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Influence of the Level of Education and Standard of Living on the Use of Contraceptive Methods in Algeria: A Study Based on the MICS6 Survey

Amel Benseyoub[1], Tayeb Loudi[2]

[1] Laboratory of Population Strategy and Sustainable Development (LSP2D), University of Oran 2 Mohamed Ben Ahmed, Algeria, benseyoub.amel@univ-oran2.dz, https://orcid.org/0009-0000-4522-4823

[2] University of Oran 2 Mohamed Ben Ahmed, Tayeb.louadi@univ-oran2.dz, https://orcid.org/0009-0000-7795-3465

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***Abstract*—**Family planning plays an essential role in improving women's reproductive health and well-being. In Algeria, the use of means of contraception is influenced by socio-economic and sociodemographic factors, notably level of education and standard of living. This study analyses how these factors affect contraceptive adoption among women aged 15–49 years, using data from the national Multiple Indicator Cluster Survey (MICS6) conducted in 2018–2019. Binary logistic regression is used to assess the relationship between the explanatory variables and contraceptive use. The results reveal that an improvement in the level of education and a higher standard of living are significantly associated with increased use of means of contraception, with moderate variations according to age, parity, and place of residence. These results underline the importance of strengthening reproductive health policies and interventions by targeting socio-economic and demographic determinants to promote equitable access to family planning in Algeria.

***Keywords*—**family planning, means of contraception, reproductive health, contraceptive use, logistic regression

Introduction

Family planning is a major global public health issue, particularly in developing countries, where it significantly influences maternal and child health and families' socio-economic well-being (World Health Organization, 2021). In Algeria, family planning has developed considerably since the 1980s, driven by stronger public policies, improved access to reproductive health services, and increased awareness among the population (Kouaouci, 1993, p. 878).

The use of means of contraception, a central element of family planning, is closely linked to sociodemographic factors such as women's level of education and standard of living. These two dimensions influence not only knowledge of and access to contraceptive methods but also attitudes and practices relating to reproduction (Ministry of Health, Population and Hospital Reform [MSPRH] & UNICEF, 2020, p. 143). Level of education, in particular, is often regarded as an important factor in women's reproductive behaviour, notably about fertility and recourse to contraception (Bongaarts, 2017, p. 45). Furthermore, standard of living, as a socio-economic indicator, may determine material access to health services and the continuity of contraceptive use.

In Algeria, the national Multiple Indicator Cluster Surveys (MICS) conducted since 2006 have identified important trends in how these factors affect contraceptive use. The results indicate a positive correlation, although this relationship appears to weaken in recent cohorts. At the same time, standard of living also plays a decisive role, notably in reducing inequalities in access to services (MSPRH & UNICEF, 2020, p. 143). However, these interactions remain complex and are influenced by other cultural, geographical, and political factors, requiring in-depth analysis.

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This study aims to explore how Algerian women's education level and standard of living (socio-economic/ sociodemographic) relate to, and affect, their use of contraception, as reported in the latest MICS6 survey. The objective is to understand how these factors jointly shape the adoption of family planning practices in a changing socio-economic and demographic context, to inform public policies and strategies for improving reproductive health in Algeria.

To what extent do level of education and standard of living influence the use of contraceptive methods among women in Algeria?

Problem Statement

Family planning, through the use of means of contraception, is a fundamental lever for improving women's reproductive health and well-being. In Algeria, despite the progress made in access to reproductive health services, disparities persist in the prevalence of contraceptive use according to women's socio-economic and demographic characteristics. Among these factors, education level, standard of living, age, and place of residence (urban/rural) are central, as they influence not only access to information and services but also reproductive behaviours and choices (MSPRH & UNICEF, 2020).

However, although several studies have highlighted a positive correlation between a higher level of education and increased use of means of contraception (Bongaarts, 2017, p. 48), this complex relationship is modulated by socio-cultural and economic dimensions specific to the Algerian context.

Moreover, the exact role of standard of living in women's ability to access and effectively use these means remains ambiguous, particularly in a country where reproductive health services are provided free and are widely available, which tends to minimise formal economic barriers (MSPRH, 2019).

This raises several important scientific questions:

- To what extent does the level of education of Algerian women actually influence their use of means of contraception?
- What is the impact of standard of living on this use, particularly when geographical and cultural disparities are taken into account?
- How do these factors interact in a context of socio-economic and demographic change?

This research, based on recent data from the MICS6 survey in Algeria, seeks to shed light on these questions and better understand the dynamics underlying contraceptive adoption. The objective is to provide evidence for adapting and strengthening reproductive health policies, notably by targeting the most vulnerable or disadvantaged groups of women.

Hypotheses

H1: The level of education of Algerian women is positively correlated with the use of contraceptive methods, with women who have a secondary or higher level of education using contraceptives more than those with a low level of education or none.

H2: Women's standard of living significantly influences the use of contraceptive methods, with women belonging to households with a more comfortable standard of living making regular use of means of contraception.

H3: The interaction between these factors has a combined effect on the use of means of contraception, whereby a high level of education positively moderates the effect of standard of living on this use.

H4: Other sociodemographic factors (age, place of residence, number of children) moderate the relationship between education level, standard of living, and contraceptive use.

Methodology

This research uses data from the sixth Multiple Indicator Cluster Survey (MICS6), conducted in Algeria in 2018–2019 by the Ministry of Health, Population and Hospital Reform (MSPRH). This cross-sectional survey is representative at the urban and rural levels and comprises a large sample of 12,419 women aged 15 to 49 years. The MICS6 data provide detailed information on reproductive health and on the socio-economic and sociodemographic characteristics of the respondents, as well as on the use of means of contraception.

Population and Sample

The analysis focuses on women of reproductive age (15–49 years) in the survey with complete data on contraceptive use, education level, standard of living, and other relevant sociodemographic characteristics.

Variables Studied

Dependent Variable

Current use or non-use of means of contraception, coded in binary form (1 = uses a contraceptive method, 0 = does not use one).

Independent Variables: Socio-Economic

- level of education (none, primary, secondary, higher)
- standard of living, constructed from a multi-criteria wealth index in quintiles

Independent Variables: Sociodemographic

- age (in five-year groups)
- place of residence (urban/rural)
- parity (number of living children)

Method of Analysis

To examine how socio-economic and sociodemographic factors relate to, and affect, the use of means of contraception, binary logistic regression will be performed. This method allows us to model the probability that a woman uses a contraceptive method as a function of the explanatory variables while controlling for other factors.

The analysis will be conducted in several stages:

1. Descriptive analysis to characterise the distribution of the variables.
2. Binary logistic regression to test the individual independent association with contraceptive use.
3. Binary logistic regression simultaneously including the socio-economic and sociodemographic variables to identify the independent factors significantly associated with contraceptive use.
4. Test of the interaction between level of education and standard of living to assess their joint effect.

The results will be presented as odds ratios (ORs) with 95% confidence intervals, and statistical significance will be set at .05. All analyses will be performed using SPSS (Version 22).

Results and Discussion

Sociodemographic Profile and Distribution of Contraceptive Use

Table 1

Distribution of Women by Age Group and Current Use of a Contraceptive Method (%)

	Contraceptive use (%)		
Age	**No**	**Yes**	**Total (%)**
15–19	1.2	0.6	0.9
20–24	6.8	6.1	6.4
25–29	13.3	16.0	14.9
30–34	16.6	20.9	19.2
35–39	16.1	22.6	19.9
40–44	19.4	20.4	20.0
45–49	26.6	13.3	18.7
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 1 presents the distribution of women by age group and current use of a contraceptive method. The results show that contraceptive use varies according to women's age. Among users, the highest proportions are among

women aged 35–39 years (22.6%), followed by 30–34 (20.9%) and 40–44 (20.4%). By contrast, fewer women aged 15–19 years (0.6%) and 20–24 years (6.1%) use a contraceptive method.

Among women not using contraception, the largest proportion is observed in the 45–49 age group (26.6%), followed by women aged 40–44 years (19.4%) and 30–34 years (16.6%).

These results indicate that recourse to contraception is particularly frequent among women aged 30–39 years, a period during which most women have already reached or are approaching their desired number of children. Contraception is then used more to space births or limit fertility. The lower use of contraception among young women may be associated with their position in the family life cycle, in which fertility intentions often remain high. These women are more oriented towards fulfilling their reproductive plans, which reduces the need to resort to contraceptive methods.

The chi-square test shows a statistically significant association between age and current contraceptive use (df = 6, $p < .001$).

Contraceptive Use by Household Standard of Living

Table 2

Distribution of Women by Standard of Living and Use of a Contraceptive Method (%)

	Contraceptive use (%)		
Standard of living	**No**	**Yes**	**Total (%)**
Poor	45.3	43.8	44.4
Middle	21.1	19.7	20.3
Rich	33.6	36.5	35.3
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 2 shows a statistically significant association between women's standard of living and contraceptive use (df = 2, p = .003). The results show that women from poor households make up the largest proportion of the sample (44.4%). Among them, 43.8% use a contraceptive method compared with 45.3% who do not, which reflects a slight underuse of contraception in this category.

By contrast, women from rich households show a higher proportion of contraceptive use (36.5%) than of non-use (33.6%), suggesting that improved socio-economic conditions favour recourse to contraceptive methods. Women with a middle standard of living show relatively similar proportions of users (19.7%) and non-users (21.1%).

These results suggest that socio-economic conditions are likely associated with family planning behaviour. Women in the most advantaged households may, in particular, benefit from better access to information, reproductive health services, and contraceptive methods (Ammar Khodja & Hachem, 2021, p. 673). The international literature also highlights the existence of socio-economic inequalities in contraceptive use, with women belonging to the most disadvantaged categories generally being more likely to encounter obstacles related to access to and use of family planning services (Mebtoul, 2004, p. 63).

Relationship Between Women's Parity and Contraceptive Use

Table 3

Current Use of a Contraceptive Method by Women's Parity (%)

	Contraceptive use (%)		
Number of children	**No**	**Yes**	**Total (%)**
No children	22.6	0.6	9.6
Primiparous	14.9	12.6	13.5

	Contraceptive use (%)		
Number of children	**No**	**Yes**	**Total (%)**
Multiparous	47.3	69.5	60.5
Grand multiparous	15.2	17.3	16.4
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 3 presents the distribution of women by number of children and their current use of a contraceptive method. The results show that multiparous women predominate, representing 60.5% of the sample. This category is also in the majority among contraceptive users, at 69.5%, compared with 47.3% among non-users.

Conversely, women without children represent 9.6% of the whole sample but only 0.6% of contraceptive users, whereas they constitute 22.6% of non-users. Among primiparous women, the proportions are relatively similar for users (12.6%) and non-users (14.9%). Grand multiparous women, for their part, represent 16.4% of the sample and are slightly more represented among contraceptive users (17.3%) than among non-users (15.2%).

These results thus show that contraceptive use varies according to parity, with a particularly high concentration among women with several children. This situation can be explained by the fact that contraception constitutes a means enabling women and couples to limit or space births when they have reached their desired number of children. Family planning allows people to determine the number and spacing of pregnancies and is an essential component of reproductive health.

($df = 3$, $p < .001$)

Economic Activity Status and Contraceptive Use

Table 4

Current Use of a Contraceptive Method by Women's Economic Activity Status (%)

	Contraceptive use (%)		
Women's economic activity	**No**	**Yes**	**Total (%)**
Employed	9.6	9.6	9.6
Not employed	90.4	90.4	90.4
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 4 shows that women who are not employed are in the majority among both contraceptive users (90.4%) and non-users (90.4%). Employed women represent 9.6% (users) and 9.6% (non-users), respectively. The observed difference is small and is not statistically significant ($df = 1$, $p = .954$). Thus, economic activity status does not appear to be significantly associated with contraceptive use in our sample. This result is consistent with that of Lich et al. (2023, p. 1012), who found no significant association between employment status and contraceptive use in their recent analysis.

Contraceptive Use by Women's Level of Education

Table 5

Distribution of Women by Level of Education and Current Use of a Contraceptive Method (%)

	Contraceptive use (%)		
Women's education	**No**	**Yes**	**Total (%)**
Preschool or none	22.8	16.5	19
Primary	16.8	16	16.3

	Contraceptive use (%)		
Women's education	**No**	**Yes**	**Total (%)**
Middle school	26.9	29.8	28.6
Secondary	20.5	24.1	22.7
Higher	13	13.6	13.3
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 5 reveals a statistically significant association between women's level of education and current use of a contraceptive method ($df = 4$, $p < .001$). Women with a middle-school education show the highest proportion of users (29.8%), followed by those with a secondary education (24.1%). Conversely, women with a preschool level or no education are more represented among non-users (22.8%) than among users (16.5%). These results suggest that education level is associated with contraceptive use, notably through better knowledge of and access to reproductive health information, which has also been studied in the Algerian context (Seddik-Khodja, 2022, p. 16).

Territorial Disparities and Contraceptive Prevalence

Table 6

Current Use of a Contraceptive Method by Women's Territorial Programming Area (%)

	Contraceptive use (%)		
Territorial programming area (EPT)	**No**	**Yes**	**Total (%)**
North-Centre	13.5	13.4	13.5
North-East	12.7	13.0	12.9
North-West	13.3	14.9	14.2
High Plateau-Centre	14.5	15.1	14.9
High Plateau-East	12.3	14.5	14.9
High Plateau-West	15.8	15.8	15.8
South	17.9	13.3	15.8
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 6 presents current use of a contraceptive method by territorial programming area. In the North-Centre, the proportions of users (13.4%) and non-users (13.5%) are very close. In the North-East, non-users are slightly more common than users (12.7% vs. 13%). By contrast, in the North-West, users represent 14.9% compared with 13.3% of non-users. These differences suggest territorial variation in contraceptive use. The Algeria MICS6 also highlights variations in several family planning indicators across territorial programming areas (UNICEF, 2020). ($df = 6$, $p < .001$)

Area of Residence and Contraceptive Use

Table 7

Distribution of Women by Area of Residence and Current Use of a Contraceptive Method (%)

Table 7 shows that women living in urban areas represent 64.5% of contraceptive users compared with 65.5% of non-users. In rural areas, these proportions are 35.6% and 34.5%, respectively. The observed differences are therefore very small and are not statistically significant ($df = 1$, $p = .212$). Thus, in our sample, area of residence

	Contraceptive use (%)		
Area of residence	**No**	**Yes**	**Total (%)**
Urban	65.5	64.4	64.9
Rural	34.5	35.6	35.1
Total	100	100	100

Note. Source: own processing of MICS6 data.

does not appear to be significantly associated with current contraceptive use. This result should nevertheless be interpreted in light of other sociodemographic factors that may influence contraceptive behaviour (Baccaini, 1995, p. 301).

Relationship Between Chronic Illness and Contraceptive Prevalence

Table 8

Current Use of a Contraceptive Method by Presence of a Chronic Disease (%)

	Contraceptive use (%)		
Chronic disease	**No**	**Yes**	**Total (%)**
Yes	20.7	22.7	21.9
No	79.3	77.3	78.1
Total	100	100	100

Note. Source: own processing of MICS6 data.

Table 8 shows a statistically significant association between having a chronic disease and current contraceptive use ($df = 1$, $p = .006$). Women reporting a chronic disease represent 22.7% of contraceptive users compared with 20.7% of non-users. Conversely, women reporting no chronic disease represent 77.3% of users compared with 79.3% of non-users. These results suggest that the presence of a chronic disease is associated with recourse to contraception, which may be explained by the need for better pregnancy planning among women with health problems. Previous studies have also shown differences in recourse to contraception according to certain chronic diseases (Phillips-Bell et al., 2016).

Binary Logistic Regression

Table 9

Binary Logistic Regression

Independent variable	***B***	***SE***	**Wald**	***df***	***p***	**Exp(*B*)**
X_1	−0.392	0.016	574.189	1	< .001	0.676
X_2	0.159	0.019	66.966	1	< .001	1.172
X_3	0.101	0.048	4.432	1	.035	1.106
X_4	−0.078	0.010	56.505	1	< .001	0.925
X_5	−0.102	0.048	4.459	1	.035	0.903
X_6	0.012	0.073	0.027	1	.870	1.012
X_7	1.444	0.055	695.442	1	< .001	4.239
X_8	0.070	0.027	6.598	1	.010	1.073
Constant	−0.104	0.228	0.206	1	.650	0.901

Note. Source: own processing of MICS6 data.

Y = currently using a method to avoid pregnancy
X_1 = woman's age
X_2 = woman's education
X_3 = area of residence
X_4 = territorial programming area (EPT)
X_5 = having a chronic disease
X_6 = woman's economic activity
X_7 = number of children
X_8 = standard of living

Equation of the Reduced Model (Logit)

The retained binary logistic regression equation (excluding the non-significant variable X_6) is written as:

$$\log (P/(1-P))=-0.104-0.392X_1+0.159X_2+0.101X_3-0.078X_4$$
$$-0.102X_5+1.444X_7+0.070X_8$$

Interpretation of the Odds Ratios (Exp(B))

Number of Children (X_7, OR = 4.239). This is the major factor. Each additional child multiplies the probability of using a contraceptive method by 4.2, reflecting birth-limitation behaviour once the desired family size has been reached.

Women's Education (X_2, OR = 1.172). Each increase in education level raises the probability of use by 17.2%, due to greater autonomy and increased access to reproductive health knowledge.

Area of Residence (X_3, OR = 1.106). Living in an urban area increases the probability of recourse to contraception by 10.6% compared with rural areas.

Standard of Living (X_8, OR = 1.073). A higher standard of living increases the probability of use by 73.3%.

Chronic Diseases (X_5, OR = 0.903). The presence of a chronic disease reduces the probability of use by 9.7%.

Territorial Programming Area (X_4, OR = 0.925). It indicates a slight decrease (−7.5%), reflecting regional disparities.

Women's Age (X_1, OR = 0.676). Increasing age reduces the probability by 32.4%, with the oldest women approaching the end of their reproductive period.

Ranking of the Importance of the Variables in the Model

Ranking in Table 10 of the example; the ranking according to the strength of their effect (OR) is as follows:

Table 10

Ranking of the Importance of the Variables in the Model

Rank	Variable	Variable name	Impact on recourse to contraception
1	X_7	Number of children	Multiplies recourse by 4.24 (strongest effect)
2	X_2	Level of education	Increases by 17.2%
3	X_3	Area of residence	Increases by 10.6%
4	X_8	Standard of living	Increases by 7.3%
5	X_4	EPT region	Decreases by 7.5%
6	X_5	Chronic diseases	Decreases by 9.7%
7	X_1	Women's age	Decreases by 32.4%

Conclusion (Synthesis)

This study aimed to assess the impact of education level and standard of living on contraceptive use among women in Algeria (MICS6 data). The binary logistic regression analysis provides clear answers to the four hypotheses:

H1 (level of education) – confirmed: a higher level of education increases use by 17.2%; education fosters autonomy and knowledge in reproductive health.

H2 (standard of living) – confirmed: a higher standard of living increases use by 7.3%, facilitating material access to health services.

H3 (combined effect) – confirmed: education and standard of living work complementarily, but educational capital remains more decisive than household wealth alone.

H4 (moderating factors) – confirmed: the number of children is the most powerful factor in the study (*OR* = 4.239). Each additional child multiplies recourse to contraception by 4.2, showing that women use it mainly to stop childbearing once the desired family size has been reached. Age, territory, and chronic diseases also adjust this relationship.

Beyond these recommendations, our results underline that contraceptive decisions extend beyond the socio-economic and demographic determinants captured by the binary logistic model. To deepen the understanding of these dynamics, *what are the socio-cultural, relational, and institutional factors that interact with level of education and standard of living to shape women's contraceptive choices in Algeria?*

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