

## **Moroccan Middle Classes between Reality and Perception: A Comparative Analysis of Monetary and Subjective Approaches**

**Author: Fouzia Daoudim**

**Affiliations:** GEAS3D Laboratory, National Institute of Statistics and Applied Economics, Rabat, Morocco <http://insea.ac.ma/>

Head of the division of Studies and Research on Living Conditions at the High Commission for Planning, Morocco <https://www.hcp.ma/>

**Corresponding author email:** fdaoudim@insea.ac.ma

### **Abstract**

This article has a twofold purpose: the first is to compare the lifestyle, the socio-demographic profile and perceptions of the middle classes measured according to several monetary approaches. This comparison makes it possible to determine which approaches lead to a middle class that represents the typical characteristics of this group as described in the literature and that is most consistent with the self-identified social status. The second is to analyze the determinants of the self-perceived social status and to explore to what extent it is in line with the objective reality. Thus, four objective definitions of the middle class based on living standards were compared according to several objective and subjective characteristics. Using data from the 2014 National Household Consumption and Expenditure Survey, our results show that, regardless of the approach, the Moroccan middle class is characterized by great diversity in terms of socio-demographic and subjective characteristics. However, these characteristics, as well as the magnitude of the differences between the objective stratification and the subjective one, depend largely on the approach used to delimit this group, suggesting a positive correlation between living standards and self-identified social status. The study of the latter's determinants confirms this positive correlation, although it is far from perfect. Indeed, other factors influence this self-assessment, such as education, occupation and status on the labor market, housing comfort, upward or downward trajectories of the household's standard of living, etc.

**Keywords:** Middle class, socio-demographic profile, self-perceived social status, ordered multinomial probit, Morocco.

## 1. Introduction

Morocco represents, due to its access to the Mediterranean and the Atlantic Ocean, a strategic point in Africa. It has a population of nearly 34 million inhabitants, with 60.3% living in urban areas according to the last general population and housing census of 2014. The World Bank classifies Morocco as a lower-middle-income country and identifies it as one of five countries in the MENA region (Algeria, Egypt, Jordan, Tunisia, and Morocco) that have failed to escape the middle-income trap (Arezki et al. 2018).

Emerging relatively unscathed from the global financial crisis and the Arab Spring, the country is reputed to enjoy great political stability (Vergne 2014). This has allowed it to undertake important social, economic and institutional reforms to progressively liberalize the economy, restructure its financial system, strengthen governance and the rule of law, and guarantee a growing number of fundamental rights (World Bank 2018).

These reforms have enabled Morocco to make considerable progress illustrated by the improvement of several economic and socio-demographic indicators, namely the achievement of an average annual growth in GDP per capita of around 3.3% between 2000 and 2015, the decrease in monetary poverty from 8.9% in 2007 to 4.8% in 2014 and to 1.7% in 2019, the decline in the total fertility rate from 2.47 in 2004 to 2.38 in 2018, the increase in life expectancy from 71.07 years in 2004 to 76.68 years in 2019. At the social level, access to educational services, to health services, to drinking water, to electricity, to transport, and to rural roads has improved significantly, thus contributing to the improvement of Moroccans' human capital and living conditions (AfDB, Government of Morocco and MCC 2015).

However, the inequitable distribution of national wealth and the widening of social and economic inequalities have led to several economic and social problems that have become a primary driver of the social protests in Morocco, such as the 2011 anti-cronyism protests that took place mainly in the large and relatively affluent cities (Casablanca, Rabat and Tangier), or the 2018 boycott campaign that targeted several mass-market products in Morocco, expressing a demand for social justice and an opposition to the unbridled financialization of certain big businesses. Other protests took place in the Rif after the death of the fish vendor crushed inside a trash compactor in 2016. The protesters began with demands for justice and a thorough investigation into his death, and then evolved into socio-economic demands for jobs and public infrastructure that are lacking in this region, although its inhabitants enjoy an above-average standard of living, thanks to the importance of remittances. These observations imply that the main actors of these social movements are the middle classes who play a key role in establishing better governance and strengthening social cohesion and political stability, because unlike the lower classes, the middle-class members consistently require better public service and seek greater accountability from public officials, hence the need to consider the middle class in any social policy in order to strengthen political rights and participation (Birdsall, Graham, and Pettinato 2000). Similarly, Cohen sees the middle class as a necessary category for the state to demonstrate that it is modern and that citizens have the opportunity to improve their lives. As such, support for this category is vital to the survival of the modern state, which can only protect itself by preserving this class (Cohen 2009). Moreover, the strengthening and expansion of the middle class also plays an important role as a factor of growth and economic stability. It supports consumption and stimulates investment through its capacity for saving (CESE 2021).

Thus, recognizing the importance of the middle classes in the economic, social and political sphere of the country, King Mohammed VI has repeatedly asked the Moroccan government to pay more attention

to the middle classes, such as in his 2008 throne speech, where he expressed his strong will to ensure that all public policies are devoted to the expansion of the middle class to be the foundation of the social edifice, the basis of stability and a powerful catalyst for production and creativity. The King reiterated this will in his speech of August 2019<sup>1</sup>: *“In recent years, a middle class, by the grace of the Almighty, has emerged in Morocco and is turning into a productive force as well as an element of cohesion and stability. Considering its importance in the life of the community, the middle class ought to be preserved. Measures should also be taken to strengthen it, expand its base and promote social mobility to and from the middle class”*. The will is clear but dissociating policies for the poor from those for the middle class remains an arduous task, given the complexity of defining the middle class in a developing country like Morocco where the middle class is regularly invoked but rarely defined. In fact, a first official definition of the middle class in Morocco was made in 2009 by the High Commission for Planning (HCP). This study has fueled controversy over the definition of the middle class and has sparked a lively debate about some of its results, including the fact that more than half of the Moroccan population belongs to the middle class. Some believe that it does not fit to the Moroccan context and overestimates the size of the middle class (CESE 2021; Basty-Hamimi 2011). Certain media have questioned the political significance of the study, pointing out that the HCP is mainly trying to prove that government policy is successful. This vibrant debate in the country was reinforced by the concomitant publication of a qualitative study by the Center for Social, Economic and Managerial Studies (CESEM)<sup>2</sup>, entitled "The Middle Class, Who Is It?" and also, by the feeling that the middle class is losing ground. In this respect, Clementi et al. (2019) note the deterioration in the self-perceived social status of the middle classes, who have become highly skeptical about passing on the same level of wellbeing to future generations and fear downgrading or loss of hard-won social status.

The specificity of Moroccan context as well as the aforementioned debate are the main reasons why this paper focuses on Morocco. We seek to enrich this important debate by examining the socio-demographic profile, consumption behavior, and perceptions of the middle classes as measured by four rival monetary approaches since there is no universally accepted definition of this group. The in-depth study of the characteristics of the middle class according to the different definitions allows us to identify the approach that delimits a middle class with the typical behavior patterns of this category as described in the literature and that is most consistent with the self-identified social status. The latter's determinants are analyzed to support the results obtained by exploring the extent to which individuals' perceptions of their social class correspond to their objective reality.

The remainder of the paper is structured as follows. In the next section, we present a brief theoretical foundation of the middle classes. In the third section, we present and compare the different approaches to measuring the middle class. The fourth section presents the main studies on the middle class in Morocco and in some North African countries. A detailed discussion of analysis methods and the data source is presented in the fifth section. The results are summarized and discussed in the sixth section, which addresses the different monetary criteria for defining the middle class, including their alignment with the subjective criterion, the demographic and socioeconomic profiles, the self-identified social status and subjective profile of the objective middle classes, and the determinants of self-identified social status. Finally, the main conclusions of this research are summarized in section 7.

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<sup>1</sup> Available at: <https://www.maroc.ma/en/royal-speeches/full-text-royal-speech-66th-anniversary-revolution-king-and-people>

<sup>2</sup> HEM Business school research center, <http://www.cesem.ma/>

## 2. Theoretical foundations of the middle classes

Before addressing the definition of the middle classes, which are at the heart of our analysis, it is essential to clarify the definition of social classes, whose founding theories go back to the work of Karl Marx and Max Weber in the emerging industrial societies of the 19th and early 20th centuries. In the Marxist conception, social classes are based on two criteria: the first one is objective, called "class in itself" and consists in sharing the same position in the economic production relationships. It opposes the bourgeoisie, i.e., owners of the means of production, against proletarians, real creators of wealth or surplus value. The second one is subjective, called "class for itself", it supposes the collective awareness which generally leads to the class struggle (Bouffartigue 2004). Marx also distinguishes other classes or fractions of classes such as the petty bourgeoisie or the middle class. These are generally small business owners, artisans, shopkeepers, etc. For Marx, this group does not really constitute a social class because of its lack of consciousness of having common interests to defend. It thus becomes a transitional class incapable of political domination and will eventually be absorbed by the proletariat (Dahrendorf 1959).

The conception of Weber (1921) is quite different, he offers a functionalist view of class as shared life chances that are associated with opportunities for income generation in the market. He distinguishes three types of hierarchy which correspond to the economic, social and political orders. Contrary to Marx's conception, Weber considers ownership of the means of production to be only one possible basis for inequality of life chances. Differences in social status may also be due to other factors, such as skills or credentials (Seekings 2009). Later, at the end of the 1970s, Bourdieu renewed these theories by considering that the social hierarchy results from the unequal distribution of four types of capital: economic, cultural, social and symbolic. For him, economic capital and cultural capital are the most relevant differentiation criteria for building a social space called "the space of life-styles" in which social groups are associated with specific cultural practices and lifestyles. Bourdieu (1979) maintains that it is the habitus<sup>3</sup>, which structures the way of life of a particular group to such an extent that one, can speak of "class habitus". Therefore, social classes should be homogeneous and the agents of a group should be as similar as possible in the largest possible number of aspects (Bourdieu 1987).

## 3. Comparing different approaches to measuring the middle class

While the literature largely agrees on the relevance and importance of the middle class in political, social and economic processes, there is no consensus on the definition or the appropriate tools to delimit this specific group. This is a widely controversial concept that remains vague and unclear despite the multitude of theoretical approaches (Bosc 2008). However, the term "middle class" refers to a group of households that are neither poor nor rich. The plural<sup>4</sup> is necessary to underline the variety and heterogeneity of the situations to which they may refer (Damon 2012).

The middle class can be defined according to three criteria: sociological, subjective and economic. The sociological criterion is essentially based on occupation, education, lifestyles, attitudes and values. The subjective or self-assessment criterion consists of considering as middle class those households that declare themselves in an intermediate position between the poor and the rich. As for the economic

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<sup>3</sup>The habitus represents the set of dispositions (values, skills, tastes, etc.) that the individual has incorporated during his life. These dispositions make him perceive the world in a particular way and guide his actions without being necessarily conscious of it.

<sup>4</sup> In this article, the expression "middle class" will be written indifferently in the singular or in the plural.

criterion, it is the most frequently used and often define the middle class as a residual category, distinct from the lower class (the poor) and the upper class (the rich), therefore two thresholds are required. These cut-off points are defined according to several approaches: the relative approach, the absolute approach (including the vulnerability approach and the poverty line-based approach), the mixed approach:

### **3.1 The relative approach**

This approach defines the middle class as the population in the middle part of the income distribution. Relative intervals are constructed either from measures of central tendency (median or mean) or from fractiles (percentiles, deciles, quintiles or quartiles). For the former, the lower limit of the middle class is often a fraction of the median<sup>5</sup>, while the upper limit is defined as a multiple of that measure. For example, Birdsall, Graham, and Pettinato (2000) define the middle class as households with per capita income between 0.75 and 1.25 times the median, this definition was first proposed by Thurow (1987). Other authors have chosen delimitation ranges based on fractiles of the income distribution. For example, considering as middle class the group of individuals with an income between the third and the ninth decile (Solimano 2008), or consider the three middle quintiles as middle class (Easterly 2001; Foster and Wolfson 2009). The main drawback of this approach is not allowing for the analysis of changes in the size of the middle class held constant over time (Cruces, Calva, and Battistón 2011).

While the relative approach is favored in developed countries, its application in Africa is particularly problematic because it captures those who are very close to the poverty line and are actually living in vulnerable conditions (Thurlow, Resnick, and Ubogu 2015). Banerjee and Duflo (2008) note that the middle class defined in relative terms could be poor in absolute terms, especially in some low-income countries because of substantial differences in the consumption levels of the middle class in these countries.

### **3.2 The absolute approach**

Most economists adopt an absolute approach to defining the middle class in terms of income and consumption levels (Kharas and Gertz 2010). In developing countries, a definition of the middle class based on absolute bounds seems more suitable (Ricci 2020). Many intervals are constructed with the famous \$2 (the World Bank's extreme poverty line). For example, Banerjee and Duflo (2008) define middle-class households as having a daily per capita consumption between \$2 and \$10 valued at purchasing power parity (PPP), separating the lower middle class (between \$2 and \$4) and the upper middle class (between \$6 and \$10). The definition proposed by Ravallion (2010) is close to that of the Banerjee-Duflo, but he gives more meaning to the bounds by considering the middle class in the developing world those who are not poor by developing country standards, but are still poor by rich country standards. Thus, he defines the lower middle-class threshold as the median poverty line in 70 developing countries, which corresponds to \$2, and he sets the American poverty line of \$13 per day in 2005 PPP as the upper bound. Similarly, the African Development Bank (AfDB) defines the middle class as individuals with daily per capita expenditure between \$2-\$20 in 2005 PPP US dollars. The AfDB distinguishes between three sub-categories: the "floating class" between \$2 and \$4, the "lower

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<sup>5</sup> The use of the mean is not appropriate because of the extreme values that could influence the middle-class ranges.

middle class" between \$4 and \$10, and the "upper middle class" with per capita consumption of \$10 to \$20 per day.

The most widely applied measure for estimating the global middle class has been proposed by Milanovic and Yitzhaki (2002), who consider as middle class those individuals living on a per capita income between \$12 and \$50 per day, in 2000 PPP terms. The lower and upper bounds correspond respectively to the average per capita income level in Brazil and Italy. Similarly, Kharas and Gertz (2010) choose a range of \$10 to \$100 of daily expenditure per person in 2005 PPP, excluding individuals who would be considered poor in Portugal and Italy (the poorest advanced countries) and rich in Luxembourg (the richest advanced country).

The absolute approach is useful for international comparisons across countries and over time but seems too arbitrary for country analysis. Other approaches attempt to define the middle class in a less arbitrary<sup>6</sup> manner and try to justify the choice of the middle-class thresholds, namely the vulnerability approach and the poverty line-based approach:

### **3.2.1 The vulnerability approach:**

Goldthorpe and McKnight (2004) point out that social class is correlated with the risk that individuals face in the labor market. Based on their finding, Lopez-Calva and Ortiz-Juarez (2011) pioneered a vulnerability approach to estimating the middle class by exploring the relationship between income and vulnerability to poverty in selected Latin American countries (Chile, Mexico and Peru). They argue that not all non-poor households are necessarily middle class and that is possible to find the level of income associated with a set of assets and socioeconomic characteristics that allow households to be less vulnerable to poverty following various shocks. This approach requires panel data to estimate the probability of falling into poverty as a function of a range of variables (assets and several socioeconomic characteristics). The middle class is thus defined as non-poor households that have a low probability of falling into poverty but remain below an affluent threshold. This analysis yields to a specific range for the middle class from 10\$ to 50\$ in 2005 PPPs per day. They conclude that the middle class has grown significantly in the three countries studied.

Following the same approach, Ferreira et al. (2013) adopt the same \$10 to \$50 range to define the middle class in Latin American countries. They perform a validation of the lower threshold by examining the income levels that are consistent with self-reported middle-class status. They find that the lower envelope of subjective lower thresholds in their sample (about \$9 to \$10 PPP per day) is remarkably close to the lines obtained by the vulnerability approach.

In Africa, Zizzamia et al. (2016) also follow the methodology suggested by López-Calva and Ortiz-Juarez and attempt to develop a rigorous approach to defining and measuring the middle class in South Africa, they consider vulnerability to poverty as a key criterion for defining middle class status. Using panel data, they present a probability model that predicts the risk of remaining or falling into poverty, and then choose the expenditure level associated with a maximum poverty risk of 10% as the lower bound of the middle class and the expenditure level associated with effective invulnerability to poverty as the upper bound. They find that the middle class in South Africa is smaller than previous research

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<sup>6</sup> There are other multidimensional approaches or drawn from polarization studies that analyze the middle class in a less arbitrary way (Daoudim and Bakass 2022).

suggested. Similarly, Corral et al. (2019) builds on the same approach to define the Nigerian middle class, estimate its size and assess its evolution over time. They find that the profile of the middle class as defined by the vulnerability approach is consistent with expectations. Thus, the middle class has significantly different characteristics than the vulnerable group (higher education, better employment opportunities, asset ownership and residence in urban areas, etc.).

### **3.2.2 The poverty line-based approach:**

Burkhauser et al. (1996) have proposed a definition of the middle class based on absolute ranges, expressed not in PPP dollars but in terms of the national poverty line, which does not allow for international comparisons. They consider that the middle class includes households with income between two and five times the poverty line. Another definition based on the poverty line was proposed by Acs and Loprest (2005), they consider the middle-income families those with incomes between two and three times the poverty line.

### **3.3 The mixed approach**

This approach consists of combining an absolute lower limit and a relative upper limit. Birdsall (2010) proposed a lower limit of \$10 PPP per day and an upper limit corresponding to the 95th percentile of the income distribution. She set the lower limit at \$10 to separate members of the secure middle class from a larger group in the developing world who have escaped poverty, as defined by the international \$2 per day poverty line but are at risk of falling back into poverty. Birdsall argues that the middle class should have financial security, which means not having to worry about becoming poor. She considers those living in households with incomes between \$4 and \$10 per person per day to be the "strugglers"<sup>7</sup>. The relative upper bound (95th percentile) was chosen to exclude from the middle class those individuals relatively rich in their own society and whose income is most likely to come from inherited wealth or economic rents associated with monopoly or other privileges, and thus less associated with productive work activity.

Escudero and Petralia (2010) also opt for a hybrid definition and define the middle class as those above the poverty line and below the 90th income percentile.

The mixed approach as well as the absolute approach are criticized for using purchasing power parity (PPP) exchange rates, which do not properly reflect purchasing power adjustments across countries, as they are based on weak theoretical foundations and remain deficient with respect to the treatment of housing, productivity rates of government services, urban bias in pricing, etc. (Deaton 2010).

## **4. The middle class in Morocco: various definitions**

After Morocco's independence, most studies have focused on the bourgeoisie and the elite. Initially, the focus was on the relationship of the bourgeoisie and the elite to politics and social reproduction (Benhaddou 1997). In a second phase, research interests turned to the study of these social groups in

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<sup>7</sup> Birdsall notes that Mohamed Bouazizi, the street vendor whose suicide by self-immolation led to the Arab Spring riots in Tunisia, lived on about \$5 a day, which would mean he was middle class by many definitions (African Development Bank (2011), Banerjee and Duflo (2008), Ravallion (2010), etc.). Although he was not living in extreme poverty, his situation was precarious enough that he could not survive after the confiscation of his cart by the police and he was probably a struggler (Birdsall 2015).

business and enterprise (Catusse 2008; Tangeaoui 1993). The issue of social classes had already been raised in the comparative study between Morocco and the West by André Adam (1968) who worked on social classes in urban areas. After that, there was no study on the middle classes and their role in Moroccan society until 2008 (Igamane 2018). As mentioned before, the first official study on the middle class in Morocco was made in 2009 by the HCP, which adopted two approaches to define the middle classes. The first approach is subjective and is based on self-reporting of household social status. It considers as middle class all households that identify themselves in an intermediate position between the poor and the rich. As a result, 55.8% of the population consider themselves to be middle class. The second approach is objective and consists of the application of a relative approach that considers as middle class all households whose income (or consumption expenditure) is between 0.75 and 2.5 times the median value. The HCP shows that the middle class<sup>8</sup> covers 53% of the population and concludes that it is heterogeneous in terms of income, socio-professional structure and living conditions (HCP 2009).

The HCP study has opened the debate on the issue of the middle class in Morocco, notably with the concomitant publication of the CESEM study whose researchers favored a qualitative approach by conducting individual interviews with newspaper editors, political actors, civil society, etc. By combining qualitative results with statistical data, CESEM researchers segment the middle class in Morocco into four categories based on two assumptions. The first is economic and stipulates that the middle class must be self-sufficient in order to live (not just survive), while the second is sociological and considers that the middle class must be able to perform social mobility. As a result, they have identified boundaries based on behavioral, income and consumption indicators while questioning the relative approach of the HCP. They find that Morocco's statistical curve is more hourglass-shaped than balloon-shaped. In other words, the Moroccan middle classes are a distinctive minority rather than carriers of mass effects (Peraldi et al. 2009).

Thus, the two studies mentioned above have initiated a movement of interest in this social segment that has given rise to conference-debates such as the one organized in 2014 by the Attijariwafa bank Foundation named "Middle class and shared sustainable growth". Most speakers criticized the definition adopted by the HCP and proposed alternative definitions with higher thresholds. For example, Moroccan economist Youssef Saadani considers that the relative approach adopted by the HCP is more appropriate for developed countries but risks considering poor people as middle class in developing countries. Therefore, he proposes an absolute definition by considering as middle class all households with a monthly income between 10,000 and 40,000 dirhams, this range is much higher than that of the HCP which delimits the middle classes between 2800 and 6700 dirhams. Similarly, Based on the study conducted by the financial auditing firm Ernst & Young (2013) on emerging countries, the economist Mohamed Mabrouk, partner of EY France, emphasized the need to raise the criteria to provide a definition that is much more useful and close to Moroccan realities. He considers as middle class all people earning between \$10 and \$100 a day (Attijariwafa bank Foundation 2014).

Other researchers have been interested in studying the Moroccan middle class, such as Shana Cohen, who combined institutional economic analysis with cultural theory and ethnographic observation, including interviews with seventy young adults. She reveals that the majority of urban Moroccan youth perceive an improvement in their economic and social well-being outside the types of civic participation

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<sup>8</sup> The size of the middle class is 58.1% according to the standard of living criterion (consumption expenditure).



typically associated with nationalism and national identity. She points to the formation of a "modern national middle class", responsible for setting an example of social transformation on the basis of nationalism and access to modernity (Cohen 2004). For their part, Touhami and Ejjanoui (2012) find, by studying the polarization of household consumption expenditures, that the demographic weight of the middle class in Morocco did not change significantly between 1985 and 2007. More recently, Arbouch and Dadush have used an alternative measure that consists of estimating the size of the middle class based on the number of cars in circulation. They state that this method can complement studies based on household surveys in developing countries, where car ownership separates those with the ability to purchase many other non-essentials products from the rest of the population. According to this study, about 38% of the Moroccan population belong to the middle class (Arbouch and Dadush 2019).

The study by the Economic, Social and Environmental Council (CESE 2021) was conducted to address two main questions, namely the notion or concept of the middle class and ways to preserve and expand it in Morocco. This study also criticizes the HCP approach by stressing that the middle class should not be solely a statistical definition, but rather should be based on other elements such as lifestyle, level of education and aspirations to determine a middle class capable of playing a central role in achieving social and political stability and driving the country's economic, social and cultural development.

Other studies have been conducted within an international comparative framework in which Morocco is not the focus of the analysis and generally represents only one observation in the sample of countries considered, such as the Economic and Social Commission for Western Asia (ESCWA) study of Arab countries, which explores the relationship between the state, social policies and the middle class in the Arab region. This study proposes two definitions of the middle class. The economic definition considers both the quality and quantity of household expenditures. Thus, members of the middle class are those who can meet all their basic needs and whose spending on non-essential goods and services does not exceed the national poverty line. The social definition is based on a set of social attributes, regardless of the level of material well-being. Thus, the middle class includes the employed in the formal private or public sectors, belonging to the "white collar" occupational category, and having a secondary or higher level of education. The main finding of the report is the strong negative correlation between social unrest and the size of the middle class in the Arab region (ESCWA 2014).

Concerning the Arab Planning Institute study, Ali (2011) used the national PPP poverty line as the lower threshold and \$13 per day as the upper threshold to define the middle class in five Arab countries, namely Egypt, Jordan, Morocco, Tunisia and Yemen. According to this definition, the size of the middle class in these countries is relatively high and reached 79% of the total population in the mid-2000s, a share that has been stable since the mid-1990s.

Last but not least, an interesting study on the Arab middle class, entitled "The Bedrock of Society", was conducted by Booz & Company using a survey of approximately 1,500 middle class individuals in Egypt, Saudi Arabia and Morocco. It attempted to combine economic and social measures in identifying the middle class while showing that descriptions of the middle class revolve primarily around the concept of a comfortable life (meeting household needs, receiving a good salary and enjoying a high standard of living). The report makes it clear that the current middle class is not satisfied with its economic prospects, although Saudis are much happier than Egyptians and Moroccans. According to Booz & Company (2012), the Arab middle class is predominantly salaried and works in the public sector. Such over-reliance on the public sector generally hinders the development of the middle class.

## 5. Data and Methodology

In this article, we use data from the 2014 National Household Consumption and Expenditure Survey (NHCES)<sup>9</sup> carried out by the HCP among 15970 households. This survey was conducted using a three-level stratified sampling design and is representative at the national and regional levels and by place of residence.

The indicator used to measure the monetary middle classes is the consumption expenditure, which provides an easier and more relevant measure of the standard of living than income in developing countries where income data are not considered as accurate or credible as household expenditure data (Deaton and Grosh 2000; Deaton and Zaidi 2002). Moreover, in these countries, incomes tend to exhibit large seasonal variations (Tarozzi, 2007), while consumption tends to be more regular and less variable than incomes. It is therefore a better measure of permanent welfare because households can borrow, use savings, or obtain transfers to mitigate short-term fluctuations.

Since there is no consensus on the lower and upper limits of the middle-class income range, we have studied four types of economic definitions<sup>10</sup> namely, the relative middle class (HCP), the absolute middle class (Ravallion), the poverty-line middle class (Burkhauser) and the mixed middle class (Birdsall). For each approach, once the middle class has been identified, we proceed to characterize it in terms of both objective dimensions (occupation, education, demographic behaviors and consumption patterns) and subjective dimensions (preferences, fears, concerns and degree of satisfaction in the various dimensions of wellbeing).

The comparison of the objective and self-perceived profiles associated with the different monetary approaches would allow us to determine, which approaches lead to a middle class that represents the typical characteristics of this group as described in the literature. These different comparisons were made using several parametric tests, namely the V Cramer test, the test of comparison of means and the test of proportion as well as the nonparametric test of Kendall, which was used to study the adequacy between the various objective approaches and the subjective one. Kendall's rank correlation provides a nonparametric test of independence that measures the strength of dependence and the similarity between two different orders.

To go beyond descriptive analysis, we use an ordered probit model to identify the factors that influence self-identified social status represented by an ordinal polytomous qualitative variable (taking three modalities: poor, middle class or rich). The model considered is of the following form:

$$j = 1, 2 \text{ or } 3 \quad (1)$$

Where  $y_i^*$  is the latent<sup>11</sup> variable to which corresponds the observation  $y_i$  of the self-identified social status of household "i"

$x_i$  is the vector of the characteristics of household "i"

$\varepsilon_i$  corresponds to the error term that is assumed to be normally distributed.

F is the cumulative distribution function of the normal distribution.

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<sup>9</sup> This is the most recent data available at : [https://www.hcp.ma/Enquete-Nationale-sur-la-Consommation-et-les-Depenses-des-Menages-ENCDM-2014\\_a2946.html](https://www.hcp.ma/Enquete-Nationale-sur-la-Consommation-et-les-Depenses-des-Menages-ENCDM-2014_a2946.html).

<sup>10</sup> We did not study the vulnerability approach due to the unavailability of panel data.

<sup>11</sup> The latent variable is unobservable; we only know when it crosses the thresholds.

$\alpha_i$  corresponds to the limits, which separate the different self-identified classes.

The probability that household "i" has the alternative "j" is:

(2)

The estimated coefficients  $\beta$  express the variation of the logarithm of the odds ratios, following a variation of the explanatory variable by one unit.

The ordered probit model with j alternatives will have j marginal effects.

The marginal effect of an increase in an explanatory variable  $x_r$  on the probability of having alternative j

(3)

Therefore, a unit increase in the independent variable  $x_r$  increases / decreases the probability of choosing the alternative j by expressed as a percentage (Boes and Winkelmann, 2006).

**Table 1. List of variables used in the ordered probit model**

Demographic structure	Household size, economic regions, place of residence, marital status, sex and age of the household head (HH), Proportion of children under five years in the household. Household typology.
Socioeconomic characteristics of the household	Logarithm of the average annual expenditure per person; Socio-professional category of the HH; proportion per household of inactive persons, proportion of employed persons and proportion of unemployed; employment status of the HH. Educational level of the HH; proportion of illiterates per household; proportion of people with primary education; Proportion of secondary and higher education. Housing occupancy status (Owner, tenant, free housing), Having the following durable assets (shower, refrigerator, car, washing machine, air conditioner, computer); Having a house cleaner.
Characteristics of social integration	Social and political participation score represented by the sum of the following six dichotomous variables (1: Yes / 0: No) <b>1-</b> Be able to participate in public life and integrate into the social environment; <b>2-</b> To have easily administrative papers; <b>3-</b> To be able to express one's point of view; <b>4-</b> To be able to participate in the management of local affairs; <b>5-</b> To be able to join a political party, NGO, association, etc. ; <b>6-</b> To feel secure.
Characteristics related to the comparison over time or to a reference group	Evolution of the household's living standard over the last ten years (improvement, stagnation, deterioration, don't know) Intergenerational mobility: living conditions of the household in comparison with those of the parents of the HH (better situation, same level, worse, don't know).
Anticipations of the future and perceived insecurity about different risks	deprivations in terms of current consumption represented by the sum of the 10 deprivations listed below: not having (or not easily having) the financial means (1 yes and 0 no): <b>1-</b> To buy new clothes and shoes, blanket; <b>2-</b> To eat meat, chicken, fish; <b>3-</b> To eat two hot meals a day; <b>4-</b> To consult a doctor following an illness; <b>5-</b> To buy medicines; <b>6-</b> To have toiletries and hygiene products <b>7-</b> To receive, visit family and celebrate occasions; <b>8-</b> To educate all his children; <b>9-</b> To take charge of school fees; <b>10-</b> To have a few days of vacation. Housing comfort score (the sum of the following five dichotomous variables) Is your home...? (1: Yes; 0: No) <b>1-</b> Sufficient for the family; <b>2-</b> Is not exposed to bad smells or pollution; <b>3-</b> Is not exposed to noise; <b>4-</b> Close to the workplace; <b>5-</b> Close to social, administrative and road services. Score related to the source and stability of income (the sum of the following eight dichotomous variables) (1: Yes; 0: No) <b>1-</b> Be able to exercise a job or professional activity or to create a liberal activity; <b>2 -</b> Have sufficient income for household needs; <b>3 -</b> Have a regular salaried job for the unemployed; <b>4-</b> Have an agricultural or non-agricultural activity with regular income; <b>5-</b> Live without donations and transfers; <b>6-</b> Live without debt; <b>7-</b> Live without having to employ children (under 15 years); <b>8-</b> Be able to save money.

We have introduced a set of variables (see Table 1) that can influence subjective well-being (SWB) and the self-positioning of individuals on the social scale. Ravallion and Lokshin (2002) propose a classification of the determinants of SWB according to three groups of variables. The first group consists of objective variables such as consumption expenditure, durable household assets, education, employment, etc.). The second is essentially made up of the relative state of the household's standard of living compared to an individual or a reference group (the neighborhood, the parents of the household head, etc.). The third group of variables includes attitudes, expectations about the future and perceived insecurity in the face of various risks. While inspired by this typology, our list of variables will be slightly different to take into account the availability of data. Table 1 presents the explanatory variables of self-perceived social status assessed in the ordered probit model.

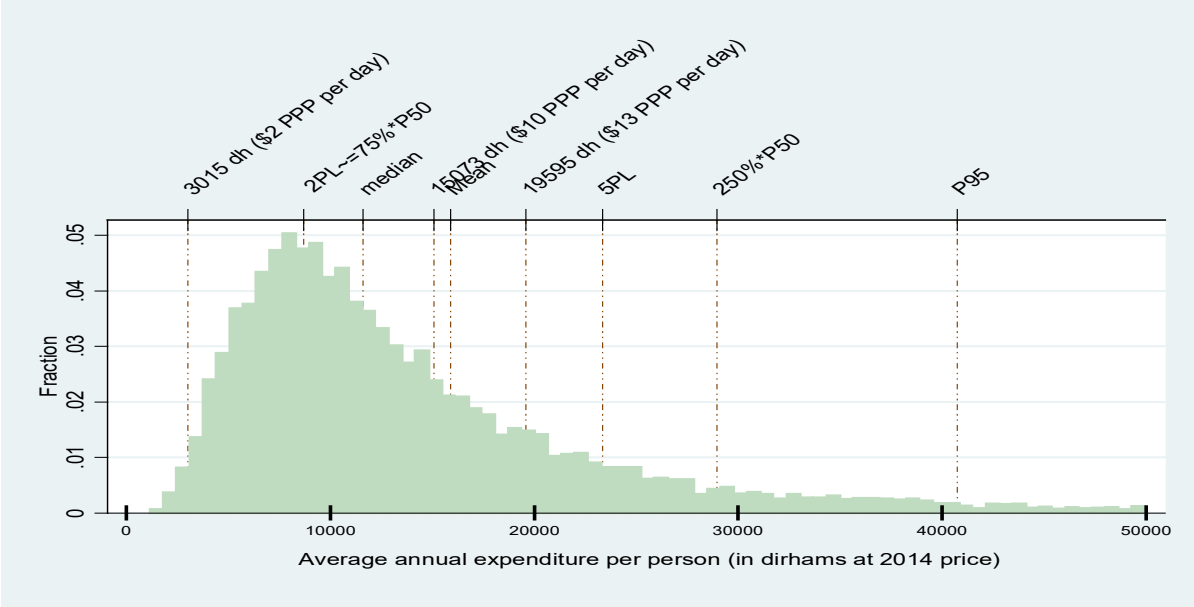
The final choice of variables retained in the model depends mainly on their relevance. Indeed, the selection of variables was made progressively by using the Bayesian Information Criterion (BIC). This latter is more parsimonious than the Akaike Information Criterion (AIC) since it penalizes more the number of variables present in the model and aims at selecting the statistically significant variables. Whereas the aim of the AIC criterion is to retain the variables that are relevant for the prediction (Ripley 2003). Thus, according to the BIC criterion, a regression is worse than the previous one if its BIC is higher.

**6. Results and discussion**

**6.1 Comparison of different criteria for defining the middle class**

Figure 1 represents the distribution of the household expenditures per capita in Morocco in 2014, as well as the position on it of some middle-class delimitation ranges. This distribution is positively skewed and stretched to the right due to the low living standards that are well illustrated by the concentration of households at obviously lower consumption levels.

**Figure 1. Distribution of Household expenditures per capita in Morocco in 2014**



Source: Author's calculations based on NHCES (2014).

Table 2 compares the ranges of the different intervals delimiting the middle classes according to their household expenditures per capita expressed in dirham in 2011 PPP adjusted to the 2014 price<sup>12</sup>. It also compares the self-identified social status of different objective middle classes.

A first observation is that the lower and upper limits of the various criteria do not match and do not overlap often enough, if ever for some intervals such as that of Ravallion (\$2-\$10) and any interval starting with \$10 such as that of Birdsall (\$10-50). This leads to enormous differences in the estimates of the size of the middle classes as well as of the other social classes. Indeed, the demographic weight of the middle classes varies widely from one approach to another and even within the same approach.

**Table 2. Comparison of different monetary criteria and the subjective criterion to define the middle classes in Morocco.**

Approach	middle class ranges	Monthly expenditure per person in DH PPP 2011 (Price 2014)	Monetary social classes			Share of self-identified social classes among the monetary middle class			Kendall coefficient
			Lower class	Middle class	Upper class	Lower class (44.3%)	Middle class (51.2%)	Upper class (4.5%)	
Absolute	[\$2-\$10]	[248-1239]	1.0	64.9	34.1	54.6	42.3	3.1	0.2825
	[\$2-\$13]	[248-1611]	1.0	77.2	21.8	51.3	45.4	3.2	0.2818
	[\$2-20 \$]	[248-2478]	1.0	89.7	9.3	47.6	48.8	3.6	0.2534
	[\$4-20 \$]	[496-2478]	12.9	77.8	9.3	44.5	51.8	3.8	0.2689
	[\$10-20 \$]	[1239-2478]	65.9	24.8	9.3	29	65.8	5.2	0.2970
	[\$10-\$50]	[1239-6194]	65.9	33.0	1.1	24.8	68.6	6.7	0.2901
	[\$10-\$100]	[1239-12389]	65.9	33.9	0.2	24.1	68.7	7.2	0.2845
	[2PL-5PL]	[719-1945]	33.4	50.7	15.9	41.3	54.8	3.9	0.2986
Relative	[75% P50-125% P50]	[724-1207]	31.2	32.3	36.5	47.8	48.9	3.3	0.2813
	[50% P50-150% P50]	[483-1449]	11.7	61.4	26.9	50.3	46.5	3.2	0.2894
	[75% P50-150% P50]	[724-1449]	31.2	41.9	26.9	45.5	51	3.5	0.2918
	[60% P50-225% P50]	[579-2173]	18.6	69.0	12.4	44.1	52.1	3.7	0.2843
	[75% P50-250% P50]	[724-2414]	31.2	58.7	10.1	40	55.9	4.1	0.2904
Mixed	[\$10-P90]	[1239-2422]	65.9	24.1	10.0	29.4	65.5	5.1	0.2971
	[\$10-P95]	[1239-3394]	65.9	29.1	5.0	26.9	67.7	5.4	0.2992
	[PL-P90]	[496-3394]	4.8	85.2	10.0	46.9	49.5	3.6	0.2617

Note: P50, P90 and P95 correspond respectively to the median, the 90th and the 95th percentile of the distribution of the household expenditures per capita. PL corresponds to absolute monetary poverty threshold that is calculated in Morocco for each place of residence.

The Kendall coefficient between objective and subjective social classes is 99% significant for the 17 criteria studied in Table 2.

Source: Author's calculations based on NHCES (2014).

For the absolute approach, the size of the middle class varies from 24.8% for the range [\$10-\$20] to 89.7% for that of [\$2-\$20]. This shows that the choice of a lower threshold of \$2 widens and swells the Moroccan middle classes with vulnerable households at risk of falling back into poverty due to socio-economic shocks (Ravallion 2010; Mubila et al. 2011). However, within the same approach, ranges with

<sup>12</sup> In Morocco, the 2011 PPP conversion factor adjusted to 2014 prices is 4.13 dirhams according to the World Bank.

a lower bound of \$10 give rise to a smaller middle class not exceeding 34%. This is also well illustrated in Figure 1, which shows that the distribution of consumption expenditure of the Moroccan population is well concentrated between \$2 and \$10. For the relative approach, the weight of the Moroccan middle classes varies from 32.3% according to the definition that delimits them between 75% and 125% of the median, to 69% for that adopting an interval between 60% and 225% of the median. As for the mixed approach, the size of the middle classes varies from 24.1% for the approach that starts from \$10 and excludes the richest 10% to 85.2% for that delimiting the middle-class income between the poverty line and the 90<sup>th</sup> percentile.

According to the subjective definition of social status, 51.2% of the population consider themselves as middle class, 44.3% as poor and 4.5% as rich. By area of residence, 55.6% of urban residents consider themselves to be middle class compared to 44.5% of rural dwellers.

An examination of Table 2 shows that the objective middle class is not equivalent to that of self-identification. Indeed, if we examine the share of self-identified social classes among the middle classes measured according to the different monetary approaches, we find that Banerjee and Duflo's delimitation (\$2 to \$10) covers the largest share of households that consider themselves poor (54.6%), while only 42.3% of them identify themselves as middle class. Likewise for Ravallion's middle class (\$2-\$13), 51.3% consider themselves poor and 45.4% middle class. Conversely, middle classes with high delineation ranges are the most likely to consider themselves as such. This is well illustrated by the Kharas delineation (between \$10 and \$100) which defines a middle class whose members overwhelmingly (68.7%) consider themselves as such.

Despite these discordances, there is a positive and significant degree of correlation between each objective measure of social class and the self-identified measure. Kendall's correlation coefficients of the relationship between subjective and objective social class, displayed in Table 2, suggest that the standard of living classification is indeed relevant to the subjective assessment of social position. However, the fact that these coefficients are consistently below 0.3 indicates that other factors affect this self-assessment. These factors will be discussed further in the section devoted to studying the determinants of self-perceived social status.

## **6.2 Comparative analysis of the demographic and socio-economic profile of the middle classes according to different monetary definitions**

Examining the middle class in 2014 according to the four definitions used in this study shows that the size of the middle class differs from one definition to another. Ravallion's absolute approach assigns the highest demographic weight to the middle class (77.1%), followed by the relative approach officially adopted by the HCP in Morocco (58.7%), and then the poverty line-based approach (50.7%). While the mixed middle class has the lowest demographic weight with 29.2%.

Table 3 presents a set of indicators for analyzing and comparing the profile of the middle classes as measured by the four approaches mentioned previously. These different types of middle classes have demographic and socioeconomic profiles that differ in magnitude but have relatively the same structure as the whole population.

In terms of standard of living, the middle class measured according to the mixed approach represents the highest level among all approaches, followed by the HCP relative middle class, then the poverty line-based approach, while the Ravallion absolute approach leads to the most disadvantaged middle

class among all approaches and in relation to the entire population (see Table 3). The share of expenditures allocated to food by the different middle classes<sup>13</sup> studied varies inversely with their standard of living, supporting Engel's observation that spending on food decreases as income increases (Phlips 1983). Housing spending is the second item that weighs heavily on Moroccan's budget. The mixed middle class remains the only one whose housing expenditures are significantly lower than the overall population. These expenses decrease as the standard of living of each class increases. In this context, Bigot (2008) notes that housing expenses are pre-committed and constitute constrained expenses whose weight is increasingly heavy in the lower or intermediate groups.

Similarly, in terms of access to basic social services and ownership of durable assets, the mixed middle class has the highest rates of access and ownership and it stands out with an over-representation of households that place more importance on the acquisition of household equipment and the latest technologies (computer, car, internet, etc.). On the other hand, the middle class of Ravallion is characterized by the under-representation of households with access to these facilities. As for the relative middle class and that of the poverty line, they are significantly over-represented by households with access to the diverse services and equipment, except for those who own a car, a computer or have internet access<sup>14</sup>. They are much less numerous in these two classes than in the overall population. This is not in line with the literature on middle class consumption behavior concerning cars and the internet. Indeed, some researchers consider the purchase of a car as practically synonymous with entry into the middle class (Arbouch and Dadush 2019; Ali and Dadush 2012). Likewise, several authors consider that access to internet services is a key indicator of middle class lifestyles (Chikweche and Fletcher 2014). Other researchers have noted that countries with predominantly poor populations have fewer internet users (Ncube and Lufumpa 2015).

As for the share of the budget devoted to education, it is paradoxically lower for all middle classes except for the mixed one, whose share is not significantly different from the overall population. This result is not consistent with that of Banerjee and Duflo (2008), who found that educational expenditure increases among the middle classes, who generally seek a better and more expensive education for their children, thus embodying the typical trait that distinguishes the middle classes according to Bourdieu (1979), namely cultural goodwill in a perspective of social ascension.

Similarly, analysis of the educational profile of the middle classes as measured by the four approaches shows that the mixed middle class has a significantly higher level of education than the other middle classes. It is overrepresented by households headed by people with high levels of education, followed by the relative and the poverty-line middle classes, which are dominated by households headed by people with no education or only basic education (primary or lower secondary). While the absolute middle class has the lowest level of education among all the other middle classes and compared to the whole population. This classification of the different middle classes, according to the educational level of the household head, is confirmed by both the average proportions per household of illiterates and those with higher education (see Table 3). Therefore, only the mixed middle class represents a typical educational profile of the middle classes as described in the literature. Indeed, several studies have

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<sup>13</sup> For brevity, the different monetary definitions of the middle classes concept are simply referred to as the different middle classes in this work.

<sup>14</sup> In NHCES (2014), information on internet access is collected in the context of household equipment and thus represents households with access to the internet via a subscription. The number of internet users in Morocco would certainly be higher if internet users via a cybercafé or some forms of technology were included.

shown that secondary schooling and higher education are strongly correlated with middle class status (Easterly 2001; Mubila et al. 2011).

**Table 3 . Demographic and socioeconomic characteristics of the middle classes according to the different monetary approaches**

Indicators	RMC N= 9727	PMC N= 8227	MMC N= 5628	AMC N=11161	ALL N=15970
<b>Demographic characteristics</b>					
<b>Gender of the household head (HH)</b>					
Female	18.2	17.7	20.9	15.8	17.6
Male	81.8	82.3	79.1	84.2	82.5
<b>Marital status of the HH</b>					
Single	3.2	2.9	4.6	2.1	3.4
Married	80.8	81.5	77.0	84.3	81.5
Divorced	3.2	3.1	4.0	2.4	3.0
Widower	12.7	12.6	14.4	11.2	12.2
<b>Place of birth of the HH</b>					
Urban	33.5	31.7	43.2	25.1	32.9
Rural	66.3	68.0	56.5	74.7	66.9
abroad	0.2	0.3	0.3	0.16	0.2
<b>place of residence</b>					
Urban	67.5	64.4	79.3	46.7	60.0
Rural	32.5	35.6	20.7	53.3	40.0
<b>average age of the HH</b>					
	52.3	52.2	53.0	51.8	52.3
<b>Household size (mean)</b>					
	4.6	4.6	3.97	5.2	4.7
<b>Total fertility rate</b>					
	2.3	2.4	2.0	2.7	2.5
<b>Socioeconomic characteristics</b>					
<b>Education</b>					
No education	51.1	53.0	41.5	59.4	51.6
Primary	24.5	24.5	23.2	23.8	22.3
lower secondary	11.3	10.7	13.0	8.8	9.9
Secondary	9.1	8.5	13.9	6.1	9.4
Superior	4.1	3.4	8.4	2.0	6.8
<b>Occupation</b>					
Senior and Middle Managers	3.3	2.5	7.4	1.6	5.5
Employees and installation operators	13.1	13.0	15.3	10.2	11.4
Commercial, Artisans and Farmers	38.2	39.3	32.0	41.8	37.3
Workers and manual laborers	18.1	18.7	13.0	22.7	18.9
Retirees and annuitants	9.3	8.4	13.7	6.1	9.5
Inactive and Unemployed	18.2	18.2	18.7	17.6	17.5
<b>Type of employer</b>					
Public employment	6.1	5.5	10.1	3.5	7.0
Formal private employment	11.7	11.3	15.3	8.0	11.2
informal private employment	54.7	56.7	42.3	64.8	54.9
Inactive and Unemployed	27.4	26.6	32.3	23.7	27.0
<b>Employment status</b>					
Inactive, unemployed	27.6	26.8	32.5	24.2	27.4
Wage earners, employees	36.9	36.7	37.0	36.9	37.5
Self-employed	33.1	34.4	27.5	37.2	32.5
Employer	2.8	2.2	3.1	1.7	2.7



**Table 3 (continued)**

Indicators	RMC N= 9727	PMC N= 8227	MMC N= 5628	AMC N=11161	ALL N= 15970
Household expenditures per capita (mean)	15675	14507	<b>23204</b>	11025	19413
Average illiteracy rate per household (H)	34.3	<b>35.3</b>	29.6	<b>38.9</b>	34.6
Average share of persons with higher	4.6	4.1	<b>7.9</b>	2.9	6.4
Average inactive rate per H	59.1	59.3	59.2	<b>60.0</b>	59.4
Average rate of employed persons per H	35.6	35.6	35.7	35.0	35.7
<b>HH receiving transfers</b>	<b>42.1</b>	40.8	<b>50.5</b>	35.3	41.6
<b>Habitat type</b>					
villa, apartment or house	<b>71.4</b>	<b>69.1</b>	<b>81.9</b>	58.5	66.8
Precarious housing	17.9	19.2	10.5	<b>27.9</b>	22.0
rural permanent building	10.8	11.7	7.6	<b>13.5</b>	11.2
<b>Housing occupancy status</b>					
homeowner	72.5	72.7	73.1	<b>74.3</b>	74.1
Tenant	<b>18.2</b>	<b>18.0</b>	<b>18.7</b>	16.2	16.9
Free accommodation	9.3	9.4	8.2	<b>9.6</b>	9.0
<b>Household appliances and equipment</b>					
Computer	20.2	18.0	<b>31.7</b>	11.8	21.3
Internet	8.4	7.1	<b>15.8</b>	4.3	11.2
Car	9.0	7.4	<b>18.8</b>	4.1	13.1
Television	<b>96.4</b>	<b>96.3</b>	<b>97.3</b>	95.0	95.6
Satellite dish	<b>87.7</b>	<b>87.2</b>	<b>90.8</b>	83.8	86.2
Washing machine	<b>56.8</b>	<b>55.0</b>	<b>68.6</b>	43.5	53.2
Drinking water	<b>73.5</b>	<b>71.8</b>	<b>81.8</b>	62.5	69.7
Electricity	<b>97.3</b>	<b>97.1</b>	<b>98.4</b>	95.6	96.6
Bath or shower	<b>53.3</b>	51.1	<b>66.4</b>	42.1	52.3
Washbasin	<b>55.8</b>	<b>53.3</b>	<b>70.3</b>	41.8	52.9
Kitchen	<b>92.9</b>	<b>92.5</b>	<b>95.2</b>	90.8	92.3
<b>Consumption structure</b>					
Food	<b>40.8</b>	<b>41.9</b>	36.4	<b>44.3</b>	37.0
Clothing	<b>3.3</b>	<b>3.3</b>	<b>3.4</b>	3.1	3.2
Housing	<b>23.6</b>	<b>23.8</b>	22.7	<b>24.3</b>	23.0
Household Equipment	3.2	3.2	<b>3.4</b>	3.0	3.2
Hygiene and health care	8.7	8.5	<b>9.3</b>	8.1	8.7
Transport and communications	7.9	7.4	<b>9.4</b>	6.5	9.3
Education and leisure	4.3	4.1	5.6	3.6	5.6
Other B&S expenses	8.2	7.8	9.8	7.0	9.9

Note: RMC, AMC, PMC and MMC denote respectively Relative Middle Class (HCP), Absolute Middle Class (Ravallion), Poverty-line Middle Class (Burkhauser) and Mixed Middle Class (Birdsall).

Bold characters indicate the fact that the value is significantly (P-value <0.05) higher in the considered class compared to the rest of the population. The gray boxes in the table do the same for significantly lower values. For the rest, the difference is not statistically significant (P≥0.05). The mean comparison test was used for quantitative variables and the equality of proportions test for qualitative variables.

Source: Author's calculations based on NHCES (2014).

In terms of occupation, only the mixed approach is overrepresented by senior and middle managers as well as retirees and annuitants. The other types of middle class are significantly underrepresented by these categories. Conversely, commercial, artisan and farmers as well as workers and laborers are significantly underrepresented in the mixed class and strongly represented in the other classes. The

mixed class is distinguished from the other classes by public employment, which is significantly lower in the other classes. As for formal private employment, it is under-represented only in Ravallion's class characterized by the predominance of informal employment, which leads to very vulnerable employment and therefore to greater insecurity for individuals that we suppose middle class (Stoffel 2016). Thus, the stability in the labor market, represented by employment in the public sector and the private formal sector, is significantly greater only for the mixed class, which, again, remains the only one that exhibits the typical characteristics of the middle classes as mentioned in the literature. Indeed, several researchers argue that formal employment is generally associated with middle class membership (Banerjee and Duflo 2008; Mubila et al. 2011; Ncube and Lufumpa 2015).

From a demographic point of view, men head most of the middle-class households, all approaches combined. The share of female-headed households varies from 15.8% for the Ravallion approach to 20.9% for the Birdsall approach. The heads of middle-class households are generally married persons who are under-represented in the various middle classes compared to the whole population. More than half of the household heads are originally rural, and they are significantly overrepresented in the absolute middle class, whereas the relative and mixed middle classes are overrepresented by people born in urban areas. This remains consistent with the fact that those who have gone through socialization in urban area especially in a big city are more likely to be included in the middle class (Tichonova and Mareyeva 2013).

Similarly, urban households are overrepresented in all middle classes compared with the population as a whole, apart from the one defined by Ravallion's approach because of its inclusion of vulnerable households that are concentrated in rural areas characterized by poor access to basic equipment and infrastructure, to employment, to income, to education, etc. In this sense, the rural dimension of poverty in Morocco as well as the urban-rural divide can only be amplified by neoliberal urban policies that have transformed several Moroccan cities (Tangier, Rabat, Casablanca) into laboratories for capital accumulation, while creating huge class divisions (Bogaert, 2018). These inequalities between the two areas constitute one of the difficulties in achieving the objective of consolidating and expanding the Moroccan middle class. The challenge is therefore to raise the standard of living of citizens from rural areas.

The same pattern is observed for household size and their total fertility rate (TFR). They are significantly lower in the various middle classes than in the entire population, except for the Ravallion approach. Indeed, households in the absolute middle class are more numerous than the other types of middle class. They have the highest TFR, with 2.7 children per woman, compared with 2.3 and 2.4 respectively for the relative and poverty-line middle classes, while the mixed middle class has the lowest TFR, with only 2.0 children per woman compared to 2.5 for the overall population.

Moreover, the comparison of fertility among the four types of middle classes reveals a tendency for the number of children per woman to decline as the standard of living of the different middle classes increases. Several authors have tried to explain the fertility decline among groups with a high standard of living, some arguing that the poorest households prefer a high number of children to multiply the sources of household income (Atake and Gnakou Ali 2019). Others see this negative relationship between wellbeing and fertility as one aspect of the "behavioral effects" of demographic change, such as the increase in female labor force participation rates in response to low fertility (Bloom et al. 2009). This idea was confirmed in the Moroccan context by Hughes Rinker (2013) who notes that women (in lower-income families) with fewer children may engage in income-generating activities in addition to

taking on the majority of child-rearing tasks. Similarly, in a systematic review of studies on factors affecting the TFR decline in the MENA region, Pourreza et al. (2021) find that economic development and improved living standards are strongly associated with fertility decline in this region.

### 6.3 Self-perceived social status and subjective profile of the objective middle classes

The comparison of the four objective definitions of the middle class, based on the standard of living, with the self-perceived social status shows a mismatch between the objective and subjective classification for all the approaches studied (see Table 4). However, the extent of this discordance differs from one definition to another. Indeed, an examination of the matching coefficient, which corresponds to the percentage of correct subjective and objective classifications of the middle class, shows that the mixed middle class has the highest matching coefficient (59.1%), followed by the relative class of the HCP (55.7%) and then the poverty-line middle class (53.7%). While the absolute middle class presents the lowest level of matching with only 41.8% of conforming classifications.

This ranking was corroborated by the Cramer's V test, which allows us to identify the objective definitions that are more associated with the subjective classification of middle-class status. These results corroborate those of Kendall's non-parametric test displayed in Table 2. Thus, the middle classes with the highest delimitation ranges agree most with the self-identified ones, indicating that the income classification is indeed relevant to individuals' subjective assessment of their social position. However, the low level of association between the subjective approach and the different monetary approaches indicates that other factors affect the self-perceived social ranking (Lora and Fajardo 2011).

**Table 4. Correspondence between the objective and self-identified middle classes**

Objective middle classes		Subjective middle class (%)		Total objective (%)	MC matching coefficient	Cramer's V
		Not MC	MC			
Relative MC	Not MC	22.9	18.4	41.3	55.7%	0.048
	MC	25.9	32.8	58.7		
Absolute MC	Not MC	6.7	16.1	22.8	41.8%	-0.220
	MC	42.1	35.1	77.2		
Poverty line MC	Not MC	25.9	23.4	49.3	53.7%	0.016
	MC	22.9	27.8	50.7		
Mixed MC	Not MC	39.4	31.5	70.9	59.1%	0.177
	MC	9.4	19.7	29.1		
<b>Total subjective (%)</b>		44.3	51.2	100.0	--	

Note: MC denotes Middle class

Source: Author's calculations based on NHCES (2014).

With regard to the subjective wellbeing of the middle classes, households in the mixed middle class are the most satisfied in life with a percentage of moderate or high satisfaction exceeding 62%, followed by the relative middle class, which also has a higher level of satisfaction (56.8%) than the overall population. While members of the poverty-line middle class and that of Ravallion are the least satisfied with their lives, with satisfaction rates of 56.2% and 51.9% respectively, compared to 56.4% for the overall population.

As for the feeling of downgrading within the middle classes, 27.3% of households in the Ravallion class report a deterioration in their standard of living between 2003 and 2014, presenting therefore a significantly high level compared to the rest of the population. On the other hand, the mixed class

remains the least affected by this feeling, which concerns 24.7% of its members. The deterioration felt by the relative and the poverty-line middle classes is not significantly different from that of the rest of the population. It is mainly due to the high cost of living according to nearly 90% of middle class households, all approaches combined.

Satisfaction in terms of the different dimensions of wellbeing shows that, whatever the approach, income and employment generate the greatest dissatisfaction among middle class households, followed by culture and leisure. However, the social priorities differ from one approach to another. The mixed middle class is overrepresented in the category of households whose first social priority is social relationships, while the Ravallion middle class includes the majority of households whose first priority is access to basic social services, including public transportation. The relative middle class and the poverty-line middle class include the majority of households whose first priority is protecting youth from delinquency.

#### **6.4 Determinants of self-identified social status**

The results of the ordered probit model presented in Table 5 show that the model's goodness of fit is relatively good. Indeed, the McFadden  $R^2$  index is around 27.3%. Another criterion for evaluating the performance of the model consists of estimating its predictive capacity. Thus, the proportion of correct predictions of the model is 73% overall. This percentage rises to 74.5% for households that consider themselves poor and to 77.8% for those that identify themselves as middle class. While the self-identified as rich have the lowest percentage of correct predictions (10.2%).

The analysis of the determinants of self-perceived social status shows that several demographic variables have been excluded from the model because they reduce its quality of adjustment and do not have a statistically significant effect, such as the household type (individual, nuclear, single-parent, sibling or compound), the sex and age of the household head<sup>15</sup>, etc. On the other hand, the marital status of the household head seems to have an impact on self-classification. In fact, households headed by a married person are significantly more likely to report being middle class or rich compared to those headed by single people (never married), while the latter are not significantly different from divorced or widowed household heads. In this respect, several studies have shown that married people have higher subjective wellbeing than single, divorced, separated or widowed people. Some explain this positive relationship by the fact that marriage provides additional sources of self-esteem, support, and companionship (Frey and Stutzer 2002).

To eliminate the variance resulting from unexplained local effects such as the effect of public goods, we include a geographic variable representing all economic regions of Morocco. Thus, compared to the Tangier-Tetouan-Al Hoceima region<sup>16</sup>, households in all other regions are more likely to consider themselves middle class or rich except for the region of Rabat-Sale-Kenitra whose households are more

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<sup>15</sup> The demographic characteristics of the respondent could yield different results, but the unavailability of this information lead us to use those relating to the household head.

<sup>16</sup> This region is one of the twelve regions of Morocco following the territorial division of 2015. It is bounded by the Mediterranean Sea to the north and the Atlantic Ocean to the west. It is surrounded to the south by the regions of Rabat-Sale-Kenitra (Rabat is the administrative and political capital) and Fez-Meknes and to the east by the Oriental region. The largest and most populous region is the Casablanca-Settat (Casablanca is the economic capital), located in the center-west of the country.

likely to report being poor. While the region of Dakhla-Oued Eddahab does not present any significant differences with the reference region.

Contrary to our expectations, household size has a significantly positive effect on their self-perceived social status. In other words, larger households are more likely to identify themselves as middle class or rich. All other things being equal, one more person in a household decreases the probability of considering themselves poor by 3% and increases the chances of being classified as middle class or rich by 2.8% and 0.2% respectively. In the same vein, the report of the HCP (2018) shows that household size is one of the indicators directly involved in guiding the opinion of the households on the evolution of their socio-economic levels. In this regard, 61.6% of households with 1 to 2 people declare a deterioration in their living standards. While this proportion is only 24.3% for larger households of six persons or more.

The analysis of the income effect, as approached by household expenditure, on self-identified social status shows that households with a higher standard of living have a low probability of declaring themselves poor and are more likely to consider themselves as middle class or rich. Marginal effects indicate that, *ceteris paribus*, a unit increase in the logarithm of the average annual expenditure per person increases the probability of considering oneself as middle class or rich by 13.2% and 1% respectively. This positive and significant correlation with income constitutes one of the most confirmed stylized facts in the empirical literature on the determinants of subjective wellbeing (Easterlin 2001).

The results of the estimation of the model show that the socio-professional category of the household heads affects their self-perceived social status. Compared to laborers and manual workers, all other categories are less likely to identify themselves as poor and more likely to consider themselves middle class or rich. These chances of attributing a higher status are increasingly important among inactive household heads and especially among retirees and annuitants. The chances of achieving high social status depend largely on employment status, which is indicative of the employment stability inherent in working in the public or formal private sector. Thus, all other things being equal, moving from public to informal private employment increases significantly the risk of declaring oneself poor by 7.2% and decreases the chance of considering oneself middle class or rich by 6.5% and 0.7% respectively.

Regarding the education of the household head, having a relatively high level of education (lower secondary or higher) increases the chances of feeling middle class or rich, and conversely, being uneducated or having a primary level of education increases the probability of considering oneself as poor. Indeed, all other things being equal, a household headed by a person having a lower secondary level or at least secondary education increases the chances of considering themselves middle class respectively by 4.7% and 3.7% compared to a household headed by uneducated person. Likewise, the percentage of illiterate per household has a significantly negative effect on self-perceived social status. The higher the number of illiterates in the household, the more likely the household is to be classified as poor and vice versa.

Other characteristics related to housing conditions also have a significant effect on the social status declared by the household. Regarding the housing occupation status, being a tenant or having free housing increases the probability of considering oneself poor and decreases that of feeling middle class or rich compared to owner-occupied households. Likewise, the possession of certain assets by the household such as the shower, the washing machine, the refrigerator, etc., increases significantly the

chances of considering oneself among the middle class or rich. In addition, all other things being equal, households with a house cleaner at home are 9.3% more likely to consider themselves as middle class.

**Table 5. Determinants of the subjective identification of social status**

Indicators	Coefficients	Marginal effects of:		
		Y = 1 "Poor"	Y = 2 "Middle class"	Y = 3 "Rich"
<b>Regions (Tangier-Tetouan-Al Hoceima)</b>				
Oriental	0.138 *** (0.050)	-0.055 *** (0.020)	0.052 *** (0.019)	0.003 *** (0.001)
Fes-Meknes	0.317 *** (0.044)	-0.125 *** (0.017)	0.117 *** (0.016)	0.008 *** (0.001)
Rabat-Sale-Kenitra	-0.152 *** (0.044)	0.060 *** (0.017)	-0.058 *** (0.017)	-0.002 *** (0.001)
Beni Mellal-Khenifra	0.608 *** (0.048)	-0.232 *** (0.018)	0.210 *** (0.016)	0.022 *** (0.002)
Casablanca-Settat	0.326 *** (0.041)	-0.129 *** (0.016)	0.121 *** (0.015)	0.008 *** (0.001)
Marrakech-Safi	0.224 *** (0.045)	-0.089 *** (0.018)	0.084 *** (0.017)	0.005 *** (0.001)
Drâa-Tafilalet	0.301 *** (0.062)	-0.119 *** (0.024)	0.112 *** (0.023)	0.007 *** (0.002)
Souss-Massa	0.337 *** (0.050)	-0.133 *** (0.019)	0.125 *** (0.018)	0.008 *** (0.002)
Guelmim-Oued Noun	0.478 *** (0.088)	-0.186 *** (0.033)	0.172 *** (0.029)	0.014 *** (0.004)
Laâyoune-Sakia Al Hamra	0.003 (0.080)	-0.001 (0.032)	0.001 (0.031)	0.000 (0.001)
Dakhla-Oued Eddahab	-0.107 (0.092)	0.042 (0.036)	-0.041 (0.035)	-0.002 (0.001)
<b>Marital status of the HH (Single)</b>				
Married	0.123 ** (0.059)	-0.049 ** (0.023)	0.046 ** (0.022)	0.003 ** (0.001)
Divorced or widowed	-0.023 (0.065)	0.009 (0.026)	-0.008 (0.024)	0.000 (0.001)
<b>Household size</b>				
	0.076 *** (0.006)	-0.030 *** (0.002)	0.028 *** (0.002)	0.002 *** (0.000)
<b>Log (Household expenditures per capita)</b>				
	0.359 *** (0.025)	-0.141 *** (0.010)	0.132 *** (0.009)	0.010 *** (0.001)
<b>Occupation (Workers and manual laborers)</b>				
Employees and Installation Operators	0.237 *** (0.042)	-0.094 *** (0.017)	0.089 *** (0.016)	0.005 *** (0.001)
Commercial, Artisans and Farmers	0.211 *** (0.031)	-0.084 *** (0.012)	0.080 *** (0.012)	0.004 *** (0.001)
Senior and Middle Managers	0.128 ** (0.064)	-0.051 ** (0.025)	0.049 ** (0.024)	0.002 * (0.001)
Retirees and annuitants	0.528 *** (0.094)	-0.204 *** (0.035)	0.188 *** (0.031)	0.016 *** (0.004)
Inactive and Unemployed	0.419 *** (0.092)	-0.164 *** (0.035)	0.153 *** (0.032)	0.011 *** (0.003)
<b>Institutional sector (Public employment)</b>				
Formal private employment	-0.096 * (0.053)	0.036 * (0.020)	-0.033 * (0.018)	-0.004 * (0.002)
Informal private employment	-0.188 *** (0.052)	0.072 ** (0.020)	-0.065 *** (0.018)	-0.007 *** (0.002)
Inactive and Unemployed	-0.347 *** (0.098)	0.135 *** (0.038)	-0.125 *** (0.035)	-0.010 *** (0.003)

**Table 5 (Continued)**

Indicators	Coefficient	Marginal effects of:		
		Y = 1 "Poor"	Y = 2 "Middle class"	Y = 3 "Rich"
<b>Education (No education)</b>				
Primary	-0.014 (0.031)	0.005 (0.012)	-0.005 (0.012)	0.000 (0.001)
Lower secondary	0.130 *** (0.041)	-0.051 *** (0.016)	0.047 *** (0.015)	0.004 *** (0.001)
Secondary or Superior	0.101 ** (0.042)	-0.040 ** (0.016)	0.037 ** (0.015)	0.003 ** (0.001)
<b>Average illiteracy rate per household</b>	-0.209 *** (0.046)	0.082 *** (0.018)	-0.077 *** (0.017)	-0.006 *** (0.001)
<b>Housing occupancy status (Owner)</b>				
Tenant	-0.188 *** (0.029)	0.074 *** (0.012)	-0.070 *** (0.011)	-0.005 *** (0.001)
Free accommodation	-0.245 *** (0.039)	0.097 *** (0.015)	-0.091 *** (0.015)	-0.006 *** (0.001)
<b>Household having:</b>				
Shower	0.162 *** (0.024)	-0.064 *** (0.010)	0.060 *** (0.009)	0.004 *** (0.001)
Refrigerator	0.135 *** (0.038)	-0.053 *** (0.015)	0.049 *** (0.014)	0.004 *** (0.001)
Car	0.067 * (0.037)	-0.027 * (0.015)	0.025 * (0.014)	0.002 * (0.001)
Washing machine	0.152 *** (0.026)	-0.060 *** (0.010)	0.056 *** (0.009)	0.004 *** (0.001)
Air conditioner	0.108 * (0.057)	-0.042 * (0.022)	0.040 * (0.021)	0.003 * (0.002)
House cleaner	0.253 *** (0.066)	-0.100 *** (0.026)	0.093 *** (0.024)	0.007 *** (0.002)
<b>Social and political participation score</b>	0.014 ** (0.006)	-0.006 ** (0.002)	0.005 ** (0.002)	0.000 ** (0.000)
<b>Evolution of the living standard during the last 10 years (Improvement)</b>				
Stagnation	-0.268 *** (0.026)	0.104 *** (0.010)	-0.095 *** (0.009)	-0.009 *** (0.001)
Deterioration	-0.527 *** (0.030)	0.207 *** (0.012)	-0.193 *** (0.011)	-0.014 *** (0.001)
Do not know	0.205 *** (0.058)	-0.073 *** (0.020)	0.061 *** (0.016)	0.011 *** (0.004)
<b>Living conditions of the household in comparison with those of the parents (Better living conditions)</b>				
Same living conditions	0.030 (0.026)	-0.012 (0.010)	0.011 (0.009)	0.001 (0.001)
Worse living conditions	-0.333 *** (0.029)	0.132 *** (0.011)	-0.125 *** (0.011)	-0.007 *** (0.001)
Do not know	0.327 *** (0.040)	-0.121 *** (0.014)	0.107 *** (0.012)	0.014 *** (0.002)
<b>Deprivation in terms of current consumption</b>	-0.093 *** (0.004)	0.037 *** (0.002)	-0.034 *** (0.002)	-0.003 *** (0.000)
<b>Housing comfort score</b>	0.081 *** (0.009)	-0.032 *** (0.004)	0.030 *** (0.003)	0.002 *** (0.000)
<b>Score related to the source and stability of income</b>	0.107 *** (0.006)	-0.042 *** (0.002)	0.039 *** (0.002)	0.003 *** (0.000)
<b>cut1</b>	4.219 (0.281)			
<b>cut2</b>	6.696 (0.285)			
<b>Observations</b>	15970	7311	7893	766
<b>% of correct predictions</b>	73%	74.5%	77.8%	10.2%
<b>Pseudo R2</b>	0.273			

Significant at \*\*\* 99% \*\* 95% \* 90%

For qualitative variables, the reference categories are mentioned in brackets

Source: Author's calculations based on NHCES (2014).

In line with the empirical literature on the determinants of subjective wellbeing, a very important part of the variability of household self-positioning on the social scale is explained by the upward or downward trajectories of the household's standard of living (Burkhardt 2003). Indeed, compared with households that have experienced an improvement in their living standard over the past ten years, those who have experienced stagnation or a deterioration are, *ceteris paribus*, respectively 10.4% and 20.7% more likely to consider themselves poor and their chances of declaring being members of the middle class decrease respectively by 9.5% and 19.3%.

The results of the model highlight also a significant influence of social origin on self-perceived social status. Indeed, compared to households that have experienced upward intergenerational mobility, those who have lower living conditions than their parents are 12.5% less likely to consider themselves middle class.

Other indices or scores, based on households' evaluation of their own living conditions, whether economic, social or political, have a positive influence on subjective social status. With regard to the social and political participation score, the more the household is integrated into its social and public environment, the less likely it is to consider itself poor. Similarly for the housing comfort score, the more the household's living conditions are comfortable (absence of noise and bad odors as well as the proximity of the dwelling to the workplace and various social services, etc.), the more likely the household is to classify itself as middle class. In addition, households that report having financial difficulties to cover the various current expenses related to food, clothing, health, education and leisure, are more susceptible to consider themselves poor. This significantly negative relationship between these financial difficulties and self-perceived social status is confirmed by the significantly positive relationship between the income stability score and the subjective social status of the household.

## **7. Conclusion**

The examination of the middle classes measured according to several criteria confirms that the middle class size differs widely from one definition to another (Bonfond, Clément, and Combarrous 2015; Combarrous et al. 2019). It also shows that the label "middle class" in Morocco, all approaches considered, can mask significant disparities in both economic and socio-demographic characteristics as well as in perceptions and social priorities of this very specific group. Indeed, the Moroccan middle class is a very heterogeneous group whose objective attributes (education, employment, standard of living, etc.) and subjective perceptions are very diverse and vary according to the definition used to measure it.

Definitions with a greater lower bound give rise to smaller middle classes with objective and subjective characteristics that are closer to those typical of the middle classes. As a result, the mixed middle class has the lowest demographic weight and somehow exhibits the typical characteristics of the middle classes. While the reverse is true for Ravallion's approach, which gives rise to the largest middle class and whose profile corresponds much more to that of the poor and vulnerable. In the same vein, Maurin and Goux (2012) have noted that the choice of a narrow definition of the middle classes limits their "catch-all" character and therefore their heterogeneity.

In addition, the objective middle classes whose delimitation ranges are very high have the highest matching rates between objective and subjective social status. Therefore, classification by standard of living is effectively relevant in the subjective assessment that individuals make of their social position. This positive correlation was confirmed by analysis of the determinants of self-identified social status.



However, it has been shown that this correlation is far from perfect and that other factors affect the self-evaluation. Indeed, the subjective position in the social hierarchy is also influenced by the level of education, the profession and labor market status, the living conditions, etc. Other factors related to individuals' evaluation of their own wellbeing (housing comfort, social integration, financial difficulties, social origin and upward or downward trajectories of the household's standard of living) have an important influence on their self-perceived social status.

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