A PLS MULTIGROUP ANALYSIS OF THE ROLE OF BUSINESSWOMEN IN THE TOURISM SECTOR IN ANDALUSIA

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ABSTRACT

The objective of this study is to determine the factors that influence "business performance" or the "role of entrepreneurs", as well as to analyse whether gender functions as a moderating variable, based on a survey conducted on a sample of 127 companies. Most of the literature in the tourism sector only considers hotel accommodation; thus, it is still limited in the case of non-hotel accommodation. Our research fills this gap by focusing on both types of establishments. An explanatory and confirmatory model has been carried out based on a PLS-SEM approach, taking the factors that determine business performance into account. Moreover, a MICOM and a multi-group analysis have been undertaken in order to check whether gender acts as a moderator. Our findings reveal that there are no significant differences between tourist accommodation companies run by women and men in Andalusia; hence, gender is not a moderating variable regarding business performance. Furthermore, as full measurement invariance has been established, a comparison between groups emphasises that the influence of the environment, and the resources and capabilities of the entrepreneur, are factors that affect women more than men, and the number of employees, work experience, and the occupancy rate are more important for businesswomen, whereas the distance to the nearest airport, check-in, and the occupancy rate are more important for businessmen. This empirical study has practical implications for hospitality industry professionals and concerned authorities which are responsible for designing strategies and policies related to this sector in Andalusia.

KEY WORDS

Business performance, gender, MICOM, PLS-MGA, tourism sector.

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Introduction

Tourism in Spain contributed 297,122 million euros to the Spanish economy in 2019, which represented an increase of 9.4% over the previous year, and represented 12.5% of national GDP, creating 2.6 million jobs (EFE Agency, 2020). Moreover, according to the World Travel and Tourism Council, Spain was the fifth-largest tour-

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ism economy in the European Union and the ninth-largest in the world, in terms of total contribution to the country's GDP in 2018 (EFE Agency, 2019). Focusing on Andalusia, tourism activity currently has an average of 385,200 employees, an annual growth of 3.5%, and represents approximately 13% of Andalusian GDP (Junta de Andalucía, 2020). Therefore, it is confirmed that tourism is a key sector in the Spanish and Andalusian economies.

On the other hand, it is relevant to note that a large number of studies on gender have taken place in recent years from different perspectives, some highlighting the symbolic differences between male and female spheres, and others focusing on the differences between companies in terms of hiring, promotion, and the generic division of labour (Escandón and Arias, 2011). This is due to the fact that the number of companies run by women has progressively increased worldwide over the last few decades, so that it has been the subject of debate and study in many cases. Studies such as Díaz and Jiménez (2009) and Guzman and Rodríguez (2008) serve to confirm this.

There are several factors that have led to this situation, the first of which is that women's access to education "has allowed them to acquire knowledge and develop the necessary skills to conduct business activity" (Guzman and Rodríguez, 2008). The second factor is the increasing participation of women in the labour market. Additionally, it should be noted that "some studies show that one of the factors that push women towards this activity is related to the difficulties they face regarding joining and progressing in said market" (Guzman and Rodríguez, 2008). The third and final factor is the rise in the service sector "offering women opportunities in those sectors in which the entry barriers are not excessively high" (Guzman and Rodríguez, 2008).

Generally speaking, the vast majority of studies highlight the disadvantages faced by companies run by women compared to the companies run by men, either regarding the level of resources, the work experience or their size. Therefore, the present study focuses on hotel and non-hotel tourist accommodation in Andalusia, in order to define a PLS-SEM Model to discern the possible differences between men and women in the management of tourist accommodation in Andalusia, as well as to check if gender acts as a moderating variable in business performance.

In this context, the aim of this study is to identify the factors that influence "business performance" or the "role of entrepreneurs", as well as to analyse whether gender functions as a categorical moderator variable in the tourism sector in Andalusia. On the other hand, in order to analyse the collected data, an explanatory and confirmatory model has been carried out, based on a PLS-SEM approach, taking into account the factors that determine business performance. Finally, in order to check whether gender plays a moderating effect, a MICOM analysis was firstly executed, followed by a multi-group analysis for the purpose of testing whether there are significant differences regarding gender.

This paper is divided into five main sections. Firstly, a literature review is presented in Section 1. Section 2 describes the data set and the research methodology, where we explain how we performed our PLS-SEM model analysis, while the results are presented in Section 3. In Section 4, we introduce gender as the categorical moderator variable. Finally, Section 5 summarises the general conclusions and discussion associated with the presented research.

1. Literature review

The study of the role of entrepreneurs in the tourism sector has usually been analysed based on profitability, and different variables considered key factors in such profitability have been investigated.

Some studies have focused on studying the characteristics of tourist accommodation (Ben Aissa and Goaied, 2016). Others, on the other hand, have been based on the analysis of their location to observe their profitability (Lado-Sestayo and Vivel-Búa, 2018), considering the proximity to tourist points as the main variable. Recent studies have confirmed "the positive effect of a hotel's proximity to tourist attractions on price or profitability" (Lado-Sestayo and Vivel-Búa, 2018). Moreover, Lado-Sestayo and Vivel-Búa (2018) have found a positive relationship between a hotel's proximity to train stations and its total revenue per available room, and Honma and Hu (2012) and Hu et al., (2010) have found that "proximity to airports affects the efficiency of the hotel" (Lado-Sestayo and Vivel-Búa, 2018).

On the other hand, the characteristics of the tourist destination (Lado-Sestayo and Vivel-Búa, 2018) and the resources and capacities of the accommodation (Phillips, 1999) have also been analysed so as to learn more about such performance.

Other studies have paid special attention to environmental factors (Parte-Esteban and Alberca-Oliver, 2015), considering "seasonality a key factor regarding the profitability in tourism studies" (Lado-Sestayo and Vivel-Búa, 2018). Finally, another factor that has also been studied in order to analyse the performance of tourist accommodation is the structure of its capital (Ben Aissa and Goaied, 2016).

Regarding the studies previously carried out on the aspects that characterise women in the business world, studies such as that of Saavedra García (2017) affirm that female entrepreneurs have fewer resources than their male counterparts. In addition, she states that women have a lower level of work experience. Rodríguez et al., (2011) point out that there is a lack of financial capital in companies led by women, which decreases the potential of investing in human capital and social capital, which would explain the lower level of resources that generally characterises companies run by women.

Another element which has been studied is the level of academic training, with contradictory results. While studies such as Escandón and Arias (2011) affirm that women have a higher level of education than men, which would seem to lead to the conclusion that businesswomen have greater levels of the skills and abilities required to create a company, on the other hand, other studies show that "women entrepreneurs have a lower degree of academic training in terms of business activity" (Guzmán and Rodríguez, 2008). It should also be noted that studies such as García et al., (2012) state that there are no significant differences between being a man or a woman in terms of academic training.

Regarding work experience, many studies have concluded that women have fewer years of work experience, both in business and in management (Guzmán and Rodríguez, 2008; Díaz and Jiménez, 2009; Powers and Magnoni, 2010; Rodríguez et al., 2011; Camarena et al., 2015).

Regarding the size of companies, most studies have concluded that companies run by women are generally smaller than those run by men (Díaz and Jiménez, 2009; Rodríguez et al., 2011; Saavedra García, 2017).

In terms of the performance of sales, capital and assets, some studies state that the returns of companies run by women are lower than those run by men. Nevertheless, there are others that affirm that "com-

panies run by women are more productive, achieving greater income per weekly hour" (Díaz and Jiménez, 2009). In terms of new technologies, studies such as García et al., (2012) state that women entrepreneurs are not as open to the adoption of new technologies. Therefore, in order to define a model for studying the performance of entrepreneurs in tourist establishments in Andalusia, with gender being the moderating variable, the profitability of these companies will be analysed among other factors such as size, location, number of employees, and so on. Therefore, according to the abovementioned literature review, four variables were selected in order to do so: the economic characteristics of the companies, the resources and capabilities of the entrepreneurs, innovation and new technologies, and the influence of the environment.

1.1. Characteristics of the companies

In the study carried out by Lado-Sestayo and Vivel-Búa (2018), the characteristics of the hotels, their location, and the reasons for tourists to visit the destinations where those hotels were located were analysed. As such, the first hypothesis postulated in this work is:

Hypothesis H1: The economic characteristics of the enterprises studied affect their business performance.

It is also important to highlight that the studies focused on the tourism sector previously mentioned in the literature review considered only hotel accommodation. Nevertheless, this study takes into account both hotel and non-hotel accommodation alike.

1.2. Entrepreneurs' resources and capabilities

Regarding resources (financial capital, human capital and social capital), Rodríguez et al., (2011) state that these are essential for a sustainable competitive advantage, due to the fact that they are a key factor in the success of a company. They also point out that such resources could be considered determining factors in the creation of a company. This is because the absence thereof could be the cause of the business failure of new projects.

It is also relevant to highlight the so-called theory of resources and capacities, which is characterised by considering that the "resources and capacities of a company are a key factor in competitiveness and thus achieving successful economic performance" (Escandón and Arias, 2011: 169). Therefore, the second hypothesis proposed is:

Hypothesis H2: Entrepreneurs' resources and capabilities influence business performance.

1.3. Innovation and new technologies

In general, innovation could be defined as the application of new knowledge and/or new interpretations and combinations of specific knowledge (Johnson, 2010). In particular, "innovation involves the aim of improving the competitive position of companies by incorporating new technologies and different kinds of knowledge" (Albornoz, 2009: 10).

Research on the relationship between innovation and economic progress may be found in the literature, highlighting a positive relationship between these two issues (Rodeiro and López, 2007). Escandón and Arias (2011) confirmed that innovation and the incorporation of new technology for products or services are a fundamental factor for a company's competitiveness. According to Rodeiro and López (2007), "increasing instability in markets has made innovation a key factor regarding the competitiveness of companies, due to the fact

such innovation increases their willingness to cope with variations in product demand and to develop novel and more efficient production processes".

Thus, it could be concluded that innovation and new technologies are crucial elements for companies and their competitiveness and for being analysed regarding the role of the entrepreneurs. Additionally, it should be noted that, normally, the higher the level of competitiveness, the higher the level of innovation which is developed in companies in order to increase their competitive advantage. Therefore, the third hypothesis proposed is:

Hypothesis H3: Innovation and new technologies influence business performance.

1.4. Influence of the environment

Two types of environments in the business field of study could be identified: the general environment (economic factors, technological factors, political-legal factors, demographic factors, sociocultural factors and environmental factors), which affects all companies, and the specific environment (suppliers, customers, competitors, financial entities, the labour market, Public Administrations and the Autonomous Community in which the company is located).

Although there are few studies that consider the influence of the environment in order to analyse the role of the entrepreneurs in the tourism sector, it is an interesting variable to take into account.

Furthermore, it should be noted that, according to Lado-Sestayo and Vivel-Búa (2018), the geographical location of tourist accommodation and the competitive environment have a significant effect on profitability. Therefore, the fourth hypothesis postulated is:

Hypothesis H4: The influence of the environment affects business performance.

3. Methodology

3.1. Data sample

A data sample of 127 companies, consisting of both hotel and non-hotel tourist accommodation, from all provinces in Andalusia was considered. In the sample, 61.4% of respondents were men and 38.6% were women, with the average age of businessmen being higher than businesswomen.

The level of academic training for women and men was quite similar, with university-level education or bachelor's degrees prevailing. Although the academic training of businessmen was slightly higher than that of businesswomen, it could be concluded that there were no significant differences between both groups, which agrees with the results of a study by García et al., (2012).

It should also be noted that the knowledge of languages was very similar among men and women alike, with English being the main language (Spanish excepted) for more than 80% of the data sample. The second most predominant language in tourist accommodation companies of Andalusia was French (40% for businessmen and 46.94% for businesswomen). The third most common language was different for men (Italian, 20%) than for women (German, 18.37%).

Regarding work experience, men had more years of experience than women. While 39% of businessmen had between 21 and 30 or more years of work experience, only 20% of businesswomen had so many years of experience behind them.

Another characteristic of the sample worth highlighting is that the vast majority of entrepreneurs in the study, both men and women, managed a four-star hotel (28.21% in the case of businesswomen and 33.85% in the case of businessmen).

Regarding technology, it is observed that male entrepreneurs used technology more than their female counterparts, which again reinforces the conclusions of García et al., (2012).

Moreover, Table 1 shows certain important economic variables regarding the data sample, in which it can be seen that there were no significant differences between the leadership of women and men, since the values were quite similar. In terms of the size of the companies, both women (42.05 rooms) and men (64.89 rooms) managed tourist establishments of similar size (albeit slightly higher for men).

Table 1. Summary of economic variables in the data sample

	Women	Men
Age of the company	15.02	18.66
Number of rooms	42.05	64.89
Number of employees	18.63	22.47
Annual turnover	2,197,959 €	2,453,333 €
Market share	24.49%	20.4%
Occupancy rate	66.98%	68.47%
ROE	10.28%	10.84%
ROA	8.75%	9.96%
Own resources (Equity)	58.46%	42.6%

Source: Own elaboration.

It should be noted that, although there were no important differences between women and men, there was a slight inherent bias, since the data collected for businessmen were slightly different compared to the data collected for the sub-sample of businesswomen. For this reason, a model was defined in order to check whether these small differences significantly influence business performance.

3.2. Instrument development and data collection

A survey was adopted in the present study to collect data for both hotel and non-hotel establishments in the Autonomous Community of Andalusia between June and October 2019. Google Drive Forms was employed to create the questionnaire used in the study, and both five-point and seven-point Likert scales were considered. Moreover, "multiple selection", "check boxes" and "drop-down" questions were also included in the questionnaire.

The questionnaire was sent to a total of 915 companies in all provinces of Andalusia, specifically 197 companies in Seville, 118 in Almería, 86 in Huelva, 87 in Jaén, 193 in Málaga, 99 in Cádiz, 49 in Córdoba and 86 in Granada. 127 responses were collected, which means a 13.88% participation rate. As shown in Table 2, the questionnaire considered 28 indicators, which means a total of 3556 data items.

Given that a certain number of companies did not want to provide economic-financial information (ROE, ROA and Equity), the missing values of these questions were replaced with the average values for men and women, in order to maintain the gender differences in case they existed.

All indicators and data were calculated in an Excel spreadsheet and then translated into the CSV format to run Smart PLS software (Ringle et al., 2015) to apply PLS-SEM path modelling.

Table 2. Constructs and indicator variables

Indicator variables	Definition
Gender	
1	Female
2	Male
RCE: Entrepreneurs' resources and capabilities	
RCE1	Age
RCE2	Academic training
RCE3	Work experience in the sector
RCE4	Languages
ECC: Economic characteristics of the company	
ECC1	Age of the company
ECC2	Type of tourist establishment
ECC3	Size of the company (number of rooms)
ECC4	Distance to the nearest airport
ECC5	Distance to the city centre
ECC6	Number of employees
ECC7	Turnover
ECC8	Chain-brand hotel
INT: Innovations and new technologies	
INT1	Ways to access rooms
INT2	New methods for receiving guests
INT3	Advertising media
INT4	Technological resources
IE: Influence of the environment	
IE1	Seasonality in tourist demand
IE2	Market share
IE3	Occupancy rate
IE4	Degree of growth in the sector
IE5	Family entrepreneurs
IE6	Influence on decision making
IE7	Factors of greatest concern in the tourism sector
PERF: Business performance (or role) of entrepreneurs	
PERF1	Return on Equity (ROE)
PERF2	Return on Assets (ROA)
PERF3	Own resources (Equity)
PERF4	Satisfaction with performance

Source: Own elaboration.

3.3. Theoretical model estimation

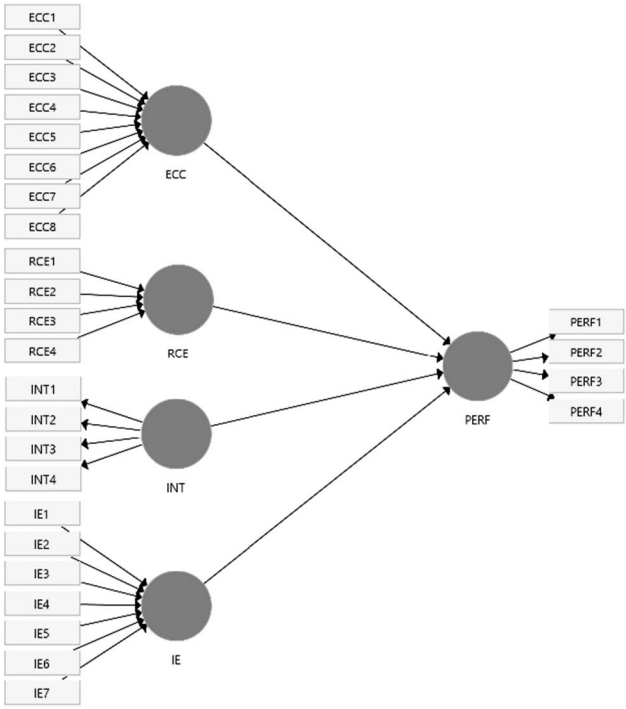
Figure 1 illustrates the initial model of PLS-SEM, which consists of the structural model, composed of four exogenous constructs or independent latent variables (ECC, RCE, INT and IE) and an endogenous construct or dependent latent variable (PERF), and the measurement models corresponding to each construct. As for the measurement models, it can be seen that ECC, RCE and IE are formative models (Mode B) and INT and PERF are reflective models (Mode A).

3.4. PLS analyses

The proposed theoretical model was evaluated using partial least squares structural equation modelling (PLS-SEM) (Hair et al., 2017). This is a structural equation

modelling (SEM) technique that can deal with very complex models with a large number of constructions, indicators and relationships. Additionally, it can simultaneously test measurement models (relationships between indicators and their corresponding constructs) and the structural model (relationships between constructs) (Garthwaite, 1994; Barclay et al., 1995). In the SEM context, this study addresses two types of measurement models: common factor models (reflective measurement - Mode A), which are a reflection of the variable, and causal indicator models (formative measurement - Mode B) that are the cause of the variable (Sarstedt et al., 2016).

Figure 1. Initial theoretical path model



Source: Own elaboration.

In order to undertake the PLS-SEM empirical analysis, a database with 127 observations was used. To verify whether this sample size meets the criteria required in PLS-SEM, four relevant references will be analysed. First, Cohen (1992) recommends that for four arrows pointing at a construct (inner model), 41 observations to detect R^2 values around 0.25, assuming significance levels of 5% with a statistical power of 80% and for seven and eight arrows (outer model), the minimum size must be 80 and 84 observations respectively. According to Nitzl (2016), in order to detect a medium effect size of 0.15 with the same levels of significance and statistical power, 103 and 109 observations are necessary. In addition, Green (1991) recommends 102 and 108 observations for the same level of analysis, with a 5% level of significance. Finally, using the statistical program G*Power (Faul et al., 2009), 55 observations would

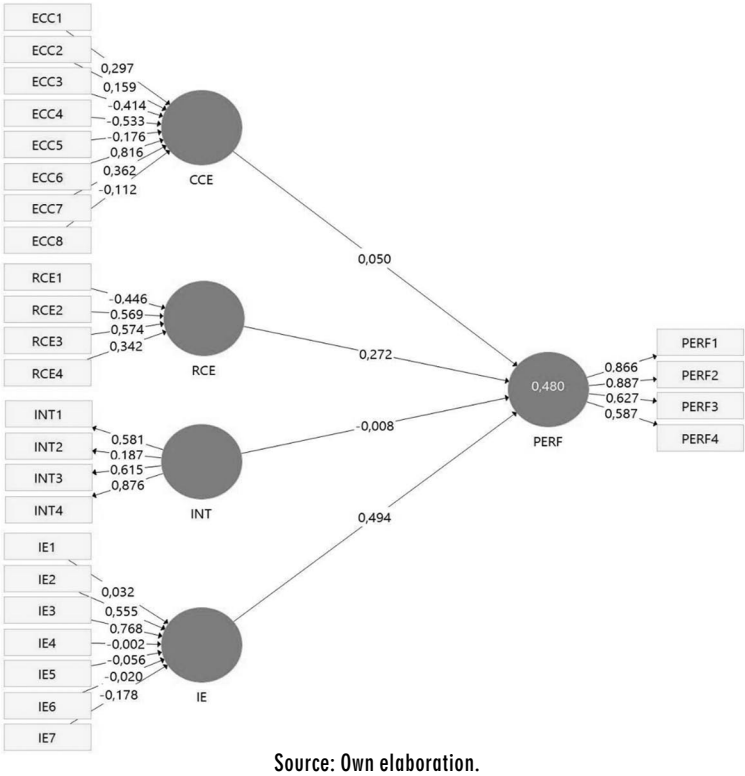
be required given the same statistical power (80%), effect size (medium) and significance level (5%). Therefore this research satisfies all of the four recommendations to define the minimum sample size.

4. Results

As pointed out by Hair et al., (2019), the objective of PLS-SEM is to maximise the explained variance (R^2) of the endogenous latent variables of the model. SmartPLS software was run and the first estimates were obtained. Figure 2 shows both indicators' outer loadings and outer weights for measurement models and path or regression coefficients for structural model relationships, and R^2 values for the latent endogenous variable. In this figure, we also observe that, with this initial model, the explained variance (R^2) amounts to 48%.

As can be seen in Figure 2, the variables that have the most relevance in terms of effect on PERF are IE, which seems to have the strongest effect with the endogenous variable (0.494), followed by RCE (0.272). On the other hand, 48% of the variance of the dependent variable is explained by the four exogenous constructs. Taking into account the size of the path coefficient, it must be determined if the connections between the constructs are statistically significant. However, in order to make definitive statements about the meanings of the coefficients and the goodness of the global model fit, it is necessary to assess both the measurement models and the structural model.

Figure 2. PLS-SEM first results



Source: Own elaboration.

Before proceeding with the reliability and validity test of each measurement model, it is necessary to verify whether the stopping criteria of the PLS algorithm is reached before the maximum number of iterations, which in this case was defined in the settings of the parameter of the PLS-SEM algorithm in 300 iterations. In our model, the algorithm converged after iteration 13, which is considered a fast and stable solution (Hair et al., 2017: 91).

4.1. Assessment of Mode A measurement models

To evaluate Mode A measurement models (INT and PERF), their validity and reliability must be tested. In order to carry out this analysis, it is necessary to observe the reliability of the indicator, the composite reliability, convergent validity (Average Variance Extracted, AVE) and the discriminant validity (Table 3).

Table 3. Results Summary for Mode A measurement models

Latent variables	Indicators	Internal Consistency Reliability		Convergent Validity			Discriminant Validity
		Cronbach's Alpha	Composite Reliability	Loadings	Indicator Reliability	AVE	HTMT Confidence interval does not include 1
		0.60-0.90	0.60-0.90	>0.70	>0.50	>0.50	
INT	INT1	0.426	0.673	0.581	0.338	0.379	Yes
	INT2			0.187	0.035		
	INT3			0.615	0.378		
	INT4			0.876	0.767		
PERF	PERF1	0.728	0.836	0.866	0.749	0.568	Yes
	PERF2			0.887	0.787		
	PERF3			0.627	0.393		
	PERF4			0.587	0.345		

Source: Own elaboration.

As can be seen in Table 3, not all the constructs of reflective measurement models show values above the suggested lower bound. This means that only three indicators (INT4, PERF1 and PERF2) for the two latent variables are well above the minimum level required for both external loadings and composite reliability.

Regarding the assessment of the discriminant validity of this model, the value of the Heterotrait-Monotrait ratio of correlations (HTMT) is 0.429, which is lower than 0.90 (Henseler et al., 2015) or 0.80 (Hair et al., 2019). Furthermore, none of the HTMT confidence intervals include the value 1, so there is discriminant validity.

Finally, the Fornell-Larcker criterion (Table 4) is also met, since both the value of PERF (0.754) and INT (0.616) are higher than the values of their corresponding rows and columns.

Table 4. Discriminant validity (Fornell-Larcker criterion)

	ECC	PERF	IE	INT	RCE
ECC					
PERF	0.373	**0.754**			
IE	0.438	0.646			
INT	0.356	0.280	0.328	**0.616**	
RCE	0.399	0.531	0.489	0.397	

Source: Own elaboration.

4.2. Assessment of Mode B measurement models

Firstly, to measure collinearity at the indicator level, the variance inflation factor (VIF) is used. In the context of PLS-SEM, a VIF value of 3.3 or more indicates a collinearity problem. Therefore, in this study, there is a collinearity problem with ECC3 and ECC6 (Table 5).

Table 5. VIF tolerance values for Mode B measurement models

Formative constructs	Indicators	VIF
ECC	ECC1	1.072
	ECC2	1.634
	ECC3	**6.485**
	ECC4	1.150
	ECC5	1.052
	ECC6	**7.151**
	ECC7	2.174
	ECC8	1.640
RCE	RCE1	1.332
	RCE2	1.094
	RCE3	1.304
	RCE4	1.143
IE	IE1	1.055
	IE2	1.154
	IE3	1.103
	IE4	1.252
	IE5	1.044
	IE6	1.022
	IE7	1.011

Source: Own elaboration.

To determine the importance of the estimated path coefficients, Table 6 shows the results of the bootstrap analysis of the measurement model for formative constructs, where the relevance of the magnitude of the outer weights can be assessed, which indicates the relative contribution from an indicator to the construct (regression weight), and from outer loadings that represent the absolute contribution of an indicator (correlation weight). Outer weights significantly different from zero are sought.

Table 6. Significance and relevance of path coefficients (outer weights and outer loadings)

Formative constructs	Indicators	Outer weights (Outer loadings)	*t*-value	*p*-value	95% BCa Confidence interval	Significant ($p<0.05$)?
ECC	ECC1	0.297 (0.356)	1.662	0.097	[-0.036, 0.636]	No
	ECC2	0.159 (-0.217)	0.658	0.511	[-0.299, 0.636]	No
	ECC3	-0.414 (0.582)	0.845	0.398	[-1.311, 0.618]	No
	ECC4	-0.533 (-0.704)	2.250	0.024	[-0.864, -0.075]	Yes
	ECC5	-0.176 (-0.190)	0.907	0.364	[-0.593, 0.180]	No
	ECC6	0.816 (0.684)	1.617	0.106	[-0.012, 1.910]	No
	ECC7	0.362 (0.670)	0.876	0.381	[-0.506, 1.052]	No
	ECC8	-0.112 (0.351)	0.532	0.595	[-0.519, 0.321]	No

RCE	RCE1	-0.446 (-0.361)	3.201	0.001	[-0.736, -0.193]	Yes
	RCE2	0.569 (0.701)	4.169	0.000	[0.279, 0.794]	Yes
	RCE3	0.574 (0.389)	3.884	0.000	[0.322, 0.903]	Yes
	RCE4	0.342 (0.633)	2.075	0.038	[0.013, 0.649]	Yes
IE	IE1	0.032 (0.030)	0.283	0.778	[-0.194, 0.259]	No
	IE2	0.555 (0.625)	5.098	0.000	[0.368, 0.783]	Yes
	IE3	0.768 (0.824)	7.793	0.000	[0.582, 0.929]	Yes

Source: Own elaboration.

Following the decision-making process for keeping or deleting formative indicators (Hair et al, 2017: 150-151), ECC4, RCE1, RCE2, RCE3, RCE4, IE2 and IE3 are kept since they are significant outer weights, as well as ECC6 and ECC7, as even though they are not significant, they show outer loadings higher than 0.50. Indicator ECC8 is also kept because its outer loading is also statistically significant, and ECC3 has been deleted due to its collinearity problems with ECC6.

4.3 Assessment of the structural model

Once the reflective and formative measurement models have been assessed, the next step is to evaluate the structural model. For this purpose, collinearity, the significance and relevance of the structural model relationships and coefficients of determination (R^2) will be assessed.

Collinearity of the structural model is evaluated in the same way as measurement models, i.e. the variance inflation factor (VIF) is used. Table 7 shows that VIF values are below 3.3, so that there are no problems of collinearity.

Table 7. Collinearity diagnostic assessment. VIF tolerance values for the structural model

	ECC	PERF	IE	INT	RCE
ECC	-	1.363	-	-	-
PERF	-		-	-	-
IE	-	1.464	-	-	-
INT	-	1.270	-	-	-
RCE	-	1.479	-	-	-

Source: Own elaboration.

On the other hand, the assessment of the statistical significance of the path coefficients of the structural model was performed to test whether they are statistically significant (Table 8).

Table 8. Significance testing results of the structural model path coefficients

	Path Coefficients	t-value	Significance Levels	p-value	Confidence Intervals Bias Corrected	Significant (p<0.05)?
ECC → PERF	0.050	0.569	NS	0.570	[-0.202, 0.174]	No
IE → PERF	0.494	5.342	***	0.000	[0.309, 0.664]	Si
INT → PERF	-0.008	0.104	NS	0.917	[-0.151, 0.127]	No
RCE → PERF	0.272	2.843	***	0.004	[0.093, 0.462]	Si

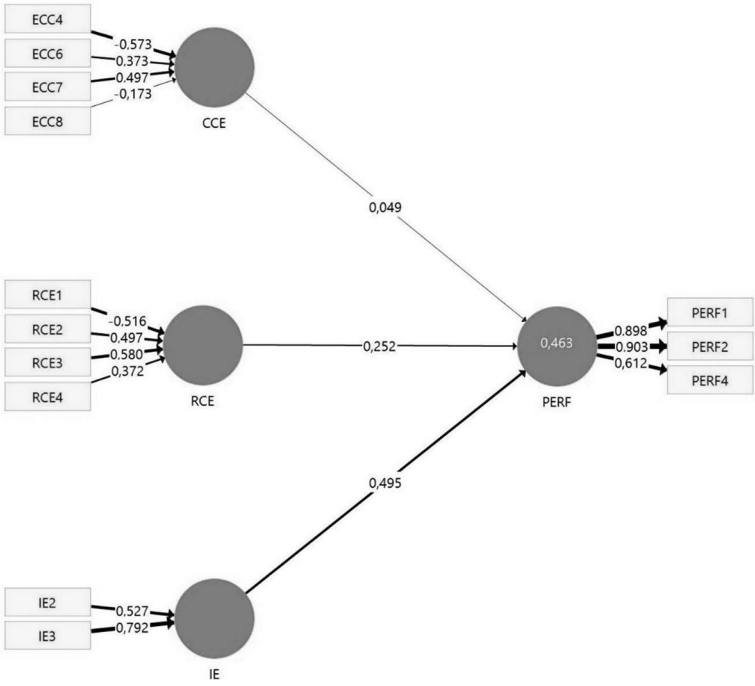
Note: NS = not significant. ** $p < 0.05$, *** $p < 0.01$; (two tail test). Bootstrap confidence intervals for 5% probability of error ($\alpha = 0.05$).

Source: Own elaboration.

Thirdly and finally, the coefficient of determination (R^2) has to be evaluated. This value ranges from 0 to 1, so the higher it is, the higher the level of accuracy and its predictive capacity. The value of R^2 of this initial model is 48%, so according to Chin (1998), it can be considered a substantial level of explanatory power.

Once the structural model has been evaluated, the initial model must be refined taking all the results obtained when analysing both the reflective and formative measurement models and the structural model into account. After the debugging process of items and constructs, the PLS-SEM algorithm was executed again obtaining an improved model (Figure 3), since there are no longer problems of reliability, validity and collinearity. In the structural model, the relationship INT → PERF has been deleted since it has been confirmed that it is not significant. However, the relationship ECC → PERF has been retained for reasons that will be explained later. The value of R^2 (46.3%) for the full sample still has a good percentage of variance explained and the path coefficients remain practically the same.

Figure 3. Proposed full sample PLS-SEM path model



Source: Own elaboration.

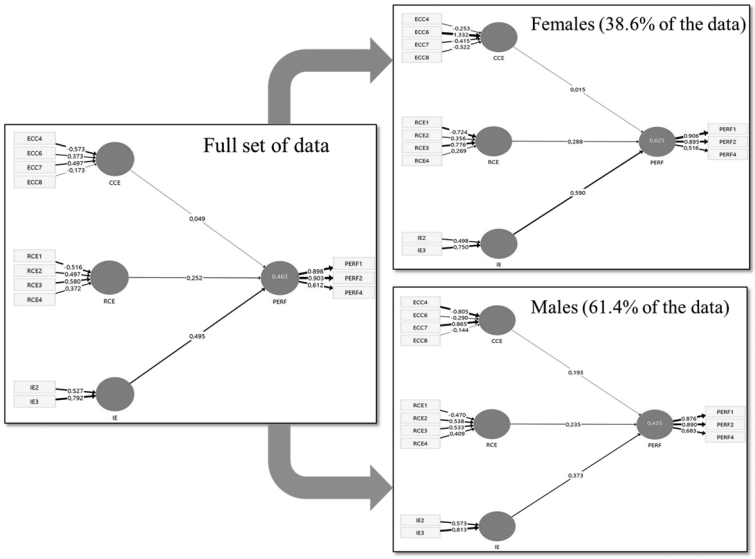
5. Gender as a categorical moderating variable

In this section we will proceed to include the gender variable in the final model obtained in order to analyse the possible differences and examine whether gender really influences business performance across the two groups, thus testing the hypotheses set out in the previous section. To this end, the algorithm has been run

again for each of the two groups or subsamples: women and men (Figure 4). Several notable differences can be observed, such as the fact that the women's model explains 62.5% of the variance whereas the men's model explains 43.5%. In addition, it should be mentioned that the importance accounted for by the latent variables or constructs is different in each model.

Another fact to be highlighted is the different distribution of weights, since for women the number of employees (ECC6), work experience (RCE3) and the occupancy rate (IE3) are important, whereas for men the distance to the nearest airport (ECC4), check-in (ECC7) and the occupancy rate (IE3) are important.

Figure 4. Gender in the proposed PLS-SEM path model



Source: Own elaboration.

5.1. Assessing measurement invariance: the MICOM procedure

To compare the results according to gender and to conduct a multi-group analysis, a MICOM (Measurement Invariance of Composite Models) procedure was carried out in order to check that the differences between both groups are not due to the content of the measurement models or the structural model (Henseler et al., 2016). In other words, MICOM analysis is a procedure for assessing the invariance of latent variables (constructs). It should be noted that "the absence of measurement invariance can reduce the power of statistical tests, and influence the accuracy of estimators and provide erroneous results" (Hair et al., 2019: 345).

This analysis, following the indications of Hair et al. (2019), consists of three steps (Table 9): configural invariance (1), compositional invariance (2), and equality of composite mean values and variances (3).

Firstly, in relation to configural invariance, both models (women and men) have identical indicators, identical data treatment, and they draw on the identical algorithm setting, so configural invariance is established.

Secondly, step 2 of the MICOM procedure shows that there is compositional invariance since the correlation values are

above the percentile (5%) and the *p*-values are higher than 0.05.

Thirdly and finally, the equality of composite mean values (step 3a) and variances (step 3b) should be evaluated. In Table 9, it can be seen that they are fulfilled, since the value of the differences is close to zero in both cases, the confidence intervals (95%) include zero, and finally the *p* values are higher than 0.05. Therefore, it can be stated that there is full measurement invariance.

Table 9. Measurement model invariance: the MICOM procedure

MICOM Step 1: Configural Invariance				
Configural invariance established across groups? Yes.				
MICOM Step 2: Compositional invariance				
Composite	**Original Correlation** c	**5% Quantile of the empirical distribution of c_u**	***p*-value**	**Compositional invariance established?**
ECC	0.338	0.191	0.100	Yes
PERF	0.982	0.980	0.072	Yes
IE	1.000	0.885	0.930	Yes
RCE	0.951	0.668	0.794	Yes
MICOM Step 3a: Equality of composites' mean values				
Composite	**Difference of the composite´s mean value (=0)**	**95% Confidence interval**	***p*-value**	**Equal mean values?**
ECC	-0.046	[-0.346, 0,362]	0.821	Yes
PERF	0.021	[-0.360, 0.363]	0.921	Yes
IE	0.089	[-0.342, 0.381]	0.631	Yes
RCE	0.109	[-0.343, 0,331]	0.548	Yes
MICOM Step 3b: Equality of composites' variance values				
Composite	**Logarithm of the composite´s variance value (=0)**	**95% Confidence interval**	***p*-value**	**Equal variances?**
ECC	-0.109	[-0.453, 0.426]	0.621	Yes
PERF	-0.360	[-0.610, 0.567]	0.229	Yes
IE	0.448	[-0.547, 0.541]	0.116	Yes
RCE	-0.052	[-0.603, 0.541]	0.869	Yes

Source: Own elaboration.

5.2. Multigroup analysis

Once the MICOM analysis has been completed, a multi-group analysis will be carried out. For this purpose, the decision was made to develop an analysis based on permutations and the PLS-MGA (Sarstedt et al., 2011). To find out if there are significant differences according to gender, the following available parametric and non-parametric approaches will be used: Permutation test (Table 10), PLS-MGA (Table 11), Parametric test (Table 12), and Welch-Satterthwaite t test (Table 12).

Therefore, as "multigroup analysis tests the null hypothesis H_0 that indicates that the path coefficients are not significantly different, which is equivalent to saying that the absolute difference between the path coefficients is zero" (Hair et al., 2019: 339), and consequently the alternative hypothesis H_1 indicates that the path coefficients are different, it is concluded that the null hypothesis cannot be rejected, that is, there are no significant differences between PLS models for women and men respectively.

Table 10. Permutation test results

	Path Coefficients Difference (GenderSex(1.0) - GenderSex(2.0))	Permutation *p*-values
ECC → PERF	-0.178	0.283
IE → PERF	0.217	0.241
RCE → PERF	0.053	0.779

Source: Own elaboration.

Table 11. PLS-MGA results

	Path Coefficients Difference (GenderSex(1.0) - GenderSex(2.0))	*p*-values
ECC → PERF	-0.178	0.858
IE → PERF	0.217	0.088
RCE → PERF	0.053	0.380

Source: Own elaboration.

Table 12. Parametric PLS multigroup test results

	Path Coefficients Difference (GenderSex(1.0) - GenderSex(2.0))	*t*-values	*p*-values
ECC → PERF	-0.178	0.888	0.376
IE → PERF	0.217	1.350	0.180
RCE → PERF	0.053	0.273	0.785

Source: Own elaboration.

Table 13. Welch-Satterthwaite t-test results

	Path Coefficients Difference (GenderSex(1.0) - GenderSex(2.0))	*t*-values	*p*-values
ECC → PERF	-0.178	0.956	0.343
IE → PERF	0.217	1.364	0.178
RCE → PERF	0.053	0.279	0.781

Source: Own elaboration.

In short, the tests carried out in the multigroup analysis reveal that, when it comes to the relations of the structural model between both groups, they do not differ significantly from each other, so we can establish that there are no significant differences due to gender. In other words, in this model, it can be stated that gender is not a moderating variable in the performance of tourism enterprises run by either men or women in the tourism sector in Andalusia. The only exception that can be established is in the relationship "Influence of the environment → Performance", which, according to the PLS-MGA analysis, differs significantly at a level of 10%, which does not occur in the rest of the statistical tests (this is why it was maintained in the model).

5.3. Evaluation of the global model fit

To evaluate the global model fit, firstly a bootstrapping process was run and the SRMR (Standardised Root Mean Square Residual), which is defined as the root mean square discrepancy between the observed correlations and the model-implied correlations, where a value of 0 for SRMR would indicate a perfect fit, was analysed (Henseler et al., 2016). However, a value of 0.08 as proposed by Hu and Bentler (1999) is considered more appropriate. The mod-

el for the full sample and the sub-sample of men has a goodness of fit for SRMR below the threshold <0.08. In addition, two measures recommended by Dijkstra and Henseler (2015) were also evaluated: (1) d_{ULS} (discrepancy of unweighted least squares) and (2) d_G (geodesic discrepancy) as exact fit criteria.

Table 14 shows the overall fit of the confirmatory model in a satisfactory manner, which indicates that the results are below the 95% (HI95) and 99% (HI99) percentiles, both for the full sample and for the female and male sub-samples.

Table 14. Global model fit

Criterion	Full sample			Women			Men		
	Value	HI95	HI99	Value	HI95	HI99	Value	HI95	HI99
SRMR	0.062	0.068	0,075	0.101	0.106	0.118	0.084	0.087	0.098
d_{USL}	0.355	0.425	0.514	0.926	1.017	1.265	0.640	0.696	0.875
d_G	0.098	0.124	0.145	0.279	0.499	0.640	0.194	0.237	0.287

Note: Standardised root mean squared residual (SRMR), unweighted least squares discrepancy (d_{USL}), geodesic discrepancy (d_G), bootstrap-based 95% percentile (HI95), bootstrap-based 99% percentile (HI99).

Source: Own elaboration.

Conclusions

The objective of the present study was to determine the factors that influence business performance and to analyse whether gender acts as a moderating variable using Partial Least Squares Structural Equation Modelling (PLS-SEM).

To study business performance, four variables were considered based on a literature review: the entrepreneur's resources and capabilities (age, level of education, work experience, etc.), the economic characteristics of a company (age of the company, category of the tourism establishment, size of the company, distance to the nearest airport, etc.), innovation and new technologies (ways to get into the rooms, advertising and technological policies, etc.) and the influence of the environment (seasonality of demand, occupancy rate, degree of sector growth, etc.). It is important to highlight that, in a first descriptive analysis of such variables, no relevant differences were found between businessmen and businesswomen, given that all the indicators studied for these variables turned out to be quite similar among them.

In order to verify the relationship between these exogenous latent variables and the endogenous latent variable (business performance), a confirmatory analysis was performed using Partial Least Squares Structural Equation Modelling (PLS-SEM). Regarding these five latent variables or constructs that made up the proposed initial model, the variable of innovation and new technologies was removed, since it did not meet the corresponding requirements. Moreover, several indicators were also removed, leading to a final debugged model that met all the necessary requirements.

Regarding the first hypotheses postulated in relation to the factors that affect business performance, it could be stated that the first hypothesis was not fulfilled, that is, the relationship between the economic characteristics of a company (ECC) and its business performance (PERF) is not statistically significant either for the overall sample or for the sub-samples of women and men. In accordance with the economic variables in Table 1, economic characteristics are quite similar. Neverthe-

less, this latent variable shows some significant differences for businessmen when it comes to the PLS-MGA analysis (at 90%), while no changes are visible from the businesswomen's point of view. For this reason, it could be stated that the results obtained are similar to those of the studies carried out by Díaz and Jiménez (2009), Rodríguez et al., (2011), and Saavedra García (2017), where they pointed out that this is not a relevant factor in businesses ran by men or women.

The second hypothesis, which relates the employer's resources and capabilities (RCE) to performance (PERF), is confirmed, since such a relationship was significant for the overall sample and for the sub-samples of men and women (specifically, 95% for women and 90% for men). Thus, the resources and capabilities of the entrepreneur are more important for businesswomen than for businessmen.

The third proposed hypothesis refers to the relationship between innovation and new technologies (INT) and business performance (PERF). This hypothesis is not confirmed, since this relationship is not significant, either for the whole sample or for the sub-samples of men and women. Furthermore, as previously stated, this variable was removed from the model. A possible explanation for the fact that this relationship has not turned out to be significant may be that respondents already consider the use of ICT to make online bookings (as is the case with Booking.com, TripAdvisor.com, Hotels.com, etc.), or the use of electronic cards to access rooms or other services available to its clients (as is the case of spas, gyms, dining rooms, party rooms, etc.), to be routine. In the case of the subsample of businesswomen, it is in line with the results of García et al., (2012) which revealed that female entrepreneurs are not as open to adopting new technologies. In contrast, it does not match the results of Escandón and Arias (2011) related to innovation and the incorporation of new technologies being fundamental components for company competitiveness.

Fourth, the previously postulated relationship between the influence of the environment (IE) and business performance (PERF) was supported, since this relationship is significant for both the overall sample and gender sub-samples. Moreover, it should be pointed out that both groups rated this variable as most important.

The PLS Model presents more accuracy for women than it does for men, since it explains 62.5% for the former and 43.5% for the latter, respectively. Moreover, the indicator variables: number of employees, work experience, and the occupancy rate, represent more significance for businesswomen, whereas the distance to the nearest airport, check-in, and the occupancy rate do likewise for businessmen.

In summary, the results obtained in the present research in general have not agreed, in part, with the previous studies carried out and the literature review. Firstly, from the present study it could be concluded that there are no significant differences between the tourist accommodation companies run by women and men in Andalusia, and thus that gender is not a moderating variable regarding business performance. Finally, as both businessmen and businesswomen pointed out, the influence of the environment is the factor that most affects business performance. Furthermore, in the model obtained for businesswomen, this variable had the most significant influence.

The present study raises further interesting questions: since the participation rate in the questionnaire was 13.88% (a decent sample size), what would its predictive power be? Are women entrepreneurs more concerned about business performance than men? What explains the slight bias in

favour of men? Could they be due to other factors such as type of accommodation, location, size, etc?

Such questions may lead to future lines of research, such as an in-depth study of the innovation and new technologies variable, since it is an issue of current interest and, according to the results obtained of late, it is relevant to neither businesswomen nor businessmen regarding business performance. Therefore, it would be interesting to further investigate if new technologies are actually appreciated by managers of tourism accommodation or not.

References

Albornoz, M. (2009), Indicadores de innovación: las dificultades de un concepto en evolución, Revista CTS, 5(13), 9-25. (Original work published in Spanish).

Barclay, D., Thompson, R., Higgings, C. (1995), The Partial Least Square (PLS) approach to causal modelling: Personal computer adoption and use as an illustration, Technology Studies, 2, 285-309.

Ben Aissa, S., Goaied, M. (2016), Determinants of Tunisian hotel profitability: The role of managerial efficiency, Tourism Management, 52, 478-487. DOI: 10.1016/j.tourman.2015.07.015

Camarena Adame, M., Saavedra García, M., Hernández Gómez, L. (2015), La competitividad de las empresas dirigidas por hombres y mujeres, paper presented at XX Congreso Internacional de Contaduría, Administración e Informática. (Original work published in Spanish).

Chin, W. (1998), The Partial Least approach to structural equation modelling, in: A. Marcoulides (Ed), Modern methods for business research (pp. 295-336), New Jersey: Lawrence Erlbaum Associates.

Cohen, J. (1992), A power primer, Psychological Bulletin, 112(1), 155-159. https://doi.org/10.1037/0033-2909.112.1.155

Díaz García, M., Jiménez Moreno, J. (2009), Recursos y resultados de las pequeñas empresas: nuevas perspectivas del efecto género, Cuadernos de Economía y Dirección de la Empresa, 13(42), 151-176. https://doi.org/10.1016/S1138-5758(10)70006-2 (Original work published in Spanish).

Dijkstra, T., Henseler, J. (2015), Consistent and asymptotically normal PLS estimators for linear structural equations, Computational Statistics & Data Analysis, 81, 10-23. https://doi.org/10.1016/j.csda.2014.07.008

EFE Agency (2020), El turismo ya aporta el 12,5% al PIB español, retrieved from: https://www.elimparcial.es/noticia/209227/economia/el-turismo-ya-aporta-el-125-al-pib-espanol.html (accessed 24 January 2020). (Original work published in Spanish).

EFE Agency (2019), La actividad turística creció el 2% en 2018 y generó más de 50.00 empleos, retrieved from: https://www.efe.com/efe/espana/economia/la-actividad-turistica-crecio-el-2-en-2018-y-genero-mas-de-50-000-empleos/10003-3869845 (accessed 20 May 2019). (Original work published in Spanish).

Escandon Barbosa, D., Arias Sandoval, A. (2011), Factores que componen la competitividad de las empresas creadas por mujeres y las relaciones entre ellos, Cuadernos de Administración, 24(42), 165-181. (Original work published in Spanish).

Faul, F., Erdfelder, E., Buchner, A., Lang, A.G. (2009), Statistical Power Analyses using G-Power 3.1: Tests for correlation and regression analyses, Behavior Research Methods, 41(4), 1149-1160. https://doi.org/10.3758/BRM.41.4.1149

Garthwaite, P.H. (1994), An interpretation of Partial Least Squares, Journal of the American Statistical Association, 89(425), 122-127. DOI: 10.1080/01621459.1994.10476452

García Solarte, M., García Pérez de Lema, D., Madrid Guijarro, A. (2012), Caracterización del comportamiento de las Pymes según el género del gerente: un estudio empírico, Cuadernos de Administración, 28(47), 37-53. DOI: 10.25100/cdea.v28i47.72 (Original work published in Spanish).

Green, S.B. (1991), How many Subjects does it take to do a Regression Analysis?, Multivariate Behavioral Research, 26 (3), 499-510. https://doi.org/10.1207/s15327906mbr2603_7

Guzmán Cuevas, J., Rodríguez Gutiérrez, M. (2008), Comportamiento de las mujeres empresarias: una visión global, Revista de Economía Mundial, 18, 381-392. (Original work published in Spanish).

Hair, H.J., Jr., Hult, G.T.M., Ringle, C., Sarstedt, M. (2017), A primer on Partial Least Squares Structural Equation Modeling (2nd edition), Thousand Oaks: Sage.

Hair, Jr, J., M.Hult, G., M. Ringle, C., Sarstedt, M., Castillo Apraiz, J., Cepeda Carrión, G., Roldán, J. (2019), Manual de Partial Least Squares Structural Equation Modeling (PLS-SEM), España: Omnia Publisher S.L.

Henseler, J., Hubona, G., Ray, P. (2016), Using PLS path modeling in new technology research: updated guidelines, Industrial Management & Data Systems, 116(1), 2-20. https://doi.org/10.1108/IMDS-09-2015-0382

Henseler, J., Ringle, C.M., Sarstedt, M. (2015), A new criterion for assessing discriminant validity in variance-based structural equation modelling, Journal of the Academy of Marketing Science, 43, 115-135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C.M., Sarstedt, M. (2016), Testing measurement invariance of composites using partial least squares, International Marketing Review, 33(3), 405-431. DOI: 10.1108/IMR-09-2014-0304

Honma, S., Hu, J.L. (2012), Analyzing Japanese hotel efficiency, Tourism and Hospitality Research, 12(3), 155–167. DOI: 10.1177/1467358412470558

Hu, L., Bentler, P. (1998), Fit indices in covariance structure modeling: Sensitivity to under parameterized Model Misspecification, Psychological Methods, 3(4), 424-453. https://doi.org/10.1037/1082-989X.3.4.424

Hu, J.L., Chiu, C.N., Shieh, H.S., Huang, C.H. (2010), A stochastic cost efficiency analysis of International tourist hotels in Taiwan, International Journal of Hospitality Management, 29(1), 99-107. DOI: 10.1016/j.ijhm.2009.06.005

Johnson, B. (2010), Institutional Learning, in: B. Lundvall (Ed.), National systems of innovation: Toward a theory of innovation and interactive learning (pp. 23-46). Anthem Press. DOI:10.7135/UPO9781843318903.003

Junta de Andalucía (2020), Turismo y Deporte, retrieved from: https://www.juntadeandalucia.es/andalucia/economia/turismo.html (accessed 24 January 2020). (Original work published in Spanish).

Lado-Sestayo, R., Vivel-Búa, M. (2018), Profitability in the hotel sector: A PLS approach, Journal of Hospitality and Tourism Technology, 9(3), 455-470. https://doi.org/10.1108/JHTT-10-2017-0118

Nitzl, C. (2016), The use of partial least squares structural equation modelling (PLS-SEM) in management accounting research: Directions for future theory development, Journal of Accounting Literature, 37, 19-35.

Parte-Esteban, L. Alberca-Oliver, P. (2015), Determinants of technical efficiency in the Spanish hotel industry: Regional and corporate performance factors, Current Issues in Tourism, 18(4), 391-411. https://doi.org/10.1080/13683500.2013.800029

Phillips, P.A. (1999), Hotel performance and competitive advantage: A contingency approach, International Journal of Contemporary Hospitality Management, 11(7), 359-365. https://doi.org/10.1108/09596119910293268

Powers, J., Magnoni, B. (2010), Dueña de tu propia empresa: Identificación, análisis y superación de las limitaciones a las pequeñas empresas de las mujeres en América Latina y el Caribe, Washington, D.C., Fondo Multilateral de Inversiones, BID. (Original work in Spanish).

Ringle, C., Wende, S., Becker, J. (2015), SmartPLS 3. Bo¨nningstedt: SmartPLS, retrieved from: http://www.smartpls.com (accessed 18 June 2019).

Rodeiro Pazos, D., López Penabad, M. (2007), La innovación como factor clave en la competitividad empresarial: un estudio empírico en las PYMES, Revista Galega de Economía, 16(2), 1-18. (Original work published in Spanish).

Rodríguez Gutiérrez, P., Fuentes Fuentes, M., Rodríguez Ariza, L. (2011), Estrategias de construcción de una ventaja competitiva en las empresas de mujeres, Ide@as CONCYTEG, 6 (78), 456-1470. (Original work published in Spanish).

Saavedra García, M. (2017), La competitividad en las empresas dirigidas por mujeres en la Ciudad de México, AEDEM, 199-218. (Original work published in Spanish).

Sarstedt, M., Henseler, J., Ringle, C.M. (2011), Multigroup analysis in Partial Least Squares (PLS) path modelling: Alternative methods and empirical results, Advances in International Marketing, 22, 195-218. DOI: 10.1108/S1474-7979(2011)0000022012

Sarstedt, M., Hair, J.F., Ringle, C.M., Thiele, K.O., Gudergan, S.P. (2016), Estimation issues with PLS and CB-SEM: Where the bias lies!, Journal of Business Research, 69(10), 3998-4010. https://doi.org/10.1016/j.jbusres.2016.06.007

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