

Determinants of participation in extracurricular activities among higher education students in Morocco: using the Logit Model

Kamal ACHDIG⁽¹⁾, Aicha EL ALAOUI⁽²⁾, Salah AHBALA⁽³⁾ et Mohammed EL BOUHALI⁽⁴⁾

⁽¹⁾ Laboratoire de recherche pluridisciplinaire en économie et gestion « LARPEG ». Faculté d'économie et de gestion, université sultan moulay Slimane, Béni Mellal
kamal.achdig@usms.ac.com

⁽²⁾ Laboratoire de recherche pluridisciplinaire en économie et gestion « LARPEG ». Faculté d'économie et de gestion, université sultan moulay Slimane, Béni Mellal
a.alaoui@usms.ma

⁽³⁾ Laboratoire de recherche pluridisciplinaire en économie et gestion « LARPEG ». Faculté d'économie et de gestion, université sultan moulay Slimane, Béni Mellal
ahbala.salah@gmail.com

⁽⁴⁾ Laboratoire de recherche pluridisciplinaire en économie et gestion « LARPEG ». Faculté d'économie et de gestion, université sultan moulay Slimane, Béni Mellal
mohammedbohali@gmail.com

Abstract

The importance of extracurricular activities in student life is widely recognized. Although efforts have been made to introduce these activities in Moroccan universities, participation rates remain modest.

In this context, the present study aims to identify the factors influencing the participation of higher education students in extracurricular activities in Morocco. It employs a quantitative approach using a hypothetico-deductive method. A questionnaire survey was conducted with 807 students from four faculties at Cadi Ayad University in Marrakech. Given the nature of the variables, the chi-square test and binary logistic regression were applied for data analysis.

The main findings indicate that participation in extracurricular activities of all types depends on educational level, personality characteristics, and parental education. For sports activities, participation depends on gender, educational level, and type of school. Involvement in non-sports activities is primarily influenced by personality characteristics and type of school.

Keywords: Extracurricular activities; higher education, logistic regression; determinants; sports activities.

Introduction

The importance of extracurricular activities in the university experience is widely recognized. Yet, in Morocco, despite efforts to introduce these activities into Moroccan universities, participation rates remain low. The results of the national survey on students and university life conducted in 2019 by the Higher Council for Education, Training and Scientific Research reveal low student involvement in club activities organised within universities (CSEFRS, 2019). Participation rates are particularly low: only 5% of students surveyed reported participating in scientific and artistic club activities, while cultural and sporting activities did not exceed participation rates of 7% and 9% respectively. The study report highlights that this lack of interest in extracurricular activities is not limited to a specific group or category of students. The lack of engagement appears to be relatively similar among female and male students, whether they are enrolled in institutions with regulated or open access, in bachelor's or master's programmes. This observation remains valid regardless of the geographical origin of the students or the socio-economic profile of their families. In this context, the present study aims to identify the factors influencing the participation of university students in ECAs.

Previous research typically considers factors such as gender, age, education level, type of activities, residence of the student and their family, parental education, personality characteristics, etc.

Sex is a significant determinant. Al-Ansari et al. (2016) indicate that boys are generally more likely to participate in ECAs than girls. Other studies show that girls favour non-sporting activities, while boys are more inclined towards sporting activities (Leppel, 2005; October, 2006).

Age is often negatively correlated with participation in ECAs. Leppel (2005) suggests that, although participation may increase with age, older students are often more in demand, which reduces their availability for extracurricular activities. The author also points out that the effect of age is more pronounced for sports activities, likely due to the physical demands they entail.

The student's residence and that of their family also play an important role. Students living on campus generally have more opportunities to participate in ECAs due to their proximity to activity locations. Some even choose to live on campus to facilitate their involvement. Leppel (2005) confirms that students residing on campus are more likely to participate, whether in sports or non-sports activities.

Guèvremont et al. (2008) emphasize that place of residence (urban or rural) was linked to the participation of young children in organized sports. They specify that urban youth aged 14 to 17 were significantly more likely than those living in rural areas to participate in organized sports.

Off-campus paid work can discourage participation in extracurricular activities due to the time commitment involved. However, Leppel (2005) observes that the impact of the average number of hours worked is relatively small and primarily affects girls, both in sports and non-sports activities.

Personality traits, such as a strong will to succeed, leadership skills, or popularity, can also promote participation in extracurricular activities. Dynamic and popular students are often more engaged in activities. Those who play sports are generally in good physical condition, while students with artistic talents are more active in clubs, music, or theater. Leppel (2005) shows that a will to succeed, leadership, and popularity are positive factors for participation, regardless of gender, except for a will to succeed, which is linked to sports activities only among girls.

Physical health primarily influences participation in sports activities, regardless of gender, while artistic abilities are more associated with non-sports activities.

Finally, family socioeconomic status can play a decisive role in the decision to participate in extracurricular activities and in the choice of activities. Octobre (2006) emphasizes that parents influence their children's leisure activities in two ways: directly, through educational projects and

cultural norms, and indirectly, through cultural osmosis, via their own cultural practices. The level of cultural resources in the home (books, computers, musical instruments, etc.) reflects the parents' educational values and shapes children's habits.

The review of studies addressing the determinants of participation in ECAs led to the following hypotheses:

- H1: Boys are more inclined to participate in sports activities.
- H2: Girls are more likely to engage in non-sporting activities.
- H3: First-year students participate in ECAs more than students in other levels.
- H4: Students residing on campus are more likely to participate in ECAs compared to students residing off campus.
- H5: Students with paid employment are less likely to participate in ECAs.
- H6: Students from families residing in rural areas are less likely to participate in ECA programs than those from families belonging to urban areas.
- H7: Students from more educated families are more likely to participate in ECAs than those from less educated families.
- H8: Older students are less likely to participate in ECAs than younger students.
- H9: Students from regulated institutions are more likely to participate in ECAs than students from open-access institutions.
- H10: Personality traits positively influence participation in ECAs.

1. Methodology

In this research, a quantitative approach was adopted to identify the determinants of participation in the ECA. This method allows us to test the hypotheses formulated from the collected data and to generalize the results to Moroccan higher education institutions.

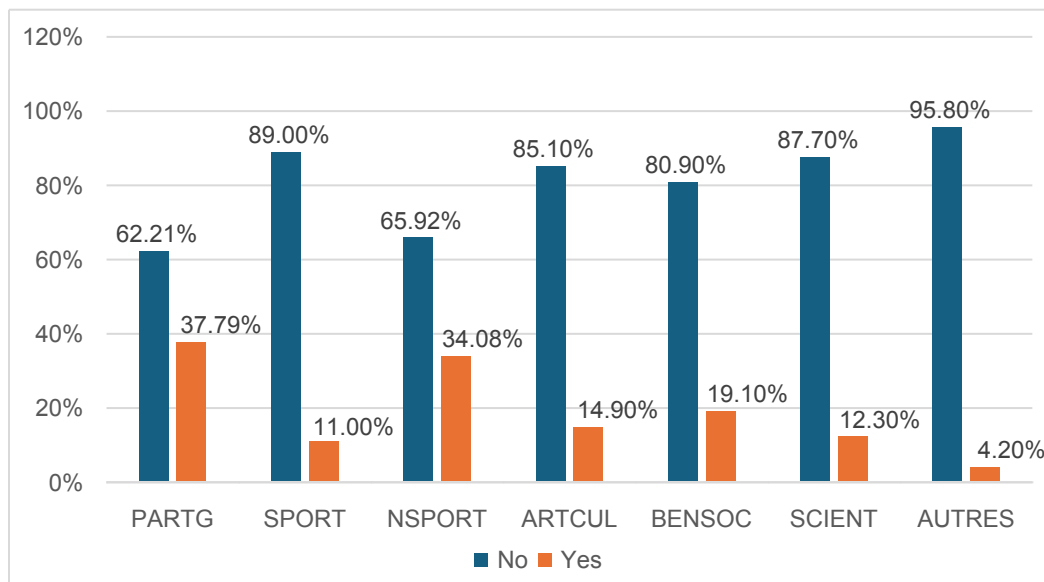
This study also adopts a deductive approach, aiming to verify hypotheses derived from the literature review. It is descriptive and explanatory in nature and seeks to identify the determinants of participation in the ECA within the specific context of higher education in Morocco.

1.1. Sample

The survey for this study was conducted in October 2024 within four faculties under the Cadi Ayyad University of Marrakech: two open access institutions (the Faculty of Arts and Humanities, and the Faculty of Legal, Economic and Social Sciences) and two regulated access institutions (the National School of Commerce and Management, and the Faculty of Sciences and Techniques).

A total of 807 students were surveyed using a questionnaire. Of these, 37.39% reported participating in at least one extracurricular activity (Figure 1). Overall participation in extracurricular activities (PARTG) is represented by a binary variable that takes the value 1 for participation in at least one extracurricular activity, and 0 otherwise.

Figure 1: Participation in extracurricular activities (%)



Source :Primary data

Similarly, the SPORT variable takes the value 1 if the student participated in at least one sporting activity, and 0 otherwise. The same logic was applied to the construction of the variables relating to participation in artistic and cultural activities (ARTCUL), volunteer and social activities (BENSOC), scientific activities (SCIENT), as well as other activities (AUTRES).

The NSPORT variable represents participation in non-sport activities and takes the value 1 if the student participated in at least one non-sport activity (artistic, cultural, social, scientific or other), and 0 otherwise.

Statistics reveal that participation in sports activities is relatively low compared to that in non-sports activities: 11% versus 34.08%. Among non-sports activities, volunteer and social activities have the highest participation rate (19.10%), while other extracurricular activities have the lowest (4.20%).

The variable SEX is a binary variable taking the value 1 when the student is male, and 0 when they are female. The sample studied is composed of 70% girls, as shown in Table 1.

Table 1: Description of variables

Variable	Description	Terms	N	%
SEX	Student's gender	Girl	565	70
		Boy	242	30
AGE	Student's age	Under 19	102	12.6
		19, 25 years old	655	81.9
		25, 30 years old	28	3.5
		30 and over	16	2
YEAR	Level of education	1st year	81	10.0
		2nd year	392	48.6
		3rd year	195	24.2
		4th year	50	6.2
		5th year	89	11.0
STUDENTR	Student residence	On campus	44	5.5
		Off campus	763	94.5

OCAMPW	Off-campus paid work	Yes	100	12.4
		No	707	87.6
FAMILYR	Family residence	Rural environment	260	32.2
		Urban environment	547	67.8
ESTAB	Type of establishment	Open access	380	47.1
		Controlled access	427	52.9
ACADAB	Academic abilities	Below average	61	7.6
		In the average range	539	66.8
		Above average	207	25.7
ARTISTAB	Artistic abilities	Below average	161	20.0
		In the average range	440	54.5
		Above average	206	25.5
DRIVE	drive to succeed	Below average	36	4.5
		In the average range	237	29.4
		Above average	534	66.2
LEADER	Leadership skills	Below average	93	11.5
		In the average range	409	50.7
		Above average	305	37.8
PHYSHEAL	Physical health	Below average	115	14.3
		In the average range	436	54.0
		Above average	256	31.7
POPULAR	Popularity	Below average	146	18.1
		In the average range	405	50.2
		Above average	256	31.7
PARENTED	Parent Education	Primary school level, secondary school level, or never attended school	412	51.1
		Secondary college	66	8.2
		Qualified Secondary	111	13.8
		Post-secondary but not university	7	0.9
		University level or higher	211	26.1

Source : Primary data

The variable AGE is an ordinal variable, grouping students' ages into intervals. The analysis shows that 81.9% of students are between 19 and 25 years old, which corresponds to the most represented age group in higher education.

The level of study is measured by the ordinal variable YEAR, ranging from the 1st to the 5th year. Most students, 72.8%, are enrolled in the 2nd or 3rd year.

The variable RESIDR indicates the student's place of residence. It is a binary variable, taking the value 1 if the student resides in university accommodation, and 0 if they reside elsewhere. Only 5.5% of students live in university residences.

The variable OCAMPW measures off-campus employment. It takes the value 1 if the student works off-campus, and 0 otherwise. 12.4% of students report having off-campus employment.

Family residence environment is represented by the FAMILYR variable, which takes the value 1 for students from urban areas and 0 for those from rural areas. 32.2% of students come from families residing in rural areas, compared to 67.8% in urban areas.

The type of institution is measured by the binary variable ESTAB, where 1 corresponds to institutions with restricted access, and 0 to institutions with open access. The sample is divided

between 47.1% of students enrolled in open-access institutions and 52.9% in institutions with restricted access.

Furthermore, students were asked about their self-perception in several personal and social areas, using questions formulated as follows: "Compared to an average person your age, would you place yourself above average, average, or below average in [specified area]?" The areas covered were academic abilities (ACADAB), artistic abilities (ARTISTAB), drive to succeed (DRIVE), leadership skills (LEADER), physical health (PHYSHEAL), and popularity (POPULAR). Except for drive to succeed, nearly 66% of students considered themselves above average, more than half of the students perceived themselves as average in the other areas of personality characteristics.

The variable corresponding to parental education (PARENTED) is derived from the mother's education variable and the father's education variable. It takes values ranging from (1=primary, lower secondary, or never attended school; 2=lower secondary; 3=high school; 4=post-secondary but not university; 5=university or higher). The construction of this variable is based on the measurement scales used in the 2023 TIMSS study. More than 50% of parents have a primary school education, a secondary college education, or have never been to school.

2.1. Data analysis

To identify the determinants of participation in extracurricular activities, three types of statistical analysis were performed. First, a univariate analysis of proportions was conducted for the categorical variables. Second, given the categorical nature of these variables, the chi-square test was applied to examine the independence between participation in extracurricular activities and the different independent variables. Finally, all the selected variables were included in a binary logistic regression model to estimate their influence on the dependent variables.

The binary logistic model aims to identify the determinants of participation in extracurricular activities. Participation in extracurricular activities is therefore the dependent variable. It is a dichotomous variable that manifests itself in two categories (1 = participation; 0 = non-participation). The determinants are the explanatory variables corresponding to sex, age, educational level, parental education, etc. These variables can be of different types.

2. Results

We begin by examining the relationship between participation in ECA and the explanatory variables. Next, we present the results of three binary logistic models designed to identify the factors influencing overall participation in ECA, participation in sports activities, and participation in non-sports activities.

3.1. Overall participation

The study of the independence between overall participation in ECAs and the explanatory variables (Table 2) reveals significant associations with several factors: educational level, family residence, academic, artistic and leadership skills, popularity, parental education level, and the type of institution attended.

Table 2: Chi-square test between overall participation and independent variables

Variable		Participation status		χ ² Test
		Yes	No	
SEX	Girl	207	358	1.073
	Boy	98	144	

AGE	Under 19	40	62	3,295
	19, 25 years old	250	411	
	25, 30 years old	11	17	
	30 and over	4	12	
YEAR	1st year	36	45	13,112**
	2nd year	136	256	
	3rd year	71	124	
	4th year	15	35	
	5th year	47	42	
STUDENTR	On campus	18	26	0.192
	Off campus	287	476	
OCAMPW	Yes	32	68	1,630
	No	273	434	
FAMILYR	Rural environment	77	183	10,914***
	Urban environment	228	319	
ACADAB	Below average	18	43	8,640**
	In the Average	192	347	
	Above average	95	112	
ARTISTAB	Below average	48	113	16,905***
	In the Average	156	284	
	Above average	101	105	
DRIVE	Below average	14	22	5,431*
	In the Average	75	162	
	Above average	216	318	
LEADER	Below average	31	62	13,718***
	In the Average	134	275	
	Above average	140	164	
PHYSHEAL	Below average	40	75	5,661*
	In the Average	153	283	
	Above average	112	144	
POPULAR	Below average	46	100	12,471***
	In the Average	140	265	
	Above average	119	137	
PARENTED	Primary school, middle school, or never attended school	130	282	22,772***
	Secondary college	22	44	
	Qualified Secondary	44	67	
	Post-secondary but not university	2	5	
	University level or higher	107	104	
ESTAB	Open access	101	279	38,424***
	Controlled access	204	223	

*p < 0.10; **p < 0.05; ***p < 0.01. Source: Primary data

Table 3 presents the results of the binary logistic regression model designed to identify the determinants of overall participation in ECAs. This model incorporates a set of socio-demographic, psychological, and contextual variables. The goodness-of-fit indicators show a good fit between the model and the data. The explanatory variables correctly predict participation in ECAs in 66.8% of cases. The pseudo-R² indicates that 13% of the variance in participation is explained by the model. Furthermore, the significant decrease in deviance confirms that the final model offers improved predictive power.

Table 3: Determinants of overall participation in ECAs

Variable	B	SE	Wald	df	Exp(B)
SEX (female)	-0.16	0.17	0.87	1.00	0.85
YEAR					
2nd year	-0.47*	0.27	3.01	1.00	0.63
3rd year	-0.56*	0.30	3.48	1.00	0.57
4th year	-1.00**	0.42	5.79	1.00	0.37
5th year	-0.16	0.35	0.21	1.00	0.85
STUDENTR (on campus)	0.19	0.34	0.30	1.00	1.20
OCAMPW (yes)	-0.24	0.25	0.90	1.00	0.79
FAMILYR (rural area)	-0.07	0.19	0.13	1.00	0.93
ACADAB	-0.05	0.16	0.11	1.00	0.95
ARTISTAB	0.34**	0.12	7.64	1.00	1.41
DRIVE	0.01	0.15	0.01	1.00	1.01
LEADER	0.03	0.14	0.05	1.00	1.03
PHYSHEAL	0.19	0.13	2.24	1.00	1.21
POPULAR	0.25**	0.13	4.10	1.00	1.29
PARENTED	0.10**	0.05	3.84	1.00	1.11
AGE	0.14	0.18	0.65	1.00	1.15
ESTAB (open access)	-0.88***	0.19	21.72	1.00	0.41
Constant	-1.71**	0.67	6.49	1.00	0.18
Deviance	81,335***				
Pseudo R ²	13.1%				
Concordance index	66.8%				

*p < 0.10; **p < 0.05; ***p < 0.01. Source: Primary data

The results reveal that fourth-year students have a significantly lower probability of participating in the ECA than first-year students (odds ratio: $\exp(\beta) = 0.37$, $p < 0.05$). In contrast, second- and third-year students do not show significant differences compared to first-year students.

Furthermore, students with artistic abilities or those enjoying a certain level of popularity are more likely to participate in the ECA (respectively: $\exp(\beta) = 1.41$, $p < 0.05$ and $\exp(\beta) = 1.29$, $p < 0.05$). In contrast, academic ability, leadership, will succeed, and physical health do not have a significant effect on overall participation.

The parents' level of education appears to be an influential factor. The more educated the parents are, the more likely their children are to engage in ECA ($\exp(\beta) = 1.11$, $p < 0.05$), representing an increased probability of 11%.

The type of institution attended also plays a determining role. Students from open-access institutions are significantly less likely to participate in ECAs than those from regulated-access institutions ($\exp(\beta) = 0.41$, $p < 0.001$), representing an 80% reduced probability.

Finally, variables such as gender, age, student residence, family residence, and off-campus paid work do not have a significant effect on overall participation in ECAs.

The participation of Moroccan higher education students in ECA is primarily influenced by personal and social factors, including artistic aptitude, popularity, parental education level, academic level, and type of institution attended. However, analyzing the determinants of overall participation does not allow for the differentiation of specific characteristics within each type of ECA. A separate study of the factors influencing each category of activity could therefore provide valuable insights.

2.1. Participation in sports activities

In Table 4 below, the chi-square test is used to examine the relationship between participation in sports activities and various explanatory variables. The results highlight significant associations with gender, off campus paid employment, physical health, and type of institution.

Tableau 4: Dependence between participation in sports and explanatory variables

	Variable	Participation status		χ ² test
		No	Yes	
SEX	Girl	535	30	62,798***
	Boy	183	59	
AGE	Under 19	90	12	1.815
	19, 25 years old	590	71	
	25, 30 years old	23	5	
	30 and over	15	1	
YEAR	1st year	66	15	7,942*
	2nd year	356	36	
	3rd year	172	23	
	4th year	47	3	
	5th year	77	12	
STUDENTR	On campus	39	5	0.005
	Off campus	679	84	
OCAMPW	Yes	82	18	5,654**
	No	636	71	
FAMILYR	Rural environment	235	25	,781
	Urban environment	483	64	
ACADAB	Below average	54	7	2,672
	In the Average	486	53	
	Above average	178	29	
DRIVE	Below average	32	4	1.633
	In the Average	216	21	
	Above average	470	64	
LEADER	Below average	88	5	4,950*
	In the Average	366	43	
	Above average	264	41	
PHYSHEAL	Below average	108	7	8,081**
	In the Average	393	43	
	Above average	217	39	
POPULAR	Below average	134	12	3,914
	In the Average	364	41	
	Above average	220	36	
PARENTED	Primary school, middle school, or never attended school	374	38	3,717
	Secondary college	58	8	
	Qualified Secondary	99	12	
	Post-secondary but not university	6	1	
	University level or higher	181	30	
ESTAB	Open access	355	25	14,491***
	Controlled access	363	64	

*p < 0.10; **p < 0.05; ***p < 0.01. Source: Primary data

Table 5 presents the results of the binary logistic regression model designed to identify the determinants of participation in sports activities. The goodness-of-fit indicators confirm the model's

quality: the concordance rate indicates that the explanatory variables accurately predict participation in 89% of cases. The significant decrease in deviance also demonstrates an improvement in the model's predictive power. The pseudo-R² reveals that 23.6% of the variance in participation in sports activities is explained.

Table 5: Factors influencing participation in sports activities

Variable	B	SE	Wald	df	Exp(B)
SEX (girls)	-1.89***	0.26	50.77	1.00	0.15
YEAR					
2nd year	-1.12***	0.38	8.50	1.00	0.33
3rd year	-1.24***	0.43	8.19	1.00	0.29
4th year	-2.25***	0.73	9.56	1.00	0.10
5th year	-1.44***	0.51	8.05	1.00	0.24
STUDENTR (on campus)	0.15	0.53	0.08	1.00	1.16
OCAMPW (yes)	0.47	0.34	1.97	1.00	1.60
FAMILYR (rural area)	0.30	0.32	0.89	1.00	1.35
ACADAB	-0.16	0.25	0.40	1.00	0.86
DRIVE	0.19	0.25	0.59	1.00	1.22
LEADER	0.05	0.23	0.04	1.00	1.05
PHYSHEAL	0.35	0.21	2.68	1.00	1.42
POPULAR	0.12	0.20	0.38	1.00	1.13
PARENTED	0.05	0.08	0.40	1.00	1.05
AGE	0.28	0.27	1.11	1.00	1.33
ESTAB (open access)	-1.58***	0.33	23.07	1.00	0.21
Constant	-1.56	1.01	2.38	1.00	0.21
Deviance	101,624***				
Pseudo R²	,236				
Concordance index	89.0%				

*p < 0.10; **p < 0.05; ***p < 0.01. Source: Primary data

The results show that female students are significantly less likely to participate in sports activities than their male counterparts ($\text{Exp}(\beta) = 0.15$, $p < 0.001$), representing a reduction of almost 85% in the probability of participation, all other things being equal.

First-year students have a higher probability of participation compared to those in later years. The relative probability of participation for second, third, fourth, and fifth-year students are 33%, 29%, 11%, and 24%, respectively, compared to first-year students.

The type of institution is also a significant factor. Students from open-access institutions are less likely to participate in sports activities than those from regulated-access institutions ($\text{Exp}(\beta) = 0.21$, $p < 0.001$), representing a reduction of more than 80% in the probability of participation.

On the other hand, variables such as the residence of the student and their family, off-campus work, academic abilities, will succeed, leadership, popularity, physical health, and the age and education level of parents do not have a significant effect on participation in sports activities.

Therefore, three variables stand out due to their significant effect on participation in sports activities:

- Gender, with significantly higher participation among boys.
- The level of study, particularly in the first year.
- The type of establishment, with a more marked participation in establishments with regulated access.

4.1. Participation in non-sporting activities

Table 6 presents the results of the independence test between the variable of interest, participation in non-sporting activities, and the explanatory variables. The analyses reveal statistically significant associations with several factors: educational level, family residence, academic and artistic abilities, drive to succeed, leadership skills, popularity, parental education level, and the type of school attended.

Table 6 : Dependence between non-sporting activities and explanatory variables

Variable		Participation status		χ ² test
		Yes	No	
SEX	Girl	380	185	1,491
	Boy	152	90	
AGE	Under 19	66	36	2,079
	19, 25 years old	436	225	
	25, 30 years old	17	11	
	30 and over	13	3	
YEAR	1st year	50	31	12,496**
	2nd year	272	120	
	3rd year	130	65	
	4th year	35	15	
	5th year	45	44	
STUDENTR	On campus	29	15	,000
	Off campus	503	260	
OCAMPW	Yes	68	32	,219
	No	464	243	
FAMILYR	Rural environment	195	65	14,068***
	Urban environment	337	210	
ACADAB	Below average	45	16	10,545***
	In the Average	369	170	
	Above average	118	89	
ARTISTAB	Below average	117	44	13,613***
	In the Average	300	140	
	Above average	115	91	
DRIVE	Below average	22	14	8,439**
	In the Average	174	63	
	Above average	336	198	
LEADER	Below average	71	22	17,330***
	In the Average	286	123	
	Above average	175	130	
	Below average			
	In the Average			
POPULAR	Below average	109	37	14,087***
	In the Average	276	129	
	Above average	147	109	
PARENTED	Primary school, middle school, or never attended school	300	112	28,069***
	Secondary college	43	23	
	Qualified Secondary	75	36	
	Post-secondary but not university	5	2	
	University level or higher	109	102	
ESTAB	Open access	300	80	54,229***
	Controlled access	232	195	

*p < 0.10; **p < 0.05; ***p < 0.01. Source: Primary data

Table 7 presents the results of the binary logistic regression model designed to identify the determinants of participation in non-sporting activities. The concordance rate indicates a good fit between the model and the data: the explanatory variables correctly predicted participation in 65.9% of cases. The significant reduction in deviance confirms that the final model improves predictive power. The pseudo-R² reveals that 15.3% of the variance in participation in non-sporting activities is explained.

Table 7: Factors influencing participation in non-sporting activities

Variable	B	SE	Wald	df	Exp(B)
SEX (female)	-0.20	0.18	1.30	1	0.82
YEAR					
2nd year	-0.44	0.28	2.54	1	0.64
3rd year	-0.48	0.31	2.39	1	0.62
4th year	-0.79*	0.42	3.45	1	0.45
5th year	-0.18	0.36	0.26	1	0.83
STUDENTR (on campus)	0.06	0.35	0.03	1	1.07
OCAMPW (yes)	0.01	0.25	0.00	1	1.01
FAMILYR (rural area)	-0.06	0.20	0.10	1	0.94
ACADAB	-0.04	0.16	0.06	1	0.96
ARTISTAB	0.27**	0.13	4.65	1	1.32
DRIVE	0.03	0.16	0.04	1	1.03
LEADER	0.18	0.15	1.46	1	1.19
POPULAR	0.32**	0.13	6.37	1	1.38
PARENTED	0.10*	0.05	3.69	1	1.11
AGE	0.12	0.18	0.42	1	1.13
ESTAB (open access)	-1.09***	0.20	30.68	1	0.34
Constant	-1.80	0.68	7.06	1	0.16
Deviance	94,892***				
Pseudo R ²	153				
Concordance index	69.9%				

*p<0.10; **p < 0.05; ***p < 0.01. Source: Primary data

Students who perceive themselves as having artistic abilities are significantly more likely to engage in non-sporting activities ($\text{Exp}(\beta) = 1.32$, $p < 0.05$), representing a 32% higher probability of participation. Similarly, popularity is a significant factor ($\text{Exp}(\beta) = 1.38$, $p < 0.05$), reflecting a 38% higher probability of participation among students who consider themselves popular.

Parental education level also plays a significant role. Indeed, students whose parents have a higher level of education are more likely to participate in non-sporting activities ($\text{Exp}(\beta) = 1.11$, $p < 0.05$). The type of institution attended reveals a marked difference. Students from institutions with restricted access have a 66.2% higher probability of participation than those from open-access institutions ($\text{Exp}(\beta) = 0.34$, $p < 0.001$).

On the other hand, variables such as gender, level of education, residence of the student and their family, off-campus work, academic and leadership skills, will succeed, age and education of parents do not have a significant effect on participation in non-sporting activities.

In summary, the engagement of higher education students in Morocco in non-sporting activities depends mainly on four factors: artistic abilities, popularity, parental education level, and type of institution.

3. Discussion and validation of hypotheses

This study aimed to identify the main factors influencing participation in extracurricular activities. The key findings reveal several significant observations. They indicate that boys are more likely to participate in sports activities than female students, and that first-year students are more likely to participate in sports than their upper-year counterparts. As for non-sports activities, participation depends primarily on popularity and artistic talent. Furthermore, the study found that participation in extracurricular activities is higher in selective-access institutions than in open-access institutions.

- **H1: Boys are more inclined to participate in sports activities**

As expected, our results suggest that boys are generally more oriented towards sports activities. This finding corroborates that of Al-Ansari et al. (2016), who showed that boys are generally more inclined to participate in extracurricular activities than girls. Other studies show that girls favor non-sports activities, while boys are more oriented towards sports activities (Leppel, 2005; Octobre, 2006).

The predominance of men in sports activities is observed in both types of institutions, which can be interpreted considering sociocultural and institutional factors. Dominant social norms in Morocco tend to associate sports participation with a masculine activity. The lack of female role models in university sports, constraints related to mixed-gender participation, and infrastructure limitations can also restrict female students' involvement. This observation raises important issues regarding equity and inclusion and calls for educational policies that promote more balanced gender participation. This could include the creation of suitable sports facilities, the organization of activities specifically for girls, and awareness campaigns aimed at dismantling gender stereotypes.

- **H2: Girls are more likely to engage in non-sporting activities**

Contrary to expectations, participation in non-sporting activities is independent of gender. This result is consistent with several studies showing that gender differences are more pronounced in sporting activities, often associated with masculine norms, than in non-sporting activities where social expectations are less differentiated.

According to Fredricks & Eccles (2006) Non-sporting activities attract young people for reasons related to creative expression, skill acquisition, or developing a sense of belonging, motivations shared by both sexes. Other studies, such as those of Eccles & Barber (1999), observe that academic, artistic or associative clubs tend to show relatively balanced levels of participation between girls and boys.

Moreover, Mahoney et al. (2005) emphasize that the democratization of educational environments and the promotion of equal opportunities help reduce participation gaps in non-sporting areas. This may explain why the differences observed in sports participation are not reflected in non-sporting activities.

However, other previous studies highlight that girls tend towards non-sporting activities, while boys tend to focus more on sporting activities (Octobre, 2006).

- **H3: First-year students participate in ECAs more than students at other levels**

Hypothesis 3 is confirmed. The fact that first-year students participate more in extracurricular activities than their more senior peers can be explained by several factors related to academic integration, motivation, and workload. Newly enrolled students often seek to adapt to their new university environment, expand their social network, and create a sense of belonging. For many,

extracurricular activities represent an effective way to build connections, feel integrated, and reduce the stress associated with the transition to higher education.

Research shows that the early years are a period during which students experiment more and explore a variety of activities before settling into a more stable academic rhythm (Terenzini & Pascarella, 1991). Furthermore, the motivation to engage in socialization and discovery activities is generally higher among new students than among more advanced students, whose priorities tend to refocus on academic and sometimes professional requirements.

As students' progress through their studies, the academic workload increases, particularly in demanding programs. Several studies highlight that this mechanically reduces the time available for ECAs. (Eccles & Barber, 1999; Feldman & Matjasko, 2005). Second- or third-year students are also more likely to have additional responsibilities (internships, final year projects, job market preparation), which contributes to a decrease in participation.

- **H4: Students residing on campus are more likely to participate in ECAs compared to students residing off campus**

Our results also indicate that student participation in extracurricular activities is not significantly influenced by their place of residence, whether they live on or off campus. This finding suggests that the geographical proximity of university facilities is not a determining factor in student engagement in these activities. However, Leppel (2005) shows that students residing on campus are more likely to participate in both sports and non-sports activities compared to those residing off campus.

Several interpretations can be offered to explain this result. First, it is possible that current means of communication (social networks, university platforms, student groups) allow all students, regardless of their place of residence, to be informed of the activities offered and to access them in a relatively equitable manner. Furthermore, some students living off campus may compensate for the distance by effective personal organization or the use of regular means of transport.

Furthermore, this result suggests that other factors play a more significant role in participation in extracurricular activities, such as personal motivation, time management, academic workload, peer support, and interest in the type of activity offered. Thus, the choice to participate appears to depend more on individual and social factors than simply place of residence.

These results therefore qualify the idea that living on campus necessarily constitutes an advantage in terms of extracurricular involvement. They suggest that future research should focus on exploring other, deeper determinants, particularly psychological, social, and institutional ones, to better understand the dynamics of student participation.

- **H5: Students with paid employment are less likely to participate in ECAs**

The results indicate that off campus paid employment is not significantly linked to student participation in extracurricular activities. This finding challenges the notion that paid work necessarily hinders involvement in university extracurricular or athletic activities. Under certain conditions, such as good time management and flexible working arrangements, off-campus paid work may not prevent students from participating in extracurricular activities. Furthermore, participation may vary depending on the nature and intensity of the employment (part-time or full-time). Part-time or low-intensity employment may be compatible with participation in extracurricular activities (Matveev, 2021).

Furthermore, this result can also be interpreted by the importance students place on extracurricular activities, which they see as a space for relaxation, personal development, or strengthening social

skills. Thus, even while working paid jobs, some students continue to participate in these activities when they find them genuinely worthwhile.

Finally, this lack of a significant relationship suggests that other factors, including motivation, interest in the proposed activities, support from those around them, or academic requirements, have a greater weight than paid employment in the decision to participate or not in extracurricular activities.

However, Leppel (2005) shows that the average number of hours of off-campus work impacts, albeit small, participation in sports and non-sports activities exclusively for girls.

- **H6: Students from rural families are less likely to participate in ECAs than those from urban families.**

Contrary to our initial assumption, participation in ECAs does not appear to depend on the student's place of residence (H6 is refuted). This result corroborates that obtained by Alpe (2006), Assante & Lişman (2023), Coroiu & Dintica (2023) and Croft & Moore (2019). Coroiu & Dintica (2023) compared students from urban and rural areas. They found that participation in physical/sporting activities differed according to place of residence, and rural students were sometimes more engaged than urban students in their sample. This shows that place of origin does not systematically lead to rural disadvantages. Croft & Moore (2019) in their report shows that students from rural areas have participation rates comparable to (or even higher than) those of urban students for certain extracurricular activities, which qualifies the idea of a "systematic rural deficit". Alpe (2006) presents a comparative analysis of cultural and extracurricular practices among young people from rural versus urban areas; she concludes that the differences are not primarily related to geographical location, but to social and cultural background.

- **H7: Students from educated families are more likely to participate in ECAs than those from less educated families.**

Another important finding of our study relates to the positive impact of parental education on participation in extracurricular activities. This aligns with the findings of Octobre (2006), which highlight that parents influence children's leisure activities in two ways: explicitly through educational projects and cultural norms, and indirectly through cultural osmosis via their own cultural practices. The level of cultural resources in the home (books, computers, musical instruments, etc.) reflects the parents' educational values and shapes children's habits.

H8: Older students are less likely to participate in ECAs than younger students

According to our results, participation in ECAs does not depend on the student's age (H8 refuted). However, Leppel (2005), for example, suggests that students are more likely to participate as they get older, for both girls and boys. Older students would be more sought after and therefore less likely to participate in extracurricular activities. The author also shows that the effect of age on ECA participation was stronger for sports activities compared to non-sports activities. This is probably because sports activities require physical strength that declines with age.

- **H9: Students from regulated institutions are more likely to participate in ECAs than students from open-access institutions**

Institutions with regulated access, often more selective, generally have better material and human resources, allowing them to offer a richer and more diverse range of extracurricular activities. They often benefit from a more structured institutional framework, with clubs, associations, and facilities dedicated to cultural, sporting, and social activities. These conditions encourage student involvement and strengthen their sense of belonging to the university community.

In contrast, open-access institutions, which welcome a larger student body with diverse profiles, often face budgetary and organizational constraints. A lack of infrastructure, dedicated staff, or well-defined programs can limit opportunities for participation in extracurricular activities. Furthermore, students at these institutions may be more focused on academic or professional aspects, to the detriment of engaging in complementary activities.

- **H10: Personality traits positively influence participation in ECAs**

As expected, participation in non-sporting activities is strongly dependent on popularity and artistic aptitude, particularly among boys and in schools with restricted access. This finding, consistent with the work of Leppel (2005), suggests that these activities are perceived as vehicles for social recognition and personal expression. This result is also consistent with research showing that individuals with strong artistic interests are more likely to seek out environments that foster personal expression and creativity (Holland, 1997).

Popularity, which refers to social skills such as interpersonal skills, the ability to interact with peers, and the capacity to integrate easily into a group, also plays a role. Non-sporting activities, such as clubs, student organizations, and group projects, often rely on collaboration and communication. Thus, popular or socially confident students find fertile ground for involvement and maintaining their social network. Eccles & Barber (1999) also point out that young people with high social capital tend to participate more in extracurricular activities with a community focus.

Conclusion and implications

The objective of this study was to identify the factors influencing participation in extracurricular activities. The main findings reveal that overall participation depends on educational level, personality characteristics (artistic abilities and popularity), parental education, and the type of school. Analysis by activity type shows that sports activities depend primarily on gender, educational level, and school type, while non-sports activities depend more on artistic abilities, popularity, and school type.

These results helped explain why participation in extracurricular activities, particularly sports, is more intense in the first year compared to later years. Furthermore, they confirm the intuitive assumption that extracurricular activities (non-sports) are more dependent on personality traits such as artistic aptitude and popularity.

Another important finding relates to the impact of parental education on overall participation in extracurricular activities. It is possible that educated parents influence, directly or indirectly, their children's decision to participate. This calls for educational policy intervention to reduce the impact of disparities linked to parental awareness, particularly by raising students' awareness of the importance of extracurricular activities. Furthermore, parental education can be clearly observed, notably in girls' school enrollment and the difference between restricted and open-access schools. The fact that male students participate in sports activities more than female students is natural given the socio-cultural characteristics of Moroccan society. This highlights the need for action at the educational policy level to reduce gender disparities, particularly by diversifying the range of sports activities available to ensure they are accessible to both sexes.

Another highly significant finding reveals the advantageous position of restricted-access institutions compared to open-access institutions. In all models, participation in the ECA in restricted-access institutions appears more effective than in open-access institutions. Naturally, these institutions are more advantageous across all levels than other institutions.

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