income) families clearly explains the higher share of middle-income workers in better quality jobs. Meanwhile, a majority (59%) of persons aged 24 and over from low-income families have not finished high school. Opportunity costs in attaining higher levels of education are high, particularly among the poor, who are more attracted to spend their time to support their families' livelihood.

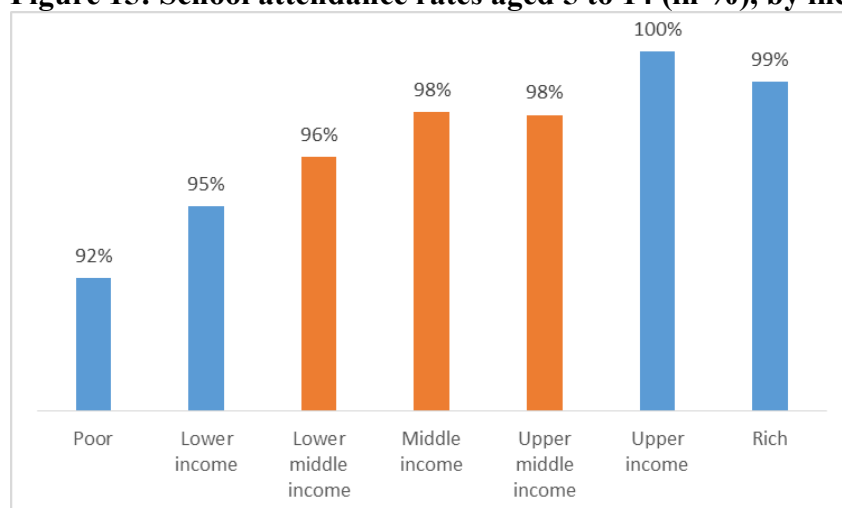
Table 6: Highest educational attainment of persons aged 24 and over, by income class of family

Highest grade completed	Low income	Middle income	High income
No grade completed	3.3	0.7	0.4
Pre-school	0.1	0.0	0.0
Some elementary	21.4	5.9	1.8
Elementary graduate	18.9	9.3	3.1
Some high school	15.3	7.4	3.4
High school graduate	27.6	28.0	13.0
Post-secondary	0.7	0.9	0.4
College undergraduate	6.2	13.2	9.4
College graduate	6.5	34.0	62.9
Post-baccalaureate	0.0	0.7	5.5

Source: FIES-LFS 2015

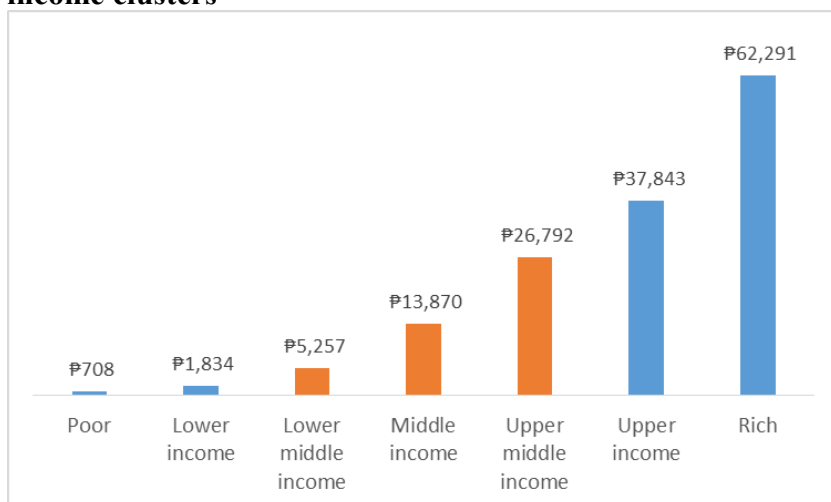
The middle-class places higher value on their children’s education. In the Philippines, high school attendance rates are associated with higher income levels (**Figure 15**). School attendance rate of middle-class children (aged 5-14) is 97%, higher by 4 pts than low- income ones. Also, middle-income families spend approximately 7 times more than low income children for their children’s education in 2015 nominal terms and nearly twice in terms of share to overall household expenditures. Since the middle-class families spend more for education of their children, middle class children tend to attend in private schools and avail tutoring services (Banerjee and Duflo, 2008).

Figure 15: School attendance rates aged 5 to 14 (in %), by income clusters of families



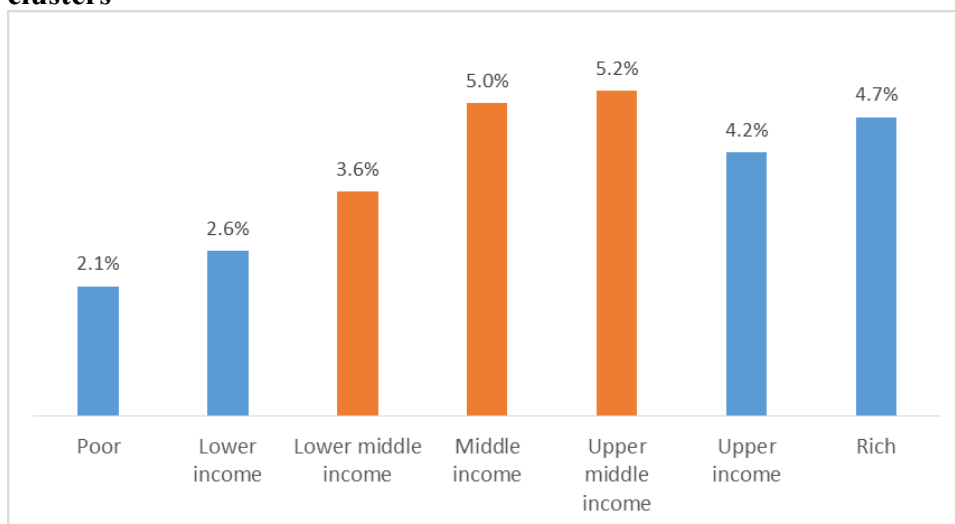
Source: Merged FIES-LFS 2015

Figure 16: Annual education expenditure per household member attending school, by income clusters



Source: Merged FIES-LFS 2015

Figure 17: Education expenditure as share to total household expenditures, by income clusters



Source: Merged FIES-LFS 2015

The middle class spends less on food, alcohol and tobacco, and more on recreation, durables and human capital development (as a proportion to total expenditure). Consistent with Engel's law, as income rises among Filipino families, the share of food to total expenditures declines as shown in **Table 7** below.

Table 7: Share of expenditures on goods to total expenditures, by income groups

Expenditures	Food	Alcohol	Tobacco	Recreation	Durables	Education	Health
Poor	62%	1%	2%	1%	1%	2%	2%

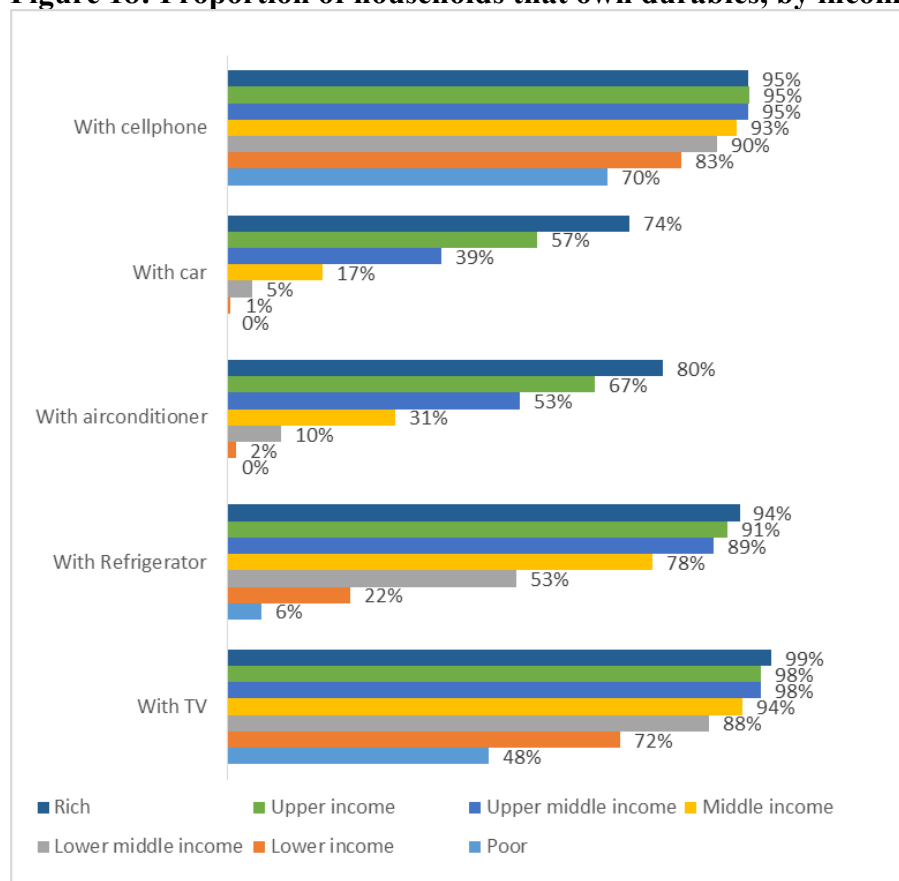
Lower income	54%	1%	2%	1%	2%	3%	2%
Lower middle income	44%	1%	1%	1%	2%	4%	3%
"Middle" middle income	35%	0%	1%	1%	3%	5%	4%
Upper middle income	28%	0%	0%	1%	4%	5%	5%
Upper income	22%	0%	0%	1%	5%	5%	6%
Rich	17%	0%	0%	1%	4%	5%	6%

Expenditures	Food	Alcohol	Tobacco	Recreation	Durables	Education	Health
Poor	62%	1%	2%	1%	1%	2%	2%
Lower income	54%	1%	2%	1%	2%	3%	2%
Lower middle income	44%	1%	1%	1%	2%	4%	3%
"Middle" middle income	35%	0%	1%	1%	3%	5%	4%
Upper middle income	28%	0%	0%	1%	4%	5%	5%
Upper income	22%	0%	0%	1%	5%	5%	6%
Rich	17%	0%	0%	1%	4%	5%	6%

Source: FIES 2015

The lower expenditure on food allows middle-class families to spend more on durable goods (**Figure 18**), recreation and human capital investments, particularly education and health of the children.

Figure 18: Proportion of households that own durables, by income clusters



Source: Merged FIES-LFS 2015

Access to water and electricity

Access to safe water is high for the middle-income class. Five-in-seven middle-income households use water from the community water system, deemed the safest source of water (**Table 9**). In contrast, around 60% of the low-income rely on ground and surface waters, which are considered by WHO (2006) as potential sources of contamination from microbes and chemicals.

Table 8: Main sources of water supply, by income class

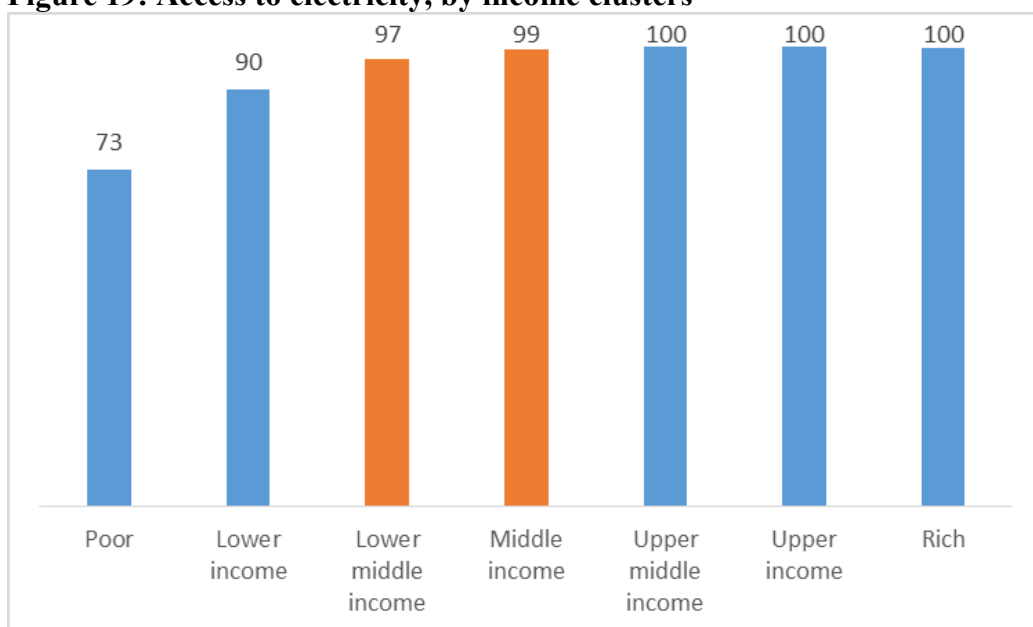
Main sources of water supply	Low income	Middle income	High income
Own use, faucet, community water system	25.0%	62.7%	85.0%
Shared, faucet, community water system	14.1%	8.6%	2.3%
Own use, tubed/piped deep well	10.3%	11.0%	8.0%
Shared, tubed/piped deep well	20.3%	7.7%	1.2%
Tubed/piped shallow well	3.8%	2.2%	1.0%
Dug well	12.6%	3.1%	1.0%
Protected spring, river, stream, etc	7.6%	2.2%	0.5%
Unprotected spring, river, stream, etc	2.1%	0.2%	0.1%
Lake, river, rain and others	1.2%	0.2%	0.1%
Peddler	2.6%	1.8%	0.2%
Others	0.3%	0.2%	0.5%

Source: FIES 2015

The low access to safe water among low-income may be more associated with where they live rather than with economic status, per se. For instance, in rural areas, access to community water system remains very low at only 41%. Moreover, in some regions, still a majority of the middle-income use ground and surface water: for instance, 69% of the middle-income in ARMM and 56% of those in CAR. In this regions, improving access to better water and sanitation is recommended.

Access to electricity is also high among the middle-income. 98% of the middle-income have access to electricity, while this is true only for 84% of the low-income (**Figure 19**). But access to electricity is high across the country. In rural areas, access of the middle income is 97% while those from the low-income is 82%.

Figure 19: Access to electricity, by income clusters



Source: FIES 2015

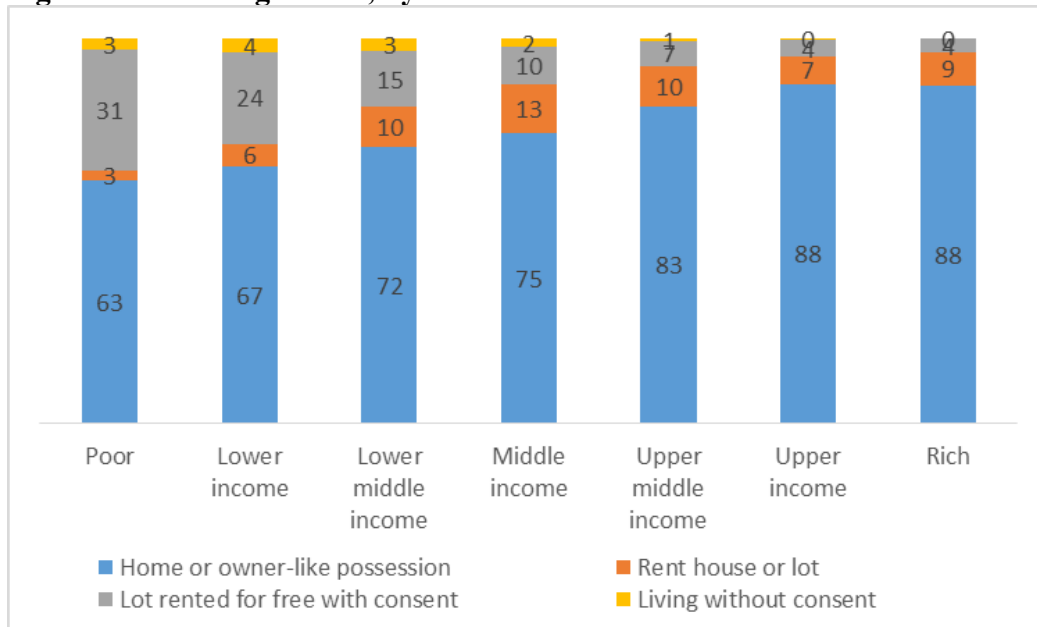
Housing tenure

Middle-income families tend to live in dwellings that they own. At the national level, about 74% of middle-income households live in dwellings that they own, while 23% rent, and 3% are informal settlers (defined as those residing in house or lot without consent). In Metro Manila, tenure status is quite different. While still a majority (58%) of middle-income residents in Metro Manila live in their own homes, a large fraction rent houses (35%), and live as informal settlers (7%).

While a small proportion of the middle income live as informal settlers (**Figure 20**), they constitute a big proportion of informal settlers nationwide. In 2015, 42% of informal settlers belong to the middle-income class, while 58% of them from the low-income class (**Figure 21**). But in contrast to the conventional view of associating the informal settlers with the urban poor, the data show that informal settlers in urbanized areas belong to the middle-income class. In Metro Manila, for instance, 69% of the informal settlers belong to the middle-income class.

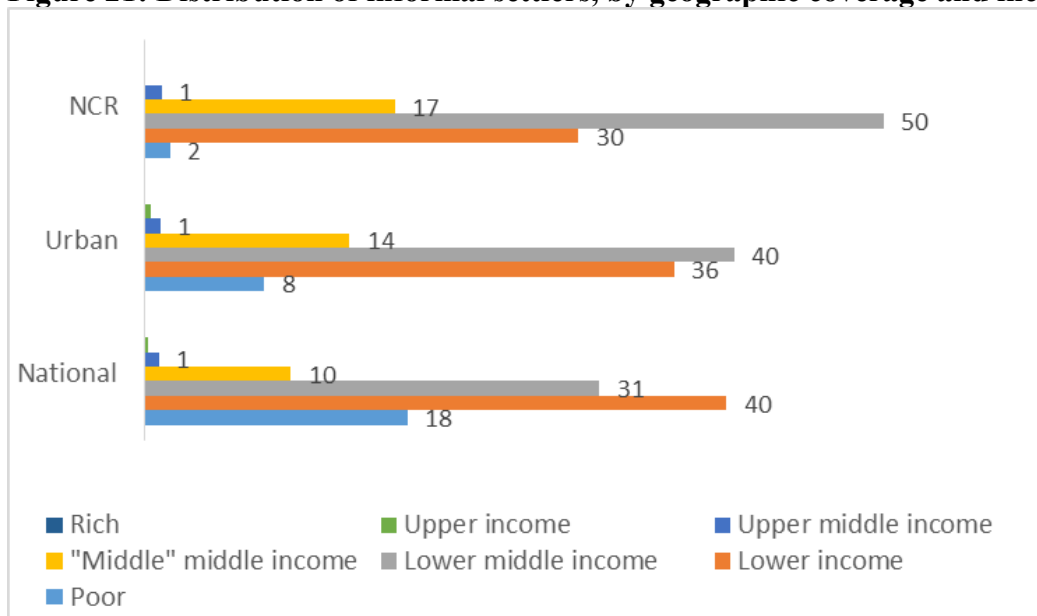
The problem of middle-income informal settlement has also been observed in some other countries, such as in South Africa (Turok, 2015) and South Asia (Ellis & Roberts, 2016) where shortage of affordable housing exists.

Figure 20: Housing tenure, by income clusters



Source: FIES 2015

Figure 21: Distribution of informal settlers, by geographic coverage and income clusters



Source: FIES 2015

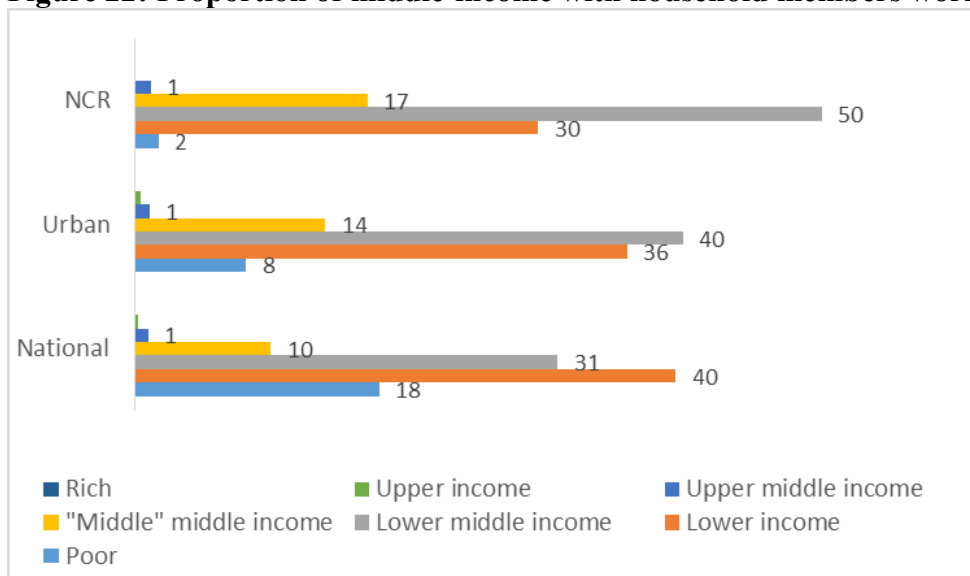
The observation of middle-income informal settlement underpins the problem of low opportunity for economic mobility in rural areas and the lack of affordable housing in urban areas. Several studies in the Philippines (e.g., Warwick *et al.* 2018) have found that

transitioning out of poverty is correlated with residence in urban areas, and employment outside agriculture. Residents from rural areas migrate to urban areas in the hopes of attaining better economic opportunities (Ballesteros, 2010). But homeownership in urban areas, especially in NCR, have significantly increased over time leading to a shortage of affordable housing. In effect, migrants from rural areas tend to live in informal settlements. As a recommendation, it is crucial for the government to formulate strategies in addressing urban-rural disparities, especially in terms of economic opportunities, and expanding affordable housing in urban areas to address this growing concern of informal settlement of the middle-income class.

OFWs and remittances

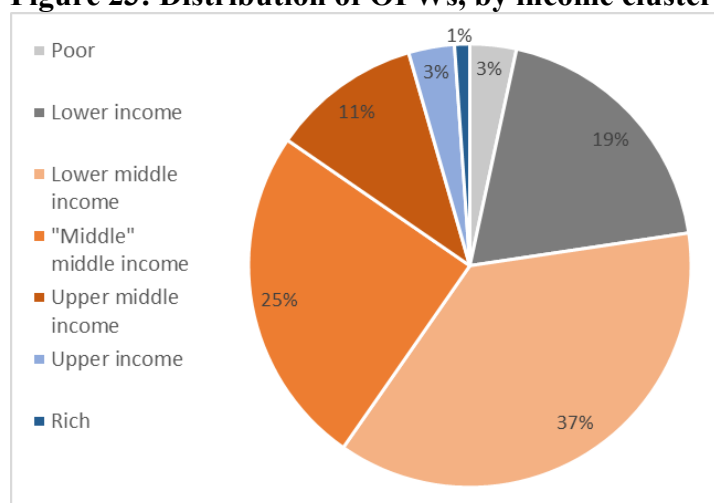
Close to 13% of the middle income have a household member working as an overseas contract worker. Households who belong to the upper middle income (18%) are more likely to have family members working as OFWs than the “middle” middle income (16%) and lower middle income (11%). In contrast, less than 4% of the low income have family members working as OFWs (**Figure 22**). But the distribution of the OFWs shows that they are predominantly middle-income (73%) with more than a third belong to the lower middle income, a quarter from the “middle” middle income, and only 11% from the upper middle income (**Figure 23**).

Figure 22: Proportion of middle-income with household members working as OFWs



Source: Merged FIES-LFS 2015

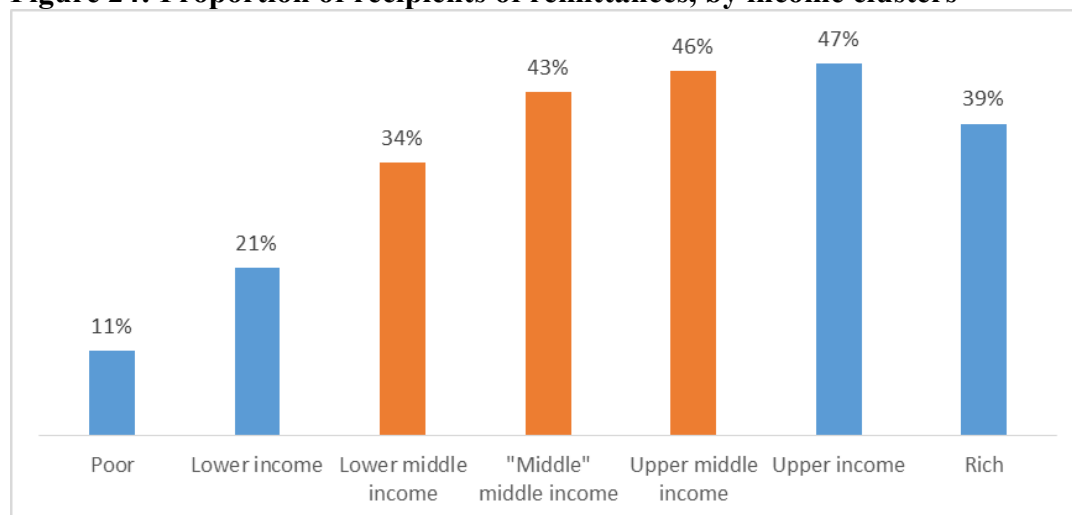
Figure 23: Distribution of OFWs, by income clusters



Source: Merged FIES-LFS 2015

There are more middle-income households that benefit from remittances than have members working as OFWs. In 2015, more than a third of the middle-income households, largely from the lower middle-income cluster, received foreign remittances (**Figure 24**). Many of the middle-income recipients source a large fraction of their household income from foreign remittances. Around 45% of the middle-income recipients receive remittances covering at least 25% of entire household income, while for one-fifths, a majority of household income is from remittances.

Figure 24: Proportion of recipients of remittances, by income clusters



Source: FIES 2015

Studies have shown the important role of OFW members in economic mobility among Filipinos. Ducanes & Abella (2008) found that migrant families climb up by 6 ppts in the income percentile ranking within a one-year period. Also, Bird *et al.* (2009) noted that while the distribution of OFWs show they are more likely to be non-poor, at least 5% of the population would have been poor in a counterfactual scenario without the remittances.

The counterfactual scenario illustrated by Bird *et al.* (2009) and the high incidence of OFW families who belong to the lower middle-income cluster highlight the economic vulnerability of middle-income families relying on OFWs. Upon the end of contract of the OFW relative, the middle-income family may easily fall back into poverty, especially for those households whose household incomes are mostly from remittances. While the government provides a multiple of welfare assistance programs to OFWs, the extent to which these programs adequately provide social protection to families has yet to be understood. It may be important to explore programs that can make more efficient use of government funds targeted towards OFWs that may provide them protection, especially during contract termination.

4. Determinants of the Middle Class

While the dashboards shown in the previous section provides various insights in assessing how patterns of economic change are likely to affect the middle-income class (and other income class), it is limited by its bivariate content. This section examines the determinants of being middle class in the Philippines using a multinomial logistic model, which allows us to infer causality of specific household characteristics and other factors on the welfare of the middle-income class, and thus identify how the middle class may grow by making changes in some of the determinants conditional on the level of other factors. A multinomial logistic regression provides predictions of the likelihood that a household belongs to the middle class based on a set explanatory variables. Many of the explanatory variables used in the analysis are similar to the characteristics used to profile the middle class in the previous section. In contrast to the descriptive analysis, a multinomial logistic model includes control variables that would better test the significance of the relationship between the explanatory variables and likelihood of belonging to the middle-income class.

The dataset used in the analysis is a merged database of microdata of the FIES 2015, with the Labor Force Survey (LFS) for the 1st Quarter of 2016, together with barangay information sourced from the 2010 CPH Form 5. The merged data allowed for the use of various variables to understand determinants of the middle class. The FIES contains household and housing characteristics; the LFS has information on characteristics of household members; while the CPH has information on the community to which the household belongs. Due to the lack of availability of more recent CPH Form 5 data, the CPH survey year is not consistent with those of the FIES and LFS, and thus, may affect the reliability of the econometric estimates.

Outcome groups in the analysis are (1) low-income, (2) middle-income, and (3) high-income classes. The low-income class is treated as the base outcome. Explanatory variables used in the model are the following:

Household characteristics	Housing characteristics	Asset ownership	Community characteristics
<ul style="list-style-type: none"> • Family size • Square of family size • Age of household head • Squared age of household head • Proportion of members aged 0 – 14 • Whether household head is married • Whether household head is male • Whether the household is in an urban area <ul style="list-style-type: none"> • Regional dummies • Household head education 	<ul style="list-style-type: none"> • Strong roof and walls • Tenure status: squatter • Tenure status: own house or owner-like possession <ul style="list-style-type: none"> • With faucet • With electricity 	<ul style="list-style-type: none"> • With television • With refrigerator • With airconditioner <ul style="list-style-type: none"> • With car • With cellphone 	<ul style="list-style-type: none"> • Agricultural workers constitute more than half of population aged 10 and above <ul style="list-style-type: none"> • Living in the town proper/poblacion • With high school in the barangay • With market place in the barangay • Number of financial establishments in the barangay • Number of manufacturing establishments within 2 kilometers from barangay

Mostly, the results (see Annex 2) of the multinomial logistic regression confirm the findings from the descriptive analysis in the previous section. Having a large family decreases the likelihood of being middle class at an increasing rate. Also, having a large share of school-aged children is less associated with being middle class. Meanwhile, living in urban areas, owning durable goods, living in own house, and having strong roof and walls are also positively associated with being middle class.

Results for the community characteristics describe how the communities of each income group compare. While the low income class tends to living in agricultural communities, the middle income class is associated with living close to financial establishments and a market place, which are common in urban communities. The upper income households are associated with living in the town center (*poblacion*) and having access to manufacturing establishments.

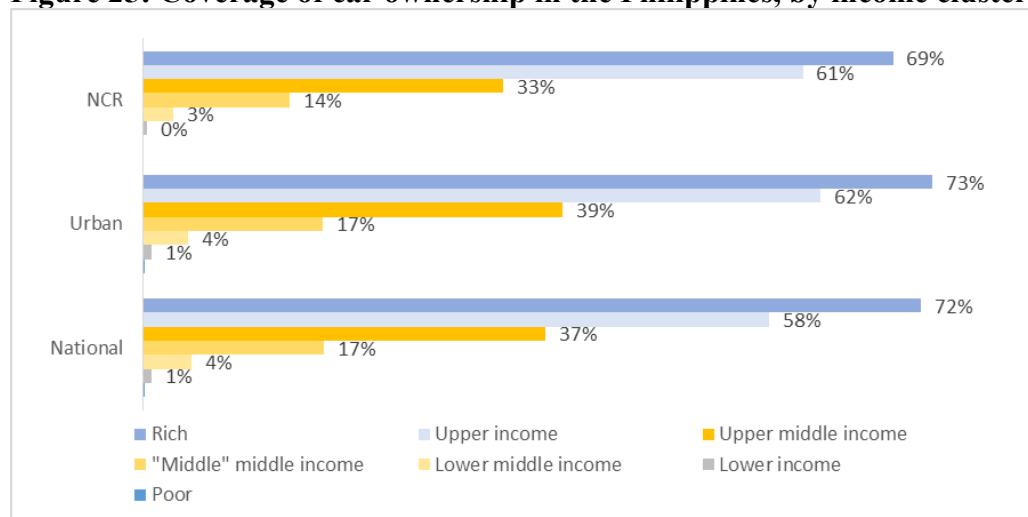
5. Other Findings on the Growth of the Middle-Income Class

While the AmBisyon 2040 vision is for the country to be predominantly middle class, the middle-income class behavior and its growth can have adverse unintended effects to society. First, we note that the middle-income class tends to reside in Metro Manila and surrounding regions. In Metro Manila and urban areas where traffic congestion remains a critical issue, the middle-income class has the biggest share of cars owned. Second, middle-income households have shifted away from using public services towards private ones; thus, causing less pressure for government institutions to improve delivery of services, especially in basic education and health care. And third, with the growth of the middle-income class, in terms of both magnitude and its large share of the total voting population, the middle-class has become more influential relative to the low-income in political decision-making. We discuss these issues in more detail in this section.

The contribution of middle-income class to congestion

Car ownership is highly correlated with income. As of 2015, nearly 12% of middle-income families own at least one car (**Figure 25**). Meanwhile, coverage of car ownership is much lower for the low income at less than 1%, but much higher for the high income at 62%. Car ownership is more common in urban areas, where close to 13% of the middle-income and 66% of the high-income own cars. Middle income households in Metro Manila are less likely to own cars than those living outside Metro Manila, which may be explained by the availability of a wider range of transportation options, such as the metro lines (MRT and LRT) and taxis in the capital.

Figure 25: Coverage of car ownership in the Philippines, by income clusters

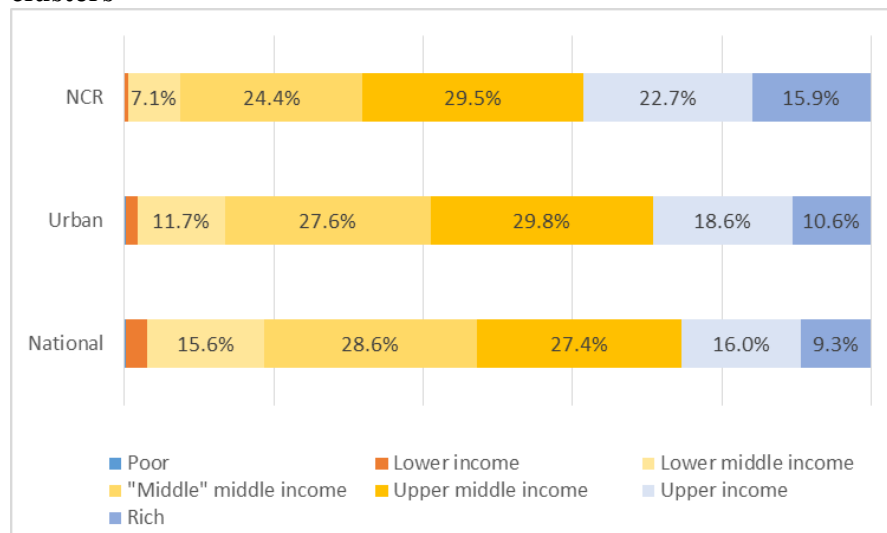


Source: FIES 2015

The contribution of the middle class to traffic congestion can be better described using the distribution of cars across the income groups rather than the coverage of car ownership. While a more appropriate variable is the frequency of car use rather than just car ownership in itself, there are no data available that can link car usage with income information. Across the country, 7 out of 10 cars are owned by the middle-income (**Figure 26**). In Metro Manila, the share of

cars owned by the middle class is less than nationwide, but as much as 6 out of every 10 cars in the National Capital Region are owned by the middle-income.

Figure 26: Distribution of cars owned by households in the Philippines, by income clusters



Source: FIES 2015

From 2006 to 2015, the annualized growth in cars ownership in Metro Manila is highest for the middle-income families at 2% (**Table 9**). The growth in car sales in the region, specifically to the middle-income, may be explained by changes in both supply- and demand-side factors. At the supply-side, car distributors are offering more attractive financing options through low down payment schemes. Car manufacturers also produce smaller cars that are sold at much affordable prices. Meanwhile, as regards the demand side, the public transport systems in Metro Manila have continuously deteriorated while the purchasing power of the middle-income class is expanding in the context of a population with strong desire to own cars (as articulated in AmBisyon 2040). As a result, the use of mass transit has become unattractive for the middle-income (relative to car ownership).

Table 9: Growth in number of cars owned, by income class

Income class	Annualized growth (2006 - 2015)				
	National	Urban	Rural	NCR	Outside NCR
Low income	-1.9%	-0.9%	-2.5%	-10.5%	-1.4%
Middle income	3.4%	3.1%	3.8%	2.0%	3.7%
High income	4.4%	4.4%	4.1%	1.7%	6.1%

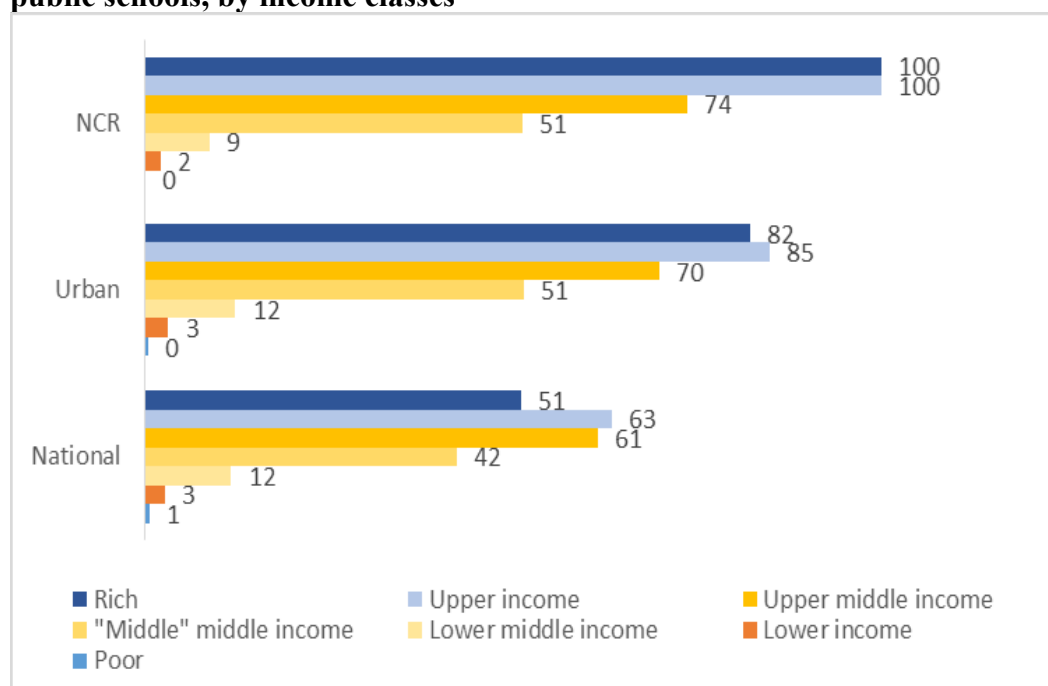
Source: FIES 2006, 2015

The middle-income class opting out of the social contract: case for education and health

The choice of the middle-income to shift from publicly-provided services towards private ones, as in the case of public transport, can also be observed for education and health. Middle-income households tend to move their children to private schools and avail tutoring services given the

high value they place on their children’s future (Banerjee and Duflo, 2008). Using 2015 FIES data, we observe a large difference in spending on education by the middle-income relative to lower-income counterparts suggesting children are sent in more costly, but deemed of better quality, private schools. Similarly, data from the 2017 Annual Poverty Indicators Survey (APIS)³ shows the large difference in the proportion of children attending private elementary schools between the low-income (2%) and middle-income (22%) families (**Figure 27**). The discrepancy is bigger among elementary students in urban areas, where close to a quarter of students from middle-income families are in private schools.

Figure 27: Proportion (in %) of elementary school children attending private and public schools, by income classes



Source: Annual Poverty Indicators Survey (APIS) 2017

A similar behavior is found in the availment of health services. Data from the 2017 Demographic and Health Survey (DHS)⁴ show that mothers from middle-income families are more likely to seek treatment or advice from private health facilities more than public ones when their children have fever or diarrhea (**Table 10**). The disparity in utilization of public health facilities between the low- and middle-income classes is more noticeable among those in urban areas, where most of the middle-income reside. Meanwhile, utilization rate for public health services is much lower for the high-income, compared to both income classes. This shows that as income increases, Filipinos tend to substitute away from public health facilities towards private ones. As the middle-class expands and shift towards private providers, this may

³ For APIS, the income classes are determined using percentiles of per capita income to account for the difference in methodology in calculating household income between APIS and FIES

⁴ For NDHS, the income classes are determined using percentiles of wealth index. NDHS does not have income variable

create less pressure for the government to undertake institutional improvements, to the detriment of the low-income households.

Table 10: Proportion of mothers who first sought treatment when child had fever or diarrhea, by income classes

Type of health facility	Fever			Diarrhea		
	Low income	Middle income	High income	Low income	Middle income	High income
Nationwide						
Public	72.1	41.3	37.8	69.3	46.5	0.0
Private	20.1	52.2	62.2	18.5	43.8	100.0
Others	6.6	5.5	0.0	9.3	8.6	0.0
Urban residents						
Public	71.0	33.7	52.6	72.4	31.1	59.3
Private	26.2	62.7	44.2	20.4	62.6	33.8
Others	5.6	3.6	4.6	6.9	4.3	6.0
Rural residents						
Public	64.0	42.4	29.2	66.7	54.8	0
Private	18.9	44.4	62.2	17.0	33.7	100
Others	9.2	9.2	0.0	11.3	11.0	0

Source: Demographic and Health Survey 2017

The middle income's growing influence on political decision-making

Recent policy decisions of the current administration reflect its priority in addressing concerns of the middle-income class. This is exemplified by two national laws that received strong support from the administration, viz. the Free Tuition Act and the 1st Package of the Tax Reform for Acceleration and Inclusion (TRAIN 1). A static beneficiary incidence analysis of the Free Tuition Act and Department of Finance's (DOF) own impact analysis on the TRAIN 1 shows that the middle-income groups benefit more from these political decisions. In itself, policies promoting the middle-income may provide social gains, but if public resources are shifted away from the low-income towards the middle-income, then this would hinder chances for development to become more inclusive, slowdown the transition of the low-income households to middle income status and worsen current socio-economic divides.

The growing influence of the middle income in the national government's policy decisions may be explained by the Median Voter Theorem (Downs 1957). Assuming that policies can be presented in a one-dimensional policy spectrum and preferences are single-peaked, the median voter theorem states that a political candidate would espouse a policy aligned with the preferences of the median voter. By doing so, the candidate can more closely capture the preferences of those in the left or in the right of the median voter's choice, and thus, receive larger electoral support. In contrast, candidates choosing a policy in the far left or right would

limit votes from candidates who have preference for the extreme, and thereby, eliminating votes from those who prefer the policy in the opposite end. Given that the current administration selects policies that are aligned with the preferences of the middle-income, it may be plausible that the middle-income may be more representative of the median voter compared to the poor, who have been considered as the median voter in the Philippine setting (Labonne *et al.* 2015).

There is a wide literature that links the median voter with national policies. Meltzer and Richard (1981) proposed that high income inequality encourages greater public spending that would allow the median voter to benefit more relative to his tax contribution. While Milanovic (2003) found strong evidence that highly unequal countries tend to redistribute at a much larger scale, he found that the middle-income class, presumed as the median voter, did not benefit from redistribution policies. This finding puts into question whether the middle-income class can be considered as the median voter. But Acemoglu *et al.* (2012) theorized that politicians may introduce “populist” policies that are those to the left of the political bliss point median voter in order to signal that he is far from being captured by the elite. In contrast, Frisell (2009) characterized “populist” policies as those conforming to popular wisdom, as indicated in the opinion polls.

Linking the literature with the policy shifts manifested by the current administration may suggest that the Filipino median voter may have moved to the right – that is, the median voter may be less associated with being low income, but more with the middle income. There is reason to believe this theory. The middle-income class grew over time, especially in terms of magnitude. But while the share of the low income is still larger than the middle income, the middle-income tends to be older and thus, have a higher likelihood of voting. Moreover, a vast literature considers education as a driver of electoral participation and other forms of civic action (Almond and Verba 1963). And thus, among the eligible, the middle-income is more likely to vote given their higher level of educational attainment.

Other than the models that rely on the Median Voter Theorem, there are also alternative models that may explain the current policies that are less pro-poor. First, voters base their decisions more on the candidates’ character than the platforms they espouse (Kartik & McAfee 2007). This may be more compatible in democracies with history of politicians betraying on their campaign promises. In effect, the median voter preference becomes less relevant to national policy decisions, but based more on the policies pledged by the candidate with the strong character, regardless of its proximity to the median voter preference. Second, the candidate (typically the incumbent) may take advantage of information asymmetry to manipulate the issue salience and select less efficient policies in which he is a stronger candidate in order to attract a larger number of votes (Hodler *et al.* 2010). And third, voters may have conformed to the opinions and expectations of their superiors (Prendergast 1993). In this case, voters may espouse the policy not directly of their own preference, but that of their superior, which eventually leads to right-leaning policies.

This section describes the extent to which the middle income can be considered to benefit the median voter. It provides some evidence that the Free Tuition Act and the TRAIN Law-Package 1 are more beneficial towards the middle-income class relative to the lower income groups, and therefore, suggest that current politicians are more inclined to promote the interest of the middle income than that of the low income. To deepen the discussion, the paper explores time series data from national expenditures and opinion polls on urgent national concerns to determine the extent to which government expenditures are consistent with the urgent national concerns identified by the middle-income groups.

Data are available from various sources. A static beneficiary incidence analysis of the Free Tuition Act relies on the Annual Poverty Indicators Survey (APIS) 2017. The impact analysis of the TRAIN Law is adopted from the presentations of DOF's Strategy, Economics and Results Group (SERG), which analyzed the impact of the various tax components of the TRAIN on the different income deciles. Expenditure data is taken from the Budget of Expenditures and Sources of Financing, while the information on urgent national concerns is from results of surveys conducted by Pulse Asia.

There are some caveats in the analyses and in the use of data. First, the beneficiary incidence analysis of the Free Tuition Act identifies the middle income in APIS 2017 using income percentiles, rather than the income variable, which is calculated following a different methodology from FIES 2015. Also, the analysis is static, and does not capture the distortionary impacts of free education in public universities and colleges. As a consequence, the results of the beneficiary incidence analysis understate the true impact of the Free College Act. Second, the DOF-SERG's analysis of the TRAIN impact per income decile is accepted as a given, and no exercise was done to replicate the results. And third, the Pulse Asia Survey identifies 3 income classes, namely class "ABC" covering 5%-10% of the population, class D covering around 65%-75%, and class E around 20%-30% (Holmes, 2016). The analysis in this report uses class ABC and D as proxy for the upper-income and middle-income classes, respectively, considering their closer proximity with the classes of the income distribution defined in this paper.

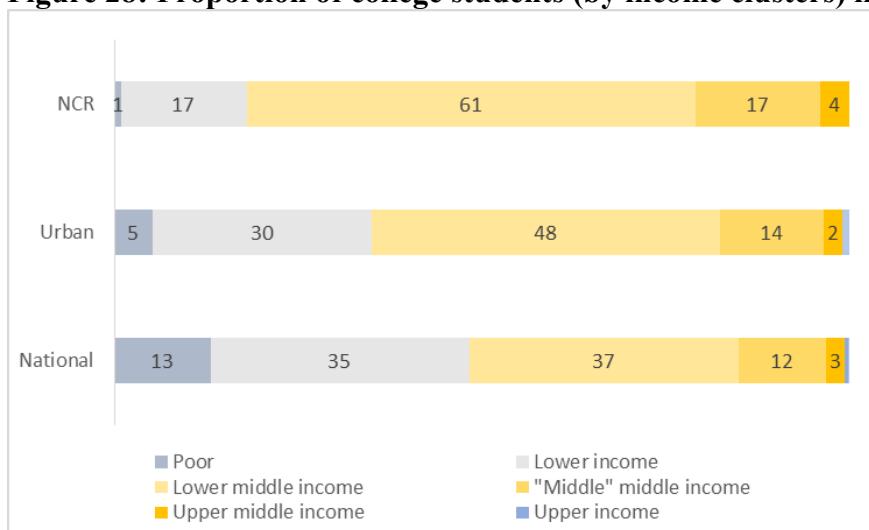
Beneficiary incidence analysis of the Free Tuition Act

The purpose of the beneficiary incidence analysis is to determine who would benefit from the Free College Act of 2017. The law provides free tuition to students enrolled in state universities and colleges (SUCs). The analysis is static because it does not incorporate the crowding-out effects of the policy that is well-documented in the literature. For example, Bucarey (2018) found that free tuition makes specific programs in public tertiary education more competitive that leads to crowding out of low-income students, especially those at the margin of admission who would have otherwise been qualified. The effect would be worse if learning outcomes in secondary education show wide disparities between private and public schools, with the latter more likely to be attended by those from low income groups.

While the incidence analysis does not capture these crowding-out effects, results at the national level show a slightly larger composition of students from middle-income families (51%) than

lower income counterparts (48%) in public tertiary schools in 2017 (**Figure 28**). But the distribution at the national level conceals the reality that more middle-income students reside in urban areas, and in the Greater Metro Manila area. Incidence analysis of SUCs in the NCR and in urban areas show the disproportionately larger share of middle-income students. In urban areas, 64% of SUC students are from the middle-income class. Meanwhile, the distribution is more skewed in NCR wherein 82% of students in SUCs are from the middle-income class. Taking into account the possible crowding-out effects would reflect an even more disproportionate distribution of middle-income students in these areas. Students from lower income groups are less likely to attend college, but if they do, they tend to attend private non-sectarian higher educational institutions (Ducanes and Yee 2018).

Figure 28: Proportion of college students (by income clusters) in SUCs



Source: APIS 2017

Impact analysis of TRAIN 1 Package

The TRAIN 1 Package is among the successive packages of tax reforms to be introduced by the current administration with the objective of creating a “simpler, fairer and more efficient tax system characterized by low rates and a broad base that can promote investment, job creation, and poverty reduction⁵.” In December 2018, the TRAIN 1 Package was passed by the bicameral committee and signed by the President.

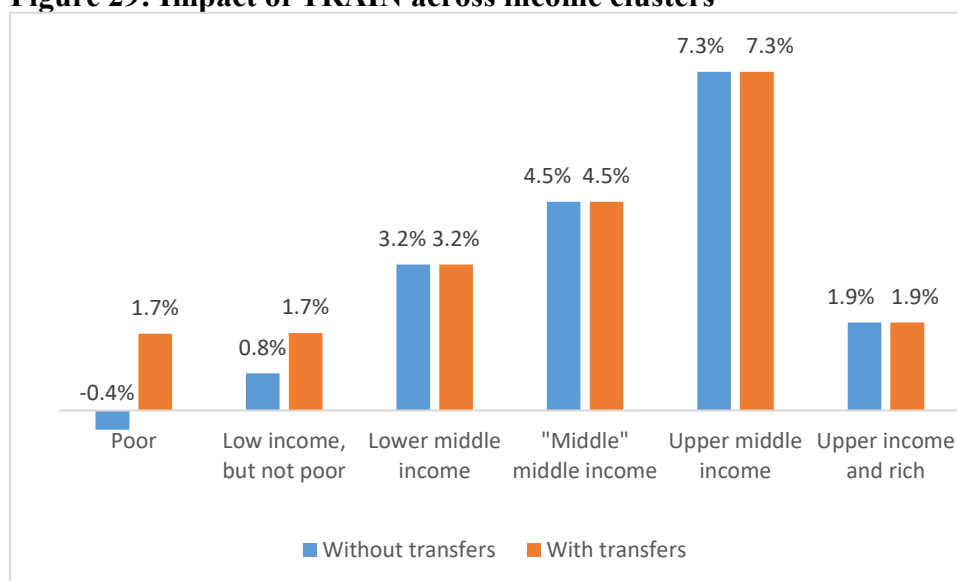
The major reforms introduced by the tax are: (1) lower personal income taxes but removed personal exemptions; (2) lower estate and donor taxes; and (3) impose excise taxes on petroleum products, automated vehicles, sugar-sweetened beverages, and tobacco. The tax package also includes an Unconditional Cash Transfer program (UCT) that provides a one-

⁵ TRAIN Package 1 grand presentation

time grant of PhP 2,400 to the 10 Million poorest families in order to protect them from the inflationary impact of the consumption taxes.

Ex-ante impact estimates released by the DOF show that the better off households, especially the income deciles which comprise the middle income (6th – 10th deciles), benefit from the tax reform package more than any other income group (**Figure 29**). Households from the richest decile are estimated to gain the most (8%), while households at the poorest decile are estimated to incur marginal losses of -0.5. The low-income households generally incur losses because they did not benefit from the reformed income tax schedule that provided cushion to those who belong in the middle-income class. While with the UCT, the low-income households are estimated to have a net gain ranging from 1.3% - 2%, this net gain is lower than the net gains of the middle-income class (ranging from 1.8% - 7.3%), suggesting that the tax reform is regressive – with or without the transfers. Those from the upper-income class experience a net gain of less than 2%, and the top taxpayers are expected to pay more taxes. Ex-post analysis of the impact of the TRAIN Package 1 may provide different estimates from the results of the ex-ante analysis, but these cannot be estimated until the release of results of the 2018 FIES.

Figure 29: Impact of TRAIN across income clusters



Source: DOF (2018)

National expenditures and opinion polls

This analysis describes the relationship between national expenditures and opinion polls. Does the government spend more on what the middle-income class deem to be urgent?

Results of Pulse Asia surveys provide information on the three most urgent national concerns across the socio-economic groups that proxy three income classes: ABC (high-income), D

(middle-income) and E (low-income). The respondents are asked to identify the three most urgent among various pre-identified national issues. Among the low-income, the three most urgent national concerns have been more or less consistent: controlling inflation, improving the pay of workers, and creating more jobs. Those from the middle-income tend to have similar concerns as those in the low income, but at a lesser extent, and become more concerned with criminality and corruption, which those in the high income identify as their critical issues.

At the national level, urgent national concerns vary across administrations and may be driven by the prevailing political climate (**Table 11**). During the Arroyo administration, which faced several corruption-related scandals, corruption has been ranked as the second most urgent national concern. This issue dropped to rank 3 during the Aquino administration, and further dropped to rank 5 in the current administration. Promoting peace is among the top 5 concerns during the Arroyo administration in the light of the political turmoil that overthrew the Estrada administration, terrorist attacks at the global and national landscape, and the Iraq war. Meanwhile, inflation has consistently been identified as the top or 2nd urgent national concern.

Table 11: Top 5 urgent national concerns across administrations (median percentage)

Arroyo ⁶		Aquino ⁷		Duterte ⁸	
Inflation	45	Inflation	48	Wages	45.5
Corruption	34	Wages	47	Inflation	39
Poverty	34	Corruption	41	Jobs	35
Economic recovery	32	Jobs	38	Poverty	32.5
Peace	31	Poverty	35	Corruption	31

Source: Pulse Asia

⁶ This covers only years 2002-2006 of the Arroyo administration. The Pulse Asia database does not contain surveys on urgent national concerns conducted from 2007 to 2010.

⁷ This covers only 2012-2015 of the Aquino administration.

⁸ This covers years 2016-2018 of the Duterte administration

Table 12: Top 5 urgent national across administrations, by Pulse Asia income class

ABC (High income and some middle income)					
Arroyo		Aquino		Duterte	
Corruption	38	Wages	48	Criminality	37.5
Economic recovery	34	Corruption	47	Inflation	37.5
Inflation	33	Inflation	45	Wages	37.5
Peace	30	Jobs	32	Jobs	33
Poverty	30	Poverty	31	Corruption	30.5
D (Middle income and some low income)					
Arroyo		Aquino		Duterte	
Inflation	45	Inflation	46	Wages	44.5
Corruption	36	Wages	46	Inflation	38
Economic recovery	33	Corruption	42	Jobs	34.5
Peace	31	Jobs	40	Poverty	32.5
Poverty	31	Poverty	35	Corruption	32
E (Low income)					
Arroyo		Aquino		Duterte	
Inflation	45	Inflation	55	Wages	48
Poverty	36	Wages	55	Inflation	42
Economic recovery	33	Jobs	41	Jobs	38.5
Peace	31	Poverty	38	Poverty	35
Wages	30	Corruption	33	Criminality	29

Source: Pulse Asia

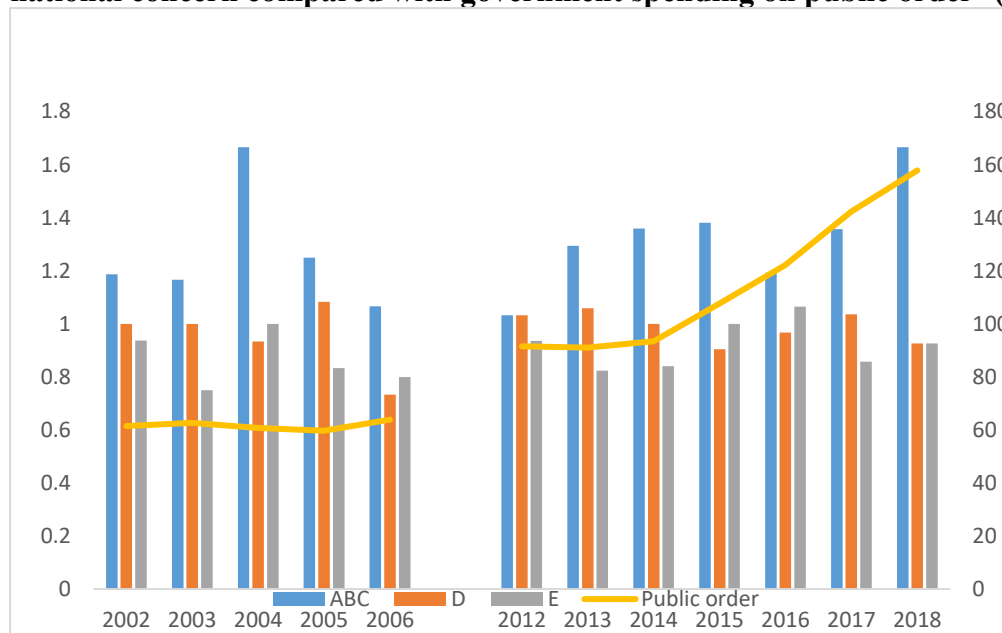
There are nuanced differences in the identified concerns across the three income groups (**Table 12**). Among those in socio-economic classes ABC and D, corruption has consistently been among the most urgent national concerns. Meanwhile, corruption has been less of a concern than economic issues (e.g., inflation and wages) for those in Class E. In the current administration, the Class ABC recognized criminality as the most urgent national concern, while this is ranked 5th for the Class E, and ranked 6th for the Class D.

In comparing national and disaggregated levels, it can be observed that the responses of Class D most closely approximate the responses at the national level given it has the largest coverage of the respondents. Following the literature on the Median Voter Theorem, the responses of the Class D, or predominantly the middle-income, receive more attention from politicians and policymakers. In the previous discussion on the Free Tuition Act and TRAIN 1, the middle-income benefitted more from these passage of these laws. It may also be interesting to describe the relationship between fiscal spending and the middle-income preferences reflected in the opinion polls.

By comparing fiscal spending patterns and middle-income concerns, we can describe the extent to which politicians more closely address middle-income concerns through national government expenditures. The approach is to compare the responses of different income classes (normalized by the national average) on the categories of urgent concerns, and matched with sectoral government expenditures, in real terms. In this exercise, the concern of fighting

criminality is superimposed with real expenditures promoting public order and safety; and, poverty reduction with expenditures on social security, welfare and employment (Figure 30). Fighting terrorism and promoting peace with national defense. Admittedly, each of the national concern categories can be matched with other sectoral expenditure categories. For example, concerns on poverty can be matched with expenditures on economic services, more specifically, agriculture where a large share of the low income belong. But for the purposes of simplicity, the national concern categories are matched with sectoral expenditure categories that can more directly address the concerns.

Figure 30: Proportion of respondents that identified criminality as a top three urgent national concern compared with government spending on public order⁹ (2006 prices)

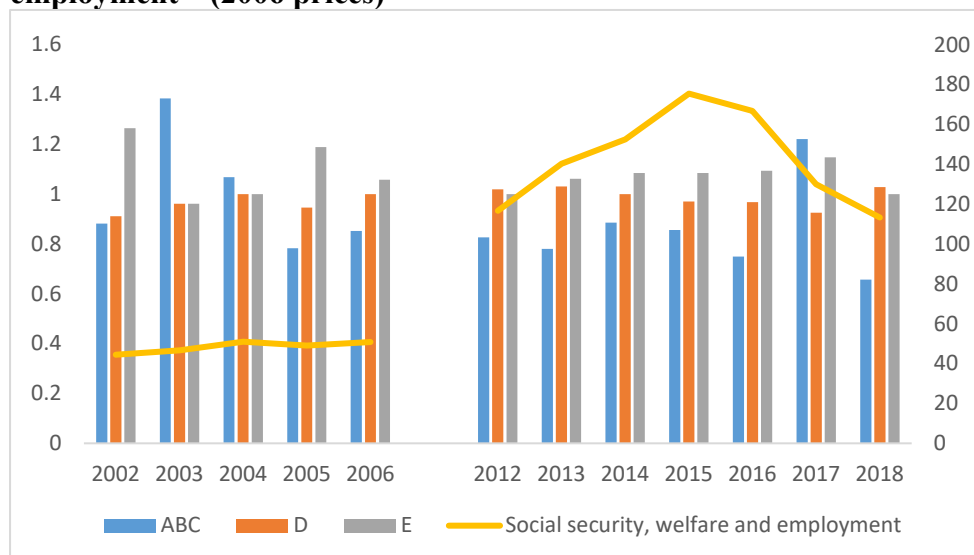


Source: Pulse Asia; Budget of Expenditures and Sources of Financing

Trends show that criminality is consistently a concern for those in Class ABC. While expenditures on public order remained stagnant from 2002 to 2006, it increased steeply especially during the Duterte administration, wherein public order expenditures increased significantly. The recent increased spending on public order is addressing the growing concern of Class ABC on criminality, which is not as much a concern for those in the lower classes. In contrast, previous administrations did not make significant expenditures for public order, just as criminality remained a less urgent concern for those in Class E (Figure 31).

⁹ For 2018, data is based on the General Appropriations Act.

Figure 31: Proportion of respondents that identified poverty as a top three urgent national concern compared with government spending on social welfare and employment¹⁰ (2006 prices)



Source: Pulse Asia; Budget of Expenditures and Sources of Financing

Meanwhile, poverty reduction is predominantly more of a concern for those in Classes D and E. In the latest polls, a third of those in Classes D and E reported that poverty reduction is an urgent national concern. Similarly, poverty reduction has been a major concern during the Aquino administration, with more than a third of the Class E that reported it as a top 3 concern. In parallel, the Aquino administration embarked on a platform called the “Social Contract with the Filipino People” that is reflected in its expenditures for social protection reaching unprecedented levels of 9%-11% of national government spending. Central to its social protection commitment was the expansion of the Conditional Cash Transfer Program, better known as the Pantawid Pamilyang Pilipino Program (4Ps), which was also considered the Aquino administration’s major program to reduce poverty in the long term. When the Duterte administration came, the expenditure share of social protection reverted back to the levels during the Arroyo administration, even if poverty reduction has been identified as an important concern for the Classes D and E, even more than fighting criminality.

The inverse relationship between expenditures on social protection and the poor’s concern for poverty reduction, and the positive relationship between expenditures on public order and the concern of higher income households on criminality suggests that the current administration places higher priority to concerns of those who belong in Class ABC, which more likely captures the high-income class, together with the upper middle and middle middle income

¹⁰ For 2018, data is based on the General Appropriations Act.

clusters. To a certain extent, this relationship is in line with the analyses showing that the middle-income benefitted more from the Free Tuition Act and the TRAIN Package 1 (than the low income class). When contrasted with the significant increase in social protection during the Aquino administration, the trends suggest a shift in the current government’s priority from low income to the middle-income.

The analyses presented here shows that the middle-income and the upper-income currently receive more attention from the government than the low-income class. This shift may not be consistent with the pursuit of inclusive growth, reduced inequality and the SDGs. This may also become a barrier to the long-term goal of transitioning into a predominantly middle-income society by 2040.

6. Transition of the poor to middle income status

The Ambisyon 2040 articulates the vision for a Philippine society which is “predominantly middle class” where “no one is poor” by 2040. Following ideas espoused in Morduch (1998), this study undertakes a simple simulation exercise to see how long it takes for someone from the low-income class to transition to middle-income status assuming that annual (per capita) income grows at a constant rate. If z is the lower threshold for the middle-income class and if the per capita income of a low-income person, y_i , grows at a constant positive rate g per year, then the number of years it will take him or her to reach the threshold is:

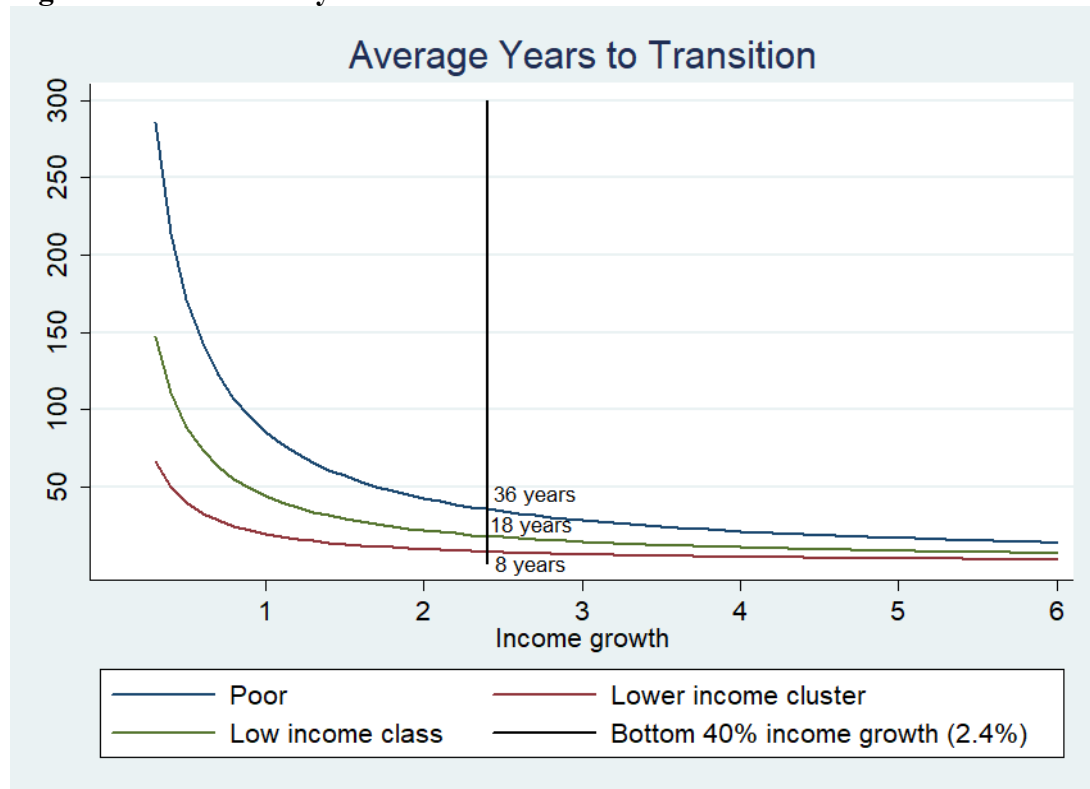
$$t_i^g = \frac{\ln(\frac{z}{y_i})}{g}$$

The average transition time of a low-income person is simply t_i^g averaged over all low-income persons. In our case, however, since there is considerable price variation, we ought to obtain a spatial price index (set for all the urban and rural areas in all the provinces based on the poverty lines and the national poverty line) and apply this to the nominal per capita income estimates for each household, so as to convert them into national average prices.

Figure 32 shows the average transition time (in years) to transition among the poor, and among the low-income but not poor (and among the low-income class). For a potential growth rate of real income per capita of 2.4% per year, which is the estimated real income growth rate of the bottom 40% in the period 2009-2015, the average transition time for the low income to become middle class would be ~18 years if this growth rate were continuous and uniform across the population. The lower income cluster (but not poor) can transition to middle-income before 2040 (on average, they transition by 2023), but not the poor. On average the poor can only transition to middle-income class by 2051 with a real growth rate of 2.4 percent per year. For the average poor to transition to middle income by 2040, the poor’s annual income should grow faster at 3.4% per year (nearly 42 percent more than the benchmark 2.4 percent). While growing constantly at the same growth rate per year is clearly an unrealistic scenario because growth is often skewed toward the higher income brackets, and even more rarely continuous, yet this

simulation provides meaningful information on whether the AMBISYON 2040 aspiration for a middle-class society where no one is poor is within reach.

Figure 32: Number of years to transition into lower middle income



Source: Authors' calculations

7. Summary and Ways Forward

This study aimed to look into the previous definition of the middle class in Albert *et al.* (2015) and re-define the middle class if needed. Using the revised definition, we also intended to profile the middle class, to understand what the middle class plays in driving sustained growth, and to identify policy issues for building resilience to risks in household welfare.

Based on the definition of the middle (income) class that we used in this study, the middle-income households in the country are found to have substantially improved access to non-monetary indicators of welfare than low-income counterparts. Middle-class households mainly live in urban areas and in the Greater Metro Manila with ease of access to various services and private establishments. Persons aged 24 and over from middle income families have attained a high level of education. Middle-class families put high value on human capital development. Members of middle-income households who are employed tend to have non-vulnerable jobs outside agriculture.

While the middle-income tend to be better off than a large proportion of the population, they have their own vulnerabilities. First, a large proportion of the OFWs belong to the middle-income class, specifically to the lower middle income cluster, and rely a large proportion of income from foreign remittances. This suggests that OFWs experiencing end-of-contracts may be vulnerable to falling into poverty without adequate social protection provided to them. Second, while the middle-income generally have good access to quality water, those living in disadvantaged areas still rely on ground and surface water that are prone to contamination. Third, a large proportion of the informal settlers, especially in Metro Manila, are middle-income who are likely facing difficulties in access to affordable housing.

The findings also show that middle-income growth has unintended consequences on the economy. First, they have the biggest share of car ownership in urban areas, and therefore, seen to have a big contribution to traffic congestion. Second, they opt-out of the social contract and prefer privately provided services, which may cause less pressure on government for institutional improvements. And third, they become more decisive in political decisions that risks redistribution of public resources away from the poor. All these adverse roles of the middle income boil down to a fragmented social contract that puts the low-income at a disadvantage (Ferreira, *f.*, 2016).

While middle-income growth is essential for development, the government needs to intervene by promoting a more inclusive social contract to offset the negative consequences associated with middle-income expansion. In the case of the middle-income's growing contribution to traffic congestion, the government should fast-track the improvement of public transport services in order to attract the middle-income into using public transport instead of using cars. At the same time, this will largely benefit the low-income who have even stronger dependence of public transport services as they are unlikely to use private modes for their own mobility.

Ensuring that the middle-income values are aligned with social inclusion, rather than pushing for reforms exclusively aligned with their own interests, and leveraging on their strong influence on political decision-making can help achieve a more inclusive social contract. With strong support from the population in improving public services, rather than having tendencies to shift to private services, the government will be incentivized to enhance the quality of its public services that benefit the population as a whole.

Defining the middle-income is critical for monitoring towards achieving the country's long term goals. Monitoring the middle-income relative to the low- and upper-income classes would inform policy makers on the scale of policy interventions that need to be introduced to ensure the feasibility of the long term vision. Simulations show that at the current income growth of the bottom 40%, it is unlikely for the poor to transition into middle class by 2040. However, it is not impossible to achieve the envisioned transition of the poor only if the country's impressive economic growth benefits everyone across the income distribution.

The paper provides an alternative income classification that may be useful in assessing impacts of government policies and/or shocks across different groups of people. Compared to using income deciles or quintiles, using the income classes defined in this paper is seen to be more appealing to policymakers, lawmakers, and the public. Moreover, the definition of the middle-income is straightforward and more appropriate as it is simply linked with the data on the poverty line, which accounts for the differences in standard of living across the country.

Future studies can be built around the results of this paper. Given that a large proportion of the middle income are at the low subgroup (lower middle income), it may be worthwhile to regularly evaluate their vulnerability to falling into poverty (Albert and Vizmanos 2018) and examine the effects of public interventions in improving their risk resilience. Also, we recommend analyzing what determines the transition from lower-middle income to higher middle income clusters in order to inform policymakers on interventions to better promote economic mobility among those in the lower middle income cluster.

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Annex 1, Table 1: Magnitude estimates of each income cluster for 2006, 2009, 2012 and 2015

Magnitude, by income cluster										
Income cluster	Population					Household				
	2006	2009	2012	2015	Growth	2006	2009	2012	2015	Growth
Poor	22,644,043	23,302,773	23,745,860	21,927,010	-0.4%	3,345,132	3,455,841	3,513,785	3,235,319	-0.4%
Lower income	28,484,210	30,811,063	32,245,456	37,356,420	3.1%	4,887,494	5,358,602	5,591,775	6,404,248	3.0%
Lower middle income	20,619,013	21,473,527	23,326,403	26,771,928	2.9%	3,840,021	4,091,913	4,357,894	5,155,060	3.3%
"Middle" middle income	8,727,662	8,685,219	9,431,603	10,343,485	1.9%	1,759,127	1,817,548	1,990,601	2,217,958	2.6%
Upper middle income	3,382,153	3,156,483	3,771,090	3,713,498	1.0%	737,701	730,793	878,282	857,764	1.7%
Upper income	1,017,009	952,275	1,152,338	1,090,744	0.8%	235,743	242,146	272,075	283,209	2.1%
Rich	377,500	310,988	391,613	359,059	-0.6%	100,581	82,207	107,881	97,416	-0.4%

Source: FIES 2006, 2009, 2012, 201

Magnitude, by income group										
Income group	Population					Household				
	2006	2009	2012	2015	Growth	2006	2009	2012	2015	Growth
Low income	51,128,253	54,113,836	55,991,316	59,283,430	1.7%	8,232,626	8,814,443	9,105,561	9,639,566	1.8%
Middle income	32,728,828	33,315,229	36,529,096	40,828,911	2.5%	6,336,848	6,640,254	7,226,777	8,230,782	2.9%
High income	1,394,509	1,263,263	1,543,951	1,449,803	0.4%	336,325	324,353	379,956	380,626	1.4%

Annex 1, Table 2: Distribution of each income cluster for 2006, 2009, 2012 and 2015

Distribution by income cluster										
Income cluster	Population					Household				
	2006	2009	2012	2015	Growth	2006	2009	2012	2015	Growth
Poor	26.6%	26.3%	25.2%	21.6%	-5.0%	22.4%	21.9%	21.0%	17.7%	-4.7%
Lower income	33.4%	34.7%	34.3%	36.8%	3.4%	32.8%	34.0%	33.5%	35.1%	2.3%
Lower middle income	24.2%	24.2%	24.8%	26.4%	2.2%	25.8%	25.9%	26.1%	28.2%	2.5%
"Middle" middle income	10.2%	9.8%	10.0%	10.2%	-0.1%	11.8%	11.5%	11.9%	12.2%	0.4%
Upper middle income	4.0%	3.6%	4.0%	3.7%	-0.3%	4.9%	4.6%	5.3%	4.7%	-0.2%
Upper income	1.2%	1.1%	1.2%	1.1%	-0.1%	1.6%	1.5%	1.6%	1.6%	0.0%
Rich	0.4%	0.4%	0.4%	0.4%	-0.1%	0.7%	0.5%	0.6%	0.5%	-0.1%

Source: FIES 2006, 2009, 2012, 2015

Annex 1, Table 3: Magnitude estimates of each income class for 2006, 2009, 2012 and 2015

Magnitude, by income group										
Income group	Population					Household				
	2006	2009	2012	2015	Growth	2006	2009	2012	2015	Growth
Low income	51,128,253	54,113,836	55,991,316	59,283,430	1.7%	8,232,626	8,814,443	9,105,561	9,639,566	1.8%
Middle income	32,728,828	33,315,229	36,529,096	40,828,911	2.5%	6,336,848	6,640,254	7,226,777	8,230,782	2.9%
High income	1,394,509	1,263,263	1,543,951	1,449,803	0.4%	336,325	324,353	379,956	380,626	1.4%

Source: FIES 2006, 2009, 2012, 2015

Annex 1, Table 4: Distribution of each income class for 2006, 2009, 2012 and 2015

Distribution by income group										
Income group	Population					Household				
	2006	2009	2012	2015	Growth	2006	2009	2012	2015	Growth
Low income	60.0%	61.0%	59.5%	58.4%	-1.6%	55.2%	55.9%	54.5%	52.8%	-2.4%
Middle income	38.4%	37.6%	38.8%	40.2%	1.8%	42.5%	42.1%	43.2%	45.1%	2.6%

High income	1.6%	1.4%	1.6%	1.4%		2.3%	2.1%	2.3%	2.1%	-0.2%
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Source: FIES 2006, 2009, 2012, 2015

Annex 2: Multinomial Logistic Regression results (R-squared: 0.45)

Middle income (Base: low income)							
Variable	Description	Coeff	Std Error	z	P-val	95% confidence	
fsize	Family size	-0.884	0.027	-33.09	0.00	-0.936	-0.831
fsize_sq	Family size squared	0.043	0.002	20.14	0.00	0.039	0.047
age	Age of HH head	0.027	0.007	4.2	0.00	0.015	0.040
age_sq	Age of HH head squared	0.000	0.000	-4.65	0.00	0.000	0.000
p_mem_0_14	Proportion of members aged 0 -14	-2.635	0.087	-30.2	0.00	-2.806	-2.464
married	Married HH head	-0.241	0.046	-5.22	0.00	-0.332	-0.151
male	Male HH head	0.005	0.046	0.11	0.91	-0.085	0.095
urban	Urban residence	0.205	0.040	5.15	0.00	0.127	0.283
regn1	Region I	-0.269	0.086	-3.11	0.00	-0.438	-0.100
regn2	Region II	-0.345	0.087	-3.98	0.00	-0.515	-0.175
regn3	Region III	-0.256	0.082	-3.11	0.00	-0.418	-0.095
regn4	Region V	-0.954	0.091	-10.47	0.00	-1.132	-0.775
regn5	Region VI	-0.515	0.085	-6.04	0.00	-0.682	-0.348
regn6	Region VII	-0.698	0.088	-7.9	0.00	-0.872	-0.525
regn7	Region VIII	-0.879	0.092	-9.58	0.00	-1.059	-0.699
regn8	Region IX	-0.959	0.098	-9.74	0.00	-1.152	-0.766
regn9	Region X	-1.113	0.097	-11.49	0.00	-1.302	-0.923
regn10	Region XI	-0.777	0.090	-8.61	0.00	-0.954	-0.600
regn11	Region XII	-1.194	0.096	-12.5	0.00	-1.381	-1.007
regn12	CAR	-0.200	0.091	-2.21	0.03	-0.377	-0.022
regn14	ARMM	-1.395	0.115	-12.18	0.00	-1.619	-1.170
regn15	Region XIII	-1.516	0.101	-15.03	0.00	-1.714	-1.318
regn16	Region IVA	-0.290	0.081	-3.56	0.00	-0.450	-0.130

reg17	Region IVB	-0.131	0.103	-1.27	0.21	-0.333	0.071
hoh_hgc_2	HH head: Some elementary/elementary	0.343	0.110	3.11	0.00	0.127	0.559
hoh_hgc_3	HH head: Some HS/HS	0.751	0.113	6.66	0.00	0.530	0.972
hoh_hgc_4	HH head: Some college/college/post-col	1.684	0.117	14.45	0.00	1.456	1.912
house_strong_3	Strong roof and walls	0.566	0.034	16.78	0.00	0.500	0.632
ts_squatter	Squatter	-0.005	0.092	-0.05	0.96	-0.185	0.176
ts_oh_ol	Own house/Owner-like possession	0.103	0.035	2.95	0.00	0.034	0.171
w_tv	With TV	0.681	0.044	15.34	0.00	0.594	0.768
w_ref	With Ref	1.352	0.034	40.23	0.00	1.286	1.417
w_ac	With Airconditioner	1.618	0.083	19.4	0.00	1.454	1.781
w_car	With car	1.736	0.114	15.26	0.00	1.513	1.959
w_cellphone	With cellphone	0.745	0.048	15.43	0.00	0.651	0.840
ws_o_faucet	Faucet	0.485	0.034	14.42	0.00	0.419	0.551
w_elec	With electricity	0.304	0.069	4.41	0.00	0.169	0.439
q5	Agricultural barangay	-0.327	0.033	-10	0.00	-0.391	-0.263
q1c	Living in Poblacion	0.059	0.039	1.49	0.14	-0.018	0.136
q4g	High school in barangay	0.002	0.033	0.06	0.95	-0.062	0.066
q10a	No. of fin establishment in brgy	0.003	0.001	2.86	0.00	0.001	0.005
q8b	No. of mnfg est within 2 km from bgy	0.000	0.000	0.56	0.58	-0.001	0.001
q4e	With market place in barangay	0.075	0.036	2.11	0.04	0.005	0.145
_cons	Constant	0.010	0.217	0.04	0.97	-0.416	0.436

High income							
Variable	Description	Coeff	Std Error	z	P-val	95% confidence	
fsize	Family size	-2.070	0.069	-30	0.00	-2.205	-1.935
fsize_sq	Family size squared	0.107	0.005	19.73	0.00	0.096	0.117
age	Age of HH head	0.074	0.021	3.56	0.00	0.033	0.114
age_sq	Age of HH head squared	-0.001	0.000	-3.4	0.00	-0.001	0.000
p_mem_0_14	Proportion of members aged 0 -14	-4.190	0.325	-12.89	0.00	-4.827	-3.553
married	Married HH head	-0.080	0.125	-0.64	0.52	-0.326	0.166
male	Male HH head	-0.324	0.116	-2.79	0.01	-0.550	-0.097
urban	Urban residence	0.132	0.120	1.1	0.27	-0.104	0.368
regn1	Region I	-0.675	0.284	-2.38	0.02	-1.232	-0.118
regn2	Region II	-0.309	0.277	-1.12	0.26	-0.852	0.234
regn3	Region III	-0.817	0.266	-3.08	0.00	-1.338	-0.297
regn4	Region V	-1.627	0.329	-4.95	0.00	-2.272	-0.983
regn5	Region VI	-1.118	0.299	-3.74	0.00	-1.705	-0.531
regn6	Region VII	-1.094	0.284	-3.86	0.00	-1.650	-0.539
regn7	Region VIII	-0.599	0.285	-2.1	0.04	-1.158	-0.040
regn8	Region IX	-1.410	0.342	-4.12	0.00	-2.081	-0.740
regn9	Region X	-1.617	0.313	-5.16	0.00	-2.230	-1.003
regn10	Region XI	-1.355	0.289	-4.68	0.00	-1.922	-0.788
regn11	Region XII	-1.504	0.311	-4.84	0.00	-2.113	-0.896
regn12	CAR	-0.521	0.258	-2.02	0.04	-1.025	-0.016
regn14	ARMM	-2.520	0.781	-3.23	0.00	-4.052	-0.989
regn15	Region XIII	-2.014	0.324	-6.21	0.00	-2.650	-1.378
regn16	Region IVA	-0.878	0.251	-3.5	0.00	-1.369	-0.386

reg17	Region IVB	0.838	0.299	2.81	0.01	0.253	1.423
hoh_hgc_2	HH head: Some elementary/elementary	-0.407	0.635	-0.64	0.52	-1.650	0.837
hoh_hgc_3	HH head: Some HS/HS	0.539	0.628	0.86	0.39	-0.692	1.770
hoh_hgc_4	HH head: Some college/college/post-col	2.636	0.626	4.21	0.00	1.410	3.863
house_strong_3	Strong roof and walls	1.641	0.254	6.46	0.00	1.143	2.140
ts_squatter	Squatter	-0.936	0.785	-1.19	0.23	-2.474	0.603
ts_oh_ol	Own house/Owner-like possession	0.461	0.144	3.21	0.00	0.180	0.743
w_tv	With TV	1.033	0.275	3.76	0.00	0.494	1.571
w_ref	With Ref	2.201	0.156	14.1	0.00	1.895	2.507
w_ac	With Airconditioner	2.644	0.132	19.99	0.00	2.385	2.904
w_car	With car	3.658	0.153	23.97	0.00	3.359	3.957
w_cellphone	With cellphone	1.218	0.207	5.87	0.00	0.811	1.624
ws_o_faucet	Faucet	0.664	0.119	5.57	0.00	0.430	0.898
w_elec	With electricity	0.562	0.557	1.01	0.31	-0.529	1.654
q5	Agricultural barangay	-0.102	0.110	-0.93	0.35	-0.318	0.114
q1c	Living in Poblacion	0.178	0.103	1.74	0.08	-0.023	0.379
q4g	High school in barangay	0.159	0.100	1.58	0.11	-0.038	0.355
q10a	No. of fin establishment in brgy	0.010	0.002	6.18	0.00	0.007	0.014
q8b	No. of mnfg est within 2 km from bgy	0.002	0.001	1.87	0.06	0.000	0.003
q4e	With market place in barangay	-0.073	0.102	-0.71	0.48	-0.274	0.128
_cons	Constant	-5.543	0.992	-5.59	0.00	-7.486	-3.599

Source: Authors' estimates