

The Role of Membership in Cooperatives in Reducing Poverty Among Their Members: A Comparative Approach in the Province of Azilal

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Abstract

This study examines the role of cooperative membership in reducing poverty among members in the province of Azilal, Morocco. A post-positivist quantitative design was adopted and a structured questionnaire was administered face to face to 370 cooperative members drawn from a survey base of 14,315 members. Poverty was treated as a multidimensional phenomenon captured through two monetary dimensions, income and consumption on the one hand and savings and asset ownership on the other and one non-monetary dimension covering human capital, health and access to basic services. Each respondent acted as his or her own control, the situation reported before joining being compared with the situation reported after joining, which limits the bias linked to unobserved characteristics such as motivation, ability or education. Paired sample t-tests were used to test the mean differences and Cohen's d to estimate the magnitude of the effects. Membership is associated with a very large and significant improvement in income and consumption (6.74 against 2.58, $p < 0.001$, $d = 2.225$) and in the non-monetary dimension (32.45 against 10.59, $p < 0.001$, $d = 3.090$), members reporting better access to training, schooling, health care, nutrition, hygiene and basic services. The savings and asset dimension, by contrast, moves in the opposite direction and records a significant but small decline (5.55 against 6.28, $p < 0.001$, $d = 0.271$), additional income appearing to be absorbed by immediate consumption rather than converted into savings or assets. The findings support financial education, easier access to credit and stronger institutional support for cooperatives.

Keywords: Azilal Province, Cooperative Membership, Monetary Poverty, Non-monetary Poverty, Poverty Reduction.

Introduction

In developing countries, cooperatives occupy a growing place in development strategies. They are credited with creating employment, improving access to markets and empowering marginalised groups, in particular women and young people (1). They are also analysed as instruments of community development in their own right (2). Their alignment with the Sustainable Development Goals of the United Nations has reinforced this interest (3). In Morocco, the cooperative sector is treated as a strategic axis of the new development model and its weight in the national socio-economic structure has grown steadily. The evidence on what membership actually changes in the living conditions of members nevertheless remains thin, particularly in the landlocked rural provinces where poverty is most concentrated. The International Cooperative Alliance defines a cooperative as an autonomous association of persons voluntarily united to meet their common

economic, social and cultural needs through a jointly owned and democratically controlled enterprise. Three features separate cooperatives from investor-owned firms: voluntary membership, democratic control independent of the capital contributed and allocation of surplus according to participation rather than shareholding. Three theoretical traditions explain why these features may bear on poverty. The theory of collective action holds that cooperation allows individual constraints to be overcome and common resources to be managed effectively (4). The theory of enterprise ownership attributes to cooperatives a comparative advantage through economies of scale and reduced transaction costs (5). The theory of social capital emphasises the strengthening of social ties and the resulting access to collective resources (6). Membership is therefore expected to act through an economic and a relational channel simultaneously. Empirically,

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(Received 10th June 2026; Accepted 29th September 2026; Published 21st October 2026)

membership has been associated with higher incomes, cooperatives allowing producers to negotiate better prices and to reach more profitable markets (7). Panel evidence from maize farmers in Ethiopia confirms that membership raises household income and lowers the incidence of income poverty, although the gains accrue mainly to better-endowed households (8). Savings and credit cooperatives extend financial inclusion in rural areas where commercial banks are absent (9, 10). The solidarity principle also makes cooperatives act as informal safety nets during crises (11). Beyond income, cooperatives contribute to human capital through collective learning and mutual trust (12, 13). Women's cooperatives further provide a space for learning and leadership that transforms social status (14). Membership has also been linked to improved food security and nutrition (15, 16). A review of this literature concludes that cooperatives address several dimensions of poverty simultaneously (17). The evidence is nevertheless concentrated on income and the accumulation of savings and assets is rarely examined as a distinct outcome.

Poverty is understood here in two complementary registers. The monetary approach identifies the poor by reference to a threshold of income or of consumption, the World Bank setting the extreme poverty line at US\$2.15 per day in purchasing power parity (18). It is open to well-known objections: a single threshold ignores the diversity of needs across territories; it captures a moment rather than a trajectory and crossing the line does not guarantee well-being. The non-monetary approach therefore treats poverty as a multidimensional condition in which individuals are excluded from the ordinary living patterns of their society when their resources fall far below its average (19). The present study accordingly separates three dimensions: income and consumption, savings and asset ownership and a non-monetary dimension covering human capital, health and access to basic services.

Evidence for the landlocked provinces of Morocco remains scarce and most studies compare members with non-members without controlling for the individual characteristics that determine the decision to join. This gap matters for policy in landlocked rural provinces such as Azilal, since territorial inequalities in human development

remain marked in Morocco (20). The present study addresses it by combining both approaches within a matched comparative design in which each member serves as his or her own control, isolating the effect of membership from unobserved characteristics such as motivation, ability and education.

The study therefore asks what role membership in the cooperatives of Azilal plays in reducing the poverty of their members. Three objectives follow. The first is to measure the effect of membership on income and consumption. The second is to measure its effect on savings and on the ownership of assets. The third is to measure its effect on the non-monetary dimension of poverty. Establishing which dimensions respond to membership and which do not have direct implications for the design of public support schemes.

The monetary variables retained are income and consumption stability, together with savings and the ability to accumulate assets. The non-monetary variables are human capital, expressed by access to training and children's schooling, health and access to housing and basic services. The hypotheses are formulated accordingly.

General hypothesis: membership in the cooperatives of Azilal has a positive and significant impact on the living conditions of members, acting simultaneously on economic levers and on the multidimensional aspects of poverty.

Hypothesis 1, income and consumption: Membership increases the income of members through the employment offered and the income it generates, which ensures greater consumption stability.

Hypothesis 2, savings and asset ownership: Membership enables savings and promotes productive investment, such as the purchase of equipment and tools, rather than mere subsistence consumption.

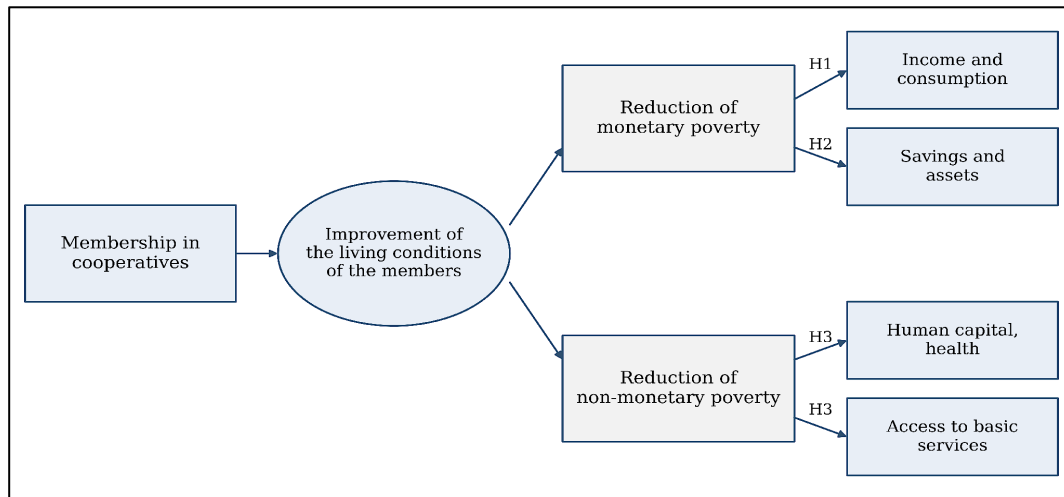
Hypothesis 3, human capital, health and access to basic services: Membership allows members to ensure their children's education and to benefit from technical training, provides access to health services, food security and hygiene and facilitates access to basic services.

The three hypotheses are summarised in Table 1 and the conceptual model of the study is presented in Figure 1.

Table 1: Summary of the Formulated Hypotheses

Field	Dimension	Expected relationship
Monetary poverty	Income and consumption level	Positive (+)
Monetary poverty	Savings and asset ownership	Positive (+)
Non-monetary poverty	Human capital, health and access to basic services	Positive (+)

Note: (+) indicates an expected improvement of the dimension after joining a cooperative.

**Figure 1:** Conceptual Model of the Study

Methodology

The study of the role of cooperatives in poverty reduction in the province of Azilal requires a rigorous methodological approach that allows an objective assessment of their contribution to the improvement of the living conditions of members.

Epistemological Positioning and Research Approach

The present work is situated within a post-positivist epistemological stance based on action research with a hypothetico-deductive reasoning mode and on the collection of empirical material of a quantitative nature. The inclusion of the study within a hypothetico-deductive framework anchored in theory allowed the relationships between the variables to be stated clearly, the investigative process starting from a general theoretical framework in order to study a specific fact related to the cooperatives of the province of Azilal. The quantitative approach was retained because it relies on measurable and verifiable data and therefore allows objective and reproducible results (21). By using precise indicators such as the evolution of the average income of members, the

evolution of access to crucial services or the level of diversification of income sources, it becomes possible to evaluate rigorously the effectiveness of cooperatives in the fight against poverty.

Analytical Framework of the Comparative Approach

The influence of cooperative membership on the poverty situation of members was examined by comparing members with non-members. In order to establish the basis for comparison, the control population of non-members was made up of the same individuals before they joined their cooperatives. Using the same individuals for both comparison groups removes the bias associated with intrinsic characteristics such as motivation, ability and education. The comparison is therefore carried out within a homogeneous population that belongs to the same social group and faces the same conditions and opportunities. The only point of distinction is membership in the cooperative, which is precisely the variable whose contribution to poverty is to be assessed. Figure 2 illustrates the methodological sequence of the population selection for this comparative approach.

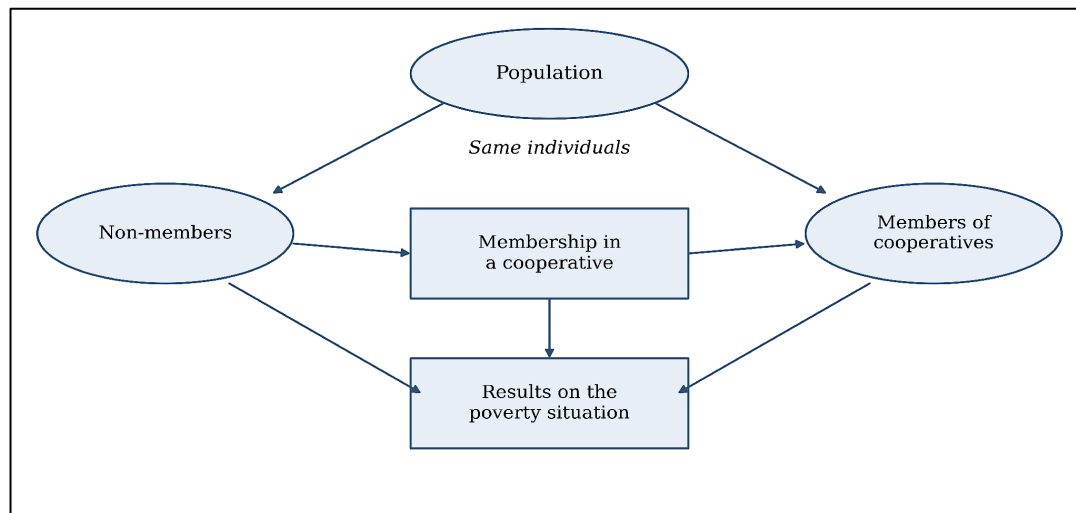


Figure 2: Analytical Framework of the Comparative Approach of This Study

The approach can be formalised as follows. Let X_i be the measure obtained for an individual i before joining a cooperative and Y_i the measure obtained after joining. The difference observed for each individual and the estimator of the mean of the differences are given by Equations [1, 2], the paired sample t-test statistic by Equation [3] and the standard deviation of the differences by Equation [4].

$$D_i = Y_i - X_i \quad [1]$$

$$\bar{D} = (1/n) \sum D_i \quad [2]$$

$$t = \bar{D} / (SD / \sqrt{n}) \quad [3]$$

$$SD = \sqrt{[(1/(n-1)) \sum (D_i - \bar{D})^2]} \quad [4]$$

For categorical variables, the McNemar test given in Equation [5] can be applied, where c is the number of cases moving from the poor to the non-poor state and b the number of cases moving in the opposite direction. The magnitude of the observed effects was estimated with Cohen's d , computed as shown in Equation [6].

$$\chi^2 = (b - c)^2 / (b + c) \quad [5]$$

$$d = (\mu_1 - \mu_2) / SD = t / \sqrt{N} \quad [6]$$

Questionnaire and Measurement

The questionnaire was retained as the data collection tool because it allows a significant number of individuals to be interviewed and gives easy access to information that is not directly observable, such as socio-demographic data, attitudes, opinions and behaviours (22). The order of certain items was mixed in order to avoid biases related to the interaction between questions, namely the halo effect, produced by answers given in the same manner to questions that go in the same direction, the rationalisation effect, which follows from answers based on social norms or perceived expectations and the contamination effect, which corresponds to the influence of one question on another. Because part of the target population has a low level of education, a face-to-

face administration mode was adopted in order to avoid any risk of misunderstanding.

The questionnaire opens with an introductory phase presenting the cooperative, its sector of activity and its territory, followed by an analytical section used to filter respondents on the points that reflect the effectiveness of membership, namely active participation in the cooperative, whether the cooperative is the sole source of income, whether the member intends to leave the cooperative and whether the contribution to the mandatory health insurance (Assurance Maladie Obligatoire, AMO) may be a reason to abandon the cooperative. The first field concerns the items related to monetary poverty, divided into a first dimension related to income and consumption and a second dimension related to savings and asset

ownership. The second field concerns the items of non-monetary poverty. The third field concerns well-being at work and is reserved for a later study. The fourth field is dedicated to demographic information, namely gender, age, marital status, number of children, education level, seniority in

the cooperative and city. The final questionnaire includes 13 items related to the theme of this study and 11 items for the respondent's profile. The items of the poverty variable are presented in Table 2 by field and by dimension.

Table 2: List of the Research Items by Field and Dimension

Field	Dimension	Items
Monetary poverty	Income and consumption	Income level
		Level of consumption
	Savings and assets	Savings capacity
		Level of vulnerability in relation to the territory
Non-monetary poverty	Human capital, health and various basic services	Power of asset ownership
		Access to training
		Education of children
		Nutrition
		Access to health care services
		Hygiene level
		Access to water and sanitation
		Clothing
		Access to electricity and telephone networks

Note: the third and fourth fields of the questionnaire, dedicated to well-being at work and to the respondent's profile, are not reported here.

Likert interval scales, nominal variables and binary variables were used to measure the study variables. The Likert scale allows respondents to express their degree of agreement or disagreement with a given statement. A five-point scale was adopted, ranging from very low to high for the income dimension of monetary poverty and from completely disagree to completely agree for the other items. A composite score was computed for each dimension by summing the corresponding items, so that the theoretical range is 2 to 10 for the income and consumption dimension, 3 to 15 for the savings and asset dimension and 8 to 40 for the non-monetary dimension.

Sampling

Cluster sampling would have been the ideal design in a rural province such as Azilal, since it allows municipalities to be drawn at random, but the detailed membership data by municipality required for such a design are not available. A non-probability sampling strategy combining purposive site selection with venue-based recruitment was therefore adopted, guided by the

feasibility of fieldwork and by the accessibility of the target population. Four pilot municipalities were selected purposively on the basis of the density and the recent expansion of cooperative activity in the province, namely Azilal, Demnate, Ait Taguella (Ouzoud) and Bzou. Within these municipalities, members were approached through three channels. First, the presidents of cooperatives and the local associations with which the research team had established prior contact facilitated introductions to their members. Second, respondents were recruited directly at the cooperative fairs held in Demnate and Azilal, which bring together cooperatives from across the province. Third, the Maison des Cooperatives in Bzou served as a further collection point. Members who had already been interviewed also referred other members, which introduces a snowball component into the recruitment. Data collection was carried out face to face by the corresponding author together with trained survey assistants. The province of Azilal has 1,250 cooperatives and the survey base used in this study comprises 14,315 members (23).

For reference, the classic finite-population formula reported in Equation [7] indicates the sample size that would be required for a given level of precision, where n is the sample size, N the population size, z the value associated with the confidence level, p the estimated proportion of the characteristic studied and e the tolerated margin of error.

$$n = N \cdot z^2 \cdot p \cdot (1 - p) / [e^2 \cdot (N - 1) + z^2 \cdot p \cdot (1 - p)] \quad [7]$$

With $N = 14,315$, $z = 1.96$ for a confidence level of 95%, $p = 0.5$ in order to maximise the size and $e = 0.05$, the formula yields a benchmark of $n = 374$.

A total of 370 members were interviewed, a figure close to this benchmark but constrained by the resources available for fieldwork. It must be emphasised, however, that this formula establishes only the precision that a given sample size would afford under probability sampling; it does not confer representativeness, which follows from the probability of selection inherent in the sampling process and not from sample size. Because participants were not selected with known and non-zero probabilities of selection, the sample is not claimed to be representative of the cooperative membership of the province and the estimates reported below should be read as valid for the respondents surveyed rather than as province-wide parameters. This constraint is acknowledged as a limitation in the discussion. It does not, however, affect the internal validity of the matched comparison, since each respondent serves as his or her own control and the before-and-after contrast is drawn within individuals.

Data Analysis and Ethical Considerations

Data were analysed with IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA). For each dimension studied, the hypotheses were tested independently on paired data. The null hypothesis states that membership in a cooperative does not have a significant impact on the improvement of the dimension considered, so

that the mean difference between the situation after and the situation before membership is equal to zero. The alternative hypothesis states that this mean difference is different from zero. Paired sample t -tests were used to test the mean differences, the correlation between the paired measures was examined for each dimension and Cohen's d was computed in order to estimate the magnitude of the effects, with the conventional thresholds of 0.2 for a small effect, 0.5 for a medium effect and 0.8 for a large effect.

The criteria of scientific rigour specific to quantitative analysis and the principles of research ethics were taken into consideration throughout the study. Participation was voluntary, the academic purpose of the research was explained to every respondent and all respondents gave their free and informed consent to the use and the publication of the information collected in a scientific journal. No personally identifiable information was collected and the responses were used for research purposes only.

Results

The descriptive statistics of the paired measures are reported in Table 3, the correlations between the paired measures in Table 4 and the results of the paired sample tests in Table 5. The effect sizes and the decisions on the research hypotheses are summarised in Table 6.

Table 3: Paired Sample Statistics for the Three Dimensions of Poverty

Dimension	Measure	Mean	SD	SE mean
Income and consumption	After membership	6.7405	1.82507	0.09488
	Before membership	2.5811	1.08459	0.05639
Savings and assets	After membership	5.5541	1.95021	0.10139
	Before membership	6.2784	1.23667	0.06429
Non-monetary poverty	After membership	32.4541	6.24732	0.32478
	Before membership	10.5919	4.42749	0.23017

Note: $N = 370$ for each pair, SD = Standard Deviation, SE mean = Standard Error of the Mean.

Table 4: Correlations of the Paired Samples

Pair	N	Correlation	Significance
Income and consumption, after and before membership	370	0.256	0.000
Savings and assets, after and before membership	370	-0.379	0.000
Non-monetary poverty, after and before membership	370	0.155	0.003

Note: Pearson correlation coefficients between the paired measures.

Table 5: Paired Sample Test of the Mean Differences

Dimension	Mean difference	SD	SE mean	95% CI lower	95% CI upper	t	df	Sig.
Income and consumption	4.15946	1.86945	0.09719	3.96835	4.35057	42.798	369	0.000*
Savings and assets	-0.72432	2.67574	0.13910	-0.99786	-0.45079	-5.207	369	0.000*
Non-monetary poverty	21.86216	7.07489	0.36781	21.13890	22.58542	59.439	369	0.000*

Note: Differences are computed as the score after membership minus the score before membership. CI = confidence interval of the difference, df = degrees of freedom, Sig. = two-tailed significance. *Significant at the 0.001 level.

Monetary poverty: Income and Consumption

Tables 3 and 5 show a significant difference at the 0.001 level in favour of the indicators of the first dimension of monetary poverty after joining a cooperative. Membership substantially improves income and consumption. The mean composite score rises from 2.5811 before membership to 6.7405 after membership, a mean difference of 4.15946 with a 95% confidence interval ranging from 3.96835 to 4.35057 ($t = 42.798$, $df = 369$, $p < 0.001$). The effect size measured by Cohen's d reaches 2.225 and therefore far exceeds the threshold of 0.8 that characterises a large effect, so that the effect of joining a cooperative on income and consumption is remarkably large.

Monetary poverty: Savings and Asset Ownership

Tables 3 and 5 show a significant difference at the 0.001 level for the second dimension of monetary poverty. The mean composite score is 6.2784 before membership and 5.5541 after membership, a mean difference of -0.72432 with a 95% confidence interval ranging from -0.99786 to -0.45079 ($t = -5.207$, $df = 369$, $p < 0.001$).

Although the difference is statistically significant, its magnitude is small: Cohen's d amounts to 0.271, close to the threshold of 0.2 that characterises a small effect. Membership therefore does not produce an improvement in the level of savings and of asset accumulation; the composite score in fact declines slightly after membership, although the magnitude of this decline is small.

Non-monetary Poverty

Tables 3 and 5 show a significant difference at the 0.001 level in favour of the non-monetary indicators after joining a cooperative. The mean composite score rises from 10.5919 before membership to 32.4541 after membership, a mean difference of 21.86216 with a 95% confidence interval ranging from 21.13890 to 22.58542 ($t = 59.439$, $df = 369$, $p < 0.001$). This finding is corroborated by the effect size, Cohen's d reaching 3.090 and far exceeding the upper threshold of 0.8, which means that membership in a cooperative has a remarkably large effect on the human capital, the health and the access to basic services of members.

Table 6: Effect Sizes and Decisions on the Research Hypotheses

Hypothesis	Dimension	Cohen's d	Magnitude of the effect	Decision
H1	Income and consumption	2.225	Very large, favourable	Supported
H2	Savings and asset ownership	0.271	Small, unfavourable	Not supported (effect in the opposite direction)
H3	Human capital, health and access to basic services	3.090	Very large, favourable	Supported

Note: thresholds retained for Cohen's d are 0.2 for a small effect, 0.5 for a medium effect and 0.8 for a large effect.

Discussion

The results obtained for the cooperatives of the province of Azilal confirm and enrich the lessons derived from the international and Moroccan literature on the role of cooperatives in the fight against poverty. They are discussed below in relation to previous research, with attention to contextual specificities, limitations and implications for public policy.

Effect of Membership on Monetary Poverty

The study reveals a statistically significant improvement in the income and the consumption of members after their integration into a cooperative (6.74 against 2.58, $p < 0.001$, $d = 2.225$). This result corroborates work showing that cooperatives are powerful vectors for increasing member income through the pooling of resources, access to markets and collective bargaining power, particularly in the rural areas of developing countries (7). In Morocco, agricultural cooperatives have likewise been shown to contribute to income generation and to strengthen access to markets (24). The improvement is particularly pronounced in regions with high socio-economic vulnerability such as Azilal, where the baseline situation before joining is often very low, which also explains the unusually large magnitude of the effect measured here.

The second dimension of monetary poverty behaves differently. The effect of membership on savings capacity and on asset ownership is statistically significant but small and, unlike the other two dimensions, negative in sign ($d = 0.271$), the composite score declining after membership. This is in line with the conclusions according to which cooperatives play a key role in access to financial services and in the reduction of vulnerability to economic shocks, while the most vulnerable households struggle to convert income into savings or into assets because of immediate consumption needs and of structural constraints such as limited access to credit (9, 10, 25). In Azilal, the accumulation function does not therefore follow automatically from the income function: the additional income generated by the cooperative appears to be absorbed largely by immediate consumption, which leaves little room for productive investment in equipment and tools. Evidence from rural China points in the same direction, the poverty-reducing effect of

cooperatives being weaker precisely among households with the lowest income and the lowest human capital (26).

Effect of Membership on Non-monetary Poverty

The contribution of cooperative membership to human capital is particularly marked in this study ($d = 3.090$). Members report better access to training and to the schooling of their children as well as to adult literacy. Integration into cooperative networks allows skills to be acquired, mutual trust to be strengthened and positive collective dynamics to emerge (12, 13). In Morocco, the dynamics of women's cooperatives illustrate this empowerment mechanism, membership strengthening women's economic opportunities, their participation in governance and their control over resources (27). Access to health care and to basic services such as water, sanitation and electricity is also improved for members, which is consistent with the evidence that inclusion in cooperative structures promotes food security, access to health care and better hygiene (15, 16). Despite the progress recorded at national level, territorial disparities persist in Morocco and the collective action of cooperatives helps to mitigate exclusion, particularly in remote rural areas (20).

Implications, Limitations and Further Research

Taken together, the results allow a decision to be taken on the formulated hypotheses. For the first dimension of monetary poverty, the null hypothesis is rejected and Hypothesis 1 is validated, since the mean difference is significant ($p < 0.001$) and the effect is substantial ($d = 2.225$). For the second dimension, the null hypothesis is rejected but the difference runs counter to the direction stated in Hypothesis 2: the mean difference is statistically significant yet negative and the effect is small ($d = 0.271$), so that membership is not associated with an improvement in savings and asset accumulation. For non-monetary poverty, the null hypothesis is rejected and Hypothesis 3 is validated, the effect being very large ($d = 3.090$). The hypotheses of the study are therefore validated for the dimensions of income, consumption, human capital, health and access to services, while Hypothesis 2 is not supported, the effect on savings and on asset accumulation being small and unfavourable.

These findings have direct implications for public policy. They argue for strengthening the financial and technical support granted to cooperatives, with a particular emphasis on financial education and on facilitating access to credit, since it is precisely at the stage of accumulation that the cooperative model reaches its limits in Azilal. They also argue for the collection of data disaggregated by municipality, which would improve the representativeness and the robustness of future studies and would allow support schemes to be targeted more precisely.

The study has several limitations related to field constraints. Because participants were recruited through a non-probability procedure, the sample is not representative in the statistical sense and the results cannot be generalised beyond the respondents surveyed. The analysis relies on self-reported data for several variables and the measure of the situation before membership is retrospective, which exposes it to recall bias and to a possible tendency of respondents to underestimate their initial situation; this mechanism may contribute to the unusually large effect sizes obtained. Finally, the design does not allow the long-term effects of membership to be assessed and the small negative effect observed on savings and assets calls for a deeper analysis of the mechanisms of wealth accumulation and of the obstacles to investment within cooperatives. Future research should extend the analysis to other provinces and to cooperatives operating in different sectors and should combine the quantitative approach with qualitative material to document the accumulation strategies of members over time.

Conclusion

The study conducted on the effect of membership in cooperatives in the province of Azilal contributes to the understanding of the role of cooperative organisations in poverty reduction in vulnerable rural areas of Morocco. Its added value lies in the adoption of a matched comparative approach that isolates the specific effect of membership on the various indicators of poverty, whether monetary or non-monetary. The results demonstrate robustly that membership in a cooperative significantly improves income and consumption as well as human capital, expressed through the benefits of training and of children's

education and access to health services and to the basic services related to the living conditions of members. The effect on savings and on asset accumulation, by contrast, is small and unfavourable, which indicates that the additional income generated by the cooperative is absorbed by immediate consumption. These findings confirm the structuring role of cooperatives in improving the socio-economic situation of vulnerable populations and validate the relevance of public support for these organisations, while showing that such support must be complemented by measures aimed specifically at accumulation, namely financial education and access to credit. If the institutional and structural constraints that hinder their growth are lifted, cooperatives can become a lever for inclusive human development and a real pathway for combating poverty.

Abbreviations

AMO: Assurance Maladie Obligatoire (mandatory health insurance), FAO: Food and Agriculture Organization, ICA: International Cooperative Alliance, ILO: International Labour Organization, ODCO: Office for the Development of Cooperation, PPP: Purchasing Power Parity, SD: Standard Deviation, SDGs: Sustainable Development Goals, SPSS: Statistical Package for the Social Sciences, UN: United Nations.

Acknowledgement

The authors thank the members of the cooperatives of the province of Azilal who agreed to take part in the survey, as well as the Office for the Development of Cooperation (ODCO) for providing the statistics on the cooperative sector of the province.

Author Contributions

Nabil El Alami: Conceptualisation, Research Design, Construction of the Questionnaire, Data Collection, Interpretation of the Results, Manuscript Drafting and Revision, Aicha El Alaoui: Literature Review, Theoretical Framing, Supervision, Critical Revision, Abdellah Hmimas: Statistical Analysis, Presentation of the Results, Verification of the Analyses. All authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Conflict of Interest

Nabil El Alami declares that he has no conflict of interest. Aicha El Alaoui declares that she has no

conflict of interest. Abdellah Hmimas declares that he has no conflict of interest.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available because of the confidentiality and privacy considerations attached to the participants. The statistics on the cooperative sector of the province of Azilal were obtained from the ODCO.

Declaration Of Artificial Intelligence (AI) Assistance

Generative artificial intelligence tools were used for two purposes in the preparation of this manuscript. The first is language refinement and grammar correction of the English text, the manuscript having originally been drafted in French. The second concerns the figures: the conceptual design and the content of all figures are entirely the work of the authors and AI assistance was limited to their graphical style and layout. No AI tool was used for the design of the study, the collection or the analysis of the data, or the interpretation of the results. The authors reviewed, edited and validated all the content and take full responsibility for the originality, the accuracy and the integrity of the manuscript.

Ethics Approval

The study involved an anonymous survey with adult participants and minimal risk. Participation was voluntary, the purpose of the research was explained to all respondents and free and informed consent was obtained from each of them for the use and the publication of the information collected. No personally identifiable information was collected and anonymity and confidentiality were strictly maintained. In accordance with the applicable academic research guidelines, formal institutional ethical approval was not required for this type of study.

Funding

The authors declare that no specific funding, grant or financial support was received from any public, commercial or not-for-profit agency for the conduct of this research or for the preparation of this manuscript.

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How to Cite: El Alami N, El Alaoui A, Hmimas A. The Role of Membership in Cooperatives in Reducing Poverty Among Their Members: A Comparative Approach in the Province of Azilal. *Int Res J Multidiscip Scope*. 2026;7(4):1428-1438. DOI: 10.47857/irjms.2026.v07i04.012827