



# Morocco's Tourism Policy Formulation and Sustainable Development Goals up to 2030 Horizon: A Time-Series Econometric Analysis Using the ARDL Bounds Testing

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## ABSTRACT

Tourism is a major pillar of Morocco's economy and has long been supported by ambitious national strategies, including the 2010 and 2020 Visions. As the country prepares for the 2030 FIFA World Cup, co-hosted with Spain and Portugal, it is increasingly orienting its tourism development toward sustainability and competitiveness in line with the sustainable development goals (SDGs). This study investigates the determinants of a future Moroccan tourism policy up to 2030 using the autoregressive distributed lag (ARDL) bounds testing approach on time-series data covering 2000-2021. The findings show that economic freedom positively influences tourist arrivals, whereas poverty negatively affects tourism performance. Renewable energy use and controlled water stress also contribute to destination attractiveness, highlighting the importance of environmental sustainability. These effects persist over the long term, with stronger impacts from economic freedom and poverty. The study recommends targeted short- and long-term policy reforms while acknowledging data availability limitations.

**Keywords:** Tourism Policy, Tourism Development, Sustainable Development, Morocco, Autoregressive Distributed Lag

**JEL Classifications:** L83, Q01, Q56, C22

## 1. INTRODUCTION

Morocco is among the nations that have positioned tourism as a key driver of economic and social development. Over the years, the kingdom has implemented various tourism policies, with the most notable being the Vision 2010 and Vision 2020 tourism policies. These frames aimed to establish Morocco as one of the world's most attractive tourist destinations (García, 2018).

During 2019, the kingdom hosted a total of 13 million tourists, tourism directly contributed of 7% to the national GDP (rising to 12% when including indirect contributions). The sector created 550.000 direct jobs, and generated nearly 80 billion dirhams in

annual foreign exchange earnings from travel receipts (MTAESS, 2020) (El Menyari, 2021).

Following the COVID-19 crisis in 2020, the tourism industry faced an unprecedented challenge, left unprepared and struggling to cope with the immense shock. Driven by a determination to recover and reinvent itself, the sector experienced a dramatic decline of 79% in tourist arrivals, receiving only 3 million visitors. Revenues also dropped by 54%, amounting to 36.5 billion dirhams compared to 2019 levels (OBST, 2022) (Mirar and Barbouchi, 2023).

In August 2020, the Ministry of Tourism introduced a recovery program for the tourism sector in the post-COVID-19 phase. This program included 21 measures aimed at achieving three main

objectives: Safeguarding the economic structure and employment, speeding up the recovery process, and laying the foundation for the sector's sustainable transformation (MTAESS, 2020) (Didast and Bousstta, 2023).

While the tourism sector's fragility is evident, its remarkable resilience is equally undeniable. In 2024, Morocco welcomed a total of 17.41 million visitors and generated 112.48 billion dirhams in tourism revenues. This represents an increase of 20% and 7.5%, respectively, compared to 2023 levels (OBST, 2025). The national tourism sector has surpassed its pre-COVID-19 performance, with 1.53 million additional tourists and 25.94 billion dirhams more in revenue compared to 2019 levels (OBST, 2020).

In March 2023, the Moroccan government unveiled its new operational roadmap for 2023-2026, with the goal of attracting 17.5 million tourists and generating 120 billion dirhams in foreign currency revenue. The plan also aims to create 200,000 new direct and indirect jobs through targeted actions across five key sectors: air capacity, promotion and marketing, cultural and recreational activities, accommodation levels, also, human capital quality and skills (MTAESS, 2024). Acknowledging that Moroccan tourism is undergoing a necessary transition towards sustainability and competitiveness, particularly with the 2030 horizon. Particularly in view of the country's plan to co-host the FIFA World Cup alongside prominent tourist destinations such as Spain and Portugal.

The future of Morocco's tourism development is influenced also by the sustainable development goals (SDGs), a set of 17 global objectives established by the United Nations in 2015, these targets aim to address the world's most pressing challenges with a deadline of 2030. The SDGs focus on eradicating poverty, reducing inequalities, and promoting prosperity while ensuring the protection of the planet. They emphasize a balanced approach to development by integrating economic growth, social inclusion, and environmental sustainability (Halkos and Gkampoura, 2021).

This paper examines the following problem, what are the determinants responding to the Sustainable Development Goals and likely impact the formulation of future Morocco's tourism policy up to the 2030 horizon? The objective of this study is to identify the key determinants that align with the sustainable development goals (SDGs) and influence the formulation of Morocco's future tourism policy up to 2030. It aims to assess how past and current tourism policies have integrated sustainability principles and to identify potential gaps that need to be addressed.

### 1.1. Literature Review, Conceptual Framework and Hypothesis Development

By the 1980s, global sustainability debates led to calls for policies that incorporated socio-cultural and environmental factors into tourism. Concepts such as soft tourism emerged, emphasizing tourism's need to avoid damaging the very attractions it depends on, thus preserving the quality of life for local communities (Guo et al., 2019) (Baum, 1994) (Krippendorf, 1982). Sustainable development was formally defined in the 1987 Brundtland Report

as development that meets present needs without compromising future generations' ability to meet theirs (Hardy et al., 2002) (WCED, 1987).

From a theoretical point of view, sustainable tourism policies (STP's) outline the strategic direction that a destination or nation intends to follow in developing tourism, aiming to maximize economic and social benefits. Also supporting quality visitor experiences while minimizing negative impacts on the environment and local cultures (Edgell and Swanson, 2019). STP has thus become a tool to ensure a balance between tourism growth and the protection of local environmental and socio-cultural integrity (Goeldner and Ritchie, 2012).

Adding, these sustainable tourism policies (STP's) are guided by the "Tourism in the 2030 Agenda" which aligns with the United Nations Sustainable Development Goals (UN SDGs). These goals particularly emphasize: No poverty (goal 1); Zero hunger (goal 2); Good health and well-being (goal 3); Quality education (goal 4); Gender equality (goal 5); Clean water and sanitation (goal 6); Affordable and clean energy (goal 7); Decent work and economic growth (goal 8); Industry, innovation and infrastructure (goal 9); Reduced inequalities (goal 10); Sustainable cities and communities (goal 11); Responsible consumption and production (goal 12); Climate action (goal 13); Life below water (goal 14); Life on land (goal 15); Peace and justice (goal 16); Partnerships for the goals (goal 17) (UNWTO, 2017).

Also, the conceptual framework of sustainable tourism policy formulation encompasses a diverse set of factors that vary in scope and influence. These factors can be broadly categorized into ecological, social, cultural, and economic dimensions, each playing a crucial role in shaping sustainable tourism strategies. The ecological dimension considers environmental conservation, biodiversity protection, and climate change mitigation, ensuring that tourism activities do not degrade natural resources (Delgado and Palomeque, 2012).

Plus, the social aspect focuses on community engagement, local participation, and equitable distribution of tourism benefits to foster inclusivity and social well-being (Nugraheni et al., 2020). The cultural dimension highlights the preservation of heritage sites, traditions, and indigenous knowledge, promoting cultural sustainability alongside tourism development (Haigh, 2020). Adding, the economic aspect addresses job creation, local business empowerment, and long-term financial viability to ensure that tourism contributes positively to national and regional economies (Velasco, 2016).

These interconnected dimensions align closely with the United Nations Sustainable Development Goals (SDGs) which are presented in Figure 1. By integrating these factors into tourism policy formulation, decision-makers can create tourism strategies that balance economic growth with environmental and social responsibility, ensuring long-term sustainability in the industry. From this framework (Figure 1), we can develop the following hypotheses:

H<sub>1</sub>: Ecological factors are major components for Morocco's

**Figure 1:** Conceptual framework for sustainable tourism policy formulation

Ecological :	Social :	Economical :	Cultural :
- Carbon dioxide (CO2) emissions (total) excluding LULUCF (Mt CO2e)	- Local income	- Economic freedom	- Preservation of heritage constructs
- Level of water stress	- Human development index	- Business freedom	SDGs : 11
- Renewable energy consumption	- Poverty level	- Monetary Freedom	
- Climate change	SDGs : 1 – 2 – 3 – 4 – 5 – 10 – 16	- Investment freedom	
SDGs : 6 – 7 – 13 – 14 – 15		- Trade freedom	
		- Labor freedom	
		- Financial freedom	
		SDGs : 8 – 9 – 12	

Source: Authors

sustainable tourism policies.

H<sub>2</sub>: Socio-cultural variables are also a priority for national STPs formulation.

H<sub>3</sub>: Economic determinants are essentials for Morocco's sustainable tourism policies.

## 2. METHODOLOGY AND MODELISATION

This study follows a hypothetico-deductive approach, which is commonly used in empirical research to test theoretical propositions against observed data. The research begins with the formulation of a set of hypotheses derived from existing theories on tourism policy literature and sustainable development goals up to 2030 horizon. These hypotheses outline the expected relationships between key determinants of sustainability and tourism development (Martini, 2017).

Building on the theoretical framework (Figure 1), this study employs the autoregressive distributed lag (ARDL) bounds testing approach to empirically assess the role of ecological, socio-cultural, and economic factors in the formulation of Morocco's sustainable tourism policies. Given the increasing emphasis on sustainability in global tourism strategies, it is crucial to quantitatively evaluate how these determinants influence policy formulation over time.

The ARDL model is particularly suitable for this study, as it identifies the key factors shaping tourism policy while ensuring alignment with sustainability objectives leading up to 2030. By examining both short-run and long-run relationships between the identified variables, this approach provides a dynamic perspective on how sustainable tourism policies evolve in response to economic, environmental, and social challenges.

The ARDL bounds testing approach involves several steps. First, unit root tests, such as the augmented Dickey-Fuller (ADF) conducted to assess the order of integration of each variable. Then, the ARDL bounds test is applied to determine the existence of a long-run relationship among the variables. If cointegration is confirmed, the long-run coefficients are estimated, followed by the derivation of short-run dynamics using an error correction model (ECM). The ECM captures the speed at which deviations from the long-run equilibrium are corrected in the short term.

The data were collected in the form of annual time-series observations from open-access databases, particularly the World Bank, the World Economic Forum, and the Heritage Foundation, covering Morocco during the period 2000–2021. The ARDL bounds testing model established through the study hypothesis using three types of dependent variables (tourist arrivals, tourist receipts and tourist overnight stays) expressing tourism growth and represented as follows:

### 2.1. Empirical Model Assuming Ecological, Socio-Cultural and Economic Sustainability

The short-run equation for the dependent variable  $\square \square Y_t$  (tourist arrivals (TA), tourist revenues (TR), or tourist overnight stays (TN)) is:

$$\Delta Y_t = \alpha_0 + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \beta_1 \Delta CO2_t + \beta_2 \Delta CO2_{t-1} + \beta_3 \Delta WS_t + \beta_4 \Delta WS_{t-1} + \beta_5 \Delta RENC_t + \beta_6 \Delta RENC_{t-1} + \beta_7 \Delta TC_t + \beta_8 \Delta TC_{t-1} + \beta_9 \Delta LAI_t + \beta_{10} \Delta LAI_{t-1} + \beta_{11} \Delta HDI_t + \beta_{12} \Delta HDI_{t-1} + \beta_{13} \Delta PL_t + \beta_{14} \Delta PL_{t-1} + \beta_{15} \Delta EF_t + \beta_{16} \Delta EF_{t-1} + \beta_{17} \Delta BF_t + \beta_{18} \Delta BF_{t-1} + \beta_{19} \Delta MF_t + \beta_{20} \Delta MF_{t-1} + \beta_{21} \Delta IV_t + \beta_{22} \Delta IV_{t-1} + \beta_{23} \Delta TF_t + \beta_{24} \Delta TF_{t-1} + \beta_{25} \Delta LF_t + \beta_{26} \Delta LF_{t-1} + \beta_{27} \Delta FF_t + \beta_{28} \Delta FF_{t-1} + \beta_{29} \Delta CPE_t + \beta_{30} \Delta CPE_{t-1} + \epsilon_t$$

Where:

- $\Delta Y_t$ : Represents the first difference (change) in the dependent variable tourist arrivals, tourist revenues, and tourist nights) at time t.
- $\alpha_0$ : The intercept or constant term in the equation.
- $\gamma_1 \Delta Y_{t-1}, \gamma_2 \Delta Y_{t-2}$ : Represent the lagged first differences of the dependent variable ( $\Delta Y$ ) at lags 1 and 2, respectively. These terms capture the short-run dynamics of the dependent variable.
- $\Delta CO2_t, \Delta CO2_{t-1}$ : Represent the current and lagged first differences of the independent variable  $CO_2$  (carbon dioxide emissions).
- $\Delta WSt, \Delta WSt-1$ : Represent the current and lagged first differences of the independent variable WS (Water stress).
- Similar terms are included for all other independent variables ( $\Delta RENC, \Delta TC \dots$ ) see Table 1.
- $\gamma_1, \gamma_2$ : Coefficients for the lagged differences of the dependent variable ( $\Delta Y \Delta Y$ ).

**Table 1: List of variables acronym**

Acronym	Variable (dependent and explanatory)	Sources
TA	Tourist arrivals	World Bank
CO <sub>2</sub>	Carbon dioxide (CO <sub>2</sub> ) emissions	World Bank
WS	Level of water stress	World Bank
RENC	Renewable energy consumption	World Bank
TC	Temperature change	World Bank
LAI	Local average income	World Bank
HDI	Human development index	World Bank
PL	Poverty level	World Bank
EF	Economic freedom	Heritage Foundation
BF	Business freedom	Heritage Foundation
MF	Monetary freedom	Heritage Foundation
IV	Investment freedom	Heritage Foundation
TF	Trade freedom	Heritage Foundation
LF	Labor freedom	Heritage Foundation
FF	Financial freedom	Heritage Foundation
CPE	Cultural preservation expenses	UNESCO

Source: Authors

- $\beta_1, \beta_2, \beta_3, \dots, \beta_{30}$ : Coefficients for the lagged differences of the independent variables ( $\Delta CO_2, \Delta WS, \Delta RENC$ ).
- $\varepsilon_t$ : Represents the error term, which captures the unexplained variation in the dependent variable not accounted for by the model.

The long-run equation for the dependent variable  $Y_t$  ( $Y_t$  (Tourist Arrivals (TA), Tourist Revenues (TR), or Tourist overnight Stays (TN)) is:

$$Y_t = \theta_0 + \theta_1 CO_2_t + \theta_2 WS_t + \theta_3 RENC_t + \theta_4 TC_t + \theta_5 LAI_t + \theta_6 HDI_t + \theta_7 PL_t + \theta_8 EF_t + \theta_9 BF_t + \theta_{10} MF_t + \theta_{11} IV_t + \theta_{12} TF_t + \theta_{13} LF_t + \theta_{14} FF_t + \theta_{15} CPE_t + \varepsilon_t$$

Where:

- ( $Y_t$ ): Represents the level of the dependent variable — Tourist Arrivals (TA), Tourist Revenues (TR), or Tourist Overnight Stays (TN) — at time ( $t$ ).
- $\theta_0$ : The intercept or constant term in the equation.
- ( $CO_2_t$ ): Carbon dioxide (CO<sub>2</sub>) emissions.
- ( $WS_t$ ): Water stress level.
- ( $RENC_t$ ): Renewable energy consumption.
- ( $TC_t$ ): Temperature change.
- ( $LAI_t$ ): Local average income.
- ( $HDI_t$ ): Human Development Index.
- ( $PL_t$ ): Poverty level.
- ( $EF_t$ ): Economic freedom.
- ( $BF_t$ ): Business freedom.
- ( $MF_t$ ): Monetary freedom.
- ( $IV_t$ ): Investment freedom.
- ( $TF_t$ ): Trade freedom.
- ( $LF_t$ ): Labor freedom.
- ( $FF_t$ ): Financial freedom.
- ( $CPE_t$ ): Cultural preservation expenses.
- $\theta_1, \theta_2, \dots, \theta_{13}$ : Represent the long-run coefficients associated with each explanatory variable. These coefficients capture the long-run impact of ecological, socio-cultural, and economic sustainability factors on tourism performance in Morocco.
- $\varepsilon_t$ : Represents the error term, capturing the variation in the

dependent variable that is not explained by the independent variables included in the model.

### 3. RESULTS, DISCUSSION AND POLICY IMPLICATIONS

The long-run results of the ARDL Bounds testing reveal a significant and economically meaningful cointegrating relationship between tourist arrivals (TA) and key explanatory variables: Economic freedom (EF), poverty level (PL), renewable energy consumption (RENC), and water stress (WS). The F-statistic of 5.9277 decisively exceeds the critical bounds at the 5% level, confirming the existence of a stable long-run equilibrium relationship among these variables.

The coefficient of economic freedom (66.49,  $P = 0.0281$ ) demonstrates a robust positive effect on tourism demand, suggesting that an improved economic environment characterized by fewer regulatory barriers, higher market openness, and institutional effectiveness creates favorable conditions for attracting international tourists. This supports the view that economic freedom reduces transaction costs, encourages private sector investment in tourism infrastructure and services, and signals political and economic stability, as factors that are critical for international travelers when choosing destinations.

Conversely, the poverty level has a significant negative coefficient ( $-2.60, P = 0.0350$ ), indicating that higher poverty rates correspond with reduced tourist arrivals. This relationship likely reflects tourists' sensitivity to social conditions such as safety concerns, the availability and quality of infrastructure, and global destination image. High poverty can undermine these elements and therefore deter potential visitors.

The inclusion of renewable energy consumption, with a positive coefficient (2.65,  $P = 0.0052$ ), underscores the growing importance of environmental sustainability as a long-term driver of Moroccan tourism demand. This suggests that tourists are increasingly attracted to destinations that promote clean energy and environmentally responsible policies, aligning with the global trend toward sustainable tourism practices.

In contrast, water stress exhibits a strongly negative impact ( $-10.21, P = 0.0031$ ), emphasizing the critical challenge that water scarcity presents for tourism development, especially in arid or semi-arid regions like Morocco. Water shortages can degrade the natural and built environment, limit the availability of essential tourism services, and ultimately reduce destination competitiveness.

The negative but marginally significant constant term ( $-132.72, P = 0.0607$ ) serves as the model's baseline, implying that in the absence of favorable conditions, tourist arrivals would remain significantly suppressed. Collectively, these long-run findings highlight the necessity for integrated tourism policies that promote economic liberalization, social upliftment, sustainable energy use, and water resource management to sustain and grow tourism flows over time. The highly significant error correction term (CointEq(-1))

= -0.4709; P < 0.0001) confirms a strong tendency for short-term deviations from equilibrium to be corrected, with nearly 47% of disequilibria adjusted annually, indicating a moderately paced but reliable adjustment process toward long-term balance.

In the short-run dynamic specification, the explanatory variables exhibit effects consistent with their long-run relationships, but reflect more immediate responsiveness of tourism demand to changing conditions. Economic freedom retains a positive and highly significant impact on tourist arrivals (coefficient = 31.31, P = 0.0003), demonstrating that improvements in economic policies and market openness can quickly stimulate inbound tourism.

This short-term sensitivity underscores the importance of maintaining flexible and efficient regulatory environments to capitalize on emerging opportunities in the global tourism market. Similarly, renewable energy consumption continues to exert a positive and statistically significant influence in the short run (coefficient = 1.25, P = 0.0278), which may reflect the rising awareness and preference of environmentally conscious tourists

who respond rapidly to green initiatives and sustainable practices.

In contrast, poverty level continues to negatively affect tourism demand (coefficient = -1.22, P = 0.0002), suggesting that socio-economic vulnerabilities and perceptions of insecurity or underdevelopment immediately discourage visitors. The short-run coefficient for water stress (-4.81, P = 0.0130) remains negative and significant, reaffirming that resource constraints exert a dampening effect on tourism flows even over shorter time horizons.

The lagged dependent variable TA(-1) is positive and significant (0.53, P = 0.0083), indicating substantial persistence or inertia in tourist arrivals, which may be explained by cumulative reputation effects, word-of-mouth, and long-term investments in infrastructure and marketing that influence tourism patterns over time in Morocco.

Diagnostic statistics corroborate the robustness of the model, with an R-squared of 0.79 and adjusted R-squared of 0.72, indicating that the model explains a large portion of the variance in tourist

**Table 2: ARDL Bounds testing results**

Designation	Unit root test - ADF (with constant and trend)				
Variables significant at 5%	<ul style="list-style-type: none"> <li>• Dependent variable: Tourist arrivals (TA)</li> <li>• Independent variables: Business freedom - carbon dioxide (CO<sub>2</sub>) emissions - economic freedom - financial freedom - investment freedom - local average income - labor freedom - monetary freedom - poverty level - renewable energy consumption - water stress - temperature change - trade freedom</li> </ul>				
Autoregressive distributed lag (ARDL) (based only on the significant variables)					
<b>Long-run form</b>					
Variables	Coefficient	Standard error	t-statistic	Prob.	
EF	66.48788	27.35516	2.430543	0.0281	
PL	-2.600435	1.122255	-2.317151	0.0350	
RENC	2.650805	1.488554	1.780792	0.0964	
WS	-10.21299	5.499606	-1.857040	0.0841	
C (Constant)	-132.7233	65.43722	-2.028255	0.0607	
Levels equation (ECM)					
CointEq(-1)	-0.470942	0.068388	-6.886312	0.0000	
Short-run form (dynamic regression)					
TA(-1)	0.529058	0.174086	3.039052	0.0083	
EF	31.31195	6.800614	4.604283	0.0003	
PL	-1.224654	0.249191	-4.914525	0.0002	
RENC	1.248376	0.512465	2.436020	0.0278	
WS	-4.809727	1.707471	-2.816872	0.0130	
C (Constant)	-62.50502	17.65716	-3.539926	0.0030	
<b>F-bounds test results</b>					
Test statistic	Value	Significance level	I (0) critical value	I (1) critical value	
F-statistic	5.9277	10%	2.2	3.09	
		5%	2.56	3.49	
		1%	3.29	4.37	
Sample size (n=21) Finite Sample	10%	2.46	3.46		
		5%	4.088		
		1%	5.532		
Model fit statistics					
R-squared	0.793637	Adjusted R-squared	0.724849		
S.E. of Regression	0.224593	Akaike Info Criterion	0.085907		
Sum squared residuals	0.756633	Schwarz criterion	0.384342		
Log Likelihood	5.097979	Hannan-Quinn criterion	0.150675		
Durbin-watson stat	2.530180	F-statistic (Model Fit)	11.53749		
F-statistic (Model Fit)	11.53749	Prob (F-statistic)	0.000104		
The investigation confirms the first and third hypotheses (H <sub>1</sub> and H <sub>3</sub> )					

Source: authors using Eviews12

arrivals. The Durbin-Watson statistic of 2.53 suggests the absence of serious autocorrelation, while the significant overall F-statistic (11.54,  $P < 0.001$ ) confirms the joint relevance of the included regressors.

Taken together, the perspectives of the short-term tourism plans and future long-term national tourism policies should balance natural resources management, economic diversity, with social development and inclusion efforts. Consequently, a balanced tourism development framework that addresses both economic initiatives and urgent socio-environmental challenges is essential for achieving sustained a Moroccan tourism growth in the light of the sustainable development goals up to 2030 horizon, which confirms the priority of the first and the third research hypotheses.

Table 2 presents the results of the ARDL bounds testing procedure and subsequent model estimation. The F-statistic exceeds the upper bounds at the 5% significance level, confirming the existence of a long-run relationship among the variables. The long-run form identifies economic freedom, poverty level, renewable energy consumption, and water stress as significant predictors of tourist arrivals. The error correction term is statistically significant and negative, confirming the speed of adjustment toward long-run equilibrium. The model demonstrates strong goodness of fit with an adjusted  $R^2$  of 0.72 and a Durbin-Watson statistic close to 2, indicating no autocorrelation.

#### 4. CONCLUSION

This study applied the autoregressive distributed lag (ARDL) bounds testing approach to analyze the factors influencing tourism arrivals (TA) in Morocco from 2000 to 2021. Key explanatory variables included economic freedom (EF), poverty level (PL), renewable energy consumption (RENC), and water stress level (WS). In the long run, economic freedom had a strong positive effect on tourism arrivals, suggesting that open markets and favorable policies attract more tourists. In contrast, higher poverty levels negatively impacted tourism, likely reducing disposable income and the country's attractiveness. Renewable energy consumption had a modest positive effect, reflecting growing environmental awareness, while manageable water stress levels also positively influenced tourism, indicating the importance of sustainability for tourists.

In the short run, economic freedom and poverty levels continued to significantly affect tourism arrivals, with economic freedom promoting tourism and poverty deterring it. Water stress management and renewable energy consumption remained a relevant factors for short-term of tourism development. The F-Bounds Test confirmed a significant long-run relationship between the variables, supporting the ARDL model's validity. Model fit statistics indicated good explanatory power, and no issues with autocorrelation were detected.

Regarding these results, through the hypothetico-deductive approach, the investigation provides strong support for the economic dimension of sustainable tourism policy formulation through the significance of economic freedom and poverty

reduction. The ecological variables, namely renewable energy consumption and water stress, display the expected relationships with tourism performance but only weak statistical significance in the long run. Consequently, the findings provide partial support for the first hypothesis and strong support for the third hypothesis, while no significant evidence was found for the socio-cultural dimension represented by cultural preservation expenditures.

As a discussion of these results, Moroccan policy-makers can focus the future tourism policy framework on a double perspective - first the short-term (up to 5 years - 2030) in which an inclusion of economic freedom, poverty erasing, diminishing water stress and increasing renewable energy consumption. For the long term (10-20 years), only economic freedom and poverty reduction are visibly a sustainability aspects impacting the sector's prosperity.

To extend the outputs-outlook, the rational, adequate (to real world problem-solving), and effective future Moroccan tourism policy formulation up to 2030 could integrate the sustainable development goals especially related to the ecological and economical aspects of tourism development. Speaking about clean water and sanitation (goal 6), affordable and clean energy (goal 7), decent work and economic growth (goal 8), Industry, innovation and infrastructure (goal 9), reduced inequalities (goal 10 which can be both economic and socio-cultural), responsible consumption and production (goal 12), life below water (goal 14), life on land (goal 15) (UNWTO, 2017).

As limitations, the study relies solely on available variables from open-access databases such as the World Bank, the World Economic Forum, and the Heritage Foundation. While these sources are comprehensive, they may not fully capture all the nuanced factors influencing tourism arrivals, especially those not easily quantifiable or found in public databases.

Additionally, the study does not include expert opinions or insights, as there was no qualitative expert-based research conducted alongside the quantitative analysis. This could have provided valuable context and deeper understanding of the sustainability dimensions completing the SDGs. The study only considers a limited set of variables, and future research could incorporate additional factors such as political or cultural elements, policies that might also impact Moroccan tourism development.

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