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*Market structures, strategy and innovation in services  
A study applied to the tourism sector*

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**A study applied to the tourism sector**

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**Abstract**

The objectives of this paper are twofold – first we discuss innovation in the service sector, especially in tourism. Secondly, we apply the diagnostic test of the integrated model of innovation (Sarkar 2005, 2007) to present the results of an empirical study applied to tourism in a small open economy. The study applies multivariate analysis using a data set consisting of survey responses from 158 Portuguese firms. The study uses an archetype and the market outcome resulting from the innovation strategies pursued to compare similarities and differences according to the geographical localizations of the firms in order to identify innovative patterns in tourism firms. The study identifies the linkage between service, market structures and innovation strategies considering geographical agglomeration of firms in a small economy. The identification of different innovation trajectories and positions in the model could justify different public politics to incentivise and promote innovation in tourism firms.

**KEYWORDS:** Market structures; strategy; innovation

## **1. Introductory Note**

Innovation emerges as a driver of economic growth and prosperity in several countries (Stockdale, 2001; Fagerberg and Godinho 2004) and at a micro level, innovation is a source of competitive advantage for firms. It is also considered a key source of improved output performance of the service sector (Van Ark et al, 2003). In fact, the service sector plays a fundamental role in developed economies. The United Nations, confirms this by citing three main reasons “First: Services are the largest productive sector in most economies (...) growth and efficiency of services promote competitiveness in the broad sense of the term; Second: Many services are crucial inputs into products that compete in domestic and international markets (...) with the rising importance of information and knowledge economy, the share of services in most activities is growing.(...) Third: Advances in information and communication technologies (ICTs) facilitate trade in services (...)” (United Nations, 2004, p.95)

Within the service sector, tourism plays an important role in the economy of various OECD countries by contributing to their economic growth and providing employment and income (OECD, 2000). Given its importance and the globalization of economies, it is essential to increase the competitiveness of this sector. The key to increasing its competitiveness lies in innovation.

There has been increasing research recently into service sector innovation (Sundbo 2001, 2007, Sundbo et al. 2007, Gallouj 2002, Schianetz et al. 2007, Miles 2005, Hjalager, 2002, Carvalho, 2008). In this context, while several authors indicate that innovation in services and innovation in manufacturing are closely related, other authors establish a difference between them (Sundbo 2007, Pires et al, 2008). However, research into innovation in tourism is in its infancy. This study aims to contribute towards creating and developing research into innovation applicable to the tourism sector.

## **2. Innovation. Search for a definition.**

The Lisbon Strategy threw up the major challenge to European Union countries of transforming this economic space into the most competitive economic region. These challenges were to be met through investment in human capital, innovation and

entrepreneurship. Consequently, innovation and research have a crucial role to play in improving the competitiveness of firms.

Schumpeter explicitly introduced the economic impact of innovation in 1934 when he described innovation as the development of new products, new processes, new markets, and new sources of raw materials or new ways to shape industrial organization. Schumpeter introduced into economics the concept of creative destruction as a source of a new economic cycle and related innovation with economic growth. The role of innovation in economic development has received attention from other authors in this area (Nelson and Winter, 1982).

Additionally, innovation literature highlights different approaches, such as works on the economics of industrial innovation (Freedman, 1991), R&D and innovation (Arrow, 1962), differences across industries (Pavitt, 1984) and the role that firm-level capabilities play for innovation and learning (Cohen and Levinthal 1989, 1990).

According to Kline and Rosenberg (1986) innovation is a complex social phenomenon. The process through which innovations emerge doesn't follow a linear path, it is characterised by complex feedback mechanisms and interactive relations. Hollenstein (2000) considers the innovation process to be a complex phenomenon that includes several stages starting from basic research through to accessing the market with new products and the introduction of new production techniques within the firm.

Furthermore, the European Commission (2004) describe innovation as the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organization, working conditions and skills of workforce.

### **3. Innovation in Services**

The service sector is the largest productive sector in most OECD economies. Recently several authors focused their research into services (Sundbo 2001, 2007, Sundbo, 2007, Sundbo et al. 2007, Gallouj 2002, Schianetz et al. 2007, Miles 2005, Hjalager, 2002, Carvalho, 2008). However, research in this area is fraught with difficulty, and the diversity of activities included in the service sector makes it difficult even to define

service. Services were initially classified as non-productive activities. Economists describe service products as “anything sold in trade that could not be dropped on your foot” (Hauknes, 1998, p.6). Table 1 summarizes items that contribute towards defining innovation in services.

**Table 1. Innovation in Services**

Service innovation are often small adjustments of procedures and thus incremental and rarely radical. Services innovation processes are normally very practical.	Sundbo and Gallouj (1999)
The introduction of significantly new products and services or implementations of significantly improved process.	Licht, et al (1999)
Service innovation is by definition multidimensional. Compared to, for example, manufacturing, service innovation is characterized by much more emphasis on the organizational dimension of innovation (new service concepts, new client interface and new delivery systems) relative the technological options.	Van Ark et al, (2003)
Services innovation is mainly an incremental process that includes two components: - A non-technological component, dependent on intangible human resources, organizational structure and factors that can add value to customer service (marketing, distribution channels, etc.); - A technological component that is nowadays inseparable from the first component, and which depends on technology, especially Information and Communication Technologies (ICT).	Carvalho (2008)

Service sector innovation implies changes in many elements, and sometimes it is difficult to separate process innovation from product innovation. Whether it is the new service product, the new procedure for producing or delivering, the new organizational form and the introduction of a new technology, in “most cases cannot be stored, it must be produced in the momentum of consumption” (Gronroos, 1990)

#### **4. Innovation in tourism**

Despite the importance of and the connection between the two, the study of innovation in tourism remains in its infancy (Sarkar and Carvalho, 2005). The reasons for the paucity of research are various. First of all, the definition of tourism as a “product” involving a combination of many elements creates difficulties in the development of empirical studies. In fact, tourism products can include tangible or/and intangible elements. For instance, a destination can be identified as a number of suppliers, such as

hotels, restaurants, animation firms, rent-a-cars, tourism guides, etc. Moreover tourism is not just based on the production of goods or services. Several intangible characteristics are embodied in individuals. The sociological and cultural features of the local population as well as a tourist's behaviour can influence the tourism experience. Weiermair (2006) defines tourism product as an experience.

Other difficulties are related with the characteristics of tourism products due to the simultaneity of production and consumption (Weiermair 2006) and also coterminality (Miles 2005).

The tourism sector, like services in general, is characterized by high heterogeneity. For instance, hotel complexes with golf courses cannot be compared with family-run residences or small restaurants. Some studies on innovation and entrepreneurship find that hotels and restaurants have a lower rate of survival; they are typically establishments with very low entry barrier thus making it easy to establish new firms on a non-innovative basis (Sundbo, 1999).

The market characteristics of the sector with a high degree of competitiveness oblige firms to innovate as a condition to stay on top of the competition (Hall and Williams 2008). On the other hand, tourism sector firms have a greater difficulty to "protect" innovation and are thus easier for competitors to imitate new practices. This triggers a constant challenge to innovate and to maintain competitive advantage (Porter, 1998). Associated with the notion of competitive advantage, productivity is linked with quality and with production efficiency. As a result, tourism firms that invest in quality and product diversification are generally more competitive. Additionally, alterations in quality can contribute to a more adequate price strategy. Consequently, innovation is crucial to reduce costs of production, to enhance marketing and to provide product value (Weiermair, 2006).

The way to achieve these results should not be through reducing costs by paying low wages to employees. Tourism industries in many cases absorb the less-skilled and the unemployed. This attribute of the sector, mainly in SMEs, can compromise innovation in sector. However, competitiveness and adaption of tourism sector to new market environments depends on investment in the quality of staff and managers (OECD, 2000). In fact, the specificities of the tourism sector influence innovation. Nevertheless,

some studies point to the potential for a higher innovation activity in this sector (Hjalager 2002, Sundbo et al. 2007).

The tourism sector has recently been influenced by several factors. Three of these can be included in the study of innovation in tourism:

- First, globalization implies the deregulation and increased competition in the tourism sector (Weiermair 2006). The number of tourists has steadily increased and they have easy access to more regions/markets. Tourism consumption has grown, extending the sector to new economies. So, in this context, firms and tourism destination have to adapt to the new reality and develop strategies to improve or maintain competitive advantage.
- Secondly, the tourist profile has changed. Tourists are more experienced and informed. ICT facilitates access to information and contributes to the demand for alternative and more sophisticated products (Stamboulis and Skayannis, 2003). Tourists nowadays are more independent and they self-organize their own holidays.
- Third, sustainability is essential to gain competitive advantage. Tourism firms must be managed by attending to the three dimensions: economy, social and environmental.

These three factors, globalization, experienced demand and sustainability must be considered in the firm's strategy in order to achieve competitive advantages.

## **5. Integrated Model**

The diversity of approaches to study innovation has generated countless typologies and now model specifications depend upon the focus of study (Sarkar 2007). Despite an increasing volume of literature on innovation behaviour, innovation process is still poorly understood (Coombs et al., 1996) with still no precise prescription for successful innovation (Rothwell, 1992).

The integrated innovation model (Sarkar 2004, 2008) fills a huge gap in the understanding of innovation to market linkages, sustainability and outcomes in an intuitive yet rigorous framework. It is a framework for understanding firm and market

dynamics, as it relates to innovation, enriched by the different strands of literature on industrial organization, management and innovation. It is an integrated approach that allows the academic, the management consultant and the manager alike to understand *where* a product (or a single product firm) is located in an integrated innovation space and *why* it is so located, which then provides valuable clues as to *what* to do while designing strategy.

The model describes a product (or a single product firm) along four dimensions - an external market dimension, a dimension on the strategic orientation, and two outcome dimensions. These four dimensions together define four spaces: *an archetype space, a strategy space, an outcome space and a market space*. These four spaces in concert describe the *integrated innovation space*.

In the first and north-east quadrant, which describes the *archetype space* (Fig. 1), the external market dimension in which a firm operates is represented by the degree of competitive market pressure on the horizontal axis. A product or firms located further to the right are under increasing competitive pressure often represented by an increase in the number of firms in the industry. The vertical axis in the archetype space measures a firm's strategic orientation. In the innovation context (of the general framework), the strategic orientation is an innovation-product differentiation strategy.

Moving anti-clockwise (Fig. 1), the *strategy space* gives the trade-off between a firm's strategic orientation and market return. While the archetype space describes a firm according to the coordinates of an external (market)-internal (strategic) relationship, the strategy space defines its market outcome with respect to its strategic orientation. The second quadrant therefore describes a strategy space where the two variables innovation and market outcome are connected via a behavioural relationship.

The market outcome of the firm in its competitive environment can be variously represented by a variable such as sales, market share, margins or profits, with a westward or outward movement away from the origin representing an increased level of market share (or other outcome variable). The model suggests a generic pay-off function represented by upward sloping, concave surfaces. These curves represent *the return from activities associated with a given degree of market pressure, between the*



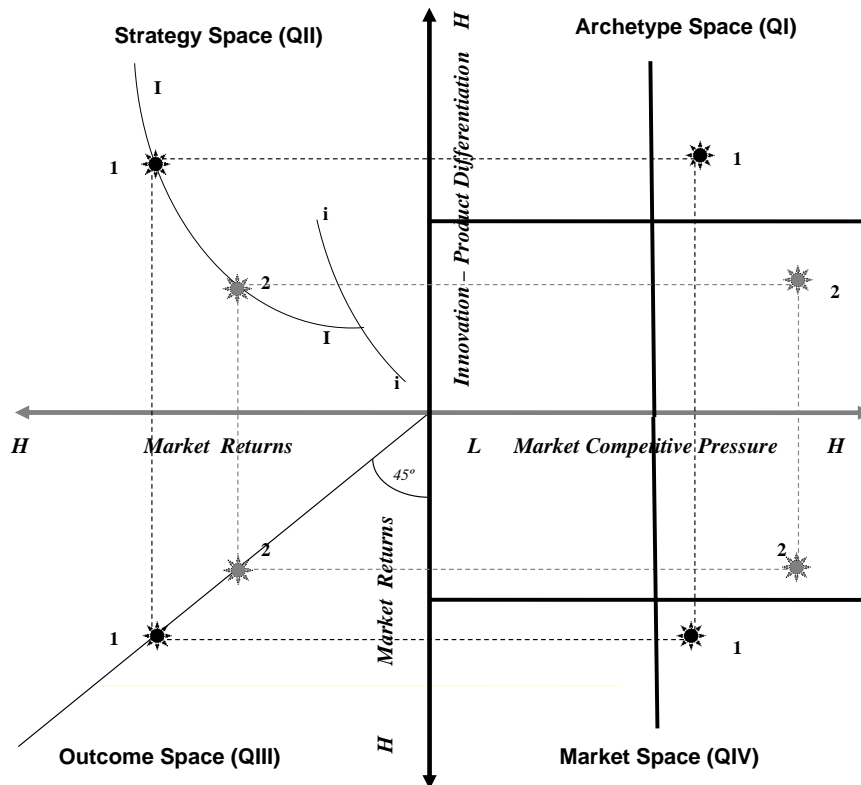
*strategic orientation pursued and the outcome of that strategy.* It posits a positive relationship between the strategic orientation (innovation/product differentiation) and the resulting market share in the industry. We call these curves the *innovation – pay-off (IP) curves*. The exact curvature or elasticity of these IP functions is industry specific. These IP curves, associated with a given degree of market pressure, can shift either temporally due to different factors including evolving product and labour market conditions, technological changes and (disruptive) innovation.

Hence coordinates of a product in the strategy space give the market outcome that the firm enjoys in a given competitive environment, which is the result of the degree of innovation or product differentiation pursued. *Ceteris paribus*, a higher level of product differentiation by a firm would lead to an increase in market outcome (sales, market share or profits). The third quadrant describes the *outcome space*, but in an effort to keep the model simple, we choose only one variable to represent a firm's outcome given its strategic orientation (innovation strategy). This space maps market outcome, which is measured by sales, market share or profits, onto itself via the 45° line. This device enables us in the final southeast quadrant to study the correspondence between returns and competitive pressure. Later on in this outcome space, we shall describe a behavioural relationship between two important market outcome variables, market share and profits.

The fourth quadrant maps the external environment to market returns for a given strategic orientation (innovation). This is the *market space*, which locates the market outcome for a given degree of competitive pressure. The market outcome of the product (single product firm) is, in turn, related to the degree of product innovation/differentiation via the integration of the strategic space and the outcome space.

Fig. 1 below illustrates the case of two firms, **1** and **2**. Firm **1** faces a fairly competitive environment and in its effort to stand above the crowd, offers a more differentiated product.

**Fig. 1 The integrated innovation space: archetype, strategy, outcome and the market space**



A firm could also be one of the following archetypes in the archetype space: wolf (high differentiation and low competition), fox (high differentiation and competition), bear (low differentiation and competition) and sheep (low differentiation and high competition).

## 6 The methodological approach

This part of the study wants to present an empirical study as applied to tourism firms.

### 6.1 Methodology

This research uses factorial analysis of principal component analysis (PCA) on a dataset composed of 158 Portuguese firms in the tourism sector. These tourism firms are drawn from different segments in the hospitality and tourism sector, including hotels, bed and breakfasts and rent-a-cars.

PCA is a statistical method that involves a mathematical procedure that transforms a number of possibly correlated variables (in this case, 29 variables from the inquiry) into a number of uncorrelated variables called principal components, related to the original variables by an orthogonal transformation. This transformation is defined in such a way that the first principal component has as high a variance as possible (that is, accounts for as much of the variability in the data as possible), and each succeeding component in turn has the highest variance possible under the constraint that it be orthogonal to the preceding components. PCA is sensitive to the relative scaling of the original variables. This methodology has an exploratory and confirmatory value (Hair *et al*, 1998), and this allows collecting the 3 components by using statistical methods from the axes of first quadrant of the model, denominated by quadrant of archetypes (Sarkar 2005, 2007).

The variables of the integrated model are grouped in 3 categories (X axis – market pressure, Y axis – product differentiation and Z axis – market performance). The first dimension of the model (X) refers to the perception of the firm’s own attitude towards the market, the second (Y) concerns the firm’s behaviour and the third dimension (Z) refers to the results. PCA uses an oblimin<sup>1</sup> rotation and a pare-wise comparison. The analysis presents a reliability analysis<sup>2</sup> for each 6 factors extracted through the determination of Cronbach’s  $\alpha$ <sup>3</sup>.

## 6.2 Data characterization

This section presents a general characterization of our sample. The sample was collected in 2010 using the electronic address of Portuguese tourism firms registered in the Portugal Travel Guide. Table 2 illustrates the distribution of firms by size, which shows that the majority of these firms are small- and medium-sized.

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<sup>1</sup> “Oblique rotations are similar or orthogonal rotations, except that oblique rotations allow correlated factors instead of maintaining independence between rotated factors” (Hair et al, 1998: 110).

<sup>2</sup> “Reliability is a fundamental issue in psychological measurement (...). Scale reliability is the proportion of variance attributable to the true score of latent variable. (...) Internal consistency is typically equated with Cronbach’s (1951) coefficient alpha.”(DeVellis, 2003: 29).

<sup>3</sup> “Alpha is defined as the proportion of a scale’s total variance that is attributable to a common source, presumably to true score of a latent variable underlying the items”(DeVellis, 2003: 31).

**Table 2. Distribution of firms by size**

<b>Size</b>	<b>Proportion (%)</b>
Small and medium firms	78%
Large firms	2%
Question left unanswered	20%

Table 3 presents the firms distribution by region. The higher number of firms is located in Lisbon and south of country (Algarve). Both are the most important touristic locations in the country.

**Table 3 - Distribution of firms by region**

<b>Region</b>	<b>Proportion (%)</b>
Lisbon	30%
South - Algarve	37%
North	7%
Centre	3%
Islands – Azores and Madeira	5%
Question left unanswered	18%

### **6.3 Multivariate Analysis: CPA**

This section presents the CPA and consequently the factors extracted.

**Table 4. Factor 1. Firms' position based on marketing**

<b>Items</b>	<b>Average<sup>4</sup></b>	<b>Standard Deviation</b>	<b>Impact Factor</b>	<b>Correlation Total of Item</b>
Question 4. With regards to new markets: our objective at the moment is simply to survive (0); we are always trying to expand and explore new market opportunities (10) [Z3]	7.3	1.66	0.352	0.808

<sup>4</sup> The inquiry includes 29 questions with a scale between 0 and 10. According with Sarkar (2007b) this scale allows more intuitive answers.

Question 5. [Z10] Our clients' are: disappointed and may easily switch to competitors' products if we are not careful (0); they are very satisfied with what we have to offer (10).	7.2	1.53	0.523	0.723
Question 6. Our products enjoy: less prestige than our competitors (0); much more prestige than our competitors (10) [Y7]	7.1	1.45	0.354	0.634
Question 7. Our products are: not dependent on any protection (0); protected by patent/copyright/some form of special knowledge (10) [Y6]	7.6	1.54	0.608	0.772
Question 9. Our product: is defined as having: standard, modular attributes (0); specialized features that are often proprietary (10) [X9]	6.5	2.22	0.273	0.618
Question 12. [We believe that we offer clients products that are: inferior to competitors' products (0); better than competitors' products (10) Y2]	6.8	1.65	0.482	0.675
Question 28. Our clients pay: less for our products than for our competitors' products (0); more for our products than for our competitors' products (10) [Y3]	7.4	1.50	0.604	0.765
Cronbach's $\alpha = 0.813$ Variance explained = 70%				

Table 4 illustrates the first factor. Based on the integrated model, this factor is named "Firms' position based on marketing" because of the inclusion of variables included in marketing strategy, as well as the importance of this variable in services firms. This factor group questions 4,5,6,7 and 8 are connected to marketing strategy. This factor highlights the non-technological dimension of innovation in the tourism sector.

**Table 5. Factor 2. Entrepreneurial Performance**

Items	Average	Standard Deviation	Impact Factor	Correlation Total of Item
Question 9. Our market share is: low and under great pressure (0); high and stable (10) (10) [Z1]	5.7	1.83	0.523	0.731
Question 24. Our margins before taxes are: small and under pressure (0); are comfortable and above industry average (10) [Z6]	5.1	1.87	0.399	0.677
Question 26. We are: concerned with our low sales (0); satisfied with the regular increments of sales (10) [Z8]	4.7	2.11	0.652	0.765

Question 29. In order to maintain our market position: we don't need great investments in technology or personnel (0); we have to invest constantly in new ideas and technology (10) [Z7]	6.4	1.77	0.543	0.654
Cronbach's $\alpha = 0.703$				
Variance explained = 34%				

Factor 2 forms a group of four items from the Z axis (market performance). This factor does not allow sub-dimensions in Z to be identified. When considering the tourism sector, this is justifiable given the inter-relation between factors 1 and 2. Some studies reveal that improvements in a firm's performance are dependent on customer relationship management and the existence of an entrepreneurial culture that promotes innovation and marketing (Brendan *et al*, 2000)

**Table 6. Factor 3. Sustainability of services in market**

Items	Average	Standard Deviation	Impact Factor	Correlation Total of Item
Question 14. Our products: are not difficult to copy (0); are not easily duplicated by other firms (10) [Y10]	6.5	1.97	0.432	0.645
Question 22. Our services: are is not difficult to replicate if we do nothing (0); are not easily replicated (10) [Y5]	6.3	2.01	0.553	0.871
Question 23. (10) Our services can be defined as having: standard attributes (0); a great many special attributes [Y1]	5.4	1.42	0.633	0.762
Cronbach's $\alpha = 0.602$				
Explained variance = 21%				

Factor 3, sustainability of services in marketing, includes a set of items related with human resources, which highlights again the importance of non-technological factors with respect to tourism firms. Tacit knowledge of human resources is a differentiator factor. This factor is situated in the Yaxis of the integrated model.

**Table 7. Factor 4. Market Structure**

<b>Items</b>	<b>Average</b>	<b>Standard Deviation</b>	<b>Impact Factor</b>	<b>Correlation Total of Item</b>
Question 13. Our market is characterized by: low turbulence in terms of entry or exit of firms (0); new firms are constantly entering the market and, in general, there is high market turbulence (10) [X5]	6.1	2.01	0.621	0.734
Question 15. Our consumers: are obliged to use our services for lack of alternatives (0); have many alternatives to our service (10) [X6]	5.9	2.12	0.528	0.732
Question 19. Our market is characterized by: difficulty of entry for new competitors (0); ease of entry for new competitors (10) [X4] Cronbach's $\alpha = 0.571$ Explained variance= 26%	4.9	2.31	0.586	0.711

The CPA analysis resulted in three factors (factors 4, 5, 6). Factor 4 concerns entry barriers, turbulence and product homogeneity as relevant factors. These factors are identified in other studies in which the entry and exit of firms are very frequent (OCDE, 2000; Carvalho, 2008). The theoretical approach developed by Comanor (1987) concerning relations between barriers to entry and innovation concludes that when barriers to entry are lower, the incentive to innovate is also small, because the profitability of innovations soon disappears, while when the barriers to entry are higher, the incentive to innovate tends to reduce. Subsequently, situations of perfect competition (the sheep archetype in the model) and monopoly (tending towards the bear archetype) justify a lower allocation of resources for innovation.

**Table 8. Factor 5. Competition**

<b>Items</b>	<b>Average</b>	<b>Standard Deviation</b>	<b>Impact Factor</b>	<b>Correlation Total of Item</b>
Question 3. Our competitors: are not as good as we are (0); are powerful and highly organized (10) [X2]	5.1	1.93	0.368	0.601
Question 11. Our market is characterized by: few competitors (0); many competitors (10) [X1]	7.3	1.95	0.614	0.648
Question 27. In terms of the functionality of our product: there is no substitute in the market (0); there are many substitutes (10) [X3]	6.9	1.81	0.562	0.733

Cronbach's  $\alpha = 0.578$

Factor 5 is very important with regards to the level of competition. Tourism firms reveal a higher segmentation according to tourism product (sun and beach, MICE [Meetings, Incentives, Conventions and Exhibitions], short breaks, city breaks, nature, etc.) and also take into consideration demand-driven features, particularly expense per customer (Dolnicar, 2004; Mok and Iverson; 2000; Pizam and Riechel, 1979; Spotts and Mahoney, 1991; Woodside *et al*, 1987).

**Table 9. Factor 6. Bargaining Power**

Items	Average	Standard Deviation	Impact Factor	Correlation Total of Item
Question 21. Our prices are: not under pressure, indeed, price is not the buyer's principal decision variable (0); are always under great pressure (10) [X10]	7.2	2.02	0.671	0.838
Question 25. When establishing prices for our services, we have: imposed our prices onto our customers (0); lowered prices to amounts that customers are willing to pay (10) [X8]	6.9	2.01	0.678	0.823
Cronbach's $\alpha$ = 0.508				
Explained variance = 14%				

The last factor, which is bargaining power, includes items connected to the bargaining power of customers. Tourism firms have at least two types of customers: one are tour operators, who have a high bargaining power, while the second group of customers usually have less bargaining power. However, data reveal that the bargaining power of individual clients has recently seen an increase as a result of the growing option of online booking and online sales. Information and communication technology has augmented transparency in the market. Information that is now available about firms makes it easy for individual clients to choose according to price.

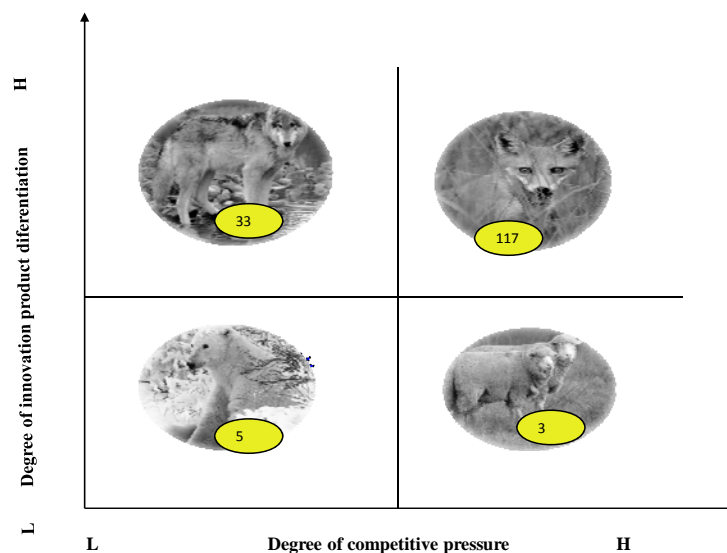


In summary, the CPA allows 6 components to be identified. These components could be situated within the dimensions of the integrated model. Although factor 1 includes the X, Y and Z variables, in our view respondents interpreted this as the Y dimension. The multivariate analysis confirms the importance of intangible resources, especially marketing and human resources, in tourism firms.

## 7. Tourism firms in archetypes of an integrated model

This section shows factors 1 (a firm's position based on marketing), 3 (sustainability of services) and 4 (market structure) archetypes of an integrated model. Factors 1 and 3 belong to differentiation (Y axis) and factor 4 belongs to market pressure<sup>5</sup> (X axis). Fig 1 allows for firms to be positioned within the archetypes according to the PCA presented in the last section.

**Fig 2. Archetypes (Y- marketing)**



<sup>5</sup> The axis X identified 3 factors, the choice of factor 4 is justified by the statistical reliability.

Figure 3 presents factors 1 (a firm's position based on marketing) and 4 (market structure). It identifies 117 firms as belonging to the fox archetype, 33 firms to the wolf archetype, 5 firms to the bear archetype and 3 firms to the sheep archetype. These positions suggest that when the strategy of differentiation/innovation is based on marketing, firms shows high competitive positioning in the market.

**Fig 3. Archetypes (Y – sustainability of services in market)**

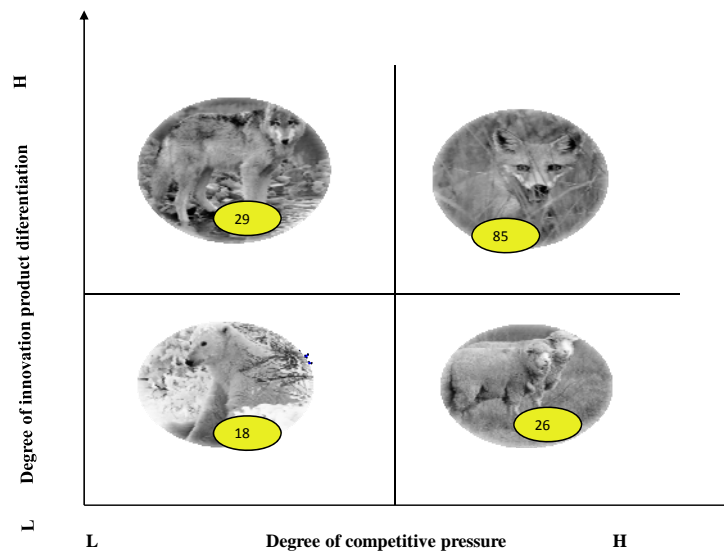


Figure 3 presents the archetypes with reference to factors 3 (sustainability of service in market) and 4 (market structure). In this case, it is possible to identify 85 firms as belonging to the fox archetype, 29 firms to the wolf archetype, 16 firms to the sheep archetype and 18 firms to the bear archetype. The positioning also suggests the importance of intangible resources, such as human resources.

A comparison of figure 2 with figure 3 allows us to draw the following conclusion: most firms are positioned as the fox archetype (74% in figure 2 and 53% in figure 3). However, figure 3 has a more balanced distribution of firms among the 4 archetypes, with a high number of firms in archetypes of lower differentiation (bear and sheep) and

a small number of firms in the sheep archetype category (3% in figure 2 and 11% in figure 3). Based on the theoretical approach of the integrated model, Schumpeterian entrepreneurs are mainly situated in the wolf archetype category, and could also include some in the fox archetype category in which firms try to innovate in order to succeed in the marketplace. However, it is important to note that firms are mainly positioned in a 0 to 10 scale in high values (mainly higher than 5). This finding raises some questions: Could it be that some wolves are foxes? And how many foxes are really sheep?

Tables 10 and 11 present how the firms are distributed by archetypes with regards to Y-marketing and Y-sustainability of services in markets.

**Table 10. Tourism firms by archetypes (Y- marketing)**

	<b>Firms</b>
<b>Sheep</b>	3
<b>Wolf</b>	33
<b>Fox</b>	117
<b>Bear</b>	5
<b>Total</b>	158

**Table 11. Tourism firms by archetypes (Y- sustainability of services in market)**

	<b>Firms</b>
<b>Sheep</b>	26
<b>Wolf</b>	29
<b>Fox</b>	85
<b>Bear</b>	18
<b>Total</b>	158

Analyzing by regions allows us to identify that the highest number of firms in the wolf archetype category are in the Lisbon region and in the south of Portugal, which are the main touristic areas in Portugal. These results suggest the possibility of an entrepreneurial clustering of the sector, which permits the reduction of uncertainties, access to resources, know-how and networks.

## 6. Concluding Remarks

In recent years, there has been increasing research into service sector innovation (Sundbo 2001, 2007, Sundbo et al. 2007, Gallouj 2002, Schianetz et al. 2007, Miles 2005, Hjalager, 2002, Carvalho, 2008). However, it is possible to point out different perspectives given that while several authors indicate that innovation in services and in manufacturing are closely related, other authors establish a difference between them (Sundbo 2007, Pires et al, 2008). But research into innovation in tourism is in its infancy. This study aims to contribute towards creating and developing research into innovation as applied to the tourism sector.

The study uses archetypes and the market outcome resulting from the innovation strategies that have been pursued and compares similarities and differences according to firms' geographical localization in order to identify innovative patterns in tourism firms.

The empirical study using CPA allows for the identification of 6 components. These components could be situated within the dimensions of the integrated model. Although factor 1 includes X, Y and Z variables, it is our view that they were interpreted as Y by respondents. The multivariate analysis confirms the importance of intangible resources, especially marketing and human resources, in tourism firms.

A complementary approach allows the positioning of firms in the first quadrant of this integrated model (archetypes axes) and suggests that most firms in the sample perceived themselves as in the fox category in both tested cases, although the firms invest greater effort and this differentiation is based on marketing. The geographical locations of Lisbon and south of Portugal seem to be relevant factors in making the values higher than 5 in the Y axis.

The study identifies the linkage between services, market structures and innovation strategies considering geographical agglomeration of firms in a small economy, as well as factors that determine the competitiveness of tourism firms.

## References

- Arrow, K. (1962), "Economic Welfare and the Allocation of Resources for Innovation," in Nelson R. R. (ed) *The Rate and Direction of Inventive Activity*, Princeton: Princeton University Press.
- Gray, B; Matear, S.M; Matheson, P.K. (2000) "Improving the performance of hospitality firms" *International Journal of Contemporary Hospitality Management*, Volume 12, Issue 3, 149-155
- Buhalis, D. (2003), *eTourism: Information technology for strategic management* Prentice Hall, Financial, Times, UK.
- Carvalho, L. (2008), *Innovation and Entrepreneurship: A model to service sector*, Phd Thesis, Evora University, June 2008, Portugal.
- Cohen, W.; D. Levinthal (1989) "Innovation and Learning: Two Faces of R & D," *The Economic Journal*, Vol. 99, No. 397, 569-596.
- Cohen, W.; D. Levinthal (1990) "Absorptive Capacity: A New Perspective on Learning and Innovation," *Administrative Science Quarterly*, 35 (1), 128-152.
- Comanor, W. (1987) "Market structure, product differentiation and industrial research" *Quarterly Journal of Economics*, 81, 639-657
- DeVellis, R. (2003) *Scale Development. Theory and Applications* Sage publications, Second Edition
- Dolnicar, S. (2004) "Beyond "Commonsense Segmentation: A Systematics of Segmentation Approaches in Tourism", *Journal of Travel Research*, Vol. 42, No. 3, 244-250
- Drejer, I. (2004), "Identifying innovation surveys of services", *Research Policy*, 33, 551-562.
- European Commission (2004) "European Innovation Scoreboard 2004. Comparative Analysis of Innovation Performance" Commission Staff Working Paper, Brussels 19.11.2004, SEC (2004) 1475.
- Fagerberg, J. (2005), "Innovation: a guide to the literature", In: Fagerberg, J. et al. (eds.), *The Oxford handbook of Innovation*. Oxford University Press, Oxford, 1-26.
- Fagerberg, J., Godinho, M. M., (2004), "Innovation and Catching-up", in Fagerberg, J., Mowery, D., Nelson, R. (Eds.), *The Oxford Handbook of Innovation*. Oxford: Oxford University Press, 514-544.
- Freeman C., (1991), "Networks of innovators: A synthesis of research issues". *Research Policy* 20, 499-514.

- Gallouj, F. (2002). *Innovation in the service economy*, Elgar, Cheltenham, UK, Northampton, USA.
- Gronroos, C. (1990), "Service Management and marketing" Lexington, MA.
- Hair, J.; Anderson, R.; Tatham, R.; Black, W. (1998) *Multivariate Data Analysis*, Fifth Edition, Prentice-Hall, International
- Hall, C. M.; Williams, A. M. (2008), *Tourism and innovation*. Routledge, London and New York.
- Hauknes, J. (1998), "Services in Innovation – Innovation in Services" STEP Report, R-13, Oslo.
- Hjalager, A. M. (2002), "Repairing innovation defectiveness in tourism", *Tourism Management*, 23, 465-474.
- Hollenstein, H. (2000, "Innovation Modes in the Swiss Service Sector. A Cluster Analysis based on firm-level data" 3<sup>rd</sup> Workshop of the focus group on Innovative Firms and Networks, OECD, Project on National Innovation Systems (Phase III), Rome, October 2-3.
- Klein, K., J., Sorra, J. S. (1996), « The Challenge of Innovation Implementation», *Academy of Management Review*, v. 21, n. 4, 1055-1080.
- Kline, S.; Rosenberg, N. (1986), "An Overview of Innovation" in Landua, R. and Rosenberg, N. (eds) *The positive sum strategy: Harnessing technology for economic growth*, National Academic Press, Washington, DC.
- Lakatos, E. M.; Marconi, M. A. ,(2003), *Metodologia do Trabalho Científico: procedimentos básicos; pesquisa bibliográfica; projecto e relatório; publicações e trabalhos científicos*, Editora Atlas, 6.<sup>a</sup> ed., São Paulo.
- Licht, G.; Ebling, G.; Janz, N.; Niggemann, H. (1999) "Innovation in service sector – Selected facts and some policy conclusions" Center for European Research, Manheim, December.
- Miles, I. (2005), "Innovation in services" In: Fagerberg, J. et al. (eds.), *The Oxford handbook of Innovation*. Oxford University Press, Oxford, 433-458.
- Mok, C.; Inverson, T.J. (2000): "Expenditure-base segmentation: Taiwanese tourists to Guan". *Tourism Management*, Vol. 21, 299-305.
- Nelson, R. R.; S. G. Winter (1982), *An Evolutionary Theory of Economic Change*, Cambridge, Mass: Harvard University Press.
- Nelson, R. R. and Winter, S. G. (1982). *An evolutionary theory of economic change*. Belknap Press, Cambridge, London.

OECD (1997) *The Oslo Manual: Proposed Guidelines for Collecting and Interpreting Technological Innovation Data*, OECD, Paris.

OECD (2000) *Industry, Services & Trade. Measuring the role of Tourism in OECD Economies*. The OECD Manual on Tourism Satellite Accounts and Employment, OECD, Paris.

OECD (2002). *Frascati Manual: proposed standard practice for surveys on research and experimental development*. OECD, Paris.

OECD (2005). *Oslo Manual: guidelines for collecting and interpreting innovation data*. OECD, Paris.

Ottenbacher, M. (2007) "Innovation Management in the Hospitality Industry: Different Strategies for Achieving Success" *Journal of Hospitality & Tourism Research*, Vol. 31, No. 4, 431-454.

Pavitt, K. (1984) "Sectoral Patterns of Technical Change: Towards a Taxonomy and Theory," *Research Policy*, 13, pp. 343-73.

Pilat, D.; Wolf; A. (2004) "Measuring the interaction between services and manufacturing" OECD, European Commission Workshop on Services sector Statistics, Luxembourg, 29-30 June.

Pires, C., S. Sarkar, L. Carvalho (2008), "Innovation in services – how different from manufacturing?", *Service Industries Journal*, 28(10), 1339-1356.

Pizam, A.; Reichel, A. (1979): "Big spenders and little spenders in US tourism". *Journal of Travel Research*, Vol 18, núm. 2, 42-3.

Porter, M. E. (1998), "On competition", *Massachussets Research Policy*, 13, 343-373.

Sarkar, S. (2007), *Innovation, Market Archetypes and Outcome - An Integrated Framework*, Heidelberg: Springer-Verlag.

Sarkar, S. (2005), "Innovation and market structures: an integrated approach", *International Journal of Entrepreneurship and Innovation Management*, 5(5/6), 366-378.

Sarkar, S.; Carvalho, L. (2005) "Which Model is best suited to measuring innovation in tourism sector" paper presented in International Conference Theoretical Advances in Tourism Economics, 18, 19 March, Évora, Portugal

Schianetz, K.; Kavanagh, L.; Lockington, D. (2007), "The learning tourism destination: the potential of a learning organization approach for improving the sustainability of tourism destinations" *Tourism Management*, 28, 6, 1485-1496.

Schumpeter, J. (1934), *The Theory Of Economic Development*, Harvard University Press, USA.

- Sirilli, G; Evangelista, R. (1998), "Technological innovation in services and manufacturing: results from Italian surveys" *Research Policy*, Volume 27, Issue 9, December, 881-899.
- Spotts, D. M.; Mahoney, E.M. (1991): "Segmenting visitors to a destination region based on their expenditure" *Journal of Travel Research*, Vol. 29, núm.4, 24-31.
- Stamboulis, Y; Skayannis, P. (2003) "Innovation strategies and technology for experimnce-based tourism" *Tourism Management*, Volume 24, Issue 1, 35-43
- Stockdale, B. (2002), "UK Innovation Survey 2001", *Economic Trends*, nº580, March 2002.
- Sundbo, J. (2001), *The strategic management of innovation*, Elgar, Cheltenham, UK, Northampton, USA.
- Sundbo, J. (2007), "Innovation and Learning in Services. The Involvement of Employees" In: Spath, D. and Fähnrich, K. P. (eds.), *Advances in services innovations*. Springer, Berlin, Heidelberg, 131-150.
- Sundbo, J.; Fuglsang, L. (2006), "Strategic reflexivity as a framework for understanding development in modern firms: how the environment drives innovation" In: Sundbo, J. et al. (eds.), *Contemporary management of innovation*. Palgrave Macmillan, Hampshire, UK, New York, USA, 147-166.
- Sundbo, J., Orfila-Sintes, F.; Sørensen, F.(2007), "The innovative behaviour of tourism firms – Comparative studies of Denmark and Spain". *Research Policy*, 36, 88-106.
- Sundbo, J.; Gallouj, F. (1999), "Innovation in Services in seven European Countries" 99:1, Synthesis Report for European Commission, DG XII, TSER-SI4S.
- Tan, B.S. (2004), "The Consequences of Innovation", *The Innovation Journal: The Public Innovation Journal*, Volume 9 (3), 1-42.
- United Nations (2004), *World Investment Report. 2004 the shift towards services*, United Nations Conference on Trade and Development, New York and Geneva.
- Van Ark, B.; Broesma, L.; Hertog, P. (2003), "Services Innovation, Performance Policy: A Review" Synthesis Report in the Framework of the Project Structural Information Provision on Information in Services, June.
- Weiermair, K. (2006), "Product improvement or innovation: what is the key to success in tourism?" In: OECD, *Innovation and growth in tourism*. OECD, Paris,.53-69.
- Woodside, A.G.; Cook, V.J.; Mindak, W. (1987): "Profiling the heavy traveler segment". *Journal of Travel Research*, Vol. 25, núm. 3, 9-14.