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Clustering Sustainable Destinations: Empirical Evidence from Selected Mediterranean Countries

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Abstract: Within the globalized tourism market, tourism destinations have the option to turn to sustainability as a conceptual and management framework for their unique branding and identity proposition. This research highlights the importance and utility of sustainability branding that stems from clustering tourism destinations based on the similarities of their tourism performance attributes. The study builds on secondary data from 11 coastal destinations in 8 Mediterranean countries. The analysis leads to the formulation of three main sets of evaluation indicators: (a) environmental footprint; (b) destination dependency on tourism; and (c) locals' prosperity, incorporating elements of social and psychological carrying capacity. Findings identify three to four distinct destination clusters based mainly on the attributes of destinations' cultural and natural attributes, seasonality of supply, typology of prevailing accommodation and tourist profile. From a theoretical perspective, the research identifies key clustering attributes of sustainable destinations that could inform management interventions around destination branding and competitive sustainability performance positioning.

Keywords: sustainable tourism destinations; sustainability indicators; Mediterranean; clustering; branding

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1. Introduction

The success of a tourist destination is often accredited to effective destination branding [1,2] and a distinctive image [3]. Destination branding has received significant interest in tourism literature over the last 30 years e.g., [4,5]. These studies focused primarily on brand development and management issues through the customisation of market demand preferences. Despite its apparent benefits, this approach has raised a lot of criticism concerning the perceived heliotropic necessity for destinations to adjust to volatile tourist demand trends, particularly for niche products [6], and the need for advanced branding schemes based on the inherent characteristics of the destinations.

Traditionally, a destination's brand is based on geographic elements, such as coastal, mountainous, rural and urban, or on the main typology of attractions, e.g., historical, cultural, natural, leisure and thematic [7,8]. It was only very recently that the international academic but mainly institutional community started branding destinations based on performance elements to facilitate or highlight specific management stances or approaches: green destinations, excellence destinations (EDEN Network) and sustainable destinations [9–11]. In contrast to tailored market branding this approach builds on performance characteristics acquired through respective management practices that reside on the supply side and the profile of a destination. Despite the operational benefits of such segmentation, the essential defining criteria of destinations falling under such management

schemes remain vague enough to capture the dynamic transitions of destinations and their unique, authentic features [12]. This reality remains prominent even within the recently adopted Sustainable Development Goals (SDGs) [13].

For a destination's strong brand identity to be resonant, particularly if based on performance attributes, it needs to establish a clear and robust identity position both in the market and in the minds of potential customers. It is therefore essential to build a brand that can be affiliated with the competitive advantages and the unique value proposition of destinations [14,15]. With destinations being regarded as market commodities [1,16,17], there is often inadequate consideration of their inherent characteristics that reside in resource management, stakeholder involvement, community well-being and sustainability performance.

In an era of perceived need for a certain standardisation within the supply and management of tourism products and services [18], tourism destination segmentation, based on performance attributes, might provide a competitive edge in the globalised market. This means that sustainability, despite its contested operationalisation, has the potential to support a conceptual and management direction for strategic planning and destination brand development. Despite the widely used term "sustainable destination" both in academic and institutional literature, only a few efforts (e.g., GSTC) have been made to define its practical implications, and sustainability performance is rarely used to segment destinations towards developing a brand identity. Researchers are often compelled to look solely at attributes or dimensions [19]. However, it may be valuable to explore the effect of sustainability concerning the image of destinations and brand development in destination management, and to consider less-tangible performance components in the contextualisation process. Such links might influence destination positioning and promotion and even consumers' predisposition to visit a destination, since consumer decision-making is based mainly upon brand/image perception [20,21].

International literature has an abundance of context and analysis frameworks, making inter-disciplinary research a rich venue for in-depth sustainability assessment, albeit on single destinations [22,23]. When it comes to the simultaneous analysis of multiple destinations, research primarily applies aggregated indices in the form of competitiveness analyses, resulting in a sustainability performance ranking of destinations of ambiguous management and branding utility [24]. Moreover, the great paradox here relates to the interpretation and assessment of sustainability, using an equally equivocal and vague concept such as competitiveness [25].

Therefore, the current research aims to shed light on how to build up an integrative and adequately generalised framework for comparative measurement on the common basis of multi- attributes among competitive destinations. The research objective of this paper is to explore the feasibility of segmenting tourist destinations based on their sustainability performance and the resulting implications for destination branding and management. The research into the feasibility of sustainability performance segmentation will improve our understanding of how attributes that define a sustainable destination may offer a subsequent basis for the analysis of performance-driven destination branding. The sustainability of a destination will be determined through the development of a performance-driven typology. In addition, this paper contributes to the stream of research by seeking to capture the integrative, systemic and multi-attribute nature of both sustainability and individual destinations.

This paper is structured as follows: firstly, we will discuss both the conceptual and operational confusion regarding sustainable performance evaluation, the multi-dimensional (i.e., multi-attribute) nature of sustainability and sustainability-related typologies at the destination level; secondly, we will describe our decision context and the specifications of our methodological approach; thirdly, we will present and discuss the results; and finally, we will draw conclusions about the feasibility of segmenting tourist destinations based on their sustainability performance and about the implications for destination branding and management.

2. Theoretical Background

This study focuses on building an integrative framework for comparative measurement of sustainable performance using a shared basis of a range of attributes among competitive destinations and a sustainable performance clustering approach. Emphasis is placed on the synthesis of concepts and the operationalisation of typologies to measure the sustainable performance of these destinations. The conceptualisation and measurement of these attributes at the destination level are discussed, while we also elaborate on the role of clustering and destination typologies.

2.1. Tourism Sustainability at Destination Level

Since the introduction of the Sustainable Development concept in the 1990s, the global tourism sector has been primed for fundamental changes in planning and management at micro and macro levels. Even if not directly linked to the tourism industry, the recently adopted SDGs provide evidence of the international community's commitment to prioritise sustainability and recognise the necessity of widely accepted standards [26]. Within the context of the SDGs and Agenda 2030, sustainability nurtures a destination vision of continuously improved performance and competitiveness based on quality and sustainability criteria. The following section critically reviews the literature on mediating sustainability at the tourism destination level from the perspectives of the (a) conceptualisation, (b) operationalisation and (c) sustainability dimensions.

2.1.1. Conceptualisation

The conceptualisation of tourism destination sustainability remains an ongoing challenge for the academic and institutional community [19,27]. This confusion stems from the conceptual discrepancy regarding the destination under review as a spatial construct. This spatial construct may imply the administrative reference unit for tourism pressure assessment, the evaluation of impact resulting from tourism or the field of spatial planning considerations. Public tourism policies and management schemes further diminish the necessity for defined spatial boundaries when they focus on increasing overall tourism flows at the national level rather than delineating a place- or destination-based management approach. The latter offers the opportunity to generate added value based on a destination's unique specifics and carrying capacity [28].

Sustainability is essential for destination competitiveness in an increasingly competitive tourism market, usually measured at the national level. It is evaluated by means of the World Economic Forum's (WEF) Travel and Tourism Competitiveness Index (TTCI), which has repeatedly been used in previous studies (see [29–31]). The WEF considers and evaluates the travel and tourism competitiveness of destinations with one overall index based upon three different sub-indices, namely (a) a travel and tourism regulatory framework sub-index, (b) a travel and tourism business environment and infrastructure sub-index and (c) a travel and tourism human, cultural and natural resource sub-index. However, a recent study suggests that destination sustainability is mainly subject to the contextualisation of the offered supply which triggers respective demand and that destination sustainability cannot be conceptualised or assessed on spatial scales larger than the regional [32].

2.1.2. Operationalisation

Despite the numerous theoretical and methodological approaches to measuring sustainability at the industry level (sustainable tourism), the operationalisation of sustainability at the destination level (sustainable tourist destination) appears to be a shortcoming [33]. On first reading, the problem seems to lie primarily in the lack of consensus over an adequately generalised evaluation framework and indicator scheme or an agreement on the necessary steps toward this direction [34]. Despite the number of efforts to systematise tourism sustainability assessment over the years, such as the ETIS, there is still no explicit differentiation on the cause-effect-impact linkages among the elements defining the tourism profile of a destination, the performance and direct effect of the sector per se and

the overall (direct, indirect, induced and catalytic) impacts resulting from tourism for the host destination. Except for the GSTC Criteria (https://www.gstcouncil.org/gstc-criteria (accessed on 7 February 2022)), there is still insufficient clarity among the concepts (and assessment frameworks) of "tourism sustainability at an industry level" and "sustainable tourism development at destination level" [33].

Sustainability measurement is often associated with the great paradox of valuing what we can measure instead of measuring what is valuable [35]. In this regard, the achievement of sustainability's measurement and analysis is usually communicated as an ideal (qualitative) state of the distant future, bearing elements of inherent abstractness and perception subjectivity [9]. This perception further restrains the real-life operationalisation of the concept into specific planning and decision-making actions of defined and measurable goals. It also disincentivises planners and decision-makers who are usually prompted by immediate short-term goals and achievements. Therefore, a need emerges for a uniform composite operationalisation framework that should allow comparability and replicability among different destinations. At the same time, this framework must be specific enough to capture unique characteristics and provide long-term insights and planning.

2.2. Clustering Destinations' Sustainable Performance

Segmentation is a well-established technique in tourism marketing. Segmentation practices are well addressed from the side of demand. They unravel how tourists' socio-demographic, psychographic or behavioural characteristics [32] influence their predisposition to visit a destination. Segmentation from the supply side is mainly correlated with developing destination typologies based on those natural and/or cultural attributes that build a destination's distinctive identity. However, only a few studies conduct segmentation based on the processes and trajectories of tourism development at the destination level and compose performance-based brands. Clustering analysis is a dimensionality reduction technique used widely in tourism studies [36]. Clustering methods involve natural groupings of data based on similarities [37]. The process which is regularly adapted from Smith (1956) [38] aims to identify intrinsic structures in the destination profiles and performance and organise them into meaningful, yet differentiated, subgroups for further analysis. The identification of structurally equivalent destinations is based on internal and external cohesions of destination sustainability performance attributes; on one hand, they group certain destinations based on their similarities but, on the other, clearly differentiate them from others, thus contributing to distinctive sustainable destination segments.

Our paper contemplates whether sustainability performance can offer the theoretical approach for destination segmentation and the relevance and implications it might entail for the development of destination management and branding strategies and policies. This section presents several insights into destination supply typologies and examines the use of sustainability-related typologies.

2.2.1. Destination-Related Typologies

According to Lew (1987) [39], destination supply typologies are based on ideographic, organisational and cognitive methods. The first category focuses on the concrete uniqueness of the environment and highlights the differences between nature- and human-oriented attractions. Typologies based on organisational perspectives focus on the spatial characteristics of size, scale and carrying capacity, whereas cognitive approaches stress typologies relating to tourist perceptions and experiences. It is relatively rare in the academic tourism literature to find methods in support of destination supply typologies based on management elements or performance attributes. Even if they are still helpful and applicable, the methods suggested by Lew [39] three decades ago can be considered rather broad, lacking enough relevance to current destination challenges and not considerate of the new forms of tourism management. Destination typologies might need to be more precise and thoughtful of current tourism destination branding and management needs.

In its simplest form, classification implies the allocation of tourism destinations into several groups based on their similarity. This allocation aims to maximise, simultaneously, within-group homogeneity and between-group heterogeneity. Segmentation is a classification procedure that identifies homogeneous sub-groups in two fundamental ways. One way is a priori, referring to the conceptual approach leading to the development of a typology through common-sense assumptions known in advance. The other way is a posteriori, through data-driven or post hoc approaches, by definition leading to empirical taxonomies [40,41]. The conceptual typology is generally deductively derived. It may be based purely on hypothetical constructs or it may have theoretical significance but not a direct empirical counterpart. On the contrary, a purely empirical taxonomy does not have a theoretical value or conceptual importance, since it measures empirical cases and groups them by similarity.

2.2.2. Sustainability Typologies

Typologies are often seen as purely descriptive rather than explanatory tools, albeit still providing for the study of relationships between the concepts involved. The construction of a typology requires conceptualisation along at least two dimensions, unfolding a range of concepts (Conceptual Classification). Sustainability is inherently related to at least the economic, social and environmental dimensions. Therefore, several sustainability typologies can be vaguely identified (e.g., environmental sustainability, socio-economic). In cases where the number of types is significant, researchers often fall back on partial or shorthand typologies stemming from the deviation from a pre-determined criterion and using the two extreme opposites as polar types [42].

Expanding on Neumayer's (1999) [43] "strong" and "weak" sustainability, which was based on the different conceptions of human and natural capital theory, Hediger (2004) [44] distinguished four fundamental concepts of sustainability that are characterised by different minimum requirements: (a) very weak sustainability (VWS), characterised by constant per capita consumption; (b) weak sustainability (WS) characterised by some non-decreasing social welfare; (c) strong sustainability (SS) characterised by constant environmental quality; and (d) very strong sustainability (VSS) characterised by a set of stationary-state conditions. In the same line of approach, the International Union for Conservation of Nature (IUCN) [45] built on the socio-economic vs environmental dichotomies to propose four types of agglomerations based on sustainability performance: (a) sustainable: high socio-economic performance and low environmental pressure/burden; (b) non-sustainable: low socio-economic performance and high environmental pressure/burden; (c) viable: high socio-economic performance and high environmental pressure/burden; and (d) green: low socio-economic performance and low environmental pressure/burden.

One of the main criticisms of these typologies is their mutual exclusivity and exhaustiveness. Based primarily on arbitrary and ad hoc criteria, they rely too much on dichotomised rather than continuous variables. They are treated as ends in themselves rather than means to an end. Sustainability typologies are subject to the same weaknesses. Tourism destinations or products rarely fall within clearly defined, static and fragmented classifications/segments. In fact, overlaps are considered the expected outcome within a dynamic system. With a priori segmentation approaches having little potential when considering the further development of models that are more coherent to the idea of sustainable development [44], tourism researchers focus on the construction of multi-variate data-driven taxonomies whose relevance and effectiveness are subject both to the quality of data and the best possible use of the explorative tool used in support (e.g., cluster analysis).

Taxonomic methods begin empirically to classify cases according to their measured similarity to observed variables (Empirical Classification). Cluster solutions are the principal technique used to demonstrate empirical presence rather than assigning conceptual meaning to the clusters [42]. Even if the number of empirical studies on destinations' sustainability is increasing, their singularity of focus, despite in-depth analysis, has not allowed the development of a respective sustainability taxonomy. After all, destination

sustainability's inherent nature and dynamics make any approach to its measurement methodologically challenging [19]. The lack of consensus on evaluation criteria or a generic framework leads to a lack of homogeneity and replicability in both scales and methodologies. Due to the limitations of each of these methods, a practical segmentation approach for destinations' sustainability performance should be achieved by combining conceptual and empirical strategies. Therefore, combining knowledge in view of the preceding sub-sections on measurement, conceptualisation, competitiveness and clustering at the destination level, this study attempts to build an integrative and adequately generalised framework for comparative measurement on the common basis of multiple attributes among competitive destinations. We explore the feasibility of segmenting tourism destinations using characteristics (i.e., dimensions) that define a sustainable destination and evaluate this approach across selected Mediterranean destinations. Hopefully, developing a performance-driven typology provides a subsequent conceptual and empirical basis for performance-driven destination branding.

3. Methodological Design

3.1. Decision Context

To attain the research objective, data were collected in the framework of UNEP's Plan Bleu Programme of activities "Tourism and Sustainable Development in the Mediterranean" [46]. Data refer to tourism-related variables of 11 Mediterranean destinations across seven neighbouring Mediterranean countries: Alanya (Turkey); Djerba (Tunisia); Torremolinos (Spain); El Alamein (Egypt); Marsa Matrouh (Egypt); Tetouan Coastal Area (Morocco); Tipaza (Algeria); Cabras (Italy); Castelsardo (Italy); Rovinj (Croatia); and Siwa Oasis (Egypt). The availability of primary sources (local experts-communication) and secondary tourism data from 11 destinations of a distinct tourism product typology allows for reliable control of the UNEP Plan Blue project findings and local experts' reports.

We consider the choice of the destination context a prominent one, since tourism is traditionally one of the main contributors to Mediterranean nations' and regions' economies. In addition, the selected destinations may be viewed as highly competitive, because they all belong to the same geographic region (around the Mediterranean basin) and in the pre-COVID era attracted huge numbers of tourists coming from both Western & Asian societies and nations [47]. The seven Mediterranean countries' governmental and private tourism institutions have been investing in international advertising campaigns to tap into global citizens' tourist interests and preferences [48]. Further, these destinations share the unique Mediterranean landscape, natural environment and similar cultural characteristics (e.g., Mediterranean lifestyle and Mediterranean dishes), which are globally known. Therefore, the data collected for the decision context will allow us to perform a comparative analysis of the sustainable performance of competitive tourist destinations based on multi-attribute characteristics.

3.2. Data Description

Within the objective of evaluating tourism sustainability, "each destination studied should be an administrative unit on the Mediterranean coast with significant international and/or domestic tourism that is also home to a permanent population but is not a major city" p.7 [46]. The collected data, subject to their comparability, capture the performance of the tourism industry and the profile of the hosting destination. The data gathered led to the formulation of three main sets of evaluation indicators following the three-stage model and also covering the three pillars of sustainable development (Triple Bottom Line).

The first set of indicators reflects the sector's stress on resources, mainly water and land, and the sector's potential environmental impact due to energy consumption and waste generation. This first set of indicators has been constructed considering both the permanent and operational impact of the tourism industry. On the one hand, tourism supply, expressed through the variable of bed availability and provision, relates to land usage issues and competition with other sectors. The construction of lodging facilities,

aiming to complement tourism supply, results in permanent changes in the landscape and the spatial planning of a destination. The permanent ensuing stress is combined with two indicators: available beds per km^2 and nights spent per km^2 in the defined tourism area. On the other hand, the results from the operation of tourism businesses relate to the footprint of the daily processes, in terms of resources required (energy and water) and generated waste. The operational ecological footprint is calculated as a function of tourism intensity (expressed by nights spent) and an average estimate of resource consumption depending on the quality standards, described by the hotel's classification by category. Due to the lack of lodgement of ecological footprint estimates at the national level, the calculation performed in the framework of this study employs the European averages as recorded in the TourBench Report (2006) [49].

The second set of indicators captures the sector's competitive position and efficiency in terms of the average productivity and the average returns to labour. Average labour productivity is the ratio of the total output to total labour employed in one year. The total number of nights spent by tourists in the area is used to proxy total output. A second indicator is constructed by replacing the nominator with the total expenditure of the tourists, converted to Power Purchasing US $. This indicates the average returns to labour, taking capital as fixed. Finally, a capacity indicator is estimated by the ratio of the number of beds available in all establishments in the area to the total persons directly employed in the sector.

The third set of indicators aims to reflect the local area's possible positive or negative dependence on the tourism industry and the sector's relative importance for the local population and prosperity. The idea behind these indicators is that the more an area depends on tourism, the higher the probability is that tourism will cause issues related to social integration and local identity. Problems also may arise concerning economic vulnerability due to the area's concentration of economic activities around the tourism cluster. Such indicators are constructed by the ratio of tourists or nights spent by tourists in the area to the area's total population. High values show that tourism (the nominator) has disproportionately developed in relation to population (denominator). This unequal growth may be due to a large tourism sector in a relatively small area in terms of population or a small tourism sector in a fairly large area. The larger the population relative to the tourism sector, the easier it is to filter and assimilate tourism's social and cultural impact. For these indicators, we estimate a ratio of the total expenditures generated by the tourism sector to the area's total population.

Table 1 shows basic descriptive statistics for the collected variables. In order to reduce the number of variables, which is greater than the number of case study areas, and to condense the available information into meaningful factors that encompass the information conveyed by the variables, we perform a factor analysis on the collected data. Because the variables are highly heterogeneous as concerns the measurement scale, they are standardised.

Meaningful comparisons among economic data in the 11 case study areas are derived by converting all financial data into equivalent Purchasing Power Parities. Purchasing Power Parity (PPP) may be understood as a currency conversion rate that converts economic indicators such as expenditures expressed in a national currency to a common artificial currency that equalises the purchasing power of different national currencies. As such, PPP is both a price deflator and a currency converter, and thus it eliminates the differences in price levels between countries. This conversion is advantageous when comparing monetary values of expenditures across Mediterranean countries with both different currencies and different purchasing power.

Table 1. Descriptive statistics of collected variables.

Abbreviated Variable Name	Description	Descriptive Statistics			
		Average	**Min**	**Max**	**St. Dev.**
Environmental pressure					
Bed/Km^2	Available beds per km^2 in the defined tourism area	1276.141	9.589	4822.582	1817.661
Nights/Km^2	Nights spent per km^2 in the defined tourism area	175,342.214	232.108	701,018.143	275,267.838
TEFP/Night	Total energy footprint per night spent in the area	0.085	0.008	0.256	0.081
TWTFP/Night	Total water footprint per night spent in the area	0.001	0.000	0.003	0.001
TWSFP/Night	Total waste footprint per night spent in the area	0.020	0.002	0.063	0.019
Efficiency of the lodging industry					
Beds/Employee	Average number of beds served by one employee	5.500	1.136	12.929	4.611
Nights/Employee	Average number of nights served by one employee	539.537	119.919	2061.344	617.226
Exp/Employee	Average expenditure per employee in US$ PPP	56,314.336	10,644.634	139,364.879	42,087.654
Economic and social integration					
Beds/Inhab	Available beds per inhabitant of the defined tourism area	0.873	0.018	4.444	1.307
Nights/Inhab	Nights spent per inhabitant of the defined tourism area	117.479	0.913	680.973	197.684
Exp/Night-PPP	Average expenditure per night spent in the area in US$ PPP	139.397	67.609	308.277	72.357
General variables of Destinations					
Size	Average size of hotels in terms of available beds	214.325	31.600	438.000	123.777
Operation	Length of the operation period in months	9.773	3.5	12.0	2.714
Occupancy	Average occupancy rate in %	40.054	5.00	95.99	26.669
Nights	Nights spent in the area	2,983,873	23,624	15,286,250	4,861,395

Table 2 displays the steps of the analytical approach for evaluating sustainability in the 11 Mediterranean destinations. In Step 1, we perform factor analysis to cluster variables into homogeneous sets and to create new variables, called factors, that can represent these sets of underlying homogeneous variables. This process allows data reduction and insight into categories, and it describes many variables using a few factors. Factor analysis can assist the analytical process in putting the destinations into categories depending on their derived factor scores. After deriving the correlation coefficient matrix of the selected variables (Table 1), we identify whether certain variables are highly or weakly correlated. Next, we extract factor loadings, after varimax rotation using the Principal Component

Analysis method that captures most of the variance in the original data. Varimax produces independent (orthogonal) factors and minimises the number of variables with high loadings on each factor. As such, it simplifies the interpretation of the factors. Factor loadings express the relationship of each variable to the underlying factor. Loadings with high positive (or negative) values signal the variable's strong positive (or negative) association with the underlying factor. Conventionally, strong associations are indicated by factor loadings higher than 0.65. Since the variables entering the factor analysis are standardised, factor loadings can be interpreted as standardised regression coefficients (for more details on the method, see [50,51].

Table 2. Steps of analytical approach to clustering sustainable destinations.

Decision Problem	Variables	Aim	Analysis
STEP 1			
Creating sets of underlying homogeneous performance variables for the 11 destinations	Fifteen (15) variables (Table 1): environmental; efficiency, economic & social integration and general indicators (i.e., attributes).	Reducing the data, gaining insight into categories and describing 15 selected variables (i.e., attributes) using a few factors.	Factor Analysis: branding the destinations based on factor score.
STEP 2			
Identifying similarities of the selected destinations (11) concerning their grouped factor scores	Areas of factors (recognised destination brands based on factor analysis) for capturing different effects of tourism activities.	Reconfirming the grouping (i.e., segmentation) of selected competitive destinations based on their areas of performance factors (dimensions) that are "close" to one another.	Hierarchical Cluster Analysis: building a hierarchy of clusters (segments) of competitive destinations based on their identified dimensions/brands.
STEP 3			
Reinforcing the identified destination clusters through multi-dimensional visualisation	Categories of selected competitive destinations based on their high/ow socioeconomic performance and high/low environmental footprint against identified dimensions/brands.	Producing independent yet complementary sustainability performance evaluations of selected destinations.	Multi-dimensional Visual Decision Analysis: rotating evaluation quadrilles continuously to support visualisation against respective dimensions (resulting areas of factor scores).

In Step 2, we adopt a data analysis methodology that reflects the theoretical basis of this work. A clustering methodology should reflect the posterior or the post hoc approach adopted in the theoretical background [50]. This choice implies no underpinning theoretical constraint concerning the number of clusters. Therefore, methods that pre-determine the number of clusters, such as K-Means clustering, or that use prior information, such as Bayesian classification, are excluded. The agglomerative (bottom-up) hierarchical clustering facilitates building a tree structure from data similarities. The method starts by considering each region as a cluster and ends when all regions, following consecutive statistical mergers, are agglomerated into one cluster. All the clustering steps between these two corner solutions are depicted in a "dendrogram" and provide a legitimate solution to the number of clusters. Furthermore, the statistical technique that produces the clusters also reflects theoretical decisions. The choice to derive clusters by considering the between-group or within-group linkages produces results that reflect the desired degree of variability, separation and overlapping among regions within a cluster and among clusters.

Using hierarchical cluster analysis, we repeatedly calculate distance measures between identified performance factors and between clusters once these factors begin to be grouped into clusters. The outcome of such an analysis is illustrated graphically using a dendrogram, which is a tree-like plot. Each step of hierarchical clustering is represented as a fusion

of two branches (i.e., clusters obtained on each step of hierarchical clustering analysis) of the tree into a single one. In other words, on each step of the hierarchical analytical process, the pair of clusters with the smallest cluster-to-cluster distance is fused into a single cluster [51]. Such an analysis confirms it is feasible to use such an integrated analytical framework for comparative measurement on a common basis of multiple attributes among competitive destinations. Therefore, it is possible to segment tourism destinations based on their sustainability performance.

Finally, in Step 3 we reinforce the identified destination clusters through multi-dimensional visualisation. We continuously engineer independent yet complementary sustainability performance evaluations of the 11 selected destinations by rotating evaluation quadrilles to support visualisation against the respective dimensions (resulting areas of factor scores). Such a multi-dimensional decision tool can create an integrated analytical framework for managerial decision making and policy planning.

4. Results & Discussion

This section presents and discusses the results following the step-by-step integrated analytical approach. Firstly, we will show the results of the factor analysis. Secondly, we will elaborate on the results of hierarchical cluster analysis. Finally, we will explain the engineering process of the multi-dimensional visualisation process, and we will display the graphical outcome.

4.1. Factor Scores & Destinations' Branding

We perform factor analysis to create sets of underlying homogeneous performance variables for the 11 destinations. Table 3 presents the correlation coefficient matrix of the variables (see Table 1) entering the factor analysis. Certain variables show a very high correlation, e.g., all variables measuring the environmental burden of tourism on land, energy, water and waste. Other, seemingly related variables are not correlated or are weakly correlated. For example, the ratio of the nights spent by tourists to the number of employees, a measure of average productivity of employment in the local lodging industry, is not correlated to the ratio of the nights spent by tourists by the number of inhabitants, a measure of the possible impact of the tourism industry on the local population.

Table 3. Correlation matrix of the variables in the factor analysis.

	Bed/Km^2	**Nights/Km^2**	**TEF/ Night**	**TWTF/ Night**	**TWSF/ Night**	**Beds/ Empl.**	**Nights/ Empl.**	**Exp/ Empl.**	**Beds/ Inhab.**	**Nights/ Inhab.**	**Exp/ Inhab.**	**Size**
Bed/Km^2	1											
Nights/Km^2	0.945 **	1										
TEF/ Night	0.925 **	0.924 **	1									
TWTF/ Night	0.924 **	0.913 **	0.999 **	1								
TWSF/ Night	0.924 **	0.913 **	0.999 **	1.000 **	1							
Beds/ Empl.	0.009	0.045	−0.154	−0.166	−0.166	1						
Nights/Empl.	0.322	0.431	0.126	0.106	0.106	0.765 **	1					
Exp/ Empl.	0.255	0.371	0.113	0.093	0.093	0.713 *	0.933 **	1				
Beds/ Inhab.	0.009	−0.025	0.019	0.027	0.027	−0.205	−0.037	0.154	1			
Nights/ Inhab.	−0.016	−0.015	0.006	0.010	0.010	−0.244	−0.042	0.155	0.990 **	1		
Exp/ Night-PPP	−0.315	−0.304	−0.220	−0.217	−0.217	−0.569	−0.465	−0.207	0.619 *	0.675 *	1	
Size	0.576	0.690 *	0.625 *	0.613 *	0.613 *	−0.025	0.405	0.525	0.460	0.492	0.122	1

where, (*): p-value < 0.05 and (**): p-value < 0.01.

With the method of Principal Component Analysis, factor analysis extracts three factors that capture almost 87% of the variance in the original data. Table 4 shows factor loadings after varimax rotation. Varimax produces independent (orthogonal) factors and minimises the number of variables with high loadings on each factor. As such, it simplifies the interpretation of the factors. Factor loadings express the relationship of each variable to the underlying factor. Loadings with high positive (or negative) values signal strong positive (or negative) association of the variable with the underlying factor. Conventionally, strong associations are indicated by factor loadings higher than 0.65. Since the variables entering the factor analysis are standardised, factor loadings can be interpreted as standardised regression coefficients. From the factor loadings shown in Table 4, we conclude that factor 1 is strongly and positively associated with all the environmental and resource variables, meaning that this factor has high values when all environmental and resource stress indicators are high. Furthermore, the same factor has a moderate positive association with the average size of the tourism establishments in the area. Factor 2 loads strongly and positively, all variables capturing the sector's importance to the local community. All variables that reflect the sector's competitive position load on factor 3.

Table 4. Rotated component matrix.

	Component		
	Factor 1	**Factor 2**	**Factor 3**
Bed/Km^2	**0.861**	0.000	0.111
Nights/Km^2	**0.909**	0.019	0.195
TEF/Night	**0.938**	−0.107	0.106
TWTF/Night	**0.953**	−0.077	0.075
TWSF/Night	**0.953**	−0.077	0.075
Beds/Employee	−0.001	−0.300	**0.866**
Nights/Employee	0.214	−0.022	**0.952**
Exp/Employee	0.227	0.200	**0.920**
Beds/Inhab	−0.056	**0.961**	0.029
Nights/Inhab	−0.034	**0.981**	0.005
Exp/Night-PPP	−0.143	**0.729**	−0.455
Size	**0.657**	0.564	0.279

Values in bold indicate high factor loadings.

Based on the results presented in Table 4, we can easily interpret the three factors as capturing (1) the effects of tourism on the resource base and the environment; (2) tourism's impact (positive or negative) on employment opportunities for the local population; and (3) the tourism industry's average productivity and efficiency.

Therefore, we can name (i.e., brand) the factors "environment", "local community-labour" and "economy-tourism dependency", respectively, with the last reflecting mainly the creation of employment and social welfare for those directly involved in the tourism sector. To evaluate the economic dimension of sustainability, the suggested approach adopts the rationale that economic prosperity should not merely be defined as a function of the generated GDP [52]. Therefore, it incorporates a set of parameters that balance generated income with the entailed social and psychological carrying capacity of a destination, which may be translated as the quality-of-life elements. By construction, factors are standardised with an average of zero and one standard deviation. In that sense, areas that score positively and very highly on one factor also have very high scores in the underlying variables correlated (loaded) to this factor. Table 5 presents the scores of each area for each of the three factors (branding of destinations).

Table 5. Factor scores of the selected destinations.

Country	Destination Area	Factor 1	Factor 2	Factor 3
		Environment	**Local Community-Labour**	**Economy-Tourism Dependence**
Turkey	Alanya	**0.912**	0.105	−0.520
Tunisia	Djerba	**2.279**	0.086	−0.558
Spain	Torremolinos	**0.842**	−0.156	**1.975**
Egypt	Al Alamein town	−0.420	**2.753**	−0.426
Egypt	Matrouh City	−0.358	−0.175	−0.818
Morocco	Tetouan	**0.230**	−0.514	−0.200
Algeria	Tipasa	−0.700	−0.631	−0.598
Italy	Cabras	−0.878	−0.888	−0.517
Italy	Castelsardo	−0.099	−0.799	0.576
Croatia	Rovinj	−0.974	0.450	**1.784**
Egypt	Siwa Oasis	−0.832	−0.229	−0.697

Values in bold indicate high factor loadings.

First and foremost, the factor scores allow us to observe possible patterns revealed by the analysis. For destinations, a positive value of the environmental factor, factor 1 (Analya, Djerba, Torremolinos and Tetouan), indicates high environmental pressure and, as such, a high and negative ecological impact. In contrast, the smaller the value of the factor is, the more environmentally conscious and friendly the sector for the destination is. Rovinj in Croatia records the lowest environmental pressure, followed by Cabras in Italy and Siwa Oasis in Egypt.

Factor 2 (local community labour) reflects the labour efficiency and performance of a destination. Taking into account the standardisation process, negative scores indicate relatively low employment rates and performance of the social dimension of the sector. The latter might indicate either labour intensity and/or low salaries. However, one should be particularly cautious when interpreting labour data, taking into account issues of unit sizes, family, secondary employment and the occasional phenomenon of seasonal non-registered work in the sector. Nevertheless, the analysed available data suggest that among the 11 destinations studied, only Alanya, Djerba, Rovinj and El Alamein score positive values in the employment factor, thus translating into higher labour performance and efficiency. El Alamein's score, in particular, has the highest positive value, greatly deviating from the group average.

The same rationale applies to analysing factor 3 (economy-tourism dependence), economic prosperity associated with the sector's importance for the host community. Positive values suggest high reliance of the destination on tourism, the intensity of the activity and therefore enhanced importance of the sector as a production and income-generating activity. The factor is calculated considering both the entailed social pressure (psychological carrying capacity) and the generated income. Therefore, optimum values in terms of sustainable development should range around the value of 0, indicating the combined effect of high generated revenue without tourism flows that jeopardise a destination's social and psychological carrying capacity. The latter can be translated as non-imposing tourism flows of high expenditure patterns. Among the destinations under review, Tetouan and El Alamein still present the lowest deviation from 0, despite their negative scores for the factor. In conceptual terms [31], one should therefore expect that contributing towards the sustainable development of a destination the tourism industry should simultaneously have low environmental impact and high employment creation while entailing minimum dependence on the host destination.

Destination Patterns

The combined factor analysis of the destinations under review reveals quite interesting patterns. Of the areas where the tourist industry seems to have a negative environmental impact (high positive value in factor 1), only Torremolinos is further associated with increased economic productivity, but also with extreme dependency scores (factor 3). However, Toremolinos appears to have relatively low and negative employment performance in the sector. This tourism monoculture of the mature destination of Torremolinos is attributed to the high influx of international tourists and its high dependence on tour operators to sell the product offered. Hence, Torremolinos appears as a mass tourism resort with medium- and large-sized accommodation units that satisfies the preference for 3S (Sea, Sun and Sand) products. The positive economic impact of tourism consumption is not reflected in job creation. Despite providing extensive tourist amenities, the evaluated labour factor remains low and negative.

Of the remaining destinations with high environmental impact, Alanya and Djerba do not enjoy either the economic or social prosperity that the industry's size would presuppose. Their economic dimension scores suggest that the tourism industry does not attract the expected expenditure patterns. The accommodation sector employment, despite being positive, still does not contribute much to unemployment alleviation. Both destinations, Alanya and Djerba, are among the most prominent destinations studied in terms of size. With a clientele predominated (yet not dominated) by international customers, the two destinations offer a wide selection of leisure activities (e.g., health spas, marinas, golf courses and casinos) hosted mainly in 4-star and 5-star hotels. These mature destinations offer an "industrial-scale" organisation of 3S tourism products of large upscale hotels, tourist infrastructure and activities, a clear division of labour for HR, management and marketing functions. These two destinations face immense issues of saturation. They are even indicating signs of decline and a need to diversify and rejuvenate their product; however, this is something the high dependency on tour operators does not easily allow. Low economic performance can be associated with lower expenditure rates and complementarily lower salaries that explain the small positive labour generated efficiency of factor 2, or with high financial leakages in terms of goods imports, equipment, products and labour force.

In Tetouan, the fourth destination with a high environmental impact, the tourism industry does not contribute much to creating jobs but reports negative employment efficiency patterns. Nonetheless, Tetouan only demonstrates a minor deviation of factor 3, suggesting tourist activity that provides the economic benefits of tourist expenditure without the city becoming a tourist resort, thus safeguarding the quality of life for the local residents. Tetouan's clientele consists of both domestic and foreign visitors who enjoy its cultural and natural resources. Its positive environmental impact might be associated with the small-sized and fragmented typologies of accommodation: B&Bs and primarily camping sites. Tetouan has the most extensive camping sites in the study group. The latter increase their environmental impact without contributing to positive employment or economic performance. According to the typology, Tetouan enjoys minimum dependence on tourism and its effects on the hosting community.

Further, in the group of destinations with a low environmental impact Matrouh City, Tipasa, Cabras, Castelsardo and Siwa Oasis all have low labour performance indicators (factor 2) and average, yet small, economic performance scores. The exception is Castelsardo, which shows the destination's positive dependence on tourism, whereas the remaining destinations suggest negative linkages. These destinations attract mainly domestic tourists. Cabras, Castelsardo and Tipaza offer a unique tourism product enriched with their local natural and cultural heritage. Tourists prefer small-size family accommodations such as B&Bs or residential apartments. As such, tourism is not the central production sector in the area but complements economic and employment performances. In these destinations, tourism activity seems to be better integrated within the local economy, yet tourism's socio-economic results are subject to issues of high seasonality.

Next, the two Egyptian destinations of Matrouh City and Siwa Oasis share the same performance similarities yet combine their distinctive cultural and natural character with mainly 4-star and 5-star hotel accommodation and supporting amenities (e.g., health spas, marinas, golf courses and casinos). Their performance patterns are primarily associated with small destinations, entailing economic leakages for big hotels and international chains as the local economy cannot provide the required quality and quantity of goods. Interestingly, the third Egyptian destination, El Alamein, combines low environmental performance with the highest employment performance scores in the whole sample. Simultaneously, the destination achieves a low negative dependence on tourism with substantial economic benefits from tourist expenditure. Domestic investors and tourists play an essential role in the area, which can be described as a rather deluxe destination for high-class domestic tourists. El Alamein is a coastal area with a tourist accommodation trend combining hotels and other complementary typologies, low levels of tourism infrastructure and differentiated activities.

Rovinj in Croatia is the destination with the lowest environmental pressure, suggesting an environmentally friendly tourism profile. Simultaneously, the destination indicates positive employment scores, highlighting the sector's importance for the creation of jobs. Nonetheless, Rovinj achieves very high economic performance and tourism dependency scores, suggesting that tourism activity might be a monoculture in the area. This destination is predominantly visited by foreign tourists, which, similar to the case of Torremolinos, explains the high dependency of the destination's welfare on tourism. However, in contradiction here, the primary typology of accommodation is non-hotel facilities where tour operators do not play a significant role in promoting the product offered. Independent tourists mainly select Rovinj with high expenditure rates, choosing the destination for its distinctive local character. It is a destination in a rejuvenation phase, based on Butlers' destination cycle. In this phase, economic leakages are low due to links with local producers (fisheries), the special status of the leading tourist company (Maistra) and local ownership of small tourist businesses (e.g., B&Bs and restaurants).

Finally, distinctive tourism products with a local character that have not seen a significant expansion of their built-up areas are offered by Castelsardo and Rovinj, but especially by Cabras and Siwa Oasis. These destinations are developing with an "artisanal" organisation of businesses (small family enterprises with no clear division of labour), low levels of tourism infrastructure and differentiated activities. Local players have an essential role in investments. These destinations are integrated into small settlements, and their appeal is based on their distinctive cultural and natural characteristics. As a "mature" destination, Rovinj is different in that it has a small number of huge hotels.

4.2. Results of Hierarchical Cluster Analysis

To gain better insight into the emerging patterns of the similarities of these destinations concerning their factor scores, we have created a hierarchical cluster analysis of the factors of the areas. Figure 1 below shows the dendrogram of the hierarchical clustering process. Three distinctive clusters are revealed.

The first distinctive cluster includes the destinations of Tipasa, Cabras, Matrouh city and Siwa Oasis, because they are all areas with negative scores for all factors. In other words, they are all areas with low environmental impact and resource stress and low economic and social performance. This group could be further extended to include the town of Tetouan. Therefore, this cluster may be branded the cluster of "destinations with low impacts".

The second distinctive cluster is formed by Torremolinos and Rovinj, both of which have very high economic performance, minor environmental effects and low dependence on the local community. Therefore, the second cluster may be branded "economic-tourism dependency". Thirdly, there is the cluster of Alanya and Djerba. Both destinations in this third cluster have high environmental effects and negative economic performance. These results reveal similarities, to a great extent, of the destinations to their factor scores.

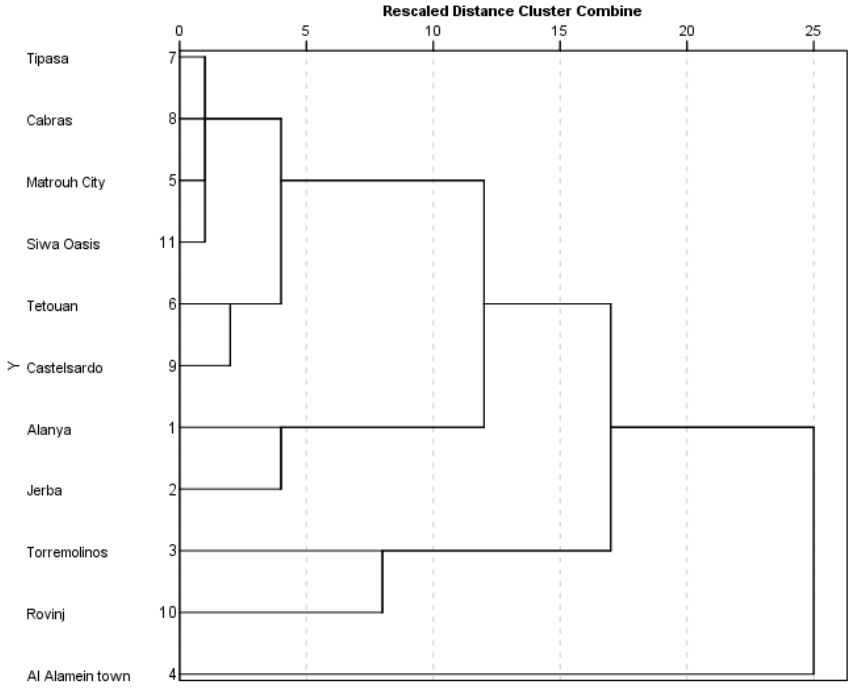

Figure 1. Dendrogram using Average Linkage (Between Groups).

4.3. Multidimensional (Visual) Decision Tool

Sustainability reflects, by default, the state of maximised socio-economic performance and minimised environmental footprint [30]. A two-dimensional (2D) visualisation (Figure 2) depicts the combined measurement of socio-economic performance (x-axis) in relation to the respective induced environmental burden (footprint) (y-axis) in a single point. Both axes cross at point (0,0) and the normalized performance values are depicted in a scale from 0–1. In order to facilitate visual conception of sustainability measurement in 2D, the evaluation quadrille is further divided into four interim sections representing performance level variations in the normalized scale of 0–0.5–1 per axis.

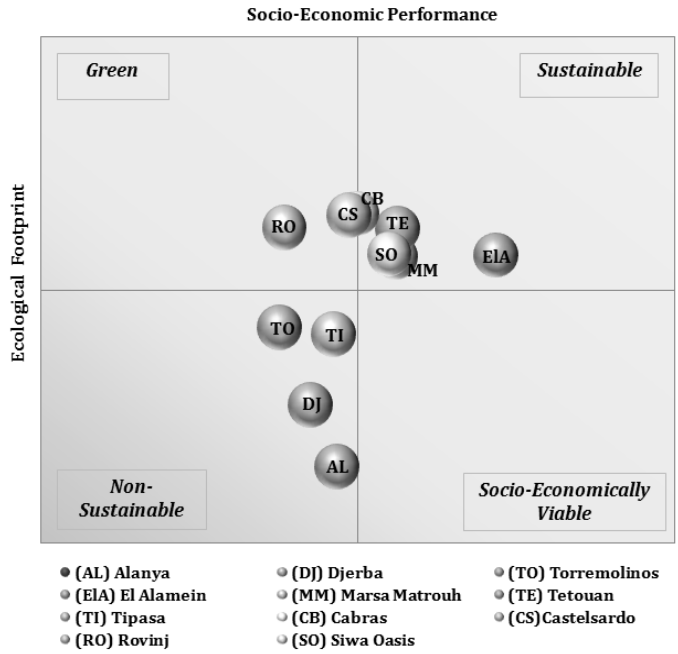

Figure 2. Destinations' sustainability performance in 2D.

Tourist destinations that present relatively high (H) socio-economic performance and low (L) environmental impact are expected to be located in the "Sustainable" (HL) quadrille. In contrast, tourist destinations characterised by low (L) socio-economic performance and high (H) environmental footprint are expected in the "Non-Sustainable" (LH) area of the frame and characterised by relatively lower levels of tourism sustainability. Tourism destinations combining low (L) socio-economic and low (L) environmental footprints are depicted in the top left quadrille and classified as "Green" (LL). In contrast, tourism destinations with high (H) socio-economic performance and a simultaneously high (H) environmental footprint are depicted in the bottom-right quadrille as "Socio-economic Viable" (HH) products or destinations.

The complementary 3D version (Figure 3) is developed as a cube representation of a three-axis system, crossing for visualisation purposes at point (0; 0; 0), with the evaluation depiction scale of normalised values ranging from −1 (minimum sample value) to 1 (maximum sample value). For this version, the axis crossing point represents the average value of each comparatively normalised sustainability dimension. As such, the user is offered the possibility to benchmark a destination's sustainability performance against the sample average. The tool's horizontal *x*-axis depicts economic performance, vertical *y*-axis represents social performance, and Cartesian *z*-axis depicts ecological footprint values. The evaluation matrix is divided into eight quadrilles, each signified by lower (L) and higher (H) performances per dimension of sustainability: LLL; LHH; LLH; HHH; HLL; HHL; LHL; and HLH. Hence, more "Sustainable" (HHL) destinations are again expected to be depicted in the Cartesian surface quartile defined simultaneously by higher (H) economic performance values (0–1 on the *x*-axis), higher (H) social performance values (0–1 on the *y*-axis) and lower (L) environmental footprint values (0–1 on the *z*-axis), while "Non-Sustainable" (LLH) destinations are expected in the Cartesian surface quartile defined simultaneously by lower (L) economic performance values (0–1 on the *x*-axis), lower (L) social performance values (0–1 on the *y*-axis) and higher (H) environmental footprint values (0–1 on the *z*-axis). In order to facilitate comprehension, the axes' arrows continuously signal the direction of maximum performance per dimension. However, a rotation matrix allows for evaluation quadrilles' continuous rotation to support clearer visualization against three or even two dimensions (Figure 3). Both visualisation interfaces produce independent yet complementary sustainability evaluations. However, the user should keep in mind that they are not directly comparable, since they depict different evaluation variables and are assessed in different measurement systems.

The findings of the empirical study of the 11 Mediterranean destinations through the 3D tool visually reinforce the identified destination clusters. Specifically, the visual output of this analysis reveals the existence of four distinctive clusters that share many similarities, with the results indicated by both factor and hierarchical cluster analysis. Specifically, the following clusters emerge:

Cluster A: "Low impact destinations" includes Tipasa, Cabras, Matrouh City and Siwa Oasis. Tourism activities have low environmental impact and resource stress in these destinations. Moreover, they are destinations of low economic dependence on tourism and low social performance. This cluster could be further extended to include the towns of Tetouan and Castelsardo. The brand name of these destinations may signal their rich cultural and natural heritage. These elements may be used in their campaigns for attracting specific tourist segments. The accommodation on offer is primarily in facilities other than conventional hotels and is highly demanded in particular seasons.

Cluster B: "Local community—labour destinations" includes Al Alamein, which has low environmental pressure and economic dependence on tourism. However, this destination has very high social productivity, offering job opportunities to locals in accommodation and tourist amenities equivalent to intentional destinations (4-star and 5-star hotel accommodation, health spas, marinas, golf courses, casinos, etc.). However, these destinations attract a low volume of tourists with higher purchasing power.

Cluster C: "Economically—tourism dependent destinations" includes Torremolinos and Rovinj. Both have very high economic dependence on tourism, small environmental impacts and low contribution to the local community. Although both are considered international destinations, their offering is based primarily on private accommodation, which outnumbers professional hotel accommodation. There has been an apparent drift towards residential housing in the case of Torremolinos. In contrast, a trend towards conservation of architecture and cultural character in Rovinj has been observed.

Cluster D: "Average local community—labour destinations" includes Alanya and Djerba, which have high environmental impact, average productivity in terms of employment and negative tourism economic dependence. These are mature destinations characterised by mass international tourism. Therefore, they offer extensive tourist amenities and hotels for hosting foreign tourists, who often book charter flights.

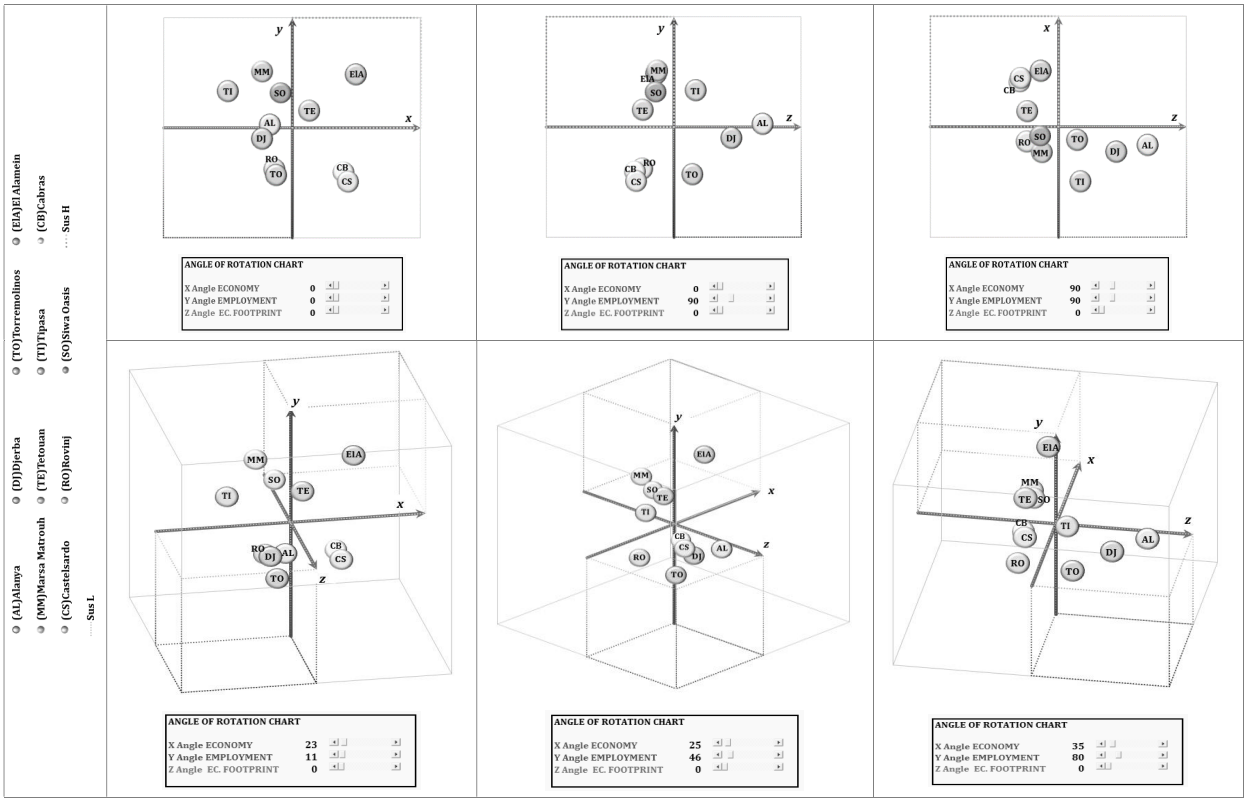

Figure 3. Destinations' sustainability performance in 3D. Output interface for the comparative sustainability assessment of the 11 Mediterranean destinations for various rotation angles. Top row from left to right: Illustration of economic (*x*-axis) versus social performance (*y*-axis); Illustration of environmental (*z*-axis) versus social performance (*y*-axis); and Illustration of environmental (*z*-axis) versus economic performance (*x*-axis). Bottom row from left to right: 3D illustrations of various rotation angles depicting the "High Sustainability"(Sus H) quadrille in the top surface and "Low Sustainability" (Sus L) quadrille in the bottom surface.

5. Conclusions

This paper has constructed an integrated framework for comparative measurement of sustainable performance on a shared basis of multiple attributes among 11 competitive Mediterranean destinations using a three-step (sustainable) performance clustering approach. In so doing, we began with a discussion on the conceptual and operational confusion regarding sustainable performance evaluation of sustainability's multi-dimensional—i.e., multi-attribute—nature. Next, we critically reviewed the abstract interface of sustainability and competitiveness and the sustainability-related typologies at the destination level. This review revealed the increased need for adopting an integrated analytical framework

that creates a common basis for comparisons among competitive destinations without selecting a priori the evaluation criteria, but rather extracting them based on their common source of variance. This theoretical underpinning determined the choice of a hierarchical cluster analysis based on the between-group linkages. After that, we introduced a three-step analytical approach to explore the feasibility of segmenting tourist destinations based on their sustainability performance and the resulting implications for destination branding and management. This inquiry has encouraged us to underline the multi-dimensional nature of sustainability at the destination level.

Moreover, based on the literature's most commonly used, we proffered a manageable bundle of metrics (15 variables) gathered into four sub-categories. Our selected variables cover the assessment constituents that can be considered representative of a shared basis of comparisons of destinations' sustainability performance. This is rather fundamental for measurement endeavours. In the first step of the analytical process, we performed a factor analysis to group these variables based on the respective factor scores. Three factors have emerged: (a) the environment; (b) local community employment; and (c) economy-tourism dependence. These findings have allowed us to understand how destinations are grouped based on their factor scores. In the second step of the process, we re-confirmed these results using hierarchical cluster analysis by identifying three clusters. Finally, in the third step of our analytical framework we visualised the clustering of the 11 Mediterranean destinations across the three identified factors. We identified four distinct clusters that underscore the importance and coherence of our analytical process by reinforcing the results of both factor and hierarchical cluster analysis.

Overall, our findings indicate that it is feasible to evaluate the sustainable performance of competitive destinations using a common basis of metric endeavours, which are derived through a grouping (clustering) process. The suggested three-step approach allows us to gain crucial insights into identified strengths and weaknesses that have either a positive and/or negative impact at the destination level rather than at the country level. Hence, this selection may serve as a common benchmark for future empirical studies or at least trigger more inquiries that look into the selection of the set of factors that will be used to assess destinations' sustainability performance while also segmenting and hence branding them in terms of their sustainability. At a theoretical level, the information revealed by such an analysis may shed light on and help the resolution of the conceptual and operational confusion regarding the measurement of sustainable performance of destinations by stressing the importance of deriving the evaluation criteria (factors) that emerge from empirical analysis. At a managerial level, the clustering of the destinations based on such criteria and their respective multi-dimensional visual outcome may allow industry managers and policymakers to be in a better position to convey the brand essence of a destination and enhance its attractiveness, as well as to demonstrate what long-term policies may emerge to overcome its inefficiencies, by creating a positive impact on the transformation of a destination towards sustainability.

This study's strengths and limitations lie in its focus on selected destinations surrounding the Mediterranean basin for a specific period of time (period of economic recession). Even if the proposed analytical approach is robust from a methodological perspective, the generalization of findings should be treated cautiously and in consideration to changes in the socio-economic context of destinations and countries, but primarily to the defining characteristics of tourism activity and performance in the destination (e.g., tourism pressure; destination carrying capacity; tourism seasonality; remoteness in accessibility; destination typology; and involvement of TOs). Further research is required in extending the consideration of destination typologies (e.g., mountainous, urban and destinations with distinctive heritage sites) and different stages of destination and sustainability life cycle (emerging, developing and stagnated) to explore the applicability of the identified clustering criteria in various destination contexts. Such research is necessary to further enhance the sensitivity, reliability and validity of the proposed integrated analytical framework.

In a nutshell, this research has explored the possibility of clustering destinations based on their sustainability performance as a starting point for using sustainability as a unique selling proposition for a destination's brand. This has been achieved by providing academics and practitioners with a "common basis" integrated framework for comparing destinations' sustainability performance. The work has identified an opportunity for scholars and practitioners to enrich their toolbox by replicating our framework for different cohorts of destinations over time when accounting for sustainable performance evaluations. It is well-known that tourism contributes to sustainable development, but in order to render tourism's contribution clearly, the assessment should be fed with conceptually clear and measurable indicators that effectuate the continuous monitoring of a destination's sustainability performance.

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