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Unlocking the Economic Potential of Moroccan Women: Challenges and Opportunities

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Unlocking the Economic Potential of Moroccan Women: Challenges and Opportunities

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Abstract

The economic and social development of Morocco is hampered by the low participation of women in the labor market, a phenomenon deeply rooted in complex socio-cultural, economic, and structural factors. Although women make up nearly half of the country's population, their labor force participation rate remains significantly lower than that of men, which limits national productivity and perpetuates gender inequality. This study focuses on understanding the determinants that influence Moroccan women's decisions to enter the workforce, particularly in light of barriers related to family responsibilities, education, and socio-cultural norms.

The central question of this research investigates the individual and contextual factors that restrict women's economic involvement, seeking to identify the primary drivers behind their limited participation in Morocco's labor market. Previous research has largely highlighted economic constraints and socio-cultural expectations as major deterrents but lacks comprehensive analysis integrating both individual and provincial factors to understand the nuanced influences on women's participation.

Addressing this question is crucial, as it fills a significant gap in the literature by offering an in-depth, multi-level analysis of both personal and contextual variables. Moreover, the research provides insights into the policy changes required to promote gender-inclusive economic growth. This study applies econometric modeling, including individual-level logistic regression and multilevel analysis, to assess data from the 2014 General Population and Housing Census, examining variables such as age, marital status, education level, and regional poverty indices.

The findings reveal that individual factors, notably age, educational attainment, and marital status, play a decisive role in influencing labor force participation among women, with higher education and middle age correlating positively with participation, whereas marriage and childrearing correlate negatively. Contextual factors, such as provincial poverty rates and the presence of cooperatives, show a less substantial impact, underscoring the importance of addressing individual barriers directly through targeted policy.

The implications of this study underscore the need for inclusive policies focused on education, childcare support, and rural employment opportunities for women. By advancing understanding of the factors inhibiting women's participation in the labor market, this research provides a foundation for policy interventions that can drive both economic growth and gender equality, enhancing resilience among Moroccan households and contributing to a more equitable and sustainable development trajectory.

Keywords :

Women's labor market participation, gender inequality, economic inclusion, socio-cultural barriers, Morocco, multilevel modeling, education, family responsibilities, policy implications, sustainable development.

الملخص

يُعدّ التطور الاقتصادي والاجتماعي في المغرب معوقاً بسبب انخفاض مشاركة النساء في سوق العمل، وهي ظاهرة متجذرة بعمق في عوامل اجتماعية وثقافية واقتصادية وهيكلية معقدة. فعلى الرغم من أن النساء يشكلن ما يقارب نصف السكان، فإن نسبة مشاركتهن في القوى العاملة لا تزال أقل بكثير من الرجال، مما يحد من الإنتاجية الوطنية ويعزز عدم المساواة بين الجنسين. تركز هذه الدراسة على فهم العوامل المؤثرة على قرار النساء المغربيات للانخراط في سوق العمل، خاصةً في ضوء العوائق المتعلقة بالمسؤوليات العائلية، والتعليم، والمعايير الاجتماعية، والثقافية.

تتمحور هذه الدراسة حول السؤال الرئيسي المتعلق بالعوامل الفردية والسياقية التي تحد من المشاركة الاقتصادية للنساء، بهدف تحديد الدوافع الأساسية وراء هذه المشاركة المحدودة في سوق العمل المغربي. وقد سلطت الدراسات السابقة الضوء على القيود الاقتصادية والتوقعات الاجتماعية والثقافية كأسباب رئيسية، لكنها تفتقر إلى تحليل شامل يدمج بين العوامل الفردية والإقليمية لفهم التأثيرات الدقيقة على مشاركة النساء.

تعتبر معالجة هذا السؤال مهمة حيث تملأ فجوة كبيرة في الأدبيات من خلال تقديم تحليل متعدد المستويات للعوامل الشخصية والسياقية. كما توفر هذه الدراسة رؤى حول التغييرات السياسية المطلوبة لتعزيز النمو الاقتصادي الشامل. تستخدم الدراسة نماذج اقتصادية قياسية، بما في ذلك تحليل لوجستي على مستوى الفرد ونماذج متعددة المستويات، لتحليل بيانات من تعداد السكان والمساكن لعام 2014، وفحص المتغيرات مثل العمر، والحالة الزوجية، ومستوى التعليم، ومؤشرات الفقر الإقليمية.

تكشف النتائج أن العوامل الفردية، وخاصة العمر، والتحصيل التعليمي، والحالة الزوجية، تلعب دوراً حاسماً في التأثير على مشاركة النساء في سوق العمل، حيث يرتبط التعليم العالي ومتوسط العمر بشكل إيجابي بالمشاركة، في حين يرتبط الزواج ورعاية الأطفال بشكل سلبي. وتظهر العوامل السياقية، مثل معدلات الفقر الإقليمية ووجود التعاونيات، تأثيراً أقل، مما يؤكد أهمية معالجة الحواجز الفردية بشكل مباشر من خلال سياسات موجهة.

تؤكد نتائج هذه الدراسة على الحاجة إلى سياسات شاملة تركز على التعليم، ودعم رعاية الأطفال، وتوفير فرص العمل الريفية للنساء. من خلال تعزيز فهم العوامل التي تعيق مشاركة النساء في سوق العمل، توفر هذه الدراسة أساساً للتدخلات السياسية التي يمكن أن تعزز النمو الاقتصادي والمساواة بين الجنسين، مما يساهم في تعزيز مرونة الأسر المغربية ودعم مسار تنموي أكثر إنصافاً واستدامة.

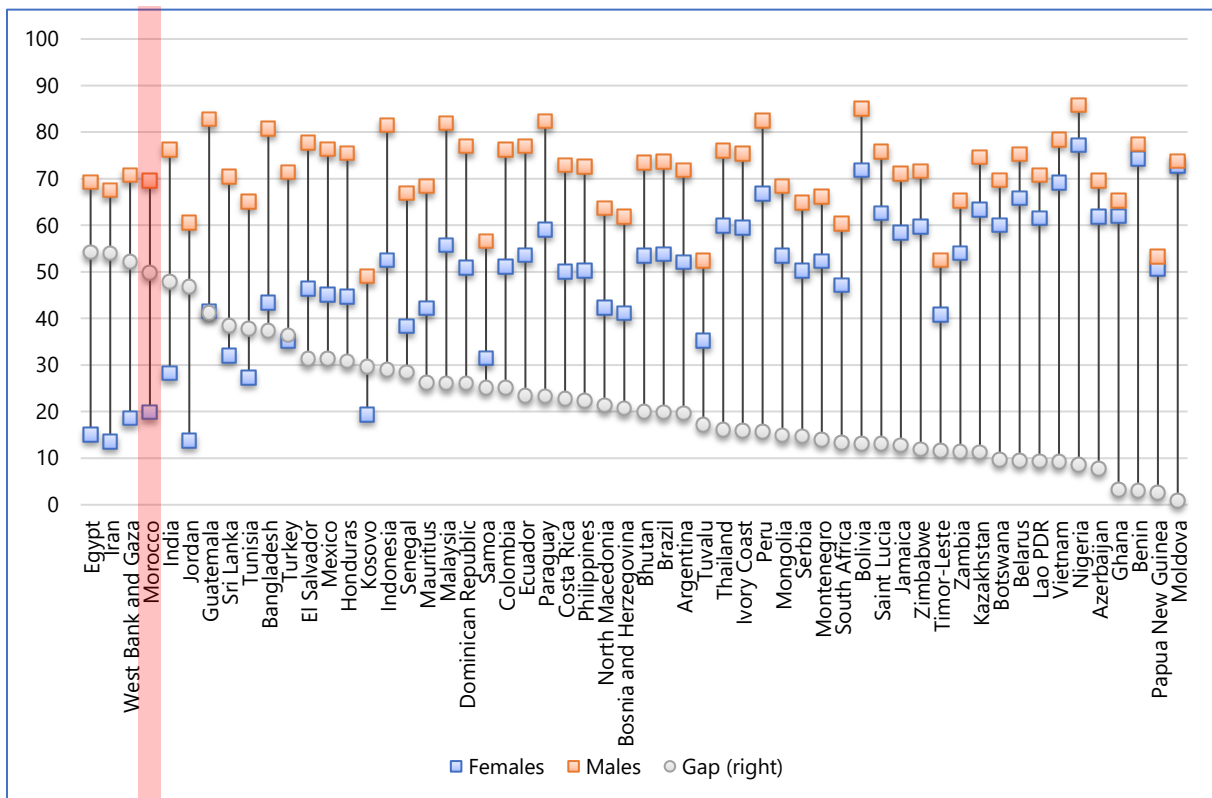
الكلمات المفتاحية

مشاركة النساء في سوق العمل، عدم المساواة بين الجنسين، الشمول الاقتصادي، الحواجز الاجتماعية والثقافية، المغرب، نماذج متعددة المستويات، التعليم، المسؤوليات العائلية، التدخلات السياسية، التنمية المستدامة

Introduction

In 2023, the labor force participation rate of women in Morocco stands at 19%, according to data from the High Commission for Planning (HCP). This figure reflects the proportion of women aged 15 and over who actively participate in the labor market, either as employees or as job seekers. In comparison, the labor force participation rate for men is 69%, highlighting a significant gender gap. This statistic underscores the challenges that Moroccan women continue to face in fully integrating into the labor market. Moreover, the limited contribution of women to the workforce impacts the overall participation rate (men and women combined), which is currently 43.6%. Compared to other developing countries, where female participation sometimes exceeds 40%, Morocco shows a notable lag.

Figure 1. Comparison of the Male/Female Participation Gap in Morocco with Other Developing Countries

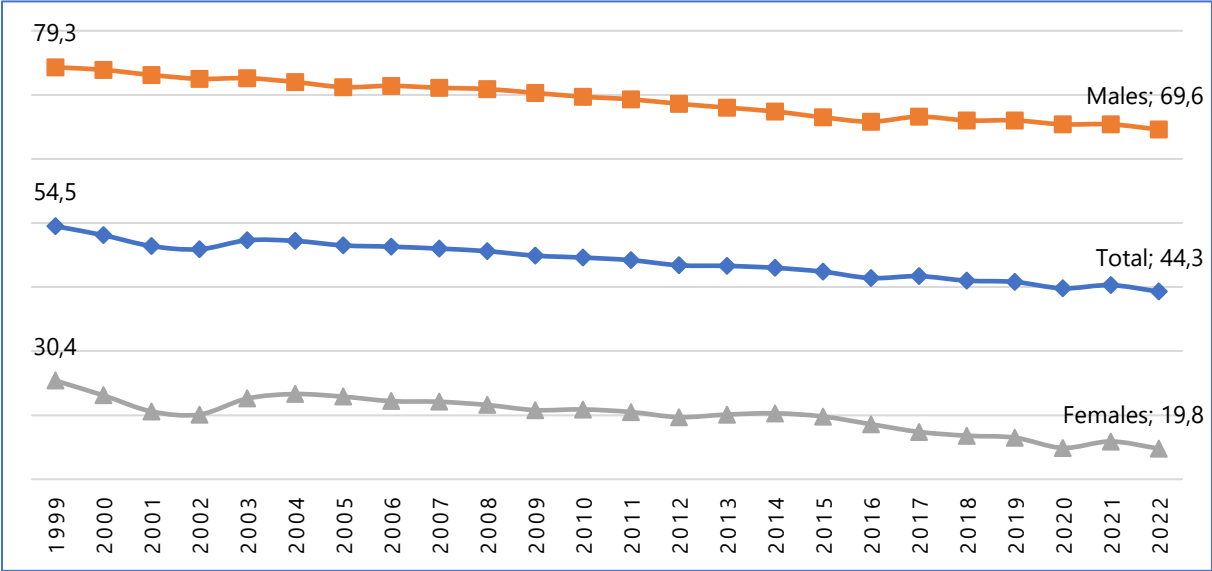


Source : World Bank, 2024

This trend is particularly troubling given that the female labor force participation rate has continuously declined in recent years. In the early 2000s, women's participation rate was slightly higher, reaching approximately 28%. Over time, however, female participation gradually diminished. In 2006, this rate stood around 27%, while the gap with men remained substantial, with the male participation rate at approximately 76% nationwide. By 2011, the proportion of economically active women over the age of 15 was estimated at 25.5%, indicating a degree of stability but still significantly lower than the male participation rate,

which reached 74.3%. By 2022, the female participation rate had dropped to 19.9%, underscoring a downward trend despite efforts aimed at promoting women’s inclusion in the formal economy.

Figure 2. Annual Labor Force Participation Rate Trend in Morocco by Gender



Source : HCP, 2024

The exclusion of a significant portion of women from Morocco’s labor market has profound implications for the country’s economic and social development. This situation not only constrains growth potential but also exacerbates gender inequalities and poses substantial challenges for Morocco's future.

One of the most concerning consequences of low female participation in the labor market is the loss of talent and skills. The limited engagement of women, who represent nearly half of the population, considerably reduces the mobilizable human capital, thus impeding the Moroccan economy’s growth potential. By contrast, increased labor market participation by women could generate a substantial rise in GDP, helping to bridge an estimated 2.2% GDP gap.

Moreover, low female participation perpetuates existing gender inequalities. This exclusion restricts women’s access to quality employment and impedes their ability to attain financial autonomy. Consequently, women often lack the opportunities necessary for full participation in social and political life. Reducing the gender gap in employment is critical to promoting equal opportunities and empowering women to play an active role in societal development.

Women’s economic participation is a powerful lever for poverty reduction and sustainable development. Studies indicate that increased female inclusion in the labor market enhances household income distribution, raises savings, and enables improved investments in children’s health and education. This virtuous cycle contributes to inclusive growth and strengthens household economic resilience, which are essential for balanced and equitable development, particularly in rural areas where women play a central role in agriculture and unpaid domestic work.

Integrating women into the economy is not merely an issue of fairness; it is also a sound economic strategy. Greater female inclusion promotes diversity in businesses, which is a proven driver of innovation, creativity, and productivity gains. Women offer a valuable source of varied skills that, if harnessed, could catalyze innovation and economic growth. Research has demonstrated that diverse teams with balanced female representation are more innovative and effective. Studies also suggest that the presence of women in sectors such as agriculture can promote sustainable practices and enhance production, especially in rural cooperatives. Thus, limited female access to the labor market may restrict business innovation and the broadening of perspectives required for Morocco to adapt to new demands in the global marketplace.

In addition, female labor market participation is essential for addressing challenges posed by demographic transitions, particularly to ensure pension system sustainability and long-term economic growth. An active female workforce can help balance demographic challenges by providing the additional human resources needed to support an economy undergoing demographic transition. This integration is beneficial not only for women but is also indispensable for maintaining the country's economic and social stability.

Given these implications, increased female labor force participation is not merely a matter of fairness; it is also an economic and developmental imperative. The economic inclusion of women is vital for sustainable growth, reducing inequalities, stimulating innovation, and enhancing Morocco's competitiveness on the international stage. It also provides solutions to future demographic and economic challenges and establishes the foundation for sustainable development.

In this context, our paper aims to examine the barriers and determinants of female labor market participation in Morocco. The next section offers a brief review of the structural, cultural, and economic obstacles impeding women's integration into the labor market. The second section analyzes the determinants of this participation using a micro-econometric approach, identifying the individual and contextual factors influencing women's access to employment. The final section presents key findings and recommendations to promote women's economic inclusion, thereby contributing to sustainable and equitable growth.

I. Review of Barriers to Women's Economic Participation

The integration of women into the Moroccan economy remains a crucial issue for promoting inclusive development and reducing socio-economic inequalities. Despite notable efforts, cultural, institutional, and economic barriers continue to limit their access to the labor market and restrict their advancement opportunities. The low participation of women in Morocco's economy is a multifaceted phenomenon, stemming from specific structural, social, and economic constraints. These barriers, though varied, are often interconnected, creating a vicious cycle that limits women's access to economic opportunities and reinforces gender inequalities. Analyzing the causes of low female participation provides a clearer understanding of the challenges and enables the formulation of targeted recommendations to increase women's presence in the labor market.

1. Socio-cultural Factors: Constraints of Traditional Roles and Gender Stereotypes

Social norms in Morocco continue to assign women a primary role within the household, focused on domestic tasks and child-rearing. These cultural expectations weigh particularly heavily in rural areas and certain urban regions where traditional values remain deeply rooted.

a. Traditional Roles and Family Pressures

Social norms and traditional gender roles are among the major barriers to women's economic participation in Morocco. In rural areas, patriarchal values confine women to domestic roles, limiting their visibility and contribution in public and economic spheres. These cultural expectations are especially pronounced for young women, who are often discouraged from pursuing education or professional training, as they are expected to devote themselves to household duties or family support.

Data show that over 60% of rural women aged 15 to 29 fall into the NEET category (neither in employment, education, nor training). This economic inactivity largely stems from the social perception that a woman's role is primarily tied to family and household responsibilities.

b. Gender Roles and the Gendered Division of Labor

The division of labor within Moroccan households assigns women a heavy domestic burden, alongside limited access to formal economic sectors. Women spend an average of five hours per day on household tasks, compared to less than an hour for men. This imbalance leaves women with little time to engage in paid activities. Furthermore, when they do participate in paid employment, they are often confined to low-paying sectors such as subsistence agriculture or domestic services, with few opportunities for advancement or economic security.

Data from 2014 reveal that 70.5% of active rural women work in unpaid family jobs, compared to only 4% in urban areas. This situation reinforces their economic dependence on men and restricts their capacity for financial autonomy.

2. Costs Associated with Balancing Professional and Family Life

a. A Weakly Inclusive Legal and Institutional Framework

While Moroccan laws promoting gender equality exist, they lack effectiveness and enforcement, especially regarding protections against discrimination and harassment. The absence of a robust legal framework discourages many women from entering the labor market, fearing discrimination or abuse without legal recourse. In particular, legislation does not sufficiently address the precarious working conditions that women often face in informal and agricultural sectors.

Despite the adoption of Law 103-13 in 2018, aimed at combating violence against women, many institutional obstacles persist. Services for supporting women who are victims of violence are unevenly distributed and often lacking in rural areas, making it difficult to report and address cases of workplace harassment and violence.

b. Insufficient Support Services to Facilitate Women's Access to Employment

The lack of affordable childcare services and support systems for working mothers limits women's access to formal employment. Childcare facilities are concentrated in urban areas and are often costly, excluding many women, particularly those from low-income families or rural areas. The absence of public daycare centers and child care programs integrated into local policies creates a barrier for women who wish to work outside the home.

Statistics show that a significant proportion of inactive women in Morocco cite family responsibilities as the main obstacle to their labor market participation. Public daycare centers and other support facilities are insufficient, particularly in peripheral and rural areas, limiting employment opportunities for women with children.

c. Rigid Working Hours and Lack of Flexibility

Working hours in most formal sectors are rigid and do not account for the specific needs of mothers. Flexible scheduling is rare, making it difficult for working women to manage family obligations. This lack of flexibility discourages many women from pursuing formal employment, as they cannot effectively balance their professional and family responsibilities.

Studies show that women working in the informal sector, although earning low wages and without social coverage, often choose this type of employment for the flexibility it offers, unlike formal jobs where fixed hours create challenges.

3. Economic Obstacles : Limited Access to Resources and Employment Precarity

a. Restricted Access to Financing

Access to financing is one of the main challenges for women, particularly those who wish to start or expand income-generating activities. Banks and financial institutions generally require collateral, which women rarely possess due to inheritance laws and unequal access to land ownership. This situation limits the creation of women-led businesses, especially in rural areas where financial services are less developed.

A study (FAO, 2018) highlights that only 17% of rural women own land or assets that could serve as collateral for a bank loan. This lack of access to resources stifles their entrepreneurial potential and restricts their ability to invest in sustainable economic activities.

b. Precarity and Low Valuation of Sectors with High Female Representation

Women are overrepresented in informal and precarious sectors, such as agriculture and domestic services, where they often lack contracts and social protection. In rural areas, this precarity is exacerbated by the seasonal nature of agricultural work and the absence of employment security mechanisms. As a result, women hold unstable jobs without prospects for professional development or financial security.

Statistics show that in 2019, approximately 97.8% of rural women worked in informal conditions. This precarity reinforces economic inequalities and perpetuates their dependence on male family income.

c. Discrimination in Hiring

Many employers perceive female candidates as less reliable or available due to perceived family responsibilities. This bias limits women's employment opportunities and reinforces gender inequalities in well-paid or prestigious professional sectors.

Research shows that employers are more hesitant to hire women for high-responsibility positions, citing concerns that family obligations could hinder their work performance. This perception leads to a lack of female representation in decision-making roles and technical fields.

d. Promotion and Pay Gaps

Women are also less likely to be promoted or receive salary increases, even when they demonstrate equal performance to their male colleagues. Wage disparities are more pronounced in male-dominated sectors and increase with levels of responsibility.

According to labor market analyses, wage gaps between men and women in Morocco can reach up to 30% in certain sectors. This pay inequality perpetuates women's economic vulnerability and dampens their motivation to invest in their careers.

4. Education Level and Inadequate Vocational Training

a. Insufficient Education and Vocational Training

Limited access to education, especially in rural areas, significantly reduces economic opportunities for women. School dropout rates are high among girls, particularly at the secondary level, due to factors such as the distance to schools, family expectations, and the cost of schooling. Consequently, women entering the labor market often have a low skill level and are confined to low-skilled, poorly paid jobs.

In 2018, only 40% of rural girls were enrolled in secondary education, compared to 79% in urban areas. This disparity in educational access limits their chances of obtaining quality employment and confines them to low-paying sectors.

b. Mismatch of Vocational Training with Labor Market Needs

The vocational training options available to women are often limited to stereotypical sectors (such as sewing or hairdressing), which do not match labor market needs. This mismatch limits their competitiveness and ability to access higher-paying or more economically valued positions. Training in digital, technical, and entrepreneurial skills remains rare, hindering their integration into growing sectors such as modern agriculture or new technologies.

Data show that women are significantly underrepresented in training for technical professions or new technologies, despite these areas' growth in the Moroccan economy. This imbalance limits their economic mobility and reinforces their financial dependency.

5. Opportunity Costs of Employment and Lack of Infrastructure

a. Costs Associated with Women's Participation in the Labor Market

Costs related to transportation, childcare, and household maintenance increase the opportunity cost for women considering entering the labor market. In the absence of support services, women's potential earnings are often insufficient to cover these expenses, discouraging their participation.

Expenses for childcare or transportation can raise the reservation wage (the minimum wage at which a woman would accept a job), thus reducing their labor market appeal in cases of low remuneration.

b. Lack of Transport and Mobility Infrastructure

In rural areas, transportation infrastructure remains insufficient, complicating women's access to work or training centers. This situation increases time and safety constraints for women, particularly those living in isolated areas.

Although transport development programs have been initiated under the New Development Model, they lack funding and follow-up for rural regions, where women are often forced to forgo paid employment due to the lack of suitable mobility solutions.

II. Determinants of Women's Participation

This section examines the determinants of Moroccan women's participation in economic activity, based on data from the 2014 General Population and Housing Census and provincial variables compiled from various sources.

1. Data Overview

The data come from a comprehensive census covering various aspects of Moroccan women's lives, including personal, familial, and contextual information. The main available variables are as follows:

- **Participation Variable:** This is a binary variable (1 if the woman is economically active, 0 otherwise), enabling identification of economically active women.
- **Spatial Characteristics:**
 - *Region of Residence:* Moroccan regions show socio-economic disparities. Developed urban regions (e.g., Casablanca-Settat) offer more formal employment opportunities, while rural regions (e.g., Drâa-Tafilalet) often limit women to informal or agricultural jobs.
 - *Province of Residence:* The diversity of local opportunities is influenced by industrialization and infrastructure, with key provincial variables including:
 - *Multidimensional Poverty Index (MPI):* A high MPI restricts women's access to the labor market due to deprivations in critical areas.
 - *Share of Municipalities Covered by the National Initiative for Human Development (INDH):* Provinces with extensive INDH coverage benefit from better infrastructure and training, facilitating women's access to the labor market.
 - *Number of Women's Cooperatives:* The presence and membership in women's cooperatives reflect support for local economic initiatives for women, providing opportunities and enhancing their economic autonomy.
 - *Number of Members in Women's Cooperatives:* A high number of cooperative members indicates active female engagement in the local economy, often supported by development programs. This can also demonstrate women's interest and motivation to participate economically when accessible options are available.
 - *Age at First Marriage:* This indicator affects women's professional opportunities, as later marriage often allows women to pursue further training and engage in their careers.
 - *Area of Residence:* Women in urban areas have easier access to formal employment and necessary infrastructure, facilitating their economic integration.

Tableau 1. Geography and Participation Status of Women

Variable	Modalities	Overall %	Participants %	Non-participants %	Difference %	Z test Z Score
Regions	Tanger-Tétouan-Al Hoceima	10	12	10	1,92	28,98
	Oriental	7	5	7	- 2,09	- 38,11
	Fès-Meknès	13	12	13	- 0,63	- 8,82
	Rabat-Salé-Kénitra	14	17	13	4,04	54,45
	Béni Mellal-Khénifra	8	5	8	- 2,52	- 44,02
	Casablanca-Settat	20	26	19	6,75	77,38
	Marrakech-Safï	13	10	14	- 3,50	- 47,63
	Drâa-Tafilalet	5	3	5	- 2,30	- 50,16
	Souss-Massa	8	7	8	- 1,55	- 26,30
	Southern Regions	2	2	2	NA	NA
Area	Urban	61	79	58	21,02	198,96
	Rural	39	21	42	- 20,94	- 198,36

Source: Authors' elaboration based on RGPH data, 2014

▪ **Demographic Characteristics:**

- *Person with Disability:* Women with disabilities often face specific barriers, such as physical limitations and discrimination, which reduce their access to suitable employment. Women caring for family members with disabilities also experience reduced availability for work.
- *Age:* Age influences participation, with higher activity rates among young and middle-aged women, reflecting life stages such as education, motherhood, and family responsibilities.
- *Marital Status:* Marital status plays a role, as married women often have more domestic responsibilities, while single women have more freedom to focus on their careers.
- *Number of Children:* A high number of children, particularly young ones, limits women's availability for work, especially in contexts where childcare services are insufficient.

Tableau 2. Demographic Characteristics of Women and Participation

Variable	Modalities	Overall %	Participantes %	Non participantes %	Difference%	Z-test
<i>Person with Disability</i>	<i>Yes</i>	5	2	6	-3,71	-77,76
	<i>No</i>	95	98	94	3,71	77,76
<i>Age</i>	<i>15-19 years</i>	9	7	9	-2,24	-36,53
	<i>20-24 years</i>	9	14	8	6,18	99,24
	<i>25-29 years</i>	8	17	7	9,71	161,70
	<i>30-34 years</i>	8	15	7	7,81	133,43
	<i>35-39 years</i>	7	12	6	6,16	109,91
	<i>40-44 years</i>	7	11	6	5,23	97,71
	<i>45-49 years</i>	6	9	5	3,83	77,06
	<i>50-54 years</i>	5	7	5	2,09	42,69
	<i>55-59 years</i>	4	4	4	0,26	6,24
	<i>60-64 years</i>	3	2	4	-2,01	-52,22
<i>65-69 years</i>	2	1	2	-1,60	-54,21	
<i>Marital Status</i>	<i>Single</i>	48	49	48	1,18	10,89
	<i>Married</i>	42	37	43	-6,05	-56,57
	<i>Divorced</i>	2	8	1	6,71	200,84
	<i>Widowed</i>	7	6	7	-1,91	-34,16
<i>Number of Children</i>	<i>0</i>	6	8	5	2,87	58,00
	<i>1</i>	8	11	8	3,62	61,02
	<i>2</i>	10	12	9	2,80	43,96
	<i>3</i>	8	8	9	-0,94	-15,68
	<i>4</i>	6	4	7	-2,96	-55,80
	<i>5</i>	4	2	5	-2,81	-63,28

Source: Authors' elaboration based on RGPH data, 2014

▪ **Education Level:**

- *Education Level:* Education enhances skills and increases the likelihood of securing quality employment. A high level of education is often associated with more stable, better paid, and more fulfilling jobs.

Tableau 3. Women's Education Level and Participation

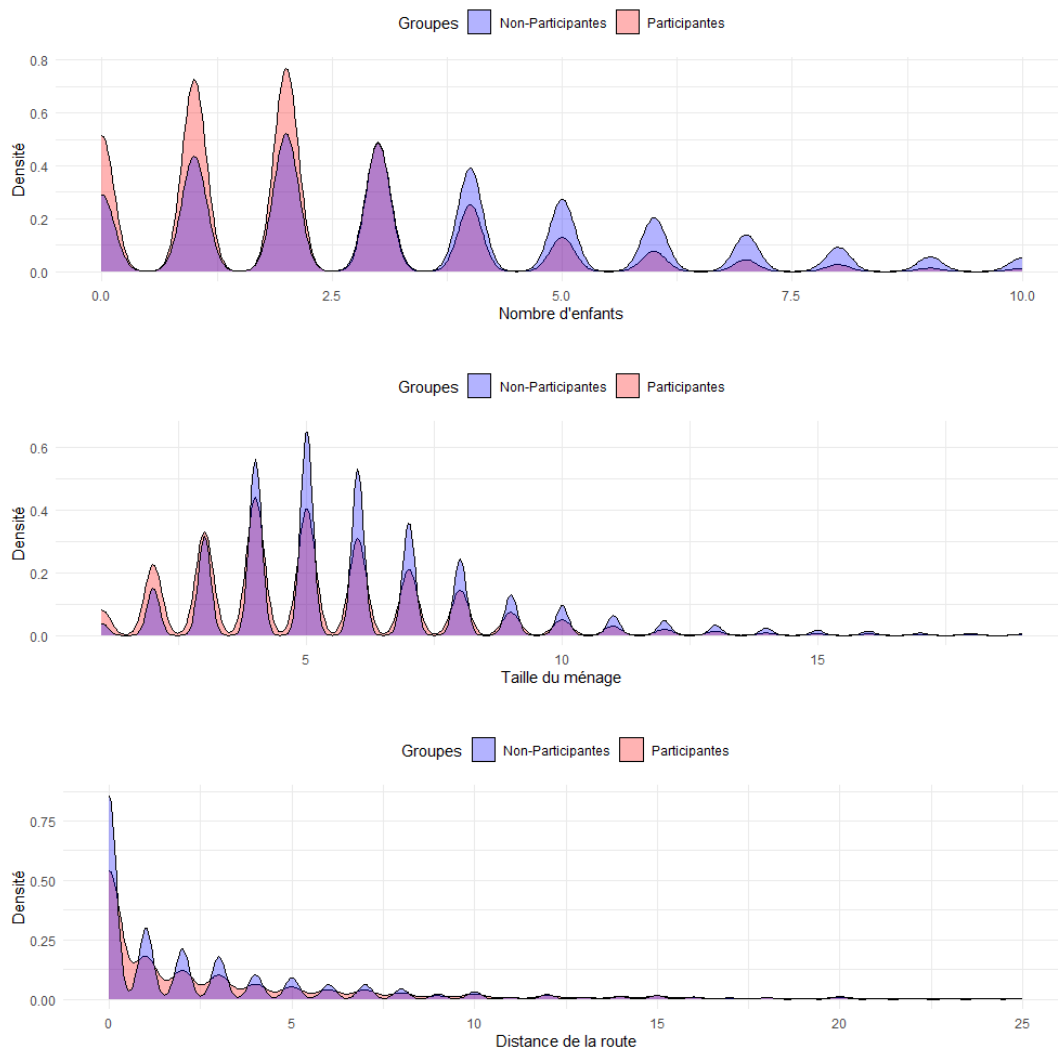
Variable	Modalities	Ensemble	Participantes	Non participantes	Différence	Z-test
		%	%	%	%	Z-Score
Education Level	No formal education	45	28	48	-20,72	-192,30
	Preschool	3	0	3	-2,92	-79,46
	Primary	25	19	26	-7,88	-83,73
	Lower secondary	12	16	11	4,20	59,51
	Upper secondary	9	18	7	10,94	176,53
	Upper secondary	5	19	3	16,38	332,07

Source: Authors' elaboration based on RGPH data, 2014

▪ **Work Accessibility:**

- *Distance to Main Road:* Women living far from transportation infrastructure often have fewer opportunities to participate in the labor market due to logistical challenges.

Figure 3. Distribution of Women by Participation Status vs. Number of Children, Household Size, and Distance from Home to Main Road



Source: Authors' elaboration based on RGPH data, 2014

▪ **Household Environment:**

- *Household Type and Size:* In single-parent households, women may feel compelled to work to support the family, while in extended households, domestic tasks are often shared, providing more flexibility.
- *Relationship to the Head of Household:* Women who are heads of household have more financial responsibilities, which may encourage them to work. Conversely, those who are not heads may benefit from the economic support of other members, reducing their need to participate in the labor market.
- *Type of Housing:* The type of housing often reflects the household's economic situation. Women living in precarious housing may seek additional income due to material instability, while others are limited in employment choices by the need to work close to home.
- *Housing Occupancy Status:* This can affect the pressure to participate in work. Renters may feel an increased need to contribute to housing expenses, while owners enjoy financial stability that may reduce this constraint.

Tableau 4. Household Context and Women's Participation Status

Variable	Modalités	Overall	Participantes	Non participantes	Difference	Z-test
		%	%	%	%	Z-Score
Type of Housing	Villa/Floor of Villa	3	4	2	2,20	64,19
	Apartment	9	16	8	8,52	136,50
	Moroccan House	56	58	55	2,67	24,83
	Informal House/Slum	4	4	4	0,43	10,70
	Rural Housing	26	14	28	-14,15	-149,06
	Other	0	0	0	0,17	14,23
Housing Occupancy Status	Owner	77	69	78	-8,78	-96,16
	Tenant	14	22	13	9,44	124,11
	Employer-Provided Housing	1	1	1	0,27	11,82
	Living Rent-Free	6	5	6	-1,00	-19,98
	Other	1	1	1	0,05	2,96
Household Type	Single-Person Household	1	3	1	2,29	87,67
	Nuclear Household (NH) - Married Couple with Child(ren)	49	41	51	-10,04	-92,79
	NH: Married Couple without Child	3	4	3	0,95	26,93
	NH: Father with Child(ren)	0	0	0	0,28	31,61
	NH: Mother with Child(ren)	7	13	6	7,53	139,31
	Polygamous Household	0	0	0	-0,03	-3,77
	Extended Household	37	33	37	-4,43	-42,47
	Composite Household	2	5	1	3,37	113,92
Relationship to Head of Household	Head of Household	7	14	6	8,59	154,65
	Spouse	33	29	34	-5,03	-49,36
	Son/Daughter	41	42	41	1,32	12,36
	Grandson/Granddaughter	5	1	5	-4,46	-97,12
	Father/Mother	3	1	4	-2,88	-77,02
	Brother/Sister	2	5	2	3,54	111,45
	Son-in-law/Daughter-in-law	5	2	6	-3,13	-65,71
	Other Relative	3	2	3	-0,21	-6,05
Unrelated Person	0	1	0	0,90	65,76	

Source: Authors' elaboration based on RGPH data, 2014

2. Econometric Model:

a. Individual-Level Logit Model

To quantify the impact of each variable on the probability of participation, a logit model is appropriate. This model is particularly useful for binary dependent variables (in this case, participation) and enables an understanding of the probability of labor market participation based on various characteristics.

The basic equation of the logit model is as follows:

$$P(\text{participation} = 1|X) = \frac{e^{\beta_0 + \beta_1 \cdot \text{age} + \beta_2 \cdot \text{Marital Status} + \dots + \beta_n \cdot X_n}}{1 + e^{\beta_0 + \beta_1 \cdot \text{age} + \beta_2 \cdot \text{Marital Status} + \dots + \beta_n \cdot X_n}}$$

Where:

- $P(\text{participation}=1|X)$ represents the probability that a woman participates in the labor market.
- X_n : These are the various explanatory variables (age, education, etc.).
- β_n : These are the estimated coefficients for each variable, showing their effect on the probability of participation.

The logit model is chosen for its ability to model a nonlinear relationship and because it produces interpretable results through odds ratios, enabling an understanding of the relative influence of each factor.

b. Multilevel Modeling

Here, the objective is to evaluate the combined effect of individual and household characteristics as well as provincial-specific factors on women's labor market participation. This approach involves analyzing data for N women (level 1 units) nested within K provinces (level 2 units).

In this context, multilevel logistic regression is appropriate, as it allows for differentiation between within-group effects (measuring the relationship between certain participant characteristics and the probability of achieving a given outcome) and between-group effects (measuring the relationship between certain group characteristics and the probability of achieving a given outcome).

The presence of two levels has two implications. First, the probabilities of the outcome variable being equal to 1 rather than 0 may differ between groups; this is reflected in the mean log-odds estimates of the probabilities in the total sample (referred to as the fixed intercept) and the variation of these estimates across groups (referred to as the random intercept variance). Thus, we aim to estimate the empty multilevel logistic model, as follows:

$$\text{Logit}(\text{odds}) = B_{00} + u_{0j}$$

Given the absence of predictors, the level 2 component, u_{0j} , is interpreted as the deviation of the log-odds of the outcome specific to a given province from the overall log-odds for all

provinces (with a mean of 0). The variance, $\text{var}(u_{0j})$, reflects the variability in the log-odds of the outcome between groups, indicating that some groups have a higher probability of the outcome than others. A high variance suggests significant variation in outcome probability between groups, whereas a low variance implies homogeneity in outcome probabilities.

Secondly, the effect of a level 1 variable on the probability of the outcome variable may vary between provinces. Consequently, the average estimate of this effect at the overall level (known as the fixed slope) and the variation of this effect from one province to another (referred to as the random slope variance) are key indicators to consider in this analysis. Thus, the following model is to be estimated

$$\text{Logit}(\text{odds}) = B_{00} + (B_{10} + u_{1j}) * x_{ij} + u_{0j}$$

The fixed slope B_{10} represents the generalized effect of the level 1 variable x_{ij} . B_{10} is referred to as the fixed slope, while u_{1j} denotes the deviation of the province-specific slope from the fixed slope (i.e., the residual term associated with the level 1 variable). Additionally, u_{1j} indicates the extent of variation in the effect from one province to another. The variance component of such a deviation is the random slope variance, $\text{var}(u_{1j})$. A higher random slope variance indicates greater variation in the effect of x_{ij} across clusters.

In the following, we adopt a three-step procedure for multilevel logistic estimation. Before proceeding, a preparatory step involves centering the explanatory variables according to the level at which they are situated: a level 2 explanatory variable can only be centered on the grand mean (i.e., subtracting the overall mean of the level 2 units from the explanatory variable). A level 1 variable can be centered either (a) on the grand mean or (b) on the cluster mean

Step 1. Construction of an Empty Model

This step involves estimating the proportion of variability in the probability that the outcome variable equals 1 instead of 0, which occurs between provinces. To accomplish this, an empty model is used, and the intra-class correlation coefficient is calculated:

$$\text{ICC} = \frac{\text{var}(u_{0j})}{\text{var}(u_{0j}) + (\pi^2 / 3)}$$

The ICC quantifies the degree of homogeneity of the outcome within provinces. It represents the proportion of variation between groupings $\text{var}(u_{0j})$ (in our case: the variation in the likelihood of the outcome between provinces) in the total variation

Step 2. Construction of an Intermediate Model

The aim is to determine the extent to which the effect of a level 1 variable varies from one province to another. To do this, we build (a) a constrained intermediate model (CIM), (b) an augmented intermediate model (AIM), and (c) compare the two by performing a likelihood ratio test.

- Constrained Intermediate Model: $\text{Logit}(\text{odds}) = B_{00} + B_{10} * x_{ij} + B_{01} * X_j + u_{0j}$
- Augmented Intermediate Model: $\text{Logit}(\text{odds}) = B_{00} + (B_{10} + u_{1j}) * x_{ij} + B_{01} * X_j + u_{0j}$

- Likelihood Ratio Test: $LR \chi^2(1) = \text{deviance(CIM)} - \text{deviance(AIM)}$

Step 3. Construction of the Final Model

The final model is estimated by adding cross-level interactions. The explanatory variables remain the same as in the intermediate models (level 1 variable, level 2 variable, and within-level interactions), but now level 1 and level 2 interactions are included.

$$\text{Logit(odds)} = B_{00} + (B_{10} + u_{1j}) * x_{ij} + B_{01} * X_j + B_{11} * x_{ij} * X_j + u_{0j}$$

Tableau 5. Summary of Key Notations and Definitions

Sample Size	N Level 1 sample size (number of observations)	K Level 2 sample size (number of provinces)
Variables	$x_{1ij}, x_{2ij}, \dots, x_{Nij}$ Level 1 variables (characteristics related to women)	X_1, X_2, \dots, X_K Level 2 variables (characteristics related to provinces)
Constants	B_{00} Fixed intercept	u_{0j} Level 2 residual
Level 1 Effect	$B_{10}, B_{20}, \dots, B_{N0}$, Fixed slopes	$u_{1j}, u_{2j}, \dots, u_{Nj}$ Residual term associated with the level 1 predictor ($x_{1ij}, x_{2ij}, \dots, x_{Nij}$)
Level 2 Effect	$B_{01}, B_{02}, \dots, B_{0K}$, Necessarily fixed slope	

Source: Sommet and Morselli (2017)

3. Hypotheses and Expectations

Before analyzing the determinants of women's labor market participation, it is essential to formulate hypotheses based on both existing studies and the specifics of the available variables. These hypotheses help guide the interpretation of results by highlighting the expected relationships between each explanatory variable and the probability of women's participation. The following table presents the main variables studied, along with hypotheses on their potential impact and associated expectations, which will be tested through econometric analysis. Factors considered include socio-demographic variables (age, marital status, children), socio-economic variables (education level, household type, household size), as well as characteristics related to accessibility and area of residence.

Tableau 6. Hypotheses and Expected Relationships between Explanatory Variables and Probability of Participation

Variable	Hypotheses	Expectations
Region	Certain regions may impact participation based on local economic opportunities.	Regions with better economic development are expected to have higher participation rates.
Province	Certain provinces may influence participation due to local socio-economic and cultural differences.	Provinces with stronger infrastructural and economic development may show greater female participation.
Area	Urban areas are expected to encourage greater participation than rural areas.	Women residing in urban areas are likely to have a higher probability of participation.
Disability Status (PSH)	People with disabilities may face additional barriers to participating in the labor market.	Women with disabilities may have a lower probability of participation due to physical, logistical, or social constraints.
Age	An inverted U-shaped relationship is expected, with higher participation among middle-aged women.	Middle-aged women are expected to participate more in the labor market than younger or older women.
Marital Status	Married women are less likely to participate due to domestic responsibilities.	The probability of participation decreases for married women.

<i>Number of Children</i>	<i>Women with young children are less likely to participate due to caregiving responsibilities.</i>	<i>The probability of participation decreases for women with young children.</i>
<i>Education</i>	<i>A higher level of education is a positive factor, increasing the likelihood of employment.</i>	<i>Women with higher levels of education are more likely to participate.</i>
<i>Household Type</i>	<i>Women in single-parent or extended households may have different participation rates.</i>	<i>Women in single-parent or extended households may have different participation rates.</i>
<i>Household Size</i>	<i>Household size may influence labor market participation.</i>	<i>In larger households, additional domestic responsibilities may reduce the likelihood of participation.</i>
<i>Relationship to Head of Household</i>	<i>Women who are heads of household or close to the head of household may have participation rates influenced by their family role.</i>	<i>Women who are heads of household may be more motivated to participate to support their families.</i>
<i>Type of Housing</i>	<i>The type of housing may reflect economic stability, influencing participation.</i>	<i>Women living in higher-quality housing may be more likely to participate.</i>
<i>Housing Occupancy Status</i>	<i>Housing occupancy status may reflect economic stability, influencing participation.</i>	<i>Women who own their housing may be more likely to participate.</i>
<i>Accessibility</i>	<i>Women living close to transportation are likely to have a higher probability of participation.</i>	<i>The closer the distance to transportation, the higher the probability of participation.</i>

4. Results

a. Individual-Level Logit Model

The results from estimating the logit model reveal the influence of the following variables on the probability of women's labor market participation:

- **Disability Status (PSH):** Women without a disability (PSH = "No") are 2.39 times more likely to participate in the labor market (odds ratio of 2.39) than women with a disability. This highly significant difference ($p < 0.001$) indicates that the presence of a disability considerably limits access to the labor market.
- **Age:** The probability of participation increases with age up to a point, peaking between ages 35 and 45 (odds ratio of 2.38), then decreases, corresponding to a period where family responsibilities may influence the choice to participate.
- **Marital Status:** Compared to married women, divorced (odds ratio of 2.22) and widowed women (odds ratio of 1.14) have a higher probability of participation. This may be due to the economic necessity of self-support in the absence of a spouse and fewer social constraints on unmarried women.
- **Number of Children:** An odds ratio below 1 (0.98) for each additional child indicates a reduction in participation probability, all else equal. The presence of children, especially young ones, limits participation due to domestic responsibilities and childcare costs.
- **Education:** Education has a strong positive effect. Women with higher education (odds ratio of 8.29) show a very high probability of participation, underscoring that education significantly enhances access to formal and well-paid employment. Conversely, women with only primary or lower secondary education have participation probabilities close to or lower than those with no education, indicating that the impact of education becomes substantial only at higher levels.
- **Household Type:** Women living in extended or composite households have similar participation odds as those in single nuclear households (odds ratio around 1), suggesting that household type may not strongly impact participation, though women

in polygamous households show a slight increase in participation (odds ratio of 1.38), possibly due to specific economic dynamics.

- **Relationship to Head of Household:** Wives or non-head family members have a lower probability of participation, likely due to increased domestic responsibilities.
- **Type of Housing:** Women residing in "other" housing types, often precarious (odds ratio of 2.82), have a higher probability of participation. Traditional urban housing, as apartments or Moroccan-style homes, do not significantly influence participation, likely reflecting moderate effects of infrastructure or socio-economic status.
- **Housing Occupancy Status:** Women living in rented households (odds ratio of 2.08) or in employer-provided housing (odds ratio of 1.42) are more likely to participate in the labor market than homeowners, potentially due to heightened financial necessity among those without home ownership.
- **Distance to Main Road:** Each additional unit of distance slightly increases the probability of participation (odds ratio of 1.016), suggesting that road accessibility is not a major barrier, but may influence participation for shorter distances.

Tableau 7. Determinants of Participation: Individual Level

	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
<i>PSH (Reference: Yes)</i>						
No	2.392755	.1057335	19.74	0.000	2.194241	2.609228
<i>Age (Reference: 15-20 years)</i>						
20-24 years	1.322299	.077322	4.78	0.000	1.179113	1.482874
25-29 years	1.733014	.0994866	9.58	0.000	1.548594	1.939398
30-34 years	1.984468	.1151908	11.81	0.000	1.771067	2.223582
35-39 years	2.245426	.1319761	13.76	0.000	2.001101	2.519583
40-44 years	2.37693	.1417235	14.52	0.000	2.114773	2.671584
45-49 years	2.106399	.1464218	14.43	0.000	2.13587	2.711194
50-54 years	2.053735	.1273848	11.60	0.000	1.818644	2.319214
55-59 years	1.724209	.1121785	8.37	0.000	1.517784	1.958708
60-64 years	1.217995	.0834354	2.88	0.004	1.064967	1.393011
65-69 years	.8385731	.0666106	-2.22	0.027	.717674	.9798387
70-74 years	.5743307	.0496319	-6.42	0.000	.484846	.6803309
75 years and above	.3480568	.0322079	-11.41	0.000	.2903242	.4172699
<i>Marital Status (Reference: Married)</i>						
Divorced	2.222986	.0895917	19.82	0.000	2.054146	2.405704
Widowed	1.143734	.0402003	3.82	0.000	1.067596	1.225303
Number of Children	.9830994	.0042699	-3.92	0.000	.9747661	.9915039
<i>Education Level (Reference: No Formal Education)</i>						
Preschool	1.245443	.1084319	2.52	0.012	1.050064	1.477175
Primary	.881577	.0204949	-5.42	0.000	.8423091	.9226755
Lower Secondary	.9604598	.0378506	-1.02	0.306	.8890666	1.037586
Upper Secondary	1.784981	.0899749	11.49	0.000	1.617065	1.970334
Higher Education	8.288075	.5243308	33.43	0.000	7.321565	9.382174
<i>Household Type (Reference: Single-Person Household)</i>						
Nuclear Household - Married Couple with Child(ren)	.9943468	.0594848	-0.09	0.924	.8843343	1.118045
Nuclear Household - Married Couple without Child(ren)	1.129017	.0767918	1.78	0.074	.9881082	1.290019
Nuclear Household - Father with Child(ren)	.6094958	.2614697	-1.15	0.248	.2629122	1.412962
Nuclear Household - Mother with Child(ren)	1.070729	.0581429	1.26	0.208	.9626256	1.190972
Polygamous Household	1.380896	.2983423	1.49	0.135	.9041889	2.108934
Extended Household	.9468111	.0551758	-0.94	0.348	.8446158	1.061372
Composite Household	1.212578	.1306902	1.79	0.074	.9816757	1.49779
Household Size	.9969983	.0035732	-0.84	0.402	.9900196	1.004026
<i>Relationship to Head of Household (Reference: Head of Household)</i>						

<i>Spouse</i>	.3229531	.0128873	-28.32	0.000	.298657	.3492257
<i>Son / Daughter</i>	.8040366	.0376619	-4.66	0.000	.7335077	.881347
<i>Grandson / Granddaughter</i>	.5754804	.1194475	-2.66	0.008	.3831369	.8643849
<i>Father / Mother</i>	.2824464	.0141524	-25.23	0.000	.2560267	.3115924
<i>Brother / Sister</i>	.5970638	.0409241	-7.52	0.000	.5220083	.6829109
<i>Son-in-law / Daughter-in-law</i>	.2955041	.0137236	-26.25	0.000	.2697942	.323664
<i>Other Relative</i>	.3588579	.0217307	-16.92	0.000	.318697	.4040799
<i>Unrelated Person</i>	.3482828	.0773808	-4.75	0.000	.2253272	.5383323
<i>Type of Housing (Reference: Villa / Floor of Villa)</i>						
<i>Apartment</i>	.7705066	.1920386	-1.05	0.296	.4727435	1.255819
<i>Moroccan House</i>	.7358848	.0903927	-2.50	0.013	.5784318	.9361977
<i>Informal / Slum House</i>	1.226319	.1581981	1.58	0.114	.95235	1.579103
<i>Rural Housing</i>	.8662835	.1063616	-1.17	0.242	.6810049	1.10197
<i>Other</i>	2.820215	.4252274	6.88	0.000	2.098647	3.789876
<i>Housing Occupancy Status (Reference: Owner)</i>						
<i>Tenant</i>	2.080012	.1023328	14.89	0.000	1.88881	2.290569
<i>Occupant of Employer-Provided Housing</i>	1.423288	.1105738	4.54	0.000	1.222261	1.657379
<i>Living Rent-Free</i>	1.128	.0356892	3.81	0.000	1.060175	1.200164
<i>Other</i>	1.136045	.0950713	1.52	0.127	.9641881	1.338534
<i>Distance to Main Road</i>	1.016327	.0010329	15.93	0.000	1.014305	1.018354
<i>Constant</i>	.0583226	.0088155	-18.80	0.000	.0433688	.0784326

Source: Authors' elaboration based on RGPH data, 2014

b. Multilevel Modeling

First, it is essential to present the parameter estimates for the empty model, which contains only the intercept. Here is a summary of the main results:

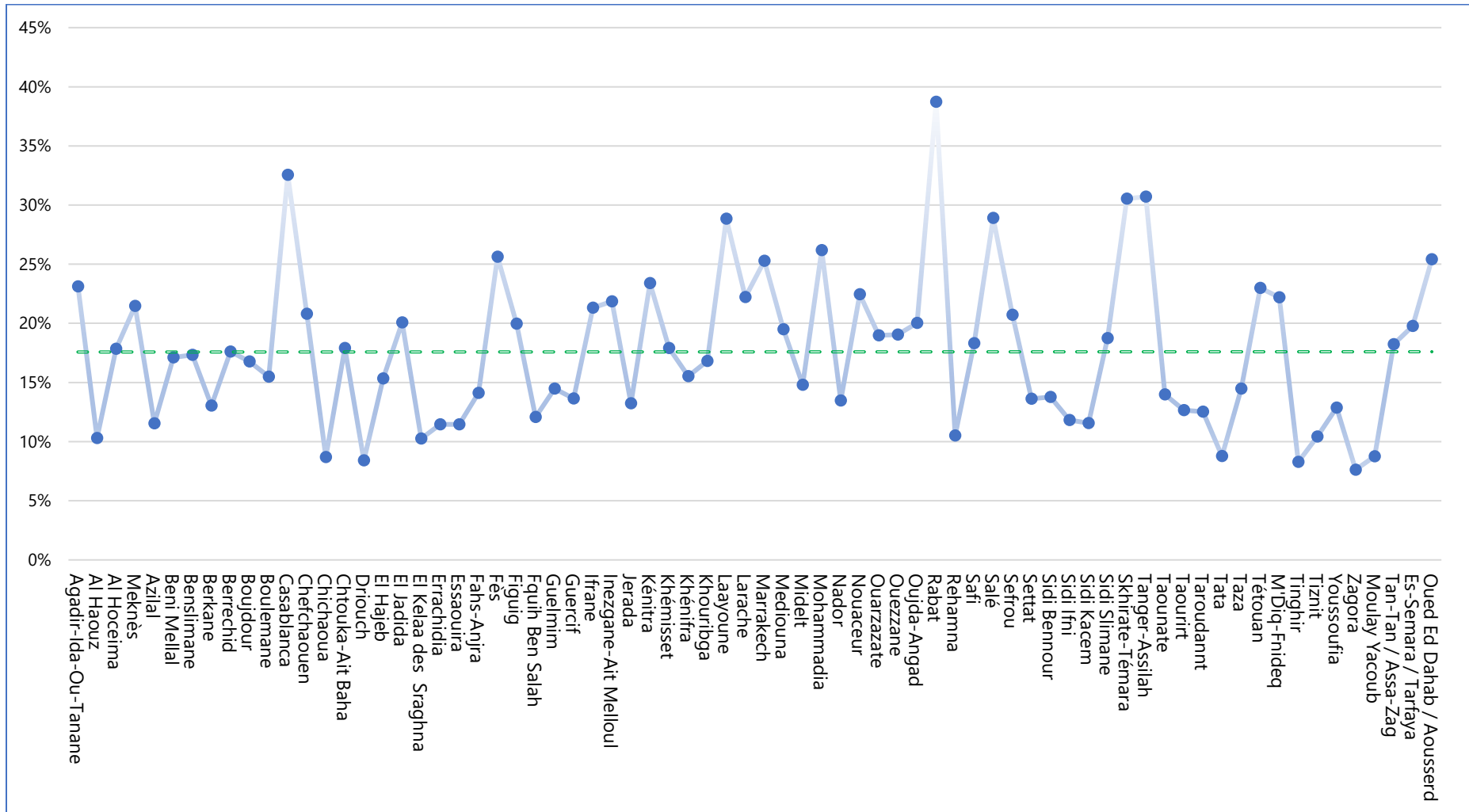
- Empty Model: The intercept has an odds ratio of 0.201, indicating a relatively low probability of participation in the absence of explanatory variables.
- Random Effects: The intra-province variance is 3.29, indicating significant variation in participation within provinces, while the inter-province variance is 0.194, suggesting a weaker influence of differences between provinces.
- Variance: 5.6% of the variation in women's participation is explained by differences between provinces, while 94.4% is explained by differences within provinces.

Tableau 8. Determinants of Women's Participation - Empty Model

<i>Fixed Effects</i>	<i>Odds Ratio</i>	<i>Std. Err.</i>	<i>95% Conf. Interval</i>
<i>Constant</i>	0.201	0.010	0.181 - 0.222
<i>Random Effects</i>			
<i>Level 2: Intra-Province Variance</i>	3.290		
<i>Level 1: Inter-Province Variance</i>	0.194	0.032	0.140 - 0.269
<i>Percentage of Intra-Province Variance</i>	94.44%		
<i>Percentage of Inter-Province Variance</i>	5.56%		

Source: Authors' elaboration based on RGPH data, 2014

Figure 4. Variation in Women's Participation Probabilities by Province



Source : Authors' elaboration based on RGPH data, 2014

The empty model does not include significant effects from explanatory variables, and additional variables must be added to refine the prediction of women's participation. An intermediate multilevel logistic regression model is then developed, incorporating two levels: individual characteristics of women on one hand, and provincial characteristics on the other.

The main results of the analysis of determinants of women's labor market participation using the intermediate multilevel model reveal the influence of both individual and provincial characteristics on this probability:

Fixed Effects (Individual Variables)

- Disability Status (PSH): Disability is a significant barrier to labor market participation (women without disabilities are 2.49 times more likely to participate than those with disabilities).
- Age: Women's participation in the labor market increases with age, peaking between 35 and 45 years (odds ratio of 2.63), then decreases for older age groups.
- Marital Status: Divorced women (odds ratio of 2.21) and widows (odds ratio of 1.11) have a higher probability of participation than married women, likely due to increased economic pressure to meet their own needs.
- Number of Children: Each additional child slightly reduces the probability of participation (odds ratio of 0.97), likely due to domestic responsibilities and childcare costs.
- Education Level: Education has a significant effect. Women with higher education show a very high probability of participation (odds ratio of 8.95).
- Relationship to Head of Household: Spouses and non-head household members have a reduced probability of participation. For instance, spouses have an odds ratio of 0.30, possibly reflecting a higher domestic burden for those who are not heads of household.
- Housing Occupancy Status: Renters (odds ratio of 1.99) and those in employer-provided housing (odds ratio of 1.56) show a higher probability of participation than homeowners, possibly reflecting economic necessity.
- Distance to Main Road: Each additional unit of distance slightly increases the probability of participation (odds ratio of 1.015), though this effect is marginal.

Provincial variables, such as the multidimensional poverty index, share of INDH municipalities, number of women's cooperatives, and average age at first marriage, do not have a significant influence on the probability of participation. This suggests that individual-level factors are more decisive in the decision to participate in the labor market than provincial characteristics in this model. The inter-province variance, estimated at 0.293 and representing approximately 8.17% of the total variance, shows that differences between provinces explain only a small part of the variation in participation. Conversely, the intra-province variance, estimated at 3.290 and accounting for 91.83% of the total variance, indicates that most differences in participation are due to individual characteristics.

Tableau 9. Determinants of Women's Participation - Intermediate Model

	Odds Ratio	Std. Err.	z	P>z	[95% Conf. Interval]	
Fixed Effects						
<i>PSH (Reference: Yes)</i>						
No	2.49116	.1095262	20.76	0.000	2.285481 2.715348	
<i>Age (Reference: 15-20 years)</i>						
20-24 years	1.300793	.0747992	4.57	0.000	1.162149 1.455978	
25-29 years	1.737349	.0981218	9.78	0.000	1.555295 1.940712	
30-34 years	2.087484	.119341	12.87	0.000	1.866209 2.334997	
35-39 years	2.396712	.1388986	15.08	0.000	2.139368 2.685012	
40-44 years	2.601229	.1530634	16.25	0.000	2.317883 2.919212	
45-49 years	2.529638	.1580206	16.09	0.000	2.337467 2.95833	
50-54 years	2.257689	.1380419	13.32	0.000	2.002715 2.545125	
55-59 years	1.927381	.1233875	10.25	0.000	1.700103 2.185043	
60-64 years	1.357291	.0911886	4.55	0.000	1.189832 1.548319	
65-69 years	.9245687	.0720958	-1.01	0.315	.7935319 1.077244	
70-74 years	.6232638	.0528952	-5.57	0.000	.5277547 .7360575	
75 years and above	.3769436	.0341756	-10.76	0.000	.3155746 .4502468	
<i>Marital Status (Reference: Married)</i>						
Divorced	2.208494	.0880835	19.87	0.000	2.042428 2.388061	
Widowed	1.10973	.0386652	2.99	0.003	1.036477 1.18816	
Number of Children	.9691085	.0040415	-7.52	0.000	.9612196 .9770621	
<i>Education Level (Reference: No Formal Education)</i>						
Preschool	1.298675	.1130195	3.00	0.003	1.095023 1.540203	
Primary	.9065666	.0209987	-4.23	0.000	.8663301 .9486717	
Lower Secondary	.9696355	.0379027	-0.79	0.430	.8981221 1.046843	
Upper Secondary	1.826339	.0905019	12.15	0.000	1.6573 2.012619	
Higher Education	8.947684	.5527405	35.47	0.000	7.927348 10.09935	
Household Size	.9960597	.0031912	-1.23	0.218	.9898246 1.002334	
<i>Relationship to Head of Household (Reference: Head of Household)</i>						
Spouse	.3032878	.0094209	-38.41	0.000	.285374 .3223261	
Son / Daughter	.7537695	.0316325	-6.74	0.000	.6942522 .8183891	
Grandson / Granddaughter	.5334513	.1114483	-3.01	0.003	.3542111 .8033916	
Father / Mother	.2779351	.0130033	-27.37	0.000	.2535827 .3046263	
Brother / Sister	.5869869	.0378167	-8.27	0.000	.5173562 .6659892	
Son-in-law / Daughter-in-law	.2868418	.0120194	-29.80	0.000	.2642255 .3113939	
Other Relative	.3566498	.0201799	-18.22	0.000	.3192122 .3984782	
Unrelated Person	.5722367	.0877033	-3.64	0.000	.4237573 .7727415	
<i>Housing Occupancy Status (Reference: Owner)</i>						
Tenant	1.987692	.0968019	14.11	0.000	1.806737 2.18677	
Occupant of Employer-Provided Housing	1.558448	.1157703	5.97	0.000	1.347287 1.802704	
Living Rent-Free	1.249278	.0397742	6.99	0.000	1.173705 1.329718	
Other	1.32058	.1114436	3.30	0.001	1.119263 1.558108	
Distance to Main Road	1.015507	.0010674	14.64	0.000	1.013417 1.017601	
<i>Provincial Characteristics</i>						
Multidimensional Poverty Index	1.010034	.0070375	1.43	0.152	.9963349 1.023922	
Share of INDH Municipalities	1.009734	.0066492	1.47	0.141	.9967856 1.022851	
Number of Women's Cooperatives	1.000723	.0049646	0.15	0.884	.9910395 1.010501	
Average Age at First Marriage	1.049181	.0473083	1.06	0.287	.9604377 1.146124	
Constant	.0091485	.0104992	-4.09	0.000	.0009649 .0867412	
Random Effects						
Level 2: Inter-Province Variance	0.293	Percentage of Inter-Province Variance			8,17%	
Level 1: Intra-Province Variance	3.290	Percentage of Intra-Province Variance			91,83%	

Source : Authors' elaboration based on RGPH data, 2014

Interactions between individual (level 1) and provincial (level 2) variables in a multilevel model reveal how contextual characteristics influence women's labor market participation. Four key interactions were explored.

First, the positive effect of education on participation is more pronounced in provinces with low multidimensional poverty, as educated women in these areas find more job opportunities that match their qualifications. Second, in provinces with extensive coverage by the National Initiative for Human Development (INDH), the restrictive impact of the number of children is mitigated due to family support infrastructure. Third, in provinces where the average age at first marriage is high, divorced or widowed women have a higher probability of participation, reflecting social norms supportive of women's independence. Finally, the distance to the main road has less impact on participation in provinces with numerous women's cooperatives, as these cooperatives offer local opportunities.

The multilevel model results confirm that individual characteristics such as age, education, marital status, and the number of children play a central role. For example, women without disabilities have a 3.3 times higher probability of participation, and divorced or widowed women are about 4.18 times more likely to participate than married women, likely out of economic necessity. The number of children reduces participation probability, while higher education encourages economic engagement. Provincial contextual characteristics also influence participation: in provinces with high poverty, women participate more due to economic need, while a higher average age at first marriage is associated with greater economic independence for women.

The interactions between individual and contextual factors reveal nuanced effects. The impact of education is limited in poorer provinces due to a lack of quality jobs. The interaction between marital status and average age at marriage shows that the effect of marital status on participation decreases in provinces where women marry later, reflecting a more liberal environment. Finally, women's cooperatives partially offset the isolation of rural areas far from main roads, creating local economic opportunities for women.

Tableau 10. Determinants of Women's Labor Market Participation - Full Model

	Odds Ratio	Std. Err.	z	P>z	[95% Conf. Interval]	
Individual Characteristics						
Disability Status (PSH)	3.32	0.144	27.8	5.04e-170	3.05	3.62
Age	0.958	0.00324	-12.8	1.17e-37	0.951	0.964
Marital Status	4.18	0.676	8.86	7.67e-19	3.05	5.74
Number of Children	0.934	0.00502	-12.6	1.36e-36	0.925	0.944
Education Level	1.20	0.0179	12.2	4.52e-34	1.16	1.23
Household Size	1.02	0.00304	6.91	4.88e-12	1.01	1.03
Relationship to Head of Household	0.859	0.00390	-33.5	7.46e-246	0.851	0.867
Housing Occupancy Status	1.08	0.00956	8.25	1.62e-16	1.06	1.09
Distance to Main Road	1.01	0.00139	6.63	3.43e-11	1.01	1.01
Provincial Characteristics						
Multidimensional Poverty Index	1.02	0.00704	2.60	9.37e-3	1.00	1.03
Share of INDH Municipalities	1.01	0.00656	1.35	1.76e-1	0.996	1.02
Number of Women's Cooperatives	0.999	0.00486	-0.307	7.59e-1	0.989	1.01
Average Age at First Marriage	1.17	0.0409	4.42	9.92e-6	1.09	1.25
Interactions						
Education Level: Multidimensional Poverty Index	0.993	0.000804	-8.28	1.20e-16	0.992	0.995
Number of Children: Share of INDH Municipalities	1.00	0.000320	-0.545	5.86e-1	0.999	1.00
Marital Status: Average Age at First Marriage	0.962	0.00608	-6.14	8.35e-10	0.950	0.974

<i>Distance to Main Road : Number of Women's Cooperatives</i>	1.00	0.000098	2.80	5.12e-3	1.00	1.00
<i>Constant</i>	0.0000635	0.000056	-10.9	8.53e-28	0.0000112	0.000359

Source : Authors' elaboration based on RGPH data, 2014

Conclusion

This analysis highlights a crucial issue for Morocco's economic and social development: the low participation of women in the labor market, which hinders the country's growth and perpetuates inequalities. This exclusion limits development potential and obstructs women's empowerment by depriving them of full participation in economic and social life. The study reveals that Moroccan women's participation is influenced by a combination of individual and contextual factors. On an individual level, factors such as age, education level, marital status, and family responsibilities are key. For instance, women aged 35-45 and those with higher education are more likely to participate. In contrast, marriage and the presence of children, especially young ones, serve as barriers due to the domestic burdens they entail, reflecting social norms and structural constraints.

Contextual factors, such as the multidimensional poverty index or the number of women's cooperatives per province, while having some influence, are less decisive than individual characteristics in this model. This suggests that the local context, though important, cannot fully offset the individual and cultural barriers to women's economic participation.

These findings suggest several policy recommendations to promote women's inclusion in the Moroccan economy. Improving young girls' access to education is essential, as a high level of education is a powerful lever for economic integration. Additionally, developing affordable childcare services would enable mothers to balance work and family. Furthermore, creating formal employment opportunities in rural areas and supporting women's cooperatives could meet the needs of women, especially those from disadvantaged backgrounds.

The effects of these policies extend beyond reducing gender inequalities: greater inclusion of women in the Moroccan labor market would boost economic growth, enhance household resilience, diversify the economic landscape, and contribute to a sustainable reduction in poverty. Integrating women into Morocco's economy is therefore not only a matter of social justice but also a key strategy for sustainable and inclusive development.

Future research could delve deeper into the impact of specific policies, such as subsidies for female entrepreneurship or flexible work platforms, to assess how they might expand women's access to economic opportunities, particularly in rural areas. This research would provide valuable insights to guide public policies and reduce gender inequalities in the Moroccan labor market.