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Human capital and business performance in the European tourism and hospitality sector

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Abstract | This paper examines the business performance of the European tourism sector, focusing on the three segments of Hotels and Restaurants (HR), Recreational and Cultural Activities (RCA) and Transport and Logistics (TL). This exploratory study is based on a sample of 6.000 companies operating in 17 EU countries during 2021, selected by the random sampling method and distributed equally among each sub-segment, providing crucial information on the financial performance and human capital of the tourism sector. Financial and human capital information was collected from the Orbis Europe database. The methodology uses a multivariate analysis of variance (MANOVA) to examine differences in financial performance indicators by group, specifically between the three segments of economic activity, size, and country where the enterprises are based. The results reveal significant differences between some enterprises' competitiveness indicators. The tourism sector is mainly made up of small and medium-sized companies.TL presents a higher volume of operating revenue. HR employs and has higher employee costs, followed by TL and RCA. However, TL has a higher average cost per employee, reflecting higher salaries, followed by RCA and finally HR. Profit per employer is highest in the RCA segment, followed by TL and RH. The EU countries with the highest profit per employee are the Netherlands, Sweden, Hungary, and Ireland.

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1. Introduction

The tourism and hospitality sector significantly impacts the European economy, employing millions of people. The European Travel Commission (2024) indicates that Europe's tourism and hospitality sector continues to recover from the pandemic and is expected to reach record numbers on travel expenditure. According to the report, for the first months of 2024, the number of foreign arrivals and overnight stays increased by 7.2% and 6.5%, respectively, surpassing the results obtained in the same period in 2019. In 2023, the results for foreign arrivals and overnights were just 1.2% and 0.2% below 2019. For the remarkable European recovery in the sector, a few countries have contributed, namely Germany, France, Italy, and the Netherlands, which have shown a strong level of intra-regional travel. According to the same source, demand from the United States (US) contributed significantly to these results, making the US one of Europe's most important markets for long-haul travel. Southern Europe is the leading region in recovery when comparing the number of international arrivals to the 2019 levels. A few countries are highlighted: Serbia (+47%), Bulgaria (+39%), Türkiye (+35%), Malta (+35%), Portugal (+17%), and Spain (+14%). The Nordic region is also emphasized, with increases in overall tourist activity. For the Baltic region, Central and Eastern Europe, the tourism and hospitality sector still faces some challenges caused by wars.

The European Travel Commission (2024) noted that accommodation costs, business costs, and staff shortages are the main challenges facing businesses in the tourism and hospitality sectors. These challenges require businesses to remain resilient and seek solutions to maintain competitiveness.

Considering that people are a critical factor in the organisations' competitive advantage, it is essential to implement strategies that combine knowledge with business objectives, making this the focus of people management (Xhemajli et al., 2022). Motivating companies to seek a balance between commercial gains and a positive corporate image implies being open to innovative business ideas. Reconciling corporate social responsibility, concern for people's management, and environmental consequences affects workers' well-being and motivation, society, and markets. Knowledge and innovation are essential components of these new

management practices (Zhao et al., 2021). Based on this perspective, it is assumed that being competitive also implies being sustainable. The need to manage resources more efficiently comes from the progress of human development, in which the compatibility between social aspects (people), territory (environment) and profit (economic aspect) equates competitiveness with sustainability (Ahn & Jenica-Avila, 2022). Companies must analyse the segment activity through indicators to guarantee a competitive advantage in the market and build proper strategies (Costa & Costa, 2019).

The business performance structure of Europe's tourism and hospitality sector will be analysed in this paper. The focus of this original research is not only to obtain the main financial results of the segment but also to collect information on the sector's human resources, which reflects some indicators relating to the human resources management practices in use. The variables under study and their results are compared according to the three groups of sub-segments in the sector, namely Hotels and Restaurants (HR), Recreational and Cultural Activities (RCA) and Transport and Logistics (TL), the size of the enterprises, small enterprises (SE), medium-sized enterprises (MSE), large enterprises (LE) and very large enterprises (VLE), and the country in which they are based (European Union countries). A bibliographic review of the sector's competitiveness was conducted, together with a quantitative analysis of statistical information calculated based on information provided by the Orbis Europe database developed by Bureau van Dijk. The sector's coverage was ensured by selecting financial indicators from the database. IBM SPSS software was used for descriptive and inferential analysis.

After examining the most relevant literature in the second section, the third section presents a brief overview of the empirical methodology approach. The fourth section discusses the results, while the fifth section presents the major outcomes, contributions, practical implications, and drawbacks.

2. Theoretical framework

Some authors argue that business success is mainly associated with organisational commitment, citizenship, and identification (Ahn & Jenica-Avila, 2022; Xhemajli, 2022; Zhao et al., 2021). Workers' perception of reciprocity, regarding the distribution of profit and the reward for their effort, also affects their commitment and motivation to embrace new challenges and be more creative (Ahmad et al., 2022). Creativity extends to human capital management strategies because the more they are aligned with the balance between the characteristics of workers,

society, and the environment, the better the collective performance of organisations and the individual performance of employees (Ahmad et al., 2022). This path to change is not a path organisations can follow alone, as countries' cultural and political differences are also reflected there (Ahn & Jenica Avila, 2022). There are also differences between sectors of tourist activity.

The idea that the challenges currently facing human resources management are multiple and complex gains support in the literature (Cachón-Rodríguez et al., 2022). Being competitive involves considering areas of recruitment, selection, and training of workers, along with labour relations that attract and retain talent capable of impacting the operational activities of the supply chain in organisations. As business and financial performance align with the current and future demands of humanity, the competitive advantage of organisations is reflected in the transition from the traditional management of knowledge, learning, and skills to the management of the relationship system. The competitiveness of markets and the focus on business profits leads organisations to place increasing pressure on workers and their roles (Butson et al., 2021), which is particularly critical in the hospitality sector (Ali et al., 2022).

Hence, creativity, commitment and productive capacity, more than an individual problem for workers, is an organisational challenge whose strategic options lead to greater or lesser productive and innovative capacity, with implications for the competitive advantage of companies (Cachón-Rodríguez, 2022). Shifting responsibility from competitive capacity to the organisational management model leads to shifting the focus from profit to formal processes of worker recognition, in which profit is not the primary objective but the positive consequence of managing this system of relationships. The challenge is no longer just the economic development of companies and territories but mainly to assume organisational sustainability in all dimensions as a factor of productivity and competitiveness.

The tourism sector’s activity is characterised by a strong level of competition, which is aligned with constant changes (Cheng Zhang, 2020; Mitrović et al., 2016). According to Sainaghi et al. (2017), analysing the performance and measuring the sector’s activity is crucial to guarantee its success.

According to the literature, intellectual capital is a crucial element of value creation in organisational performance that can contribute to sustainable and higher financial returns. Some studies in the literature have shown that competitiveness and business performance in the tourism sector can be influenced by intellectual capital (Obeidat et al., 2017; Costa et al., 2020; Silva et al., 2021). Intellectual capital consists of different components: human capital,

structural capital, and relational capital (Silva et al., 2021). According to these authors, human capital is the knowledge and skills of individual employees. Being a sector mainly composed of small and medium enterprises, with a few people employed, it is noticeable how impactful and vital human resources are for its success. Silva et al. (2021) state that these components of intellectual capital are crucial elements to help companies guarantee a competitive advantage.

Based on the importance of studying this topic and considering the literature review, in this study, the following hypotheses are proposed:

H_1: There is a statistically significant difference between the selected competitiveness indicators (OR, NE, CE, PpE, CEpOR, ACE) per segment of economic activity in the tourism sector (HR, RCA, TL):

H_{1A}: OR; H_{1B}:NE; H_{1C}: CE; $H_{1D:}$ PpE; $H_{1E:}$ CEpOR; $H_{1F:}$ ACE)

H_2: There is a statistically significant difference among the indicators (OR, NE, CE, PpE, CEpOR, ACE) per country:

H_{2A}: OR; H_{2B}:NE; H_{2C}: CE; $H_{2D:}$ PpE; $H_{2E:}$ CEpOR; $H_{2F:}$ ACE)

H_3: There is a statistically significant difference between the indicators (OR, NE, CE, PpE, CEpOR, ACE) per enterprise size: small enterprises (SE), medium-sized enterprises (MSE), large enterprises (LE) and very large enterprises (VLE).

H_{2A}: OR; H_{3B}:NE; H_{3C}: CE; $H_{3D:}$ PpE; $H_{3E:}$ CEpOR; $H_{3F:}$ ACE)

3. Methods

Considering the importance of this topic, this study aims to provide an overview of the business performance of the tourism sector. The empirical strategy of this study is based on quantitative analysis. The study sample was collected from the ORBIS database provided by Bureau van Dijk (BvD). Companies and stakeholders can make better decisions and increase their efficiency with the help of the Orbis database, which can be used to find, analyse and compare global companies (Orbis Bureau Van Djik, 2022). The wide range of available information and the fact that this database is considered robust with a large number of companies based in the EU made it a consideration for the study.

Orbis database allows precise searches of selected information based on preferred criteria. However, it has data export limitations. The criteria defined for this study were mainly directed at active companies in the Tourism and Hospitality sector and included all NACE Rev.2 codes. Specifically, the NACE Rev. 2 codes 55, 56, 79, 86, 90, 91, 93, and 96 fit within the selected HR, RCA and TL subsegments. The European Union (27) was chosen as a case study for this article to compare companies in the tourism sector in this region.

Given the limitation of data export by Orbis, this study reports data for 2021, selected because it is the most recent year with complete information on the companies' activities. Due to the limited amount of information to access, it was necessary to use the database's random sampling method in all sub-segments. This instrument, provided by the database, classifies and randomly collects companies from the initially defined sample. Data were collected regarding 2.000 enterprises for each of the sub-segments of the tourism sector (HR, TCA and TL), totalling a sample of 6.000 companies.

The criteria included all available information on human resources in each subsegment. For better results, indicators that did not have companies registered with values in any of the subsegments were excluded. The criteria used are presented in Table 1.

Table 1. Criteria

Active Companies	Companies that in the selected year were with open activity.
Classification of economic activities (CEA)	It is the available statistical classification of economic activities in the European Community. It includes all NACE Rev.2 codes within the selected HR, RCA, and TL subsegments.
Size Classification	Enterprises of all sizes, namely small enterprises (SE), medium-sized enterprises (MSE), large enterprises (LE) and very large enterprises (VLE).
European Union	The 27 countries part of the European Union: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.
Year	2021
Available values	All companies should have available values for all the indicators.

Source: Authors' elaboration

The indicators were selected within the areas classified by the database as "financials" or "number of employees", guaranteeing that the results being shown fit within the aim of this

paper, which focuses on analysing financial and human capital-related indicators. These indicators are considered in studies such as Varelas and Tsoupros (2024), Jin et al. (2021), Reichel and Haber (2005) and Costa and Costa (2019). Table 2 presents the indicators and definitions used in this study. The literature referred to and the formulas are based on the Orbis Bureau Van Djik user guide (2011).

Table 2. Selected Indicators

Indicators	Formula	Description
Operating Revenue (OR)	$\boldsymbol{OR = Net\ sales + Other\ operating\ revenues + Stock\ variations}$	Total operating revenues in thousands of dollars.
Number of employees (NE)	-	Total number of employees included in the company's payroll. Balance sheet.
Profit per employee (PpE)	$\boldsymbol{PE = \frac{Profit\ before\ tax}{Number\ of\ employees}}$	Profit per employee in thousands of dollars. Per employee ratios.
Operating Revenue per employee (ORpE)	$\boldsymbol{OREE = \frac{Operating\ Revenue}{Number\ of\ employees}}$	Total operating revenues per number of employees are in thousands of dollars.
Costs of Employees (CE)	-	All employees' costs to the company (including pension costs) in thousands of dollars. Profit and loss account.
Costs of employees per Operating Revenue (CEpOR)	$\boldsymbol{\frac{Costs\ of employees}{Operationg\ revenue} * 100}$	Proportion of Costs of employees in the operating revenue in percentage. Per employee ratios.
Average cost of employee (ACE)	$\boldsymbol{\frac{Cost\ of\ employees}{Number\ of\ employees}}$	Average cost per employee in thousands of dollars.
Working capital per employee (WCpE)	$\boldsymbol{\frac{Working\ capital}{Number\ of\ employees}}$	The capital used in day-by-day activities per employee in thousands of dollars, per employee ratios.
Liquidity ratio (LR)	$\boldsymbol{\frac{Current\ assets - stocks}{Current\ liabilities}}$	The total amount of debtors and Other current assets for each Loan, Creditors and Other liabilities. Structure ratio.
Number of Directors and Managers (NDM)	-	The number of directors and managers in the company's business structure.

Long-term debt (LTD)	$\frac{\textbf{\textit{Total long term debt}}}{\textbf{\textit{Total assetx}}}$	Long-term financial debts in thousands of dollars (e.g., loans, credits, bonds to credit institutions). Balance sheet.
Loans and short-term debt (LSTD)	$\frac{\textbf{\textit{Total loans}}}{\textbf{\textit{Total deposits}}}$	Short-term financial debts in thousands of dollars (e.g. to credit institutions, part of long-term financial debts payable within the year, bonds, etc.). Balance sheet.
Year of incorporation (Y)	-	Year the company was legally formed.

Source: Adapted from Varelas & Tsoupros (2024), Jin, Gao & Xiao (2021), Reichel & Haber (2005), Costa & Costa (2019) and Orbis Bureau Van Dijk (2011)

Considering the objectives of this study and the research hypotheses, this study applies a statistical analysis. A multivariate analysis of variance (MANOVA) was used to examine group differences in multiple outcomes in the context of exploratory data analysis. A MANOVA is an extension of the one-way ANOVA in which there is more than one response variable.

4. Results

4.1 Sample Characterisation

The sample includes 6.000 companies, equally distributed among the three sub-segments of HR, RCA, and TL (2.000 per sub-segment). According to the data, in the HR activity segment, the most significant number of companies belong to the economic activity segment of Restaurants and mobile food service activities (CEA 5610), with a representation of 48.3% (966) of HR companies and 16.1% of the total sample from the tourism sector. In the RCA activity segment, the most significant number of companies belonging to the Other Human Health Activities (CEA 8690) economic activity segment stands out, accounting for 18.3% (366) of the RCA segment and 6.1% of the total sample. Regarding TL companies, the Taxi operations activity (CEA 4932) stands out, representing 14.3% of this segment (286) and 4.8% of the total sample from the tourism sector. Table 3 presents the percentage of the most relevant NACE Rev.2 codes for each segment group.

Table 3. Sample per Classification of Economic Activities (CEA)

Segment	Code	Description	N	%
HR	5510	Hotels and similar accommodation	246	12.3%
	5520	Holiday and other short-stay accommodation	107	5.4%
	5530	Camping grounds, recreational vehicle parks and trailer parks	20	1%
	5590	Other accommodation	11	0,5%
	5610	Restaurants and mobile food service activities	966	48.3%
	5630	Beverage serving activities	347	17.3%
	--	Others	303	15.2%
	Total		**2.000**	**100%**
RCA	7911	Travel agency activities	216	10.8%
	7912	Tour operator activities	53	2.7%
	7990	Other reservation services and related activities	37	1.9%
	8690	Other human health activities	366	18.3%
	9001	Performing arts	57	2.9%
	9002	Support activities for performing arts	77	3.9%
	9004	Operation of art facilities	19	1%
	9102	Museums activities	14	0.7%
	9103	Operation of historical sites and buildings and similar visitor attractions	10	0.5%
	9104	Botanical and zoological gardens and nature reserve activities	12	0.6%
	9311	Operation of sports facilities	122	6.1%
	9321	Activities of amusement parks and theme parks	21	1.1%
	9329	Other amusement and recreation activities	259	13%
	9604	Physical well-being activities	72	3.6%
	--	Others	665	32.9%
	Total		**2.000**	**100%**
TL	4932	Taxi operation	286	14.3%
	4939	Other passenger land transport n.e.c.	275	13.8%
	5010	Sea and coastal passenger water transport	47	2.4%
	5030	Inland passenger water transport	11	0.5%
	5221	Service activities incidental to land transportation	213	10.7%
	5222	Service activities incidental to water transportation	85	4.3%
	5223	Service activities incidental to air transportation	30	1.5%

	7711	Renting and leasing of cars and light motor vehicles	216	10.8%
	7734	Renting and leasing of water transport equipment	35	1.8%
	7735	Renting and leasing of air transport equipment	2	0.1%
	--	Others	800	39.8%
	Total		**2.000**	**100%**

Source: Authors' elaboration

The companies collected in the sample represent 17 out of 27 countries of the European Union, namely Austria (0.3%), Belgium (1.5%), Bulgaria (9.3%), Croatia (5.5%), Estonia (0.6%), France (3.5%), Germany (1.1%), Hungary (0.9%), Ireland (0.3%), Italy (24.5%), Netherlands (0.02%), Poland (1.1%), Portugal (21.6%), Slovakia (10.5%), Slovenia (1.7%), Spain (17.7%) and Sweden (0.02%). Considering the size of the 6.000 enterprises, 72.4% are small, 21.9% are medium-sized, and 4.8% are large. Very large enterprises account for less than 1% of the sample (0.9%).

Table 4 provides a general description of the enterprises with the greatest representation in the sample. The data show that the most significant number of companies are based in Portugal, which accounts for 19.05%, 24%, and 21.5% of companies in the HR, RCA and TL segments, respectively. Italy and Spain also account for a considerable portion of the companies collected. TL's top 3 includes a different country from the other subsegments. Companies from Slovakia represent 17.55% of the sample collected for TL. Every subsegment includes a large portion of small enterprises: 76.4% of the HR companies, 74.7% of the RCA companies and 66% of TL enterprises are classified as small enterprises. Small and Medium-sized enterprises represent most of the sample collected from the tourism and hospitality sector. Interestingly, the subsegment with fewer Very Large enterprises is the subsegment of HR. The 2000 companies gathered by HR are mainly from restaurants and mobile food service activities. The sample from RCA is mainly associated with other human health activities. Lastly, TL includes enterprises essentially from taxi operations. All samples include, on average, enterprises with at least ten years of activity. The average year of enterprise birth for HR is 2009, for RCA is 2007 and for TL is 2005.

Table 4. General Description of the Sample

General Description	Hotels and Restaurants (HR) n=2000	Recreational and Cultural Activities (RCA) n=2000	Transport and Logistics (TL) n=2000
Top 3 Countries from the European Union 27	Italy 32.1% Spain 20.8% Portugal 19.05%	Portugal 24.1% Italy 23.75% Spain 17.55%	Portugal 21.5% Italy 17.75% Slovakia 17.55%
Small enterprises (%)	76.4%	74.7%	66%
Medium-sized enterprises (%)	21%	19.9%	24.8%
Large enterprises (%)	2.5%	4.6%	7.4%
Very large enterprises (%)	0.1%	9.8%	1.9%
Main CEA	Restaurants and mobile food service activities	Other human health activities	Taxi operation
Average year of enterprise birth	2009	2007	2005

Source: Authors' elaboration

4.2 Descriptive analysis

Table 5 summarises the statistics and presents the results obtained from each sample's selected financial and human capital-related indicators. The mean and standard deviation are highlighted through this descriptive analysis. Operating revenue, represented in thousands of US dollars, has the highest mean in the TL segment. At the same time, it is the segment with the most significant standard deviation presented, indicating considerable despair between the collected enterprises. HR has the lowest mean operating revenue presented. This subsegment also employs a smaller mean of employees than TL, with a mean of 11 and 62, respectively. Each employee provided in 2021 a mean of 3,36 thousand dollars for the HR subsegment. Curiously, even with a smaller mean of operating revenue, the profit per employee provided by the RCA

is similar to the TL, with a mean of 14.64 thousand dollars and 15.14 thousand dollars, respectively. The operating revenue per employee (ORpE) has the highest mean in the TL subsegment. Employees from this subsegment provided a mean of 244.03 thousand dollars in 2021. Once more, operating revenue on HR is the least significant of the three segments. Cost of employees (CE) has the highest mean in the TL subsegment. The enterprises from this subsegment spent 3.059,74 thousand dollars with their employees. The mean ratio costs of employees per operating revenue provided is higher in the RCA. Costs of employees (CE) represent 30.87% of the operating revenue from this subsegment. Similarly, it represents 28.84% and 27.22% of the operating revenue for HR and TL, respectively. The mean for the average cost of employees is more significant in the TL. The average working capital per employee is 13.3 thousand dollars for the HR subsegment, 14.62 thousand dollars for the RCA and 34.59 thousand dollars for the TL. The values obtained for each segment's number of directors and managers (NDM) are similar. However, the subsegment with the most significant standard deviation is TL. The liquidity ratio (LR) has the lowest mean in the HR subsegment, with 2.67. The highest mean for the liquidity ratio is presented in the RCA, with 3.73. HR and RCA have similar long-term debt means, with 634.34 and 638.36 thousand dollars, respectively. However, the standard deviation for the first segment has the highest standard deviation, indicating a more significant difference between the enterprises from this subsegment. Loans and short-term debt (LSTD), similar to long-term debt, are more significant in the TL subsegment. This subsegment has the most prominent means for both types of debts presented, and the opposite occurs with the HR subsegment.

Table 5. Description statistics

		Min.	Max.	Mean	Median	Std. deviation
HR	OR (Th USD)	1.08	154494.25	956.83	270.86	4572.26
	NE	1	865	11	5	33
	PpE (Th USD)	-98.74	458.29	3.36	1.29	23.70
	ORpE (Th USD)	1.08	1757.42	75.67	55.4	96.86
	CE (Th USD)	0.00	15648.81	248.12	67.90	956.74
	CEpOR (%)	0.00	100.00	28.84	26.89	16.48
	ACE (Th USD)	0.00	470.01	17.37	14.19	17.80
	WCpE (Th USD)	-98.81	3494.33	13.3	0.26	143.66
	NDM	0.00	28	2.33	2	2.37
	LR	0.00	92.8	2.67	1.07	5.95
	LTD (Th USD)	0.00	267334.24	634.34	14.79	7 822.97
	LSTD (Th USD)	-5.68	19717.43	69.72	0.00	676.73

RCA	OR (Th USD)	1.74	890452.64	3609.42	222.65	31605.39
	NE	1	5250	26	3	177
	PpE (Th USD)	-98.36	9097.68	14.64	2.58	207.11
	ORpE (Th USD)	0.87	19823.85	119.23	62.17	471.24
	CE (Th USD)	0.01	549340.50	1321.39	49.26	14630.40
	CEpOR (%)	0.00	100.00	30.87	25.82	21.61
	ACE (Th USD)	0.01	167.45	21.15	15.81	19.15
	WCpE (Th USD)	-94.58	5295.57	14.62	0.58	130.63
	NDM	0	43	3.39	2	4.61
	LR	0.00	89	3.73	1.57	7.63
	LTD (Th USD)	-2.27	106131.39	638.36	3.36	5061.37
	LSTD (Th USD)	0.00	353392.86	345.21	0.00	6400.37
TL	OR (Th USD)	0.95	8621353.54	14922.24	296.47	225517.05
	NE	1	61741	63	4	1395
	PpE (Th USD)	-94.16	1983.53	15.14	2.31	92.99
	ORpE (Th USD)	0.39	75184.81	244.03	72.78	1 801.91
	CE (Th USD)	0.03	3103324.84	3059.74	55.43	71276.41
	CEpOR (%)	0.01	100.00	27.22	22.36	20.76
	ACE (Th USD)	0.02	854.46	22.28	15.76	28.02
	WCpE (Th USD)	-98.54	4398.3	34.59	3.04	184.10
	NDM	0	109	3.85	2	7.02
	LR	0.01	97.85	3.38	1.27	7.74
	LTD (Th USD)	-0.23	65191341.1	45847.55	12.16	1504606.86
	LSTD (Th USD)	-898.81	6677811.41	4908.60	0.00	155880.40

Source: Authors' elaboration

4.3 Empirical Results

To validate hypotheses H1, H2, and H3, we first analysed the distribution's normality and the variances' homogeneity. Following the literature, we performed Tests of normality (Kolmogrov-Smirnov and Shapiro-Wilk). According to these test results, the null hypothesis (p-value $\leq \alpha$) is rejected for all variables under study as it violates the normal distribution parameters. To this end, we carried out non-parametric tests (Marôco, 2021; Pestana & Gageiro, 2014).

A homogeneity test was performed using non-parametric tests to conduct the MANOVA. According to the results of the Box's Test of Equality of Covariance Matrices available in Table 6, the homogeneity of the covariances was rejected.

Table 6. Box's Test of Equality of Covariance Matrices

Box's M	153313.651
F	79.407
df1	1638
df2	64149.849
Sig.	.000

Source: Authors' elaboration

In the second step, the variables were ranked in ascending order by transforming the variables under study (OR, NE, CE, PpE, CEpOR, and ACE). The MANOVA test was then conducted using these new variables ranked in order. Pillai's Trace was considered to analyse the results of the MANOVA Multivariate tests, as, according to the literature, this test is the most robust when the N is equal across the variables (Pestana & Gageiro, 2014).

The Pillai's Trace is a positively valued statistic. According to research, its value ranges from 0 to 1, and the closer it is to 1, the more substantial the evidence to show that a variable has a statistically significant effect on the response variables. Literature also shows that when conducting a MANOVA, the software willingly selects Pillai's Trace to calculate a rough approximation to an F-statistic and a subsequent p-value. If the p-value is below the significance level of 0,05 (α), the null hypothesis of the MANOVA is rejected. Rejecting this hypothesis implies that the variable significantly affects the response variables. Table 7 shows the results of the Multivariate Tests. The Pillai's Trace results indicate statistically significant differences between the groups on the combined variables.

According to the results, the size of the enterprises significantly influences the competitiveness variables under study (MANOVA: Pillai's trace = 0.130, F = 44.329 $p < 0.05$; Table 7). The country of origin statistically affects the response variables (MANOVA: Pillai trace = 0.126, F = 7.83, p 0.05). A lower effect is noticed in the group variable economic segment (MANOVA: Pillai's Trace = 0.008, F = 3.691, p 0.05). Looking at these results, it is possible to conclude that the differences are more substantial in the group variables of Size of the company and Country as the results are closer to 1. This test also indicates a significant interaction between the groups' Size, Segment and Country in the dependent variables (Pillai's Trace = 0.058, F = 1.306, $p < 0.05$).

Table 7. Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.585	1377.775[b]	6.000	5859.000	.000
Size	Pillai's Trace	.130	44.329	18.000	17583.000	.000
Segment	Pillai's Trace	.008	3.691	12.000	11720.000	.000
Country	Pillai's Trace	.126	7.830	96.000	35184.000	.000
Size* Segment	Pillai's Trace	.010	1.591	36.000	35184.000	.014
Size * Country	Pillai's Trace	.206	5.803	216.000	35184.000	.000
Segment * Country	Pillai's Trace	.044	1.555	168.000	35184.000	.000
Size * Segment * Country	Pillai's Trace	.058	1.306	264.000	35184.000	.001

Source: Authors' elaboration

Levene's test of equality of Error Variances, a result obtained in the MANOVA process, indicates that the p-value for the ranked variables was below 0.05. A p-value < 0.05 indicates evidence to affirm that the variances in the groups are different, rejecting the null hypothesis.

The tests of Between-Subjects Effects were carried out, which allowed us to understand how the independent variables influence the dependent variables. In this case, how the size of the enterprise, segment of activity and country affect the competitiveness variables OR, NE, CE, PpE, CEpOR and ACE. The size of the company influences all the competitiveness variables (p-value<0.05 and observed power between 87.2% and 100%). The segment of activity does not influence all competitiveness variables. The variables OR and CE have a p-value >0.05 (p-value=0,962 and p-value= 0.128, respectively). The remaining variables of competitiveness have a p-value <0.05, indicating that the segment of activity influences its results. The country of origin of the enterprises influences all competitiveness variables (p-value <0.05, observed power between 98.9% and 99.9%).

Table 8 shows the Post Hoc test of Tukey, which shows if there are any statistically significant differences between pairs of means. The means obtained for each indicator in the three subsegments are compared to identify significant differences. The OR shows statistically significant differences between HR and TL and between RCA and TL, apart from HR vs RCA, which has a p-value <0.05. This result indicates that the operating revenue (OR) is statistically significantly different between the subsegment of Hotels and Restaurants (HR) and Transports and Logistics (TL). Similarly, Recreational and Cultural Activities (RCA) are statistically significantly different from the subsegment of Transports and Logistics (TL). The mean differences for this indicator of competitiveness indicate that the OR for TL is superior to HR and RCA. However, the mean differences for HR vs RCA indicate that HR has a bigger OR than RCA, but it is not a statistically significant difference. It allows us to conclude that OR

presents higher values in the TL segment, followed by HR and RCA. These results partially validate H1A, with two subsegments showing differences.

The NE indicates statistically significant differences between all subsegments. The NE in HR is statistically significantly different from RCA and TL, and RCA is significantly different from TL. The average differences recorded in the NE show that the HR segment employs more people, followed by the TL and the RCA. This result validates H1B.

The HR CE is statistically significantly different from RCA (p-value<0.05). RCA also shows statistically significant differences between the CE results in TL. The CE is not statistically significantly different between HR and TL. The results indicate that the HR activity segment has a higher average in NE and CE, followed by TL and RCA. The results partially validate H1C.

The PpE shows statistically significant differences between HR and RCA and HR and TL. The average differences indicate that the profit per employer (PpE) is higher in the RCA segment, followed by the TL and finally the HR segment. However, the differences are not statistically significant between RCA and TL (p>0.05). In this sense, the results partially validate H_{1D}.

The CEpOR results show statistically significant differences between HR and TL and RCA and TL (p-value<0.05). The average differences show that the Cost of employee per operating revenue (CEpOR) is higher in the RCA activity segment, followed by HR and TL. However, there is no evidence that HR and RCA have significant differences. These results partially validate H_{1E}.

The ACE statistically significantly differs between HR and RCA and between HR and TL (p-value<0.05). There is no proof that RCA and TL are statistically significantly different (p-value>0.05). The average differences in ACE indicate that the average cost of employees is higher in TL, followed by RCA and finally HR. These results validate H1F.

Table 8. Tukey Test – Economic Activity Segments of the Tourism Sector

Tukey test				**Sub-Hypotheses**		**H_1**
Indicator	**Segment Comparisons**	**Mean difference**	**P-value**	**Conclusion**		**Validation**
OR	HR vs RCA	126.14	0.055	H_{1A}	Partially validated	Partially validated
	HR vs TL	-163.05	0.008			
	RCA vs TL	-289.20	0.000			

NE	HR vs RCA	482.11	0.000	H_{1B}	Validated	
	HR vs TL	333.97	0.000			
	RCA vs TL	-148.14	0.017			
CE	HR vs RCA	203.44	0.001	H_{1C}	Partially validated	
	HR vs TL	52.60	0.601			
	RCA vs TL	-150.84	0.016			
PpE	HR vs RCA	-397.79	0.000	H_{1D}	Partially validated	
	HR vs TL	-334.97	0.000			
	RCA vs TL	62.81	0.482			
CEpOR	HR vs RCA	-0.33	1.000	H_{1E}	Partially Validated	
	HR vs TL	321.10	0.000			
	RCA vs TL	321.43	0.000			
ACE	HR vs RCA	-274.97	0.000	H_{1F}	Partially Validated	
	HR vs TL	-316.10	0.000			
	RCA vs TL	-41.13	0.732			

Source: Authors' elaboration

In order to analyse the differences in pairwise averages between countries for each of the competitiveness indicators, the Tukey test was carried out. It has pairs between the 17 countries collected in this sample. The Netherlands and Sweden were aggregated to conduct this study, as each country contains only one company. The Tukey test requires to have at least two values to process it. The results show that the OR is statistically significantly different in over 50% of the pairs, thus partially validating H_{2A}. The average differences indicate that the countries that present an operation revenue (OR) in the tourism sector are the Netherlands and Sweden, Austria and Germany. That is followed by the Operating revenue (RO) from Hungary, Ireland, Belgium, Poland, France, Spain, Italy, Slovakia, Slovenia, Estonia, Portugal, Croatia and finally Bulgaria.

The NE is statistically significantly different in over 50% of the pairs of means, partially validating H_{2B}. The different averages show that the number of employees is higher in the Netherlands, Sweden, Austria, and Germany, f followed in descending order by Ireland, Hungary, Belgium, Poland, France, Spain, Bulgaria, Italy, Estonia, Slovakia, Portugal, Croatia and Slovenia.

The CE is statistically significantly different in over 50% of the pairs of means. The results of the average difference indicate that the costs of employees are higher in the countries

Netherlands and Sweden, Austria and Germany, followed by Ireland, Belgium, Hungary, France, Poland, Spain, Italy, Estonia, Slovenia, Portugal, Slovakia, Croatia and Bulgaria—this partially validated H_{2C}.

The PpE does not show statistically significant differences in over 50% of the countries. Thus, H_{2D} is not validated. The average differences indicate the following descending order of profit per employee: Netherlands and Sweden, Hungary, Ireland, Germany, France, Spain, Poland, Belgium, Italy, Slovenia, Bulgaria, Slovakia, Estonia, Croatia, Portugal and Austria. Similarly, H_{2E} is not validated, as over 50% of the pairs have a p-value>0.05. The average differences in CEpOR indicate that the countries with the highest costs of employees per operating revenue are Austria, Estonia and Ireland, followed by Germany, France, Slovenia, Spain, Portugal, Croatia, Belgium, Poland, Italy, Bulgaria, Slovakia, Netherlands and Sweden and Hungary.

H_{2F} is partially validated as ACE differs statistically significantly in over 50% of the pairs of countries. The average differences in ACE allow us to conclude that the average cost of an employee is sorted in descending order by the following countries: Netherlands and Sweden, Germany, Belgium, Austria, Ireland, France, Spain, Slovenia, Poland, Italy, Hungary, Portugal, Estonia, Slovakia, Croatia and Bulgaria. H2 is partially validated as most of its sub-hypotheses are also partially validated. Overall, the country of origin affects most of the results from the competitiveness indicators.

Table 9 shows the Tukey test results for the size pair means differences in all competitiveness indicators. The OR shows statistically significant differences in all sizes of the enterprises, except between LE and VLE (p-value>0.05). The mean differences in OR indicate that the segment with the highest OR is VLE, followed by LE, MSE and SE. These results partially validate H_{3A}. Similarly, the NE results indicate the same order, with SE having the smallest NE and VLE having the most NE. H_{3B} is partially validated, as all sizes show statistically significant differences (p-value<0.05) except for LE and VLE. The CE follows the previous outline, with SC having the lowest CE and VLE having the highest CE. Again, LE and VLE are the exceptions by not having statistically significant differences between these two dimensions. The other pairs show statistically significant differences, partially validating H3C. The PE shows statistically significant differences between all size dimensions except for MSE and VLE, whose results have a p-value >0.05. Pairs of mean differences indicate that profit per employee (PpE) is higher in LE, followed by VLE, MSE and SE. H_{3D} is partially validated. In CEpOR, there are only statistically significant differences between SE and MSE and between SE and LE (p-value<0.05). The remaining dimensions do not provide sufficient evidence that

they are statistically different. According to the results of the mean difference pairs, the cost of employees per operating revenue (CEpOR) is higher in VLE, followed by SE, MSE, and LE. The H3E is not validated as most pairs are not statistically significantly different. All size dimensions of the enterprises show statistically significant differences between each other in the ACE, validating H3F. The pairs of mean differences indicate that the average cost of employee (ACE) is higher in VLE, followed by LE, MSE and SE. The H3 is partially validated as most sub-hypothesis have statistically significant differences.

Table 9. Tukey Test – Size Comparisons

Tukey test				**Sub-Hypotheses**		**H_3**
Indicator	**Size Comparisons**	**Mean difference**	**p-value**	**Conclusion**		**Validation**
OR	SE vs MSE	-2507.22	0.000	H_{3A}	Partially validated	Partially validated
	SE vs LE	-3489.14	0.000			
	SE vs VLE	-3687.33	0.000			
	MSE vs LE	-981.93	0.000			
	MSE vs VLE	-1180.11	0.000			
	LE vs VLE	-198.19	0.684			
NE	SE vs MSE	-2203.98	0.000	H_{3B}	Partially validated	
	SE vs LE	-3145.12	0.000			
	SE vs VLE	-3491.31	0.000			
	MSE vs LE	-941.13	0.000			
	MSE vs VLE	-1287.32	0.000			
	LE vs VLE	-346.19	0.284			
CE	SE vs MSE	-2268.76	0.000	H_{3C}	Partially validated	
	SE vs LE	-3309.03	0.000			
	SE vs VLE	-3598.32	0.000			
	MSE vs LE	-1040.27	0.000			
	MSE vs VLE	-1329.56	0.000			
	LE vs VLE	-289.28	0.433			
PE	SE vs MSE	-523.13	0.000	H_{3D}	Partially validated	
	SE vs LE	-940.64	0.000			
	SE vs VLE	-794.80	0.003			
	MSE vs LE	-417.50	0.001			
	MSE vs VLE	-271.66	0.655			
	LE vs VLE	145.84	0.038			
CEpOR	SE vs MSE	208.69	0.001	H_{3E}	Not Validated	
	SE vs LE	490.64	0.000			
	SE vs VLE	-31.77	0.999			
	MSE vs LE	281.95	0.058			
	MSE vs VLE	-240.46	0.743			
	LE vs VLE	-522.41	0.168			
ACE	SE vs MSE	-1239.73	0.000	H_{3F}	Validated	
	SE vs LE	-2305.38	0.000			
	SE vs VLE	-2976.99	0.000			
	MSE vs LE	-1065.65	0.000			
	MSE vs VLE	-1737.26	0.000			
	LE vs VLE	-671.61	0.020			

Source: Authors' elaboration

5. Conclusions

Tourism and hospitality have experienced diverse and intense growth throughout the years. The vast demand and offer in this sector are noticeable. The sector has increased its competitiveness due to this broad range of activity. In Europe, the tourism and hospitality sector is responsible for a profound economic impact that has implications for employment, revenue, and overall economic growth. The evaluation of the business performance will show us the differences between the sub-segments of activity related to the tourism sector. For instance, Europe is the world's leading tourist destination, and its level of competition is unmatched. Analysing the business performance of the activity will show us its unique characteristics and complexity. It helps us understand why some regions and countries are more successful than others and which aspects are showing improvements through a constant analysis of their performance.

Considering the importance of this topic, this article aims to characterise and analyse the business performance of the sector through the analysis of a set of variables. Based on an extensive representative sample from across the European sector and using the most powerful database in the world (Orbis Bureau Van Djik, 2022), this study provides crucial information on the financial performance and human capital of tourism. It compares differences in financial performance indicators by group, specifically between the three segments of economic activity in the tourism sector, the size of the companies and the country in which they are located.

The sample under study, representative of the European tourism sector, allows us to conclude that the tourism sector is based in 17 of the 27 countries of the European Union, with the most significant number of companies being Italy (24.5%), Portugal (21 .6%), Spain (17.7%), Slovakia (10.5%) and Bulgaria (9.3%). Considering the size of the enterprises, 72.4% are small, 21.9% are medium, and 4.8% are large. Very large companies account for less than 1% of the sample (0.9%).

Despite being partially valid, the study's results reveal differences in companies' competitiveness, considering the segment of economic activity, the size of the company, and the country in which they are located. The results reveal notable disparities between the presented sub-segments and show distinct patterns. TL emerges as a key sub-segment in revenue generation, highlighting the sector's dependence on efficient transport and logistics networks to facilitate tourism activities.

The European countries with the highest Operating Revenue (RO) in the tourism sector are the Netherlands and Sweden, Austria, and Germany. However, the countries with the highest Cost of employees per operating revenue are Austria, Estonia, and Ireland. The countries with the highest work efficiency, i.e., profit per employee (PpE), are the Netherlands, Sweden, and Hungary.

The importance of small and medium-sized enterprises in economic activity and job creation is emphasised by the prevalence of small and medium-sized enterprises in all sub-segments. The results allow us to conclude that the HR segment is the economic activity with the fewest employees and the least money spent on their salaries. As this sub-segment is highly dependent on human labour, it is essential to develop strategies to attract more human resources and, more importantly, invest in providing them with better working conditions. The impact of transport and logistics (TL) on the European tourism and hospitality sector is widely recognised, even in a pandemic like 2021. However, this sub-segment has a high level of long- and short-term debt, which could be detrimental to the sector's future.

Strategies to attract and retain human resources are crucial, especially in labour-intensive segments such as HR. Despite these challenges, the sector's impact on the European economy must be recognised, and investment must be made in the workforce. The paper provides an insight into the financial and human capital status of the European tourism and hospitality sector. Due to being a topic little covered in the speciality literature, this study presents an analysis of the general panorama of the performance of human capital in tourism and hospitality and by sector of activity, providing clues for future studies focused on the most determining factors that explain this reality. The empirical results of this study provide relevant information for making future strategic investment decisions and increasing competitiveness in the tourism business sector. Thus, the empirical results obtained in this study provide practical information relevant to strategic planning in the European tourism sector. However, some limitations can be identified. In particular, the impossibility of a more extensive database with more variables in the Orbis database is considered a limitation of this study. In future work, we suggest the inclusion of other competitiveness and human capital variables. However, considering the significance of the subject under investigation, future research should focus on it for a more extended period, allowing for comparative temporal reflections.

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