SEGMENTING TOURISM COMPANIES WITH RELATIONAL AND TECHNOLOGICAL BASES

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Abstract

Purpose – The objective of this study is to achieve a travel agencies segmentation based on both relational (trust, commitment, satisfaction, and loyalty) and technological (advancement and use of Information and Communication Technologies) criteria that improve the understanding of their strategic behaviours.
Methodology/Design/Approach – The segmentation methodology uses a tandem approach: correspondence and hierarchical cluster analysis. From a sample of 256 travel agencies, four segments have been identified. Relational criteria have made it possible to segment only the retail agency market, while technological criteria have been shown to be more capable of segmenting the wholesale agency market.
Findings – Perceptions of trust, commitment, switching costs, satisfaction and loyalty towards the main supplier -relational variables-, as well as the ICT advancement and use in the relationship show a high discriminatory power that allows the identification of four significant different segments. The first segment ("High relational & ICT orientation") comprises retailer travel agencies with small size, -mainly outbound tourist operators- with an important local presence. The second group shows the lowest levels of relational and technological variables, and it includes the largest agencies with international and national markets. The third segment is clearly technology-oriented, but not relational, and it is associated with international scope of activity and whose main customers are companies. Finally, the fourth group -mainly local tour operators- shows low levels of technological orientation, which may be due to the short duration of the relationship with their supplier.
Originality of the research – The results allow for a better understanding of the travel agencies groups that are clearly differentiated in their relationship and use of ICT with their main providers. From the customer's perspective, the segmentation obtained allows for a more appropriate selection of their suppliers, and from the service provider's perspective, a deeper understanding of the homogeneous segments according to the characteristics of the relationship.
Keywords Segmentation; Business-to-Business; Satisfaction; Loyalty; Information and Communication Technologies; Tourism

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INTRODUCTION

Relational marketing literature highlights the importance of designing strategies aimed at creating and maintaining long-term relationships both in the Business-to-Consumer (hereafter B2C) and Business-to-Business market (hereafter B2B) (Das et al., 2022). The dichotomy between both markets has been the subject of academic debate (Nath et al., 2019). B2B market is especially complex due to the variety of parties involved in the exchange relationships and the simultaneity of roles that companies can have (Sales-Vivó et al., 2020). The study of relationships between companies in the service industry has aroused research interest in the last decade (see, among others, in insurance sector (Ruz-Mendoza et al., 2021), banking (Kaur et al., 2023), and hospitality (van Leeuwen & Koole, 2022; Berenguer-Contrí et al., 2024). However, the literature still needs to advance in the knowledge of the variables and conditions that contribute to the improvement of relations and benefits for both parties (O'Brien et al., 2020).

One of the key tools for good relationship management is segmentation. The literature is extensive, but there are still certain conceptual and methodological disagreements on the application of the most appropriate criteria and methods, and on their adaptation to different contexts (van Leeuwen & Koole, 2022). Segmentation in interorganizational context has received less attention than in the B2C market (Silva & Dias, 2020) and presents greater complexity than the consumer market (O'Brien et al., 2020). Descriptive variables of the companies have traditionally been used to identify groups, such as purchase frequency and quantity, cost, price or product variety (Barrera et al., 2024). This type of segmentation has sometimes been criticised for being more of a sectorisation than a segmentation (Rezaei & Ortt, 2013). For this reason, in recent years there has been a tendency to use relational-type criteria, that is, linked to the behaviours and assessments that companies make of their relationship with their providers (Brotspies & Weinstein, 2019; Ruz-Mendoza et al., 2021; Shi et al., 2022), as well as criteria associated with the use of technologies (van Leeuwen & Koole, 2022).

In this context, tourism is one of the most dynamic, turbulent, and competitive sectors (World Tourism Organization, 2023) and one of the most affected by the development of technologies (Gössling, 2021). The literature on segmentation in the tourism B2B market has certain shortcomings. Since the year 2000 academic research is more limited compared to the consumer

market. Regarding the criteria used, there is little empirical evidence on the formation of tourism business segments based on relational variables (van Leeuwen & Koole, 2022). Added to this is the limitation on the simultaneous study of several criteria, since the contributions focus on the observation of one or two segmentation bases. Similarly, there are still few studies that address segmentation based on technological variables (Guo et al., 2017; Fuentes-Blasco et al., 2017).

Consequently, B2B segmentation is more complex compared to B2C markets. The literature has traditionally focused mainly on differences among groups based on descriptive variables from macro segmentation approaches (O'Brien et al., 2020). However, in recent years there has become stablished a trend towards the use of subjective segmentation criteria (e.g. Shi et al., 2022), suggesting bases to identify those segments that are more likely to create and maintain long-term interfirm relationships. In the tourism context, this gap is more evident, and the few empirical evidence addresses B2B segmentation from a very partial approach with reduced attention to variables linked to the relationship between tourism companies and technologies (Fuentes-Blasco et al., 2017). The tourism B2B market presents significant challenges in terms of segment identification based on variables of a different nature, whether descriptive, behavioural, attitudinal, and even related to technology.

Therefore, the gaps that motivate this research are as follows: (1) less focus on B2B segmentation than B2C one; 2) lack of consensus regarding the criteria for B2B segmentation (descriptive, relational and/or technological variables); 3) the scarcity of research on segmentation in B2B tourism industry; 4) absence of empirical evidence in this context with regard to the discrimination capacity of relational and technological bases. Given these gaps, we believe that the variables associated with the company-provider relationship, together with the variables that characterise the type of firm and the use of technology, can improve the identification of segments. The purpose of this research is to contribute to the lack of empirical evidence that explores new segmentation criteria in the B2B tourism context. We pursue a dual objective: 1) Analyse the usefulness of two groups of criteria, relational and associated with Information and Communication Technologies (hereafter ICT), as segmentation bases to identify heterogeneous groups of travel agencies; 2) Characterise the segments obtained from descriptive variables in order to analyse the strategies used at the segment level and direct improvement towards greater adaptation to the needs of this type of tourism business.

The novelty of this work lies in the joint study of these two groups of base segmentation criteria, relational and technological, in the tourism B2B context. Although there is some evidence in tourism on segmentation with relational (Falkenreck & Wagner, 2022) and technological bases (Fuentes-Blasco et al., 2017), no recent research has been found that simultaneously addresses these variables to form business segments. This work contributes to the advancement of the literature on B2B segmentation in tourism by providing a more complete vision of the capacity of the variables linked to the relationship and the technologies in segment discrimination. This proposal enables to progress from recent studies that still adopt a descriptive segmentation approach (O'Brien et al., 2020; Barrera et al., 2024) and pay scant attention to other variables linked to the perception of the relationship (Fuentes-Blasco et al., 2017). The aim is to delve deeper into the segmentation process in the tourism context, simultaneously addressing several bases of different nature, both relational as technological. The identification of firms segments by means of these criteria responds to the research calls for integrating mindset metric with descriptive variables (e.g. Petersen et al., 2018, Ritter & Andersen, 2018). The findings contribute to the advancement of research in B2B tourism market segmentation providing evidences about the heterogeneous perception of relational and technological variables across different types of companies.

1. SEGMENTATION BASES IN B2B CONTEXT

The complexity of the industrial market turns the selection of segmentation bases into a significantly challenging area of study. Based on the social exchange theory (SET), firms aim to build and maintain relationships with their suppliers that truly add value and contribute to increased benefits for both parties (Liu et al., 2016). In this research line, the study of the process of relationship building and the variables involved is still limited as of today (Petersen et al., 2018, Andriotis & Paraskevaidis, 2021), and there are some disagreements about the influence that some of them exert (Moliner-Velázquez et al., 2023). Loyalty, satisfaction, trust, commitment and switching costs are variables that are particularly highlighted in the B2B literature to explain the process to create and consolidate relationships that can generate sustainable competitive advantages (Berenguer-Contrí et al., 2024).

From SET, Molm et al. (2003) distinguish two forms of exchange relationships: negotiated and reciprocal relations. Although economic transactions often begin as negotiated exchanges, some of them may evolve into reciprocal exchanges when greater trust and emotional commitment is generated between the parties involved. Thus, when a business-to-business relationship is consolidated, its evaluation incorporates not only economic but also social outcomes (Ritter & Andersen, 2018); in a mature relationship, both social and economic satisfaction can contribute to its consolidation (O'Brien et al., 2020). The time and quality of a relationship changes the behaviour patterns that lead to its maintenance and firms "*develop mutual and beneficial exchanges over time often move from economic exchange to social exchange, as reciprocal, mutual patterns engender trust, loyalty, and commitment among*" (Mitchell, et al., 2012, p.101). However, not all mature relationships can be described as reciprocal. In this transition, trust is the most important feature (O'Brien et al. 2020). In addition, the context will also determine the nature of the relationship. In this sense, characteristics such as the typology of the main provider, the length of patronage with the main provider, the type of firm, among others, may also affect the type of relationship. In this line, the process of ICT implementation may also determine the context in which a relationship develops, conditioning its evolution. However, some relationships evolve towards reciprocal relationships and others do not. These theoretical developments of SET argue that heterogeneity in B2B markets will be conditioned by relational, technological and descriptive variables.

Faced with the abovementioned challenges, the study of variables related to the evaluation of the company's experiences with its main provider and their subsequent consequences, such as satisfaction and loyalty, variables linked to the creation and maintenance of the relationship, such as trust, commitment and switching costs, and contextual variables such as those referring to the implementation of ICT and those that describe companies, may be useful for studying relationships from the segmentation approach.

To contribute to this line of research, we propose two blocks of bases: relational and technological criteria. In the former group, trust, commitment, satisfaction, loyalty and switching costs are included, and in the latter ICT advancement and use are addressed.

1.1. Relational bases

To properly manage relationships between companies and maintain them in the long term, it is necessary for the parties to be satisfied (Geyskens & Steenkamp, 2000). Satisfaction is the key requirement for continued relationships and customer loyalty (Eggert & Ulaga, 2002). Satisfaction and loyalty are, therefore, fundamental variables in relational marketing.

In the B2B context, satisfaction is a positive affective state that forms when a company evaluates its relationship with a provider (De Wulf et al., 2001). Several authors highlight the general and accumulated nature of satisfaction, pointing out that it is the result of the evaluation of the various aspects or stages of the relationship between the parties (Kundu & Datta, 2015). Two types of satisfaction are differentiated: economic and social (Chung et al., 2011; Ferro et al., 2016; Guan et al., 2022). Economic satisfaction refers to the assessment that a member of the channel makes of the economic rewards that occur in the relationship (e.g. efficiency), however social satisfaction is based on the psychosocial aspects of the relationship (e.g. gratification) (Geyskens & Steenkamp, 2000).

Satisfaction is a clear antecedent of loyalty, and this is demonstrated by the abundance of empirical evidence in the literature. The multidimensional character of loyalty is shared since loyalty can be manifested through attitudes or intentions and behaviours (Dick & Basu, 1994). Some studies have questioned the relationship between satisfaction and loyalty, qualifying that this link depends on the sector, the type of customers, the measures used, and the mediating or moderating variables (Kumar et al., 2013). In the B2B context, the contributions confirm that satisfaction exerts a certain influence, directly or indirectly, on loyalty (Elsäßer & Wirtz, 2017; Saragih et al., 2022). Therefore, companies that are satisfied with their provider are more likely to develop behaviours and/or attitudes related to the intention of maintaining the relationship.

Trust and commitment are also key elements that must coexist for the success and continuity of relationships between companies. Recent studies confirm that trust in the B2B context is an antecedent of satisfaction (Sales-Vivó et al., 2020; Hogevold et al., 2021). It has been defined as the conviction of one party to the relationship that the other party will manage the business in pursuit of beneficial results for both parties. This trust influences the desire to maintain the relationship, generating a long-term bonding belief that is conceptualised in the literature as commitment (Kuhn & Mostert, 2016). Commitment has also been linked to satisfaction in B2B relationships (Hogevold et al., 2021) and refers to a partner's willingness to create and maintain a long-term relationship based on emotional or rational ties (Sung & Choi, 2010). The literature recognises two types of commitments. Just as affective commitment is related to loyalty and psychological or emotional attachment, calculating commitment is formed from the assessment of objective aspects such as switching costs or the scarcity of alternatives.

Switching costs are therefore a particularly important variable in creating commitment (Ojeme et al., 2018). Literature has traditionally highlighted that switching costs favours the duration of the relationship (Patterson & Smith, 2001). They represent the perception of costs that a company may have when it changes providers (Pick & Eisend, 2014). They are barriers that protect against breaks in the relationship and loyalty (Heirati et al., 2016). When a company perceives that switching costs are high, its commitment to the provider increases and its decision to continue the relationship is reinforced. Empirical evidence on the effects of switching costs is scarce. Blut et al. (2016) confirm that relational costs are the most important to ensure B2B relationships and Ha (2017) reveals that the costs of losing personal relationships reduce the intentions to change companies and are the most closely linked to performance.

In short, we understand that satisfaction, loyalty, trust, commitment, and switching costs are relational variables that can make an important contribution to the formation of tourism business segments.

1.2. Technological bases

The tourism industry is closely linked to the development of technologies (Gössling, 2021). The rapid evolution of ICTs has brought about a continuous process of digitalisation and globalisation in the tourism market, offering new and better value creation tools (Berné et al., 2015). The use of ICT as a distribution channel management tool has aroused significant academic and practical interest in recent years (Breidbach & Maglio, 2016; De Leon & Chatterjee, 2017).

Although some authors have suggested that technology may hinder the development of relationships due to its capacity of diminish the emotional connections that is forged in face-to-face interactions (Díaz et al., 2015), there are empirical evidences in the interorganisational context on the effect that the development and use of ICT has on some relational variables. For example, Huo

et al. (2015) confirms that companies that perceive that their partner is investing in technology feel more optimistic about the future of the relationship, are more committed, and show greater loyalty to their provider. According to Kauffman and Pointer (2022), technologies streamline relationships and improve commitment, integration, trust, and value creation. Boccia et al. (2022) confirms the relationship between digitalisation and internationalisation. Research in tourism is also scarce and not very recent. For example, according to Bastakis et al. (2004), the use of ICT improves relations between hotels, tour operators, and travel agencies. Bigné et al. (2008) conclude that the intensity of the relationship between agencies and their providers favours the adoption of ICTs, and Berné et al. (2015) reveal that ICTs intensify relations between tourism companies, thereby improving financial results and market share.

Based on these contributions, we consider that the variables related to the development and use of ICT among tourism companies will demonstrate a certain capacity to identify heterogeneous segments.

2. METHODOLOGY

2.1. Measurement scales and fieldwork

A quantitative investigation has been carried out, using a structured questionnaire. Six items were used to measure economic satisfaction and social satisfaction adapted from Chung et al. (2011), Geyskens and Steenkamp (2000) and Anderson and Narus (1990). Three items were adapted from Zeithaml et al. (1996) to measure loyalty. Trust was adapted from Ferro et al (2016) and measured through three items. Commitment was measured on a four-item scale derived from Morgan and Hunt (1994). Six items were used to measure switching costs, three of them adapted from Patterson and Smith (2001). ICT advancement and use scales were derived from Wu et al. (2006), Buhalis and Law (2008), and Neuhofer et al. (2014) and respectively measured using three and four items. The items have been measured using a 7-point Likert scale.

The main object of study was travel agencies. Considering that they are companies engaged in the intermediation, organisation and implementation of tourism activities between their clients and their service providers, they are classified according to their operational nature into tour operators, wholesalers, retailers or mixed agencies. These four types of Spanish travel agencies were considered for the current study. The database of companies was obtained from secondary information available in the form of own listings, updated through the ALIMARKET and DUNS 100 databases. A list was drawn up of 900 travel agencies in the autonomous communities of Catalonia, the Valencian Community, and the Community of Madrid. A total of 256 effective interviews were definitively obtained (77 from Barcelona, 102 from Valencia, and 77 from Madrid), achieving a response rate of 30.73%. The key informant was the travel agency manager or supervisor, who assessed the eight constructs related to their main accommodation-service provider, whether hotels or booking wholesalers (Table 1).

Table 1: **Sample profile**

Type of agency		**Geographic scope**		**Tourist operation**	
Tour operator	1.56%	International	47.57%	Outbound agency	78.13%
Wholesaler	7.03%	National	32.58%	Inbound agency	17.19%
Retailer	62.89%	Local	19.85%	Domestic agency	4.69%
Mixed	28.52%			**Size**	
Main supplier				Average number of employees	14.20 (±9.10)
Integrated in a hotel chain	25.39%			Average age (years)	21.61 (±11.91)
Franchise	6.64%			**Relationship characteristics**	
Hotel bank (Bedbank)	13.67%			Average length of patronage with the main supplier (years)	11.75 (±6.76)
Wholesaler	17.58%			Average % of activity with the main supplier	44.56 (±21.05)
Reservation center	36.72%			Average spending on ICT (10^3 euros)	11.69 (±32.78)
Main client					
Families/Individuals	45.7%				
Travel agencies	8.2%				
Event organization	3.1%				
Companies	29.3%				
Groups	10.9%				
Other	2.7%				

2.2. Dimensionality, reliability and validity of scales

The reliability and validity of the scales were evaluated by estimating a first-order measurement model or confirmatory factor analysis using the package *lavaan* in the R free statistical software v. 4.1.2 with a robust estimator (maximum likelihood robust). The main results are shown in Table 2. First, the internal consistency of the measurement scales was evaluated using Cronbach's Alpha (α) and composite reliability (CR) coefficients, whose minimum thresholds are 0.7 (Nunally, 1978; Anderson & Gerbing, 1988), and through the variance extracted from each of the scales (AVE), whose value must exceed 0.5 (Fornell & Larcker, 1981).

Secondly, the validity of the scales was contrasted: (1) content validity, since the scales are formed according to the bibliographic review; (2) convergent validity, when verifying that the factor loadings were significant at 99% (t-Student statistic>2.58) (Anderson & Gerbing, 1988); and (3) discriminant validity, since the linear correlation between each pair of scales is less than the square root of the AVE of the scales involved (Table 2).

Table 2: **Descriptive statistics, reliability indices and measurement scales correlations**

	Mean	**SD**	**A**	**CR**	**AVE**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
1. Trust	5.85	0.84	0.849	0.861	0.678	*0.823*[a]							
2. Commitment	5.48	1.03	0.788	0.895	0.680	0.628	*0.825*						
3. Switching costs	5.15	0.97	0.832	0.851	0.657	0.454	0.590	*0.811*					
4. Economic satisfaction	5.16	1.24	0.839	0.886	0.723	0.548	0.538	0.492	*0.850*				
5. Social satisfaction	5.95	0.88	0.873	0.857	0.669	0.637	0.655	0.585	0.715	*0.818*			
6. Loyalty	5.25	0.98	0.775	0.841	0.639	0.578	0.719	0.627	0.733	0.758	*0.800*		
7. ICT advancement	4.17	1.37	0.849	0.886	0.728	0.139	0.300	0.424	0.277	0.302	0.377	*0.853*	
8. ICT use	4.79	1.40	0.788	0.808	0.515	0.192	0.032	0.102	0.076	0.093	0.046	0.638	*0.718*

α=Cronbach's alpha (Standardized alpha); CR=composite reliability; AVE=average variance extracted
Fit indices: $Chi^2/df=2.81<3.5$; CFI=0.854; TLI= 0.824; RMSEA=0.064
[a]*Elements on the main diagonal in italics are the square root of AVE*

3. RESULTS

We propose a segmentation analysis following a tandem approach (Schaffer & Green, 1998). We chose multiple correspondence analysis (MCA) as the segmentation method since it allowed us to jointly study the types of agencies in the sample based on their common characteristics, as well as the interrelation between these characteristics, as a factorial method, through a simple graphical representation. By means of a positioning map, MCA summarises more than two variables (Kiessling et al., 2019). Furthermore, it is an appropriate post-hoc descriptive technique for use in the context of limited sample size in comparison to other analysis, due to its capacity to identify patterns from subjective variable scores (Saura et al., 2021). The multivariate technique was also executed with R.

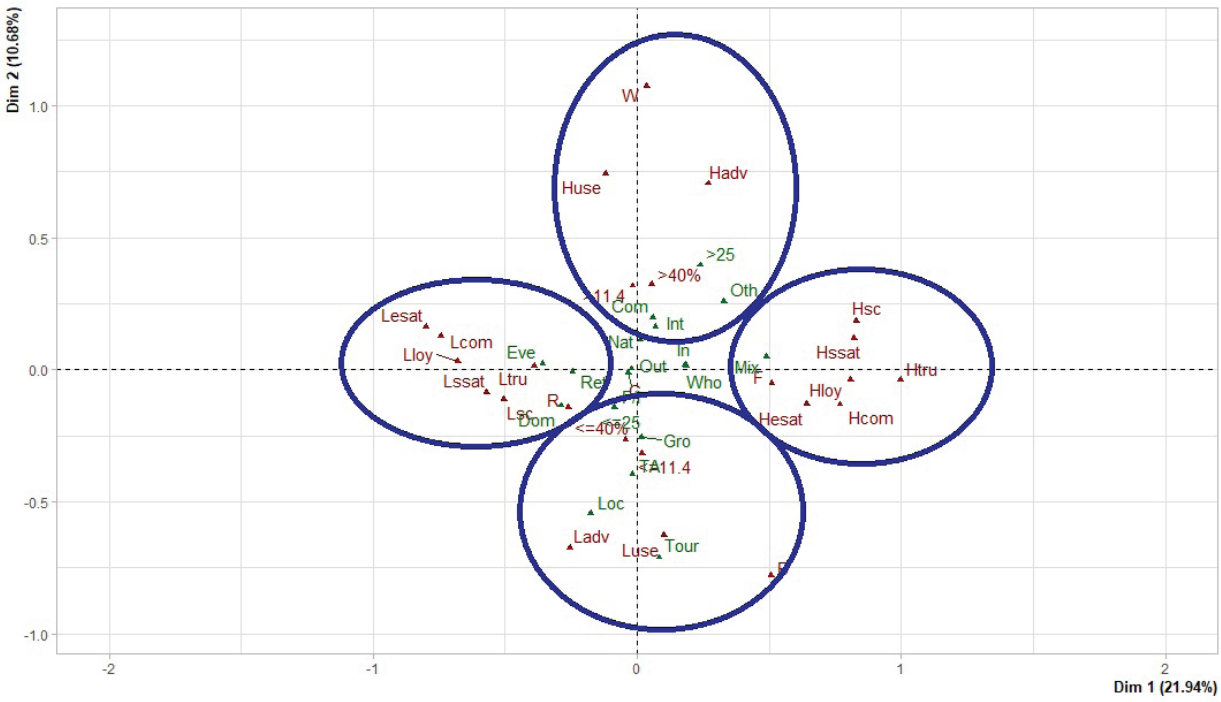
The variables used to both identify and define segments influence the methodology of segmentation (Fuentes-Blasco et al., 2017). In the multiple correspondence analysis, we used as active segmentation variables the relational and technological dimensions together with other characterising variables of the relationship (Table 3). Due to the nominal nature of the variables, we recoded all these dimensions based on the median value of the variables that make up each factor: low value for those agencies that present levels below the sample median, and high value in the case of presenting higher values. The choice of two categories for each variable is due to the fact that the more modalities the variables have, the lower the percentage of inertia in each summary factor (Grande & Abascal, 1999). Lastly, we include various descriptive variables of the agencies as supplementary variables (Table 3).

Table 3: **Categories for MCA (active and supplementary variables)**

Act/Suppl.	Variable	Categories	Label (Figure 1)
Active (red colour in Figure 1)	Trust	Low (≤6)	Ltru
		High (>6)	Htru
	Commitment	Low (≤5.5)	Lcom
		High (>5)	Hcom
	Switching costs	Low (≤4.67)	Lsc
		High (>4.67)	Hsc
	Economic satisfaction	Low (≤5.33)	Lesat
		High (>5.33)	Hesat
	Social satisfaction	Low (≤6)	Lssat
		High (>6)	Hssat
	Loyalty	Low (≤5.25)	Lloy
		High (>5.25)	Hloy
	ICT advancement	Low (≤4)	Ladv
		High (>4)	Hadv
	ICT use	Low (≤5)	Luse
		High (>5)	Huse
	Main supplier	Integrated in a hotel chain	C
		Franchise	F
		Hotel bank (Bedbank)	B
		Wholesaler	W
		Reservation centre	R
	Length of patronage	Up to 11.4 years	≤11.4
		Over 11.4 years	>11.4
	% of activity	Up to 40%	≤40%
		Over 40%	>40%
Supplementary (green colour in Figure 1)	Type of agency	Tour operator	Tour
		Wholesaler	Who
		Retailer	Ret
		Mixed	Mix
	Geographic scope	International	Int
		National	Nat
		Local	Loc
	Tourist operation	Outbound tourist agency	Out
		Inbound tourist agency	In
		Domestic tourist agency	Dom
	Number of employees	Up to 25 employees	≤25
		Over 25 employees	>25
	Main client	Families/Individuals	F/I
		Travel agencies	TA
		Event organization	Eve
		Companies	Com
		Groups	Gro
		Other	Oth

The results of the multiple correspondence analysis gather together 14 factors or axes, explaining between the first two 32.62% of the variance (they are the only ones that explain more than 10% of the variability). We will limit ourselves to the interpretation of these first two axes, since, although it may seem like a weak amount of explained information, it is sufficient in the presence of multiple factors (Grande & Abascal, 1999). It should be added that with this analysis we intend to define the groups based on the positioning (Figure 1).

Figure 1: **MCA. Positioning map for axes 1 and 2**



The first axis collects 21.94% of the variance, with the relational dimensions contributing the most to its formation. The high values of the active variables trust, commitment, switching costs, satisfaction, satisfaction, and loyalty are in the positive part, compared to the low values that are in the negative part, showing much higher contributions than the rest of the variables (all values above the median). In addition, agencies with a prominent level in relational dimensions are associated with franchise suppliers, while those with values below the median are associated with online reservation centre providers.

Regarding the second axis, it manages to explain 10.68% of the variance. It is the technological variables that contribute greatly to its formation. High categories related to ICTs are located on the vertical positive semi-axis, compared to the low categories that are located on the negative side. These groupings are also clearly associated with primary provider types and relationship characteristics. The high valuations on the technological variables are associated with the wholesaler providers with a longer relationship and a high percentage of the agency's activity with that provider. The association on the low valuations of the technological variables is related to the type of hotel bank provider, showing a shorter relationship time and a lower percentage of activity.

As a complementary analysis, a hierarchical cluster analysis was performed on the axis scores obtained for each attribute, which helped to identify the groups more accurately. Following previous studies (e.g. Hwang et al., 2006, Saura et al., 2021), this statistical tandem has been used to group the agencies in the sample into exclusive segments based on the factor scores shown in the map resulting from the multiple correspondence analysis. From the dendrogram obtained (Appendix I) and the position coordinates (Figure 1), 4 groups were identified[1]. From the results of the latter analysis, the agencies were classified into one of the four segments. To describe the profile of each group of agencies, ANOVAs were performed on the main active variables (Table 4) and contingency tables were used to identify potential differences on descriptive variables (Table 5). These results show the correlation between relational and technological variables, which have enabled the determination of the two-dimensional positioning on the two axes.

Table 4: **Means of active variables by segment (ANOVA test)**

	Seg. 1 n=73 (28.5%)	Seg. 2 n=103 (40.2%)	Seg. 3 n=45 (17.6%)	Seg. 4 n=35 (13.7%)	F-Stat (p-value)	Difference between segments[b]
1. Trust	6.09[a] (0.84)	5.61 (0.88)	5.90 (0.87)	6.01 (0.75)	5.03** (0.002)	1-2; 4-2
2. Commitment	5.79 (0.88)	5.18 (1.09)	5.42 (0.99)	5.84 (0.82)	4.72** (0.003)	1-2; 4-2
3. Switching costs	5.06 (1.16)	4.35 (1.11)	4.94 (1.20)	4.39 (1.58)	5.86** (0.001)	
4. Economic satisfaction	5.64 (1.20)	4.83 (1.15)	5.24 (1.15)	5.45 (1.52)	7.29** (<0.001)	1-2; 4-2
5. Social satisfaction	6.25 (0.78)	5.79 (0.91)	6.03 (0.59)	6.04 (1.00)	4.45** (0.005)	1-2; 4-2; 3-2
6. Loyalty	5.43 (1.16)	4.75 (1.03)	5.17 (0.93)	5.35 (1.29)	6.26** (<0.001)	1-2; 4-2; 3-2

[1] Companies have not been added to the map so as not to hinder interpretation.

7. ICT advancement	4.49 (1.46)	3.97 (1.20)	4.68 (1.28)	4.03 (1.57)	2.75* (0.044)
8. ICT use	4.79 (1.63)	4.79 (1.27)	5.20 (1.12)	4.76 (1.38)	1.07 (0.364)

[a]: Mean and standard deviation (in parentheses)
[b]: The Tukey-b post-hoc test is performed to identify the significant differences between segments. The significant differences are shown at least at the 95%
*: p-value<0.05; **: p-value<0.01

Table 5: **Descriptive segments profile**

		Seg. 1 n=73 (28.5%)	**Seg. 2** n=103 (40.2%)	**Seg. 3** n=45 (17.6%)	**Seg. 4** n=35 (13.7%)
Type of agency Chi²(df=9)=35.63**	Tour operator	1.6%[a]	2.3%	0.0%	1.5%
	Wholesaler	4.9%	9.1%	19.0%	5.9%
	Retailer	79.7%	47.7%	33.3%	51.5%
	Mixed	13.8%	40.9%	47.6%	41.2%
Geographic scope Chi²(df=6)=14.88**	International	46.3%	59.1%	52.4%	36.8%
	National	31.7%	36.4%	38.1%	30.9%
	Local	22.0%	4.5%	9.5%	32.4%
Size Chi²(df=3)=23.92**	≤25 employees	78.9%	50.0%	52.4%	85.3%
	>25 employees	21.1%	50.0%	47.6%	14.7%
Tourist operation Chi²(df=6)=4.92	Outbound tour. agency	81.3%	81.8%	71.4%	72.1%
	Inbound tour. agency	13.0%	15.9%	23.8%	23.5%
	Domestic tour. agency	5.7%	2.3%	4.8%	4.4%
Main supplier Chi²(df=12)=51.25**	Integr. in a hotel chain	27.3%	26.8%	19.0%	23.5%
	Franchise	15.9%	4.9%	4.8%	4.4%
	Hotel bank (Bedbank)	15.9%	8.9%	0.0%	25.0%
	Wholesaler	25.0%	17.1%	52.4%	2.9%
	Reservation center	15.9%	42.3%	23.8%	44.1%
Length of patronage F(df=243)=1.42	Mean ± sd[b] years	11.6±6.2	13.2±9.1	13.3±6.9	10.7±6.6
% of activity Chi²(df=3)=15.44**	≤40%	54.5%	36.4%	57.1%	72.1%
	>40%	45.5%	63.6%	42.9%	27.9%

[a]For each segment, the percentage per column of variable is shown
[b]sd: standard deviation
*: p-value<0.05; **: p-value<0.01

The first group of attributes (right side of the map) includes the higher categories of the relational variables. This group presents mean values higher than the rest for the dimensions of trust (6.09), commitment (5.79), switching costs (5.06), economic satisfaction (5.65), social satisfaction (6.25), and loyalty (5.43) (Table 4). This segment, labelled 'HIGH RELATIONAL & ICT ORIENTATION' (n=73), comprises retailer travel agencies (79.7% of the agencies of this segment) that develop strong relationships with their main provider based on trust and commitment, generating elevated levels of satisfaction and loyalty. The average values of these relational variables are significantly higher than those obtained in the second segment, except for switching costs. The costs of switching providers are also high. It should also be noted that these agencies have the highest level of development and use of ICT. The agencies included in this group are mainly outbound tourist operators (81.3%), with an important local presence (22%). The percentage of agencies whose main suppliers are franchises is remarkable compared to the rest of the segments. Together with the fourth segment, these are the smallest agencies (78.9% have up to 25 employees) (Table 5 and Table 6).

The second group (left side of the map) comprises the most active categories of attributes, since the association of valuations below the median of the relational variables is related to the main providers of reservation centres (42.3%) and integrated in a hotel chain (26.8%). This group shows mean scores of trust (5.61), commitment (5.18), switching costs (4.35), economic satisfaction (4.83), social satisfaction (5.79) and loyalty (4.75) significantly lower than the first and fourth segments (Table 4). This group also has the lowest level of ICT development among the four segments (3.97). It brings together retail agencies whose end customers are individuals and families. This group, labelled as 'LOW RELATIONAL & ICT ORIENTATION' (n=103), is the largest and their geographic scope of activity is international (59.1%) and national (36.4%) (Table 5). Along with the third segment, agencies in this group present the longest time with their main supplier (13.2±9.1), and 63.6% of these agencies have more than 40% of their activity with them. It is also the one that has the greatest difficulty in establishing relationships based on affective aspects, resulting in less satisfactory and loyal relationships (Table 5 and Table 6).

The third group (upper quadrant of the map) brings together agencies with mean values higher than those of the rest of the segments for the two technological variables (ICT advancement=4.68; ICT use=5.20) (Table 4). With regard to the relational variables, this group shows lower averages values than the first and fourth segments. Its main predominant provider is wholesale agency (52.4%). The most of these agencies indicate having been in a long relationship with their main provider and conducting a high activity with it (average length of patronage is 13.3 years). This group is associated with agencies with international scope of activity (52.4%), and whose main customers are companies. This segment is labelled as 'HIGH ICT & LOW RELATIONAL ORIENTATION' (n=45) since it is made up of companies more oriented towards the intensive use of technology. They are mainly international (52.4%) wholesale companies (19%). It is the segment with the least number of providers, which enables a safe investment in technology to maintain the relationship (Table 5 and Table 6).

The fourth group (lower quadrant of the map) corresponds to the associations with low valuations of the technological variables: ICT development (4.03) and ICT use in the relationship (4.76) as shown in Table 4. These lowest valuations are related to a shorter relationship time (10.7±6.6 years) and a lower percentage of activity with their main providers (less than 40%) (Table 5). Nevertheless, the average values of the relational variables exhibited in this segment are comparable to those observed in the first segment. Their main providers are reservation centres (44.1%) and hotel banks (25%). In this segment we can find the highest percentage of local tour operators (32.4%), whose main clients are travel agencies. This group, labelled as 'HIGH RELATIONAL & LOW ICT ORIENTATION' (n=35), is the most difficult group to characterise based on the segmentation criteria that is the object of study. Although the low use of ICT represents its main unifying element, its average evaluations do not present significant differences compared to the other segments (Table 5 and Table 6).

Table 6: **Segments classification based on the degree of relational and ICT orientation**

		Relational orientation	
		High	***Low***
ICT orientation	***High***	Segment 1: HIGH RELATIONAL & ICT ORIENTATION	Segment 3: HIGH ICT & LOW RELATIONAL ORIENTATION
	Low	Segment 4: HIGH RELATIONAL & LOW ICT ORIENTATION	Segment 2: LOW RELATIONAL & ICT ORIENTATION

4. CONCLUSIONS AND IMPLICATIONS

The tourism intermediation sector has undergone structural changes motivated by various phenomena (e.g., emergence of innovative technologies, economic crisis, and appearance of new intermediation figures). The travel agency sector has not been immune to these changes. These companies can be classified a priori according to multiple criteria such as their organisational structure (independent vs. chain), size (large vs. small), type of customer (wholesalers, retailers, or mixed) or role in providing the services (issuing or receiving).

These classifications make it possible to differentiate travel agencies from the point of view of the market they serve. However, they are not as useful when seeking to create a group, not as service provider agencies, but as customers in an interorganisational relationship. In this context, our work has focused on deepening the relationship between travel agencies and their main accommodation provider and a segmentation has been proposed based on both relational and technological bases. The choice of these two types of criteria has made it possible to identify four large segments that are mostly related to an accommodation provider profile and a travel agency type. In view of previous current studies, it is concluded that these bases constitute segmentation criteria for the tourism B2B market capable of clearly differentiating companies (e.g. O'Brien et al., 2020; Shi et al., 2022).

Firstly, there is a clear grouping that discriminates between agencies according to the intensity of the relationship with their provider: segment 1 and 4 ('high relational & ICT orientation' and 'high relational and low ICT orientation') vs. segment 2 ('low relational & ICT orientation'). The first two segments, predominantly comprising retailers, exhibit several common features such as high perceived trust and social satisfaction with their principal supplier -hotel bank-. In line with the recent study by Gansser et al. (2021), these results emphasise the importance of trust in the supplier as a key driver of buyer commitment to the relationship in the service industry. However, the fourth segment is not focused on the development and use of ICT.

Secondly, another grouping observes that differentiates agencies based on technology: segment 3 ('high ICT & low relational orientation') vs segment 2 and 4 (which show low levels of development and use of ICT in their relationship with their main provider). In this case, the link among agencies in segment 3 is its wholesale nature. ICT-oriented companies value technology as a key tool that facilitates the management of interactions and the development of stable relationships. Meanwhile companies that are not focused on ICT do not value the investment and use of technology as a strategic factor in the development of relationships. In this line, recent studies indicate how digital platforms-based on B2B ecosystems -specially AI-based technologies- assist companies in their decision-making processes (brainstorming, communication actions, etc.), impacting in the growth and overall business success (Saura et al., 2021).

This type of segmentation contributes to the advancement of research on segmentation in the tourism B2B market. These are bases that allow a better interpretation of the situation of travel agencies in terms of their relationships within the service supply channel. Just as retail agencies differ in terms of involvement in their provider relationship, wholesale agencies do so based on the technologies they use with their provider. Therefore, the relational criteria constitute useful segmentation bases to segment only the retail agency market, while the technological criteria are more capable of being used to segment the wholesale agency market.

From an academic point of view, the review of the literature showed a clear need to delve into segmentation criteria beyond those of a purely operational nature. Faced with this challenge, our research has confirmed that the variables linked to the relationship and technologies significantly improve the identification of segments at an industry level. In particular, in the tourism context, these variables have proven to have sufficient capacity to discriminate statistically heterogeneous groups of travel agencies. However, this capacity is different for each group of variables. While the relational variables segment better the retail agencies market, the technological variables differentiate wholesale agencies in a more convenient way. By means of MCA, a two- dimension of tourist B2B segmentation has been proposed. This shall facilitate the accessibility of the segments identified through subjective variables (Saura et al., 2021).

Therefore, this work contributes to the advancement of research on B2B segmentation in tourism by confirming the different discriminatory power of relational and technological variables in segmentation. A deeper understanding of the relationship between the agency and its supplier enables better identification of customer groups and therefore, a better adaptation of strategies to their needs. Retailers' providers must focus on building trust with their customers, as this type of agency is more oriented towards a long-term relationship. For example, service quality, delivery on time, responsiveness, reputation and even high ethical standards will help to build trust with this kind of travel agencies. According to Gansser et al. "*trust can be created quickly, which also implies a great opportunity to bind new customers*" (2021: 283). It is important to recognise that the perceptions of these relational variables can be also influenced by the technologies involved. Falkenreck and Wagner (2022) highlight that the success of a business model is contingent upon the trust placed in the credibility of the technology of provider, particularly in the context of internet of things (IoT)-based business models, as well as their digitisation capabilities. Therefore, providers should encourage information flows with their target segments, which would allow them to maintain frequent contacts with them to contribute to enhance the satisfaction with the relationship (Kaur et al., 2023).

Since these findings provide a better understanding of the segmentation criteria in B2B market and how they influence on segmentation process, research should continue along current studies (see, among others, Mora Cortez et al., 2021; van Leeuwen & Koole, 2022; Barrera et al., 2024) by assessing the capacity of new relational and technological bases, as well as current methodologies appropriate to these criteria.

This segmentation has practical implications for managing relationships in the industry channel. The description of the segments allows a better understanding of the customer company, the provider company, the operating characteristics and, fundamentally, the type of relationship between the two.

From the provider's perspective, the companies that provide tourism services that identify segments based on their relationship with the customer agency and based on the ICT used will be able to select their target segment more accurately and to improve their strategic orientation, achieving a greater adjustment to the specific needs of their customers. The results of this work could benefit accommodation service providers whose market is travel agencies, allowing them to carry out a more effective segmentation and, consequently, to improve relationships in terms of engagement, satisfaction or loyalty with their customers. For example, lodging companies can focus their marketing efforts on more trusted or emotionally connected agencies in order to offer a more personalised service or better pricing conditions, which will lead to greater satisfaction and loyalty for both parties. From the perspective of the customer agency, these segmentation criteria could be used as key elements in the selection of service providers. Knowing what factors contribute to satisfaction with provider and how to improve the relationship would help to identify the best service providers and thus to create a competitive advantage over other travel agencies. Agencies that are more sensitive to relationships of trust and commitment will select suppliers with similar interests while agencies that are particularly concerned with the use of ICT will look for suppliers that are more technologically advanced. From both approaches (service provider and customer agency), if providers use these types of variables to choose a customer segment and adapt their strategies, it is reasonable that customers consider the same variables to evaluate and choose their providers. Consequently, this type of segmentation should include a dual provider-customer approach and may be useful not only for the selection of customer segment(s) but also for the selection of providers.

Beyond these vertical B2B relationships, the results of this research also have practical implications on the horizontal level. The fact that relational variables -trust, commitment, switching costs, satisfaction and loyalty- and technological ones -development and use of ICT- improve tourist B2B segmentation could affect relationships among service providers and among travel agencies. At the same channel level, companies can analyse their competitors more closely, not only to differentiate themselves and/or improve their policies, but also to identify opportunities for collaboration in the form of operational actions or strategic alliances.

5. FUTURE LINES

Research on segmentation in the B2B market presents interesting challenges and opportunities. At a theoretical level, the incorporation of other relational bases of segmentation could help to deepen the discrimination of heterogeneous segments. Regarding the variables linked to the relationship, relational value and relational benefits are variables that are particularly prominent in the literature, but with little empirical evidence in the field of segmentation (e.g. Ruiz-Molina et al., 2015; Fuentes-Blasco et al., 2017). Adding these variables as segmentation bases could improve the process of identifying tourism business segments. Regarding the variables related to the technologies, the capacity that each one of the technologies (for internal use vs. for external use) has could be addressed in regard to segment formation. Furthermore, we propose analysing the study variables from the perspective of other travel agency employees. This study has only considered the managers perceptions, so learning about the perception of other employees who are in contact with providers could offer a more comprehensive view of the inter-organizational relationship.

At the methodological level, the sample size limits the ability to generalize the results to the entire population and each specific travel agencies segment. A larger sample would allow the analysis of heterogeneity performing another alternative method of segmentation, such as the latent segmentation methodology. This methodological approach indicates the size and structure of the segments to be estimated simultaneously. To improve the representativeness of the results, it is proposed to use larger and random samples.

In addition, some variables that can affect inter-firm relationships, such as market turbulence and organisational culture, may be useful to deepen the segmentation power of the variables under study. Segmentation of companies with different levels of market turbulence could be addressed in order to understand to what extent the dynamism of the sector affects the discriminatory capacity of relational and ICT-related variables. The measurement of the organisational culture of travel agencies in future research would also improve the segments profile through the values, beliefs and behaviours of the company.

With regard to technological criteria, ICTs have not permitted the formation of retail travel agency segments. This result may be due to the fact that technology can reduce emotional bonding in the absence of personal interactions (Díaz et al., 2015), making difficult for these companies to build trust-based relationships. So, the study of segmentation based on technological criteria is an interesting line of future research in the market for this type of agency.

Finally, the temporal evolution of firms' perceptions of their relationship with their supplier is proposed as another methodological approach. Since B2B relationships are dynamic, the segmentation bases will evolve over time and should be analysed through longitudinal studies. This work could also be extended to other tourism B2B contexts where relationships between companies are key in the service supply channel, such as the restaurant or cultural tourism sector.

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APPENDIX I: DENDOGRAM

